



Element Materials Technology Lafayette
2417 W. Pinhook Road
Lafayette, LA 70508-3344
TEL: (337) 235-0483 FAX: (337) 233-6540
Website: www.element.com

December 18, 2015

J. Carlton Todd
Michael Pisani & Associates
1100 Poydras Street, Suite 1430
New Orleans, LA 70163
TEL: (504) 582-2468
FAX (504) 582-2470

RE: East White Lake 07-47

Order No.: 15110631

Dear J. Carlton Todd:

Element Materials Technology Lafayette received 18 sample(s) on 11/13/2015 for the analyses presented in the following report.

In accordance with your instructions Element Lafayette conducted the analysis shown on the following pages on samples submitted by your company. The results related only to the items tested. Unless otherwise noted, all analyses were conducted using EPA approved methodologies and all test results meet all requirements of TNI. All relevant sampling information is on the attached Chain-of-Custody form.

All soil data, except for 29-B, are on a wet-weight basis unless otherwise indicated in the units field as -dry.

LELAP Certification No.: 01997. TCEQ Certification No.: T104704261-14-6. A scope of accredited parameters is available upon request. A "#" by the test method or analyte indicates this parameter is outside the scope of accreditation.

Estimated uncertainty is available upon request. This report shall not be reproduced except in full, without the written approval of the laboratory.

If you have any questions regarding these test results, please feel free to call.

A handwritten signature in blue ink, appearing to read 'Cristina Thibeaux', is written over a light blue horizontal line.

Cristina Thibeaux
Customer Service Supervisor
2417 W. Pinhook Road
Lafayette, LA 70508-3344



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Case Narrative

WO#: 15110631
Date: 12/18/2015

CLIENT: Michael Pisani & Associates
Project: East White Lake 07-47

12/18/15: This report is being re-issued and replaces the original report in its entirety. As requested, the sample moisture content was added to the samples.

Unless specified by the client, a duplicate or MS/MSD, wherever applicable, is randomly selected and analyzed from each analytical batch provided sample volume is sufficient. The sample chosen for duplicate or MS/MSD may or may not be a sample submitted in this workorder. A method blank and/or a lab control sample (LCS)/lab control sample duplicate (LCSD), wherever applicable, are processed as a quality control check for each analytical batch. When the matrix QC data is not available due to insufficient sample volume or when the results indicate possible matrix effect, the validity of the batch is determined by the method blank and LCS/LCSD.

The results of the laboratory internal quality control data are provided in the QC Summary Report section of the report for your review. Laboratory-related QC exceptions that may impact the validity of data are discussed in the case narrative. Sample-related QC exceptions are flagged either in the results page(s) or in the QC report page(s). End users should consider QC exceptions when evaluating sample data against data quality objectives.

Any other exceptions associated with this report will be footnoted in the results page(s) or the QC summary page(s).

Note: Due to insufficient volume, the CEC and ESP analytical could not be completed on client sample SS-26 (2-4 FT) (Lab ID: 15110631-015).



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Analytical Report

(consolidated)

WO#: 15110631

Date Reported: 12/18/2015

CLIENT: Michael Pisani & Associates **Collection Date:** 11/12/2015 9:05:00 AM
Project: East White Lake 07-47
Lab ID: 15110631-001 **Matrix:** SOIL
Client Sample ID SS-19 (0-2 FT)

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	46.3	0.100		meq/100g	1	11/20/2015 3:19:00 PM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	9.31	0.10		mmhos/cm	1	11/18/2015 3:07:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.11	0.100		%	1	11/20/2015 3:19:00 PM
HEM, OIL & GREASE						
SW9071B						
HEM, Oil & Grease	0.38	0.05		% dry wt	1	11/23/2015 8:02:00 AM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	7.64	0.100			1	11/19/2015
Soluble Calcium	13.8	1.00		meq/L	1	11/19/2015
Soluble Magnesium	39.0	1.00		meq/L	1	11/19/2015
Soluble Sodium	39.2	1.00		meq/L	1	11/19/2015
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	0.22	0.11		mg/Kg	1	11/17/2015 10:37:28 AM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	1.36	1.07		mg/Kg	1	11/17/2015 6:40:45 AM
Barium	190	0.537		mg/Kg	1	11/17/2015 6:40:45 AM
Cadmium	< 0.268	0.268		mg/Kg	1	11/17/2015 6:40:45 AM
Chromium	4.08	0.537		mg/Kg	1	11/17/2015 6:40:45 AM
Lead	5.02	0.537		mg/Kg	1	11/17/2015 6:40:45 AM
Selenium	< 1.07	1.07		mg/Kg	1	11/17/2015 6:40:45 AM
Silver	< 0.268	0.268		mg/Kg	1	11/17/2015 6:40:45 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
M	Matrix Interference	ND	Not Detected at the Reporting Limit
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: **15110631**

Date Reported: **12/18/2015**

CLIENT: Michael Pisani & Associates

Collection Date: 11/12/2015 9:05:00 AM

Project: East White Lake 07-47

Lab ID: 15110631-001

Matrix: SOIL

Client Sample ID SS-19 (0-2 FT)

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B Analyst: STS
METALS IN SOIL OR SLUDGE BY ICP						
Zinc	32.8	0.537		mg/Kg	1	11/17/2015 6:40:45 AM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	957	49.2		mg/Kg-dry	1	11/18/2015 5:14:39 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: MMT
Percent Moisture	61.4	1.00		wt%	1	11/13/2015 4:00:00 PM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
	M	Matrix Interference	ND	Not Detected at the Reporting Limit
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

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WO#: 15110631

Date Reported: 12/18/2015

CLIENT: Michael Pisani & Associates

Collection Date: 11/12/2015 9:10:00 AM

Project: East White Lake 07-47

Lab ID: 15110631-002

Matrix: SOIL

Client Sample ID SS-19 (2-4 FT)

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	60.1	0.100		meq/100g	1	11/20/2015 3:19:00 PM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	9.16	0.10		mmhos/cm	1	11/18/2015 3:08:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	< 0.100	0.100		%	1	11/20/2015 3:19:00 PM
HEM, OIL & GREASE						
SW9071B						
HEM, Oil & Grease	0.23	0.05		% dry wt	1	11/23/2015 8:02:00 AM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	13.9	0.100			1	11/19/2015
Soluble Calcium	7.34	1.00		meq/L	1	11/19/2015
Soluble Magnesium	26.0	1.00		meq/L	1	11/19/2015
Soluble Sodium	56.8	1.00		meq/L	1	11/19/2015
29B METALS						
MERCURY IN SOIL OR SLUDGE						
SW7471A SW7471A						
Mercury	0.15	0.10		mg/Kg	1	11/17/2015 10:40:06 AM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
SW6010B SW3050B						
Arsenic	3.41	1.06		mg/Kg	1	11/17/2015 6:46:22 AM
Barium	275	0.531		mg/Kg	1	11/17/2015 6:46:22 AM
Cadmium	< 0.266	0.266		mg/Kg	1	11/17/2015 6:46:22 AM
Chromium	4.93	0.531		mg/Kg	1	11/17/2015 6:46:22 AM
Lead	7.71	0.531		mg/Kg	1	11/17/2015 6:46:22 AM
Selenium	< 1.06	1.06		mg/Kg	1	11/17/2015 6:46:22 AM
Silver	< 0.266	0.266		mg/Kg	1	11/17/2015 6:46:22 AM

Qualifiers:
 * Value exceeds Maximum Contaminant Level.
 M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode



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WO#: **15110631**

Date Reported: **12/18/2015**

CLIENT: Michael Pisani & Associates

Collection Date: 11/12/2015 9:10:00 AM

Project: East White Lake 07-47

Lab ID: 15110631-002

Matrix: SOIL

Client Sample ID SS-19 (2-4 FT)

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B Analyst: STS
METALS IN SOIL OR SLUDGE BY ICP						
Zinc	30.4	0.531		mg/Kg	1	11/17/2015 6:46:22 AM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	482	50.0		mg/Kg-dry	1	11/18/2015 5:18:04 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: MMT
Percent Moisture	55.9	1.00		wt%	1	11/13/2015 4:00:00 PM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
	M	Matrix Interference	ND	Not Detected at the Reporting Limit
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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WO#: 15110631

Date Reported: 12/18/2015

CLIENT: Michael Pisani & Associates **Collection Date:** 11/12/2015 10:15:00 AM
Project: East White Lake 07-47
Lab ID: 15110631-003 **Matrix:** SOIL
Client Sample ID SS-20 (0-2 FT)

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	60.0	0.100		meq/100g	1	11/20/2015 3:19:00 PM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	11.1	0.10		mmhos/cm	1	11/18/2015 3:08:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	7.76	0.100		%	1	11/20/2015 3:19:00 PM
HEM, OIL & GREASE						
SW9071B						
HEM, Oil & Grease	0.53	0.05		% dry wt	1	11/23/2015 8:02:00 AM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	14.5	0.100			1	11/19/2015
Soluble Calcium	8.44	1.00		meq/L	1	11/19/2015
Soluble Magnesium	29.9	1.00		meq/L	1	11/19/2015
Soluble Sodium	63.6	1.00		meq/L	1	11/19/2015
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg	1	11/17/2015 10:42:45 AM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	3.09	1.03		mg/Kg	1	11/17/2015 7:01:26 AM
Barium	371	0.513		mg/Kg	1	11/17/2015 7:01:26 AM
Cadmium	< 0.257	0.257		mg/Kg	1	11/17/2015 7:01:26 AM
Chromium	4.65	0.513		mg/Kg	1	11/17/2015 7:01:26 AM
Lead	7.86	0.513		mg/Kg	1	11/17/2015 7:01:26 AM
Selenium	< 1.03	1.03		mg/Kg	1	11/17/2015 7:01:26 AM
Silver	< 0.257	0.257		mg/Kg	1	11/17/2015 7:01:26 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
M	Matrix Interference	ND	Not Detected at the Reporting Limit
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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WO#: 15110631

Date Reported: 12/18/2015

CLIENT: Michael Pisani & Associates **Collection Date:** 11/12/2015 10:15:00 AM
Project: East White Lake 07-47
Lab ID: 15110631-003 **Matrix:** SOIL
Client Sample ID SS-20 (0-2 FT)

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B Analyst: STS
METALS IN SOIL OR SLUDGE BY ICP						
Zinc	21.6	0.513		mg/Kg	1	11/17/2015 7:01:26 AM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	1,920	47.9		mg/Kg-dry	1	11/18/2015 5:21:29 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: MMT
Percent Moisture	67.1	1.00		wt%	1	11/13/2015 4:00:00 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
M	Matrix Interference	ND	Not Detected at the Reporting Limit
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: 15110631

Date Reported: 12/18/2015

CLIENT: Michael Pisani & Associates

Collection Date: 11/12/2015 10:20:00 AM

Project: East White Lake 07-47

Lab ID: 15110631-004

Matrix: SOIL

Client Sample ID SS-20 (2-4 FT)

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	69.3	0.100		meq/100g	1	11/20/2015 3:19:00 PM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	11.4	0.10		mmhos/cm	1	11/18/2015 3:08:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	8.60	0.100		%	1	11/20/2015 3:19:00 PM
HEM, OIL & GREASE						
SW9071B						
HEM, Oil & Grease	0.34	0.05		% dry wt	1	11/23/2015 8:02:00 AM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	14.7	0.100			1	11/19/2015
Soluble Calcium	10.5	1.00		meq/L	1	11/19/2015
Soluble Magnesium	29.7	1.00		meq/L	1	11/19/2015
Soluble Sodium	65.9	1.00		meq/L	1	11/19/2015
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg	1	11/17/2015 11:54:35 AM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	2.37	1.07		mg/Kg	1	11/17/2015 7:07:08 AM
Barium	159	0.535		mg/Kg	1	11/17/2015 7:07:08 AM
Cadmium	< 0.267	0.267		mg/Kg	1	11/17/2015 7:07:08 AM
Chromium	4.11	0.535		mg/Kg	1	11/17/2015 7:07:08 AM
Lead	5.55	0.535		mg/Kg	1	11/17/2015 7:07:08 AM
Selenium	< 1.07	1.07		mg/Kg	1	11/17/2015 7:07:08 AM
Silver	< 0.267	0.267		mg/Kg	1	11/17/2015 7:07:08 AM

Qualifiers:

* Value exceeds Maximum Contaminant Level.
 M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: 15110631

Date Reported: 12/18/2015

CLIENT: Michael Pisani & Associates **Collection Date:** 11/12/2015 10:20:00 AM
Project: East White Lake 07-47
Lab ID: 15110631-004 **Matrix:** SOIL
Client Sample ID SS-20 (2-4 FT)

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B Analyst: STS
METALS IN SOIL OR SLUDGE BY ICP						
Zinc	22.5	0.535		mg/Kg	1	11/17/2015 7:07:08 AM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	890	46.8		mg/Kg-dry	1	11/18/2015 5:24:55 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: MMT
Percent Moisture	67.0	1.00		wt%	1	11/13/2015 4:00:00 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
M	Matrix Interference	ND	Not Detected at the Reporting Limit
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

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WO#: 15110631

Date Reported: 12/18/2015

CLIENT: Michael Pisani & Associates **Collection Date:** 11/12/2015 10:25:00 AM
Project: East White Lake 07-47
Lab ID: 15110631-005 **Matrix:** SOIL
Client Sample ID SS-20 (4-6 FT)

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	69.3	0.100		meq/100g	1	11/20/2015 3:19:00 PM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	9.29	0.10		mmhos/cm	1	11/18/2015 3:09:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	6.30	0.100		%	1	11/20/2015 3:19:00 PM
HEM, OIL & GREASE						
SW9071B						
HEM, Oil & Grease	0.35	0.05		% dry wt	1	11/23/2015 8:02:00 AM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	15.9	0.100			1	11/19/2015
Soluble Calcium	8.55	1.00		meq/L	1	11/19/2015
Soluble Magnesium	18.3	1.00		meq/L	1	11/19/2015
Soluble Sodium	58.3	1.00		meq/L	1	11/19/2015
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg	1	11/17/2015 11:56:54 AM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	3.96	1.05		mg/Kg	1	11/17/2015 7:12:50 AM
Barium	332	0.525		mg/Kg	1	11/17/2015 7:12:50 AM
Cadmium	< 0.262	0.262		mg/Kg	1	11/17/2015 7:12:50 AM
Chromium	5.39	0.525		mg/Kg	1	11/17/2015 7:12:50 AM
Lead	8.67	0.525		mg/Kg	1	11/17/2015 7:12:50 AM
Selenium	< 1.05	1.05		mg/Kg	1	11/17/2015 7:12:50 AM
Silver	< 0.262	0.262		mg/Kg	1	11/17/2015 7:12:50 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
M	Matrix Interference	ND	Not Detected at the Reporting Limit
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

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WO#: **15110631**

Date Reported: **12/18/2015**

CLIENT: Michael Pisani & Associates **Collection Date:** 11/12/2015 10:25:00 AM
Project: East White Lake 07-47
Lab ID: 15110631-005 **Matrix:** SOIL
Client Sample ID SS-20 (4-6 FT)

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B Analyst: STS
METALS IN SOIL OR SLUDGE BY ICP						
Zinc	22.8	0.525		mg/Kg	1	11/17/2015 7:12:50 AM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	1,700	50.0		mg/Kg-dry	1	11/18/2015 5:28:21 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: MMT
Percent Moisture	65.0	1.00		wt%	1	11/13/2015 4:00:00 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
M	Matrix Interference	ND	Not Detected at the Reporting Limit
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: 15110631

Date Reported: 12/18/2015

CLIENT: Michael Pisani & Associates

Collection Date: 11/12/2015 12:05:00 PM

Project: East White Lake 07-47

Lab ID: 15110631-006

Matrix: SOIL

Client Sample ID SS-22 (0-2 FT)

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	60.9	0.100		meq/100g	1	11/20/2015 3:19:00 PM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	6.59	0.10		mmhos/cm	1	11/18/2015 3:09:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	6.53	0.100		%	1	11/20/2015 3:19:00 PM
HEM, OIL & GREASE						
SW9071B						
HEM, Oil & Grease	1.42	0.05		% dry wt	1	11/23/2015 8:02:00 AM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	12.5	0.100			1	11/19/2015
Soluble Calcium	5.57	1.00		meq/L	1	11/19/2015
Soluble Magnesium	12.5	1.00		meq/L	1	11/19/2015
Soluble Sodium	37.5	1.00		meq/L	1	11/19/2015
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg	1	11/17/2015 11:59:15 AM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	2.97	1.05		mg/Kg	1	11/17/2015 7:18:53 AM
Barium	162	0.523		mg/Kg	1	11/17/2015 7:18:53 AM
Cadmium	< 0.261	0.261		mg/Kg	1	11/17/2015 7:18:53 AM
Chromium	5.48	0.523		mg/Kg	1	11/17/2015 7:18:53 AM
Lead	7.91	0.523		mg/Kg	1	11/17/2015 7:18:53 AM
Selenium	< 1.05	1.05		mg/Kg	1	11/17/2015 7:18:53 AM
Silver	< 0.261	0.261		mg/Kg	1	11/17/2015 7:18:53 AM

Qualifiers:
 * Value exceeds Maximum Contaminant Level.
 M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode



Element Materials Technology Lafayette
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Analytical Report

(consolidated)

WO#: **15110631**

Date Reported: **12/18/2015**

CLIENT: Michael Pisani & Associates **Collection Date:** 11/12/2015 12:05:00 PM
Project: East White Lake 07-47
Lab ID: 15110631-006 **Matrix:** SOIL
Client Sample ID SS-22 (0-2 FT)

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B Analyst: STS
METALS IN SOIL OR SLUDGE BY ICP						
Zinc	54.5	0.523		mg/Kg	1	11/17/2015 7:18:53 AM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	1,040	49.0		mg/Kg-dry	1	11/18/2015 5:31:46 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: MMT
Percent Moisture	75.6	1.00		wt%	1	11/13/2015 4:00:00 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
M	Matrix Interference	ND	Not Detected at the Reporting Limit
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

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WO#: 15110631

Date Reported: 12/18/2015

CLIENT: Michael Pisani & Associates **Collection Date:** 11/12/2015 12:10:00 PM
Project: East White Lake 07-47
Lab ID: 15110631-007 **Matrix:** SOIL
Client Sample ID SS-22 (2-4 FT)

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	54.5	0.100		meq/100g	1	11/20/2015 3:19:00 PM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	6.76	0.10		mmhos/cm	1	11/18/2015 3:09:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	4.72	0.100		%	1	11/20/2015 3:19:00 PM
HEM, OIL & GREASE						
SW9071B						
HEM, Oil & Grease	1.20	0.05		% dry wt	1	11/23/2015 8:02:00 AM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	11.8	0.100			1	11/19/2015
Soluble Calcium	8.38	1.00		meq/L	1	11/19/2015
Soluble Magnesium	11.1	1.00		meq/L	1	11/19/2015
Soluble Sodium	36.8	1.00		meq/L	1	11/19/2015
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg	1	11/17/2015 1:02:44 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	2.63	1.08		mg/Kg	1	11/17/2015 7:24:34 AM
Barium	469	0.539		mg/Kg	1	11/17/2015 7:24:34 AM
Cadmium	< 0.269	0.269		mg/Kg	1	11/17/2015 7:24:34 AM
Chromium	6.91	0.539		mg/Kg	1	11/17/2015 7:24:34 AM
Lead	9.71	0.539		mg/Kg	1	11/17/2015 7:24:34 AM
Selenium	< 1.08	1.08		mg/Kg	1	11/17/2015 7:24:34 AM
Silver	< 0.269	0.269		mg/Kg	1	11/17/2015 7:24:34 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
M	Matrix Interference	ND	Not Detected at the Reporting Limit
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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WO#: 15110631

Date Reported: 12/18/2015

CLIENT: Michael Pisani & Associates **Collection Date:** 11/12/2015 12:10:00 PM
Project: East White Lake 07-47
Lab ID: 15110631-007 **Matrix:** SOIL
Client Sample ID SS-22 (2-4 FT)

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B Analyst: STS
METALS IN SOIL OR SLUDGE BY ICP						
Zinc	39.3	0.539		mg/Kg	1	11/17/2015 7:24:34 AM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	1,860	49.4		mg/Kg-dry	1	11/18/2015 5:35:09 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: MMT
Percent Moisture	61.9	1.00		wt%	1	11/13/2015 4:00:00 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
M	Matrix Interference	ND	Not Detected at the Reporting Limit
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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WO#: 15110631

Date Reported: 12/18/2015

CLIENT: Michael Pisani & Associates **Collection Date:** 11/12/2015 12:15:00 PM
Project: East White Lake 07-47
Lab ID: 15110631-008 **Matrix:** SOIL
Client Sample ID SS-22 (4-6 FT)

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	65.5	0.100		meq/100g	1	11/20/2015 3:19:00 PM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	7.16	0.10		mmhos/cm	1	11/18/2015 3:09:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	3.47	0.100		%	1	11/20/2015 3:19:00 PM
HEM, OIL & GREASE						
SW9071B						
HEM, Oil & Grease	1.34	0.05		% dry wt	1	11/23/2015 8:02:00 AM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	11.4	0.100			1	11/19/2015
Soluble Calcium	12.9	1.00		meq/L	1	11/19/2015
Soluble Magnesium	12.5	1.00		meq/L	1	11/19/2015
Soluble Sodium	40.7	1.00		meq/L	1	11/19/2015
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	0.14	0.10		mg/Kg	1	11/17/2015 12:04:14 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	2.24	1.02		mg/Kg	1	11/17/2015 7:30:15 AM
Barium	301	0.512		mg/Kg	1	11/17/2015 7:30:15 AM
Cadmium	< 0.256	0.256		mg/Kg	1	11/17/2015 7:30:15 AM
Chromium	7.32	0.512		mg/Kg	1	11/17/2015 7:30:15 AM
Lead	8.94	0.512		mg/Kg	1	11/17/2015 7:30:15 AM
Selenium	< 1.02	1.02		mg/Kg	1	11/17/2015 7:30:15 AM
Silver	< 0.256	0.256		mg/Kg	1	11/17/2015 7:30:15 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
M	Matrix Interference	ND	Not Detected at the Reporting Limit
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

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WO#: 15110631

Date Reported: 12/18/2015

CLIENT: Michael Pisani & Associates **Collection Date:** 11/12/2015 12:15:00 PM
Project: East White Lake 07-47
Lab ID: 15110631-008 **Matrix:** SOIL
Client Sample ID SS-22 (4-6 FT)

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B Analyst: STS
METALS IN SOIL OR SLUDGE BY ICP						
Zinc	26.8	0.512		mg/Kg	1	11/17/2015 7:30:15 AM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	1,130	47.9		mg/Kg-dry	1	11/18/2015 5:38:32 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: MMT
Percent Moisture	63.1	1.00		wt%	1	11/13/2015 4:00:00 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
M	Matrix Interference	ND	Not Detected at the Reporting Limit
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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WO#: 15110631

Date Reported: 12/18/2015

CLIENT: Michael Pisani & Associates

Collection Date: 11/12/2015 12:20:00 PM

Project: East White Lake 07-47

Lab ID: 15110631-009

Matrix: SOIL

Client Sample ID SS-22 (6-8 FT)

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	52.5	0.100		meq/100g	1	11/20/2015 3:19:00 PM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	6.57	0.10		mmhos/cm	1	11/18/2015 3:10:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	3.58	0.100		%	1	11/20/2015 3:19:00 PM
HEM, OIL & GREASE						
SW9071B						
HEM, Oil & Grease	0.28	0.05		% dry wt	1	11/23/2015 8:02:00 AM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	9.19	0.100			1	11/19/2015
Soluble Calcium	13.7	1.00		meq/L	1	11/19/2015
Soluble Magnesium	14.3	1.00		meq/L	1	11/19/2015
Soluble Sodium	34.4	1.00		meq/L	1	11/19/2015
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg	1	11/17/2015 12:14:51 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	2.38	1.02		mg/Kg	1	11/17/2015 7:36:18 AM
Barium	108	0.511		mg/Kg	1	11/17/2015 7:36:18 AM
Cadmium	< 0.255	0.255		mg/Kg	1	11/17/2015 7:36:18 AM
Chromium	4.65	0.511		mg/Kg	1	11/17/2015 7:36:18 AM
Lead	5.01	0.511		mg/Kg	1	11/17/2015 7:36:18 AM
Selenium	< 1.02	1.02		mg/Kg	1	11/17/2015 7:36:18 AM
Silver	< 0.255	0.255		mg/Kg	1	11/17/2015 7:36:18 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	H Holding times for preparation or analysis exceeded
	M Matrix Interference	ND Not Detected at the Reporting Limit
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits
	U Analyte not detected	W Sample container temperature is out of limit as specified at testcode



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WO#: 15110631

Date Reported: 12/18/2015

CLIENT: Michael Pisani & Associates **Collection Date:** 11/12/2015 12:20:00 PM
Project: East White Lake 07-47
Lab ID: 15110631-009 **Matrix:** SOIL
Client Sample ID SS-22 (6-8 FT)

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B Analyst: STS
METALS IN SOIL OR SLUDGE BY ICP						
Zinc	16.1	0.511		mg/Kg	1	11/17/2015 7:36:18 AM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	448	47.4		mg/Kg-dry	1	11/18/2015 5:41:57 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: MMT
Percent Moisture	56.0	1.00		wt%	1	11/13/2015 4:00:00 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
M	Matrix Interference	ND	Not Detected at the Reporting Limit
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

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WO#: 15110631

Date Reported: 12/18/2015

CLIENT: Michael Pisani & Associates **Collection Date:** 11/12/2015 2:20:00 PM
Project: East White Lake 07-47
Lab ID: 15110631-010 **Matrix:** SOIL
Client Sample ID SS-17 (0-2 FT)

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	45.4	0.100		meq/100g	1	11/20/2015 3:19:00 PM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	4.91	0.10		mmhos/cm	1	11/18/2015 3:10:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	7.28	0.100		%	1	11/20/2015 3:19:00 PM
HEM, OIL & GREASE						
SW9071B						
HEM, Oil & Grease	0.44	0.05		% dry wt	1	11/23/2015 8:02:00 AM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	12.9	0.100			1	11/19/2015
Soluble Calcium	6.18	1.00		meq/L	1	11/19/2015
Soluble Magnesium	5.98	1.00		meq/L	1	11/19/2015
Soluble Sodium	31.8	1.00		meq/L	1	11/19/2015
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg	1	11/17/2015 12:27:20 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	2.63	1.04		mg/Kg	1	11/17/2015 7:41:59 AM
Barium	255	0.519		mg/Kg	1	11/17/2015 7:41:59 AM
Cadmium	< 0.260	0.260		mg/Kg	1	11/17/2015 7:41:59 AM
Chromium	5.92	0.519		mg/Kg	1	11/17/2015 7:41:59 AM
Lead	8.51	0.519		mg/Kg	1	11/17/2015 7:41:59 AM
Selenium	< 1.04	1.04		mg/Kg	1	11/17/2015 7:41:59 AM
Silver	< 0.260	0.260		mg/Kg	1	11/17/2015 7:41:59 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
M	Matrix Interference	ND	Not Detected at the Reporting Limit
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

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WO#: **15110631**

Date Reported: **12/18/2015**

CLIENT: Michael Pisani & Associates **Collection Date:** 11/12/2015 2:20:00 PM
Project: East White Lake 07-47
Lab ID: 15110631-010 **Matrix:** SOIL
Client Sample ID SS-17 (0-2 FT)

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B Analyst: STS
METALS IN SOIL OR SLUDGE BY ICP						
Zinc	19.7	0.519		mg/Kg	1	11/17/2015 7:41:59 AM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	1,770	48.1		mg/Kg-dry	1	11/18/2015 5:52:43 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: MMT
Percent Moisture	56.6	1.00		wt%	1	11/13/2015 4:00:00 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
M	Matrix Interference	ND	Not Detected at the Reporting Limit
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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WO#: 15110631

Date Reported: 12/18/2015

CLIENT: Michael Pisani & Associates

Collection Date: 11/12/2015 2:25:00 PM

Project: East White Lake 07-47

Lab ID: 15110631-011

Matrix: SOIL

Client Sample ID SS-17 (2-4 FT)

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	47.4	0.100		meq/100g	1	11/20/2015 3:19:00 PM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	5.68	0.10		mmhos/cm	1	11/18/2015 3:10:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	4.77	0.100		%	1	11/20/2015 3:19:00 PM
HEM, OIL & GREASE						
SW9071B						
HEM, Oil & Grease	0.23	0.05		% dry wt	1	11/23/2015 8:02:00 AM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	11.6	0.100			1	11/19/2015
Soluble Calcium	11.5	1.00		meq/L	1	11/19/2015
Soluble Magnesium	5.58	1.00		meq/L	1	11/19/2015
Soluble Sodium	34.0	1.00		meq/L	1	11/19/2015
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg	1	11/17/2015 12:29:40 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	2.97	1.04		mg/Kg	1	11/17/2015 7:48:01 AM
Barium	846	0.520		mg/Kg	1	11/17/2015 7:48:01 AM
Cadmium	< 0.260	0.260		mg/Kg	1	11/17/2015 7:48:01 AM
Chromium	6.71	0.520		mg/Kg	1	11/17/2015 7:48:01 AM
Lead	10.8	0.520		mg/Kg	1	11/17/2015 7:48:01 AM
Selenium	< 1.04	1.04		mg/Kg	1	11/17/2015 7:48:01 AM
Silver	< 0.260	0.260		mg/Kg	1	11/17/2015 7:48:01 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	H Holding times for preparation or analysis exceeded
M	Matrix Interference	ND Not Detected at the Reporting Limit
RL	Reporting Limit	S Spike Recovery outside accepted recovery limits
U	Analyte not detected	W Sample container temperature is out of limit as specified at testcode



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Analytical Report

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WO#: 15110631

Date Reported: 12/18/2015

CLIENT: Michael Pisani & Associates **Collection Date:** 11/12/2015 2:25:00 PM
Project: East White Lake 07-47
Lab ID: 15110631-011 **Matrix:** SOIL
Client Sample ID SS-17 (2-4 FT)

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B Analyst: STS
METALS IN SOIL OR SLUDGE BY ICP						
Zinc	23.1	0.520		mg/Kg	1	11/17/2015 7:48:01 AM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	5,560	49.8		mg/Kg-dry	1	11/18/2015 5:56:06 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: MMT
Percent Moisture	56.7	1.00		wt%	1	11/13/2015 4:00:00 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
M	Matrix Interference	ND	Not Detected at the Reporting Limit
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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WO#: 15110631

Date Reported: 12/18/2015

CLIENT: Michael Pisani & Associates **Collection Date:** 11/12/2015 2:30:00 PM
Project: East White Lake 07-47
Lab ID: 15110631-012 **Matrix:** SOIL
Client Sample ID SS-17 (4-6 FT)

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	49.7	0.100		meq/100g	1	11/20/2015 3:19:00 PM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	5.84	0.10		mmhos/cm	1	11/18/2015 3:11:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	5.69	0.100		%	1	11/20/2015 3:19:00 PM
HEM, OIL & GREASE						
SW9071B						
HEM, Oil & Grease	0.26	0.05		% dry wt	1	11/23/2015 8:02:00 AM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	10.6	0.100			1	11/19/2015
Soluble Calcium	10.1	1.00		meq/L	1	11/19/2015
Soluble Magnesium	7.12	1.00		meq/L	1	11/19/2015
Soluble Sodium	31.0	1.00		meq/L	1	11/19/2015
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg	1	11/17/2015 12:32:01 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	3.80	1.01		mg/Kg	1	11/17/2015 7:53:43 AM
Barium	1,300	0.503		mg/Kg	1	11/17/2015 7:53:43 AM
Cadmium	< 0.251	0.251		mg/Kg	1	11/17/2015 7:53:43 AM
Chromium	8.43	0.503		mg/Kg	1	11/17/2015 7:53:43 AM
Lead	21.3	0.503		mg/Kg	1	11/17/2015 7:53:43 AM
Selenium	< 1.01	1.01		mg/Kg	1	11/17/2015 7:53:43 AM
Silver	< 0.251	0.251		mg/Kg	1	11/17/2015 7:53:43 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
M	Matrix Interference	ND	Not Detected at the Reporting Limit
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: **15110631**

Date Reported: **12/18/2015**

CLIENT: Michael Pisani & Associates **Collection Date:** 11/12/2015 2:30:00 PM
Project: East White Lake 07-47
Lab ID: 15110631-012 **Matrix:** SOIL
Client Sample ID SS-17 (4-6 FT)

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B Analyst: STS
METALS IN SOIL OR SLUDGE BY ICP						
Zinc	26.7	0.503		mg/Kg	1	11/17/2015 7:53:43 AM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	9,870	49.3		mg/Kg-dry	1	11/18/2015 5:59:29 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: MMT
Percent Moisture	58.0	1.00		wt%	1	11/13/2015 4:00:00 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
M	Matrix Interference	ND	Not Detected at the Reporting Limit
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: 15110631

Date Reported: 12/18/2015

CLIENT: Michael Pisani & Associates

Collection Date: 11/12/2015 2:35:00 PM

Project: East White Lake 07-47

Lab ID: 15110631-013

Matrix: SOIL

Client Sample ID SS-17 (6-8 FT)

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	48.8	0.100		meq/100g	1	11/20/2015 3:19:00 PM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	4.37	0.10		mmhos/cm	1	11/18/2015 3:11:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	6.82	0.100		%	1	11/20/2015 3:19:00 PM
HEM, OIL & GREASE						
SW9071B						
HEM, Oil & Grease	0.10	0.05		% dry wt	1	11/23/2015 8:02:00 AM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	9.95	0.100			1	11/19/2015
Soluble Calcium	5.30	1.00		meq/L	1	11/19/2015
Soluble Magnesium	7.11	1.00		meq/L	1	11/19/2015
Soluble Sodium	24.8	1.00		meq/L	1	11/19/2015
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg	1	11/17/2015 12:34:21 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	3.71	1.05		mg/Kg	1	11/17/2015 8:08:53 AM
Barium	301	0.524		mg/Kg	1	11/17/2015 8:08:53 AM
Cadmium	< 0.262	0.262		mg/Kg	1	11/17/2015 8:08:53 AM
Chromium	7.40	0.524		mg/Kg	1	11/17/2015 8:08:53 AM
Lead	9.03	0.524		mg/Kg	1	11/17/2015 8:08:53 AM
Selenium	< 1.05	1.05		mg/Kg	1	11/17/2015 8:08:53 AM
Silver	< 0.262	0.262		mg/Kg	1	11/17/2015 8:08:53 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	H Holding times for preparation or analysis exceeded
M	Matrix Interference	ND Not Detected at the Reporting Limit
RL	Reporting Limit	S Spike Recovery outside accepted recovery limits
U	Analyte not detected	W Sample container temperature is out of limit as specified at testcode



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WO#: **15110631**

Date Reported: **12/18/2015**

CLIENT: Michael Pisani & Associates

Collection Date: 11/12/2015 2:35:00 PM

Project: East White Lake 07-47

Lab ID: 15110631-013

Matrix: SOIL

Client Sample ID SS-17 (6-8 FT)

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B Analyst: STS
METALS IN SOIL OR SLUDGE BY ICP						
Zinc	30.9	0.524		mg/Kg	1	11/17/2015 8:08:53 AM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	1,100	47.4		mg/Kg-dry	1	11/18/2015 6:02:55 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: MMT
Percent Moisture	52.4	1.00		wt%	1	11/13/2015 4:00:00 PM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
	M	Matrix Interference	ND	Not Detected at the Reporting Limit
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

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WO#: 15110631

Date Reported: 12/18/2015

CLIENT: Michael Pisani & Associates **Collection Date:** 11/12/2015 3:50:00 PM
Project: East White Lake 07-47
Lab ID: 15110631-014 **Matrix:** SOIL
Client Sample ID SS-26 (0-2 FT)

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	52.8	0.100		meq/100g	1	11/20/2015 3:19:00 PM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	6.02	0.10		mmhos/cm	1	11/19/2015 12:25:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	13.9	0.100		%	1	11/20/2015 3:19:00 PM
HEM, OIL & GREASE						
SW9071B						
HEM, Oil & Grease	3.95	0.05		% dry wt	1	11/23/2015 8:02:00 AM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	24.0	0.100			1	11/19/2015
Soluble Calcium	2.76	1.00		meq/L	1	11/19/2015
Soluble Magnesium	3.81	1.00		meq/L	1	11/19/2015
Soluble Sodium	43.5	1.00		meq/L	1	11/19/2015
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.11	0.11		mg/Kg	1	11/17/2015 12:36:41 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	3.97	1.03		mg/Kg	1	11/17/2015 8:15:14 AM
Barium	293	0.514		mg/Kg	1	11/17/2015 8:15:14 AM
Cadmium	< 0.257	0.257		mg/Kg	1	11/17/2015 8:15:14 AM
Chromium	4.76	0.514		mg/Kg	1	11/17/2015 8:15:14 AM
Lead	9.23	0.514		mg/Kg	1	11/17/2015 8:15:14 AM
Selenium	< 1.03	1.03		mg/Kg	1	11/17/2015 8:15:14 AM
Silver	< 0.257	0.257		mg/Kg	1	11/17/2015 8:15:14 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
M	Matrix Interference	ND	Not Detected at the Reporting Limit
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: 15110631

Date Reported: 12/18/2015

CLIENT: Michael Pisani & Associates **Collection Date:** 11/12/2015 3:50:00 PM
Project: East White Lake 07-47
Lab ID: 15110631-014 **Matrix:** SOIL
Client Sample ID SS-26 (0-2 FT)

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B Analyst: STS
METALS IN SOIL OR SLUDGE BY ICP						
Zinc	20.4	0.514		mg/Kg	1	11/17/2015 8:15:14 AM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	1,160	46.0		mg/Kg-dry	1	11/18/2015 6:06:21 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: MMT
Percent Moisture	51.9	1.00		wt%	1	11/13/2015 6:00:00 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
M	Matrix Interference	ND	Not Detected at the Reporting Limit
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

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WO#: 15110631

Date Reported: 12/18/2015

CLIENT: Michael Pisani & Associates **Collection Date:** 11/12/2015 3:55:00 PM
Project: East White Lake 07-47
Lab ID: 15110631-015 **Matrix:** SOIL
Client Sample ID SS-26 (2-4 FT)

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
29B SALTS					LDNR 29-B	Analyst: MRM
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	18.6	0.10		mmhos/cm	1	11/19/2015 12:25:00 PM
HEM, OIL & GREASE					SW9071B	Analyst: MMT
HEM, Oil & Grease	0.92	0.05		% dry wt	1	11/23/2015 8:02:00 AM
29B SALTS					LDNR 29-B	Analyst: STS
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	40.2	0.100			1	11/19/2015
Soluble Calcium	10.5	1.00		meq/L	1	11/19/2015
Soluble Magnesium	14.6	1.00		meq/L	1	11/19/2015
Soluble Sodium	143	1.00		meq/L	1	11/19/2015
29B METALS					SW7471A	Analyst: BAS
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.11	0.11		mg/Kg	1	11/17/2015 12:39:01 PM
29B METALS					SW6010B	Analyst: STS
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	1.92	1.07		mg/Kg	1	11/17/2015 8:21:42 AM
Barium	107	0.536		mg/Kg	1	11/17/2015 8:21:42 AM
Cadmium	< 0.268	0.268		mg/Kg	1	11/17/2015 8:21:42 AM
Chromium	1.72	0.536		mg/Kg	1	11/17/2015 8:21:42 AM
Lead	2.04	0.536		mg/Kg	1	11/17/2015 8:21:42 AM
Selenium	< 1.07	1.07		mg/Kg	1	11/17/2015 8:21:42 AM
Silver	< 0.268	0.268		mg/Kg	1	11/17/2015 8:21:42 AM
Zinc	5.42	0.536		mg/Kg	1	11/17/2015 8:21:42 AM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	731	49.4		mg/Kg-dry	1	11/24/2015 7:24:17 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: MMT

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
M	Matrix Interference	ND	Not Detected at the Reporting Limit
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

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WO#: 15110631

Date Reported: 12/18/2015

CLIENT: Michael Pisani & Associates **Collection Date:** 11/12/2015 3:55:00 PM
Project: East White Lake 07-47
Lab ID: 15110631-015 **Matrix:** SOIL
Client Sample ID SS-26 (2-4 FT)

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
PERCENT MOISTURE		LDNR 29-B			Analyst: MMT	
Percent Moisture	79.4	1.00		wt%	1	11/13/2015 6:00:00 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
M	Matrix Interference	ND	Not Detected at the Reporting Limit
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

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WO#: 15110631

Date Reported: 12/18/2015

CLIENT: Michael Pisani & Associates **Collection Date:** 11/13/2015 10:00:00 AM
Project: East White Lake 07-47
Lab ID: 15110631-016 **Matrix:** SOIL
Client Sample ID SS-16 (0-2 FT)

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
29B SALTS CATION EXCHANGE CAPACITY					LDNR 29-B	LDNR 29-B Analyst: MMT
Cation Exchange Capacity	75.5	0.100		meq/100g	1	11/20/2015 3:19:00 PM
29B SALTS ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B	Analyst: MRM
Electrical Conductivity	7.68	0.10		mmhos/cm	1	11/19/2015 12:25:00 PM
29B SALTS EXCHANGEABLE SODIUM PERCENTAGE					LDNR 29-B	LDNR 29-B Analyst: MMT
Exchangeable Sodium %	11.3	0.100		%	1	11/20/2015 3:19:00 PM
29B SALTS SODIUM ADSORPTION RATIO					LDNR 29-B	LDNR 29-B Analyst: STS
Sodium Adsorption Ratio	22.5	0.100			1	11/19/2015
Soluble Calcium	4.86	1.00		meq/L	1	11/19/2015
Soluble Magnesium	7.41	1.00		meq/L	1	11/19/2015
Soluble Sodium	55.8	1.00		meq/L	1	11/19/2015
29B METALS MERCURY IN SOIL OR SLUDGE					SW7471A	SW7471A Analyst: BAS
Mercury	< 0.10	0.10		mg/Kg	1	11/17/2015 12:41:20 PM
29B METALS METALS IN SOIL OR SLUDGE BY ICP					SW6010B	SW3050B Analyst: STS
Arsenic	2.28	1.03		mg/Kg	1	11/17/2015 8:27:14 AM
Barium	146	0.517		mg/Kg	1	11/17/2015 8:27:14 AM
Cadmium	< 0.258	0.258		mg/Kg	1	11/17/2015 8:27:14 AM
Chromium	3.55	0.517		mg/Kg	1	11/17/2015 8:27:14 AM
Lead	4.40	0.517		mg/Kg	1	11/17/2015 8:27:14 AM
Selenium	< 1.03	1.03		mg/Kg	1	11/17/2015 8:27:14 AM
Silver	< 0.258	0.258		mg/Kg	1	11/17/2015 8:27:14 AM
Zinc	12.8	0.517		mg/Kg	1	11/17/2015 8:27:14 AM
29B METALS TRUE TOTAL BARIUM					LDNR 29-B	Analyst: STS

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
M	Matrix Interference	ND	Not Detected at the Reporting Limit
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: 15110631

Date Reported: 12/18/2015

CLIENT: Michael Pisani & Associates **Collection Date:** 11/13/2015 10:00:00 AM
Project: East White Lake 07-47
Lab ID: 15110631-016 **Matrix:** SOIL
Client Sample ID SS-16 (0-2 FT)

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
29B METALS				LDNR 29-B		Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	1,300	46.0		mg/Kg-dry	1	11/24/2015 7:27:40 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: MMT
Percent Moisture	68.7	1.00		wt%	1	11/13/2015 6:00:00 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
M	Matrix Interference	ND	Not Detected at the Reporting Limit
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

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WO#: 15110631

Date Reported: 12/18/2015

CLIENT: Michael Pisani & Associates **Collection Date:** 11/13/2015 10:05:00 AM
Project: East White Lake 07-47
Lab ID: 15110631-017 **Matrix:** SOIL
Client Sample ID SS-16 (2-4 FT)

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	117	0.100		meq/100g	1	11/20/2015 3:19:00 PM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	13.4	0.10		mmhos/cm	1	11/19/2015 12:25:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	15.8	0.100		%	1	11/20/2015 3:19:00 PM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	44.9	0.100			1	11/19/2015
Soluble Calcium	5.84	1.00		meq/L	1	11/19/2015
Soluble Magnesium	5.25	1.00		meq/L	1	11/19/2015
Soluble Sodium	106	1.00		meq/L	1	11/19/2015
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg	1	11/17/2015 12:43:40 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	1.41	1.05		mg/Kg	1	11/17/2015 8:33:33 AM
Barium	109	0.524		mg/Kg	1	11/17/2015 8:33:33 AM
Cadmium	< 0.262	0.262		mg/Kg	1	11/17/2015 8:33:33 AM
Chromium	1.48	0.524		mg/Kg	1	11/17/2015 8:33:33 AM
Lead	1.57	0.524		mg/Kg	1	11/17/2015 8:33:33 AM
Selenium	< 1.05	1.05		mg/Kg	1	11/17/2015 8:33:33 AM
Silver	< 0.262	0.262		mg/Kg	1	11/17/2015 8:33:33 AM
Zinc	4.99	0.524		mg/Kg	1	11/17/2015 8:33:33 AM
29B METALS						
TRUE TOTAL BARIUM						
					LDNR 29-B	Analyst: STS

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
M	Matrix Interference	ND	Not Detected at the Reporting Limit
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

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WO#: 15110631

Date Reported: 12/18/2015

CLIENT: Michael Pisani & Associates **Collection Date:** 11/13/2015 10:05:00 AM
Project: East White Lake 07-47
Lab ID: 15110631-017 **Matrix:** SOIL
Client Sample ID SS-16 (2-4 FT)

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
29B METALS						Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	829	45.9		mg/Kg-dry	1	11/24/2015 7:31:05 PM
PERCENT MOISTURE						Analyst: MMT
Percent Moisture	83.6	1.00		wt%	1	11/13/2015 6:00:00 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
M	Matrix Interference	ND	Not Detected at the Reporting Limit
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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WO#: 15110631

Date Reported: 12/18/2015

CLIENT: Michael Pisani & Associates **Collection Date:** 11/13/2015 10:10:00 AM
Project: East White Lake 07-47
Lab ID: 15110631-018 **Matrix:** SOIL
Client Sample ID SS-16 (4-6 FT)

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MMT
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	96.1	0.100		meq/100g	1	11/20/2015 3:19:00 PM
29B SALTS					LDNR 29-B	Analyst: MRM
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	11.1	0.10		mmhos/cm	1	11/19/2015 12:25:00 PM
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MMT
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	26.3	0.100		%	1	11/20/2015 3:19:00 PM
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: STS
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	67.0	0.100			1	11/19/2015
Soluble Calcium	2.47	1.00		meq/L	1	11/19/2015
Soluble Magnesium	1.63	1.00		meq/L	1	11/19/2015
Soluble Sodium	96.0	1.00		meq/L	1	11/19/2015
29B METALS					SW7471A	SW7471A Analyst: BAS
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg	1	11/17/2015 12:46:00 PM
29B METALS					SW6010B	SW3050B Analyst: STS
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	1.55	1.01		mg/Kg	1	11/17/2015 8:39:04 AM
Barium	106	0.505		mg/Kg	1	11/17/2015 8:39:04 AM
Cadmium	< 0.252	0.252		mg/Kg	1	11/17/2015 8:39:04 AM
Chromium	2.72	0.505		mg/Kg	1	11/17/2015 8:39:04 AM
Lead	2.90	0.505		mg/Kg	1	11/17/2015 8:39:04 AM
Selenium	< 1.01	1.01		mg/Kg	1	11/17/2015 8:39:04 AM
Silver	< 0.252	0.252		mg/Kg	1	11/17/2015 8:39:04 AM
Zinc	8.16	0.505		mg/Kg	1	11/17/2015 8:39:04 AM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						

Qualifiers:	* Value exceeds Maximum Contaminant Level.	H Holding times for preparation or analysis exceeded
M	Matrix Interference	ND Not Detected at the Reporting Limit
RL	Reporting Limit	S Spike Recovery outside accepted recovery limits
U	Analyte not detected	W Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: 15110631

Date Reported: 12/18/2015

CLIENT: Michael Pisani & Associates **Collection Date:** 11/13/2015 10:10:00 AM
Project: East White Lake 07-47
Lab ID: 15110631-018 **Matrix:** SOIL
Client Sample ID SS-16 (4-6 FT)

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
29B METALS				LDNR 29-B		Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	565	49.9		mg/Kg-dry	1	11/24/2015 7:34:28 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: MMT
Percent Moisture	74.4	1.00		wt%	1	11/13/2015 6:00:00 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
M	Matrix Interference	ND	Not Detected at the Reporting Limit
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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QC SUMMARY REPORT

WO#: 15110631
 18-Dec-15

Client: Michael Pisani & Associates
Project: East White Lake 07-47

BatchID: 17358

Sample ID	MB-17358	SampType:	MBLK	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	11/16/2015	RunNo:	48523						
Client ID:	PBS	Batch ID:	17358	TestNo:	SW6010B		SW3050B	Analysis Date:	11/17/2015	SeqNo:	1184214						
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val		%RPD	RPDLimit	Qual
Arsenic		< 1.00		1.00													
Barium		< 0.500		0.500													
Cadmium		< 0.250		0.250													
Chromium		< 0.500		0.500													
Lead		< 0.500		0.500													
Selenium		< 1.00		1.00													
Silver		< 0.250		0.250													
Zinc		< 0.500		0.500													

Sample ID	LCS-17358	SampType:	LCS	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	11/16/2015	RunNo:	48523						
Client ID:	LCSS	Batch ID:	17358	TestNo:	SW6010B		SW3050B	Analysis Date:	11/17/2015	SeqNo:	1184215						
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val		%RPD	RPDLimit	Qual
Arsenic		25.7		1.00		25.00		0		103	80	120					
Barium		25.9		0.500		25.00		0		104	80	120					
Cadmium		25.7		0.250		25.00		0		103	80	120					
Chromium		25.9		0.500		25.00		0		104	80	120					
Lead		26.1		0.500		25.00		0		104	80	120					
Selenium		25.5		1.00		25.00		0		102	80	120					
Silver		12.9		0.250		12.50		0		103	80	120					
Zinc		25.7		0.500		25.00		0		103	80	120					

Qualifiers:

- | | | |
|--|---|---|
| * Value exceeds Maximum Contaminant Level. | H Holding times for preparation or analysis exceeded | M Matrix Interference |
| ND Not Detected at the Reporting Limit | RL Reporting Limit | S Spike Recovery outside accepted recovery limits |
| U Analyte not detected | W Sample container temperature is out of limit as specified at testcode | |



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QC SUMMARY REPORT

WO#: 15110631
 18-Dec-15

Client: Michael Pisani & Associates
Project: East White Lake 07-47

BatchID: 17358

Sample ID	LCSD-17358	SampType:	LCSD	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	11/16/2015	RunNo:	48523
Client ID:	LCSS02	Batch ID:	17358	TestNo:	SW6010B		SW3050B	Analysis Date:	11/17/2015	SeqNo:	1184216
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	25.7	1.00	25.00	0	103	80	120	25.72	0.156	20	
Barium	25.8	0.500	25.00	0	103	80	120	25.88	0.348	20	
Cadmium	25.7	0.250	25.00	0	103	80	120	25.74	0.311	20	
Chromium	25.8	0.500	25.00	0	103	80	120	25.90	0.445	20	
Lead	26.0	0.500	25.00	0	104	80	120	26.12	0.288	20	
Selenium	25.7	1.00	25.00	0	103	80	120	25.54	0.449	20	
Silver	12.8	0.250	12.50	0	102	80	120	12.86	0.468	20	
Zinc	25.6	0.500	25.00	0	102	80	120	25.72	0.487	20	

Sample ID	15110630-008AMS	SampType:	MS	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	11/16/2015	RunNo:	48523
Client ID:	ZZZZZZ	Batch ID:	17358	TestNo:	SW6010B		SW3050B	Analysis Date:	11/17/2015	SeqNo:	1184218
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	36.3	1.04	25.98	8.142	109	75	125				
Barium	1,740	0.520	25.98	1,755	-73.5	75	125				S
Cadmium	27.4	0.260	25.98	0.4734	104	75	125				
Chromium	39.0	0.520	25.98	11.87	104	75	125				
Lead	52.9	0.520	25.98	27.47	97.8	75	125				
Selenium	25.1	1.04	25.98	0	96.8	75	125				
Silver	14.1	0.260	12.99	0	109	75	125				
Zinc	84.5	0.520	25.98	58.99	98.1	75	125				

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 15110631
 18-Dec-15

Client: Michael Pisani & Associates
Project: East White Lake 07-47

BatchID: 17358

Sample ID	15110630-008AMSD	SampType:	MSD	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	11/16/2015	RunNo:	48523
Client ID:	ZZZZZZ	Batch ID:	17358	TestNo:	SW6010B		SW3050B	Analysis Date:	11/17/2015	SeqNo:	1184219
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	37.3	1.04	25.98	8.142	112	75	125	36.33	2.55	20	
Barium	1,750	0.520	25.98	1,755	-27.0	75	125	1,736	0.693	20	S
Cadmium	27.9	0.260	25.98	0.4734	105	75	125	27.41	1.73	20	
Chromium	39.2	0.520	25.98	11.87	105	75	125	38.96	0.582	20	
Lead	53.9	0.520	25.98	27.47	102	75	125	52.89	1.89	20	
Selenium	25.1	1.04	25.98	0	96.7	75	125	25.13	0.0463	20	
Silver	14.2	0.260	12.99	0	109	75	125	14.13	0.660	20	
Zinc	84.9	0.520	25.98	58.99	99.8	75	125	84.47	0.527	20	

NOTES:

S - Analyte concentration in native sample was too high for accurate spike recovery(ies). The method is in control as indicated by the laboratory control sample (LCS).

Qualifiers:

- | | | |
|--|---|---|
| * Value exceeds Maximum Contaminant Level. | H Holding times for preparation or analysis exceeded | M Matrix Interference |
| ND Not Detected at the Reporting Limit | RL Reporting Limit | S Spike Recovery outside accepted recovery limits |
| U Analyte not detected | W Sample container temperature is out of limit as specified at testcode | |



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QC SUMMARY REPORT

WO#: 15110631
 18-Dec-15

Client: Michael Pisani & Associates

Project: East White Lake 07-47

BatchID: 17372

Sample ID	15110492-001AMS	SampType:	MS	TestCode:	HG_S_7471A	Units:	mg/Kg	Prep Date:	11/17/2015	RunNo:	48539			
Client ID:	ZZZZZZ	Batch ID:	17372	TestNo:	SW7471A	SW7471A		Analysis Date:	11/17/2015	SeqNo:	1184528			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 0.82 0.09 0.79 0 103 75 125

Sample ID	15110492-001AMSD	SampType:	MSD	TestCode:	HG_S_7471A	Units:	mg/Kg	Prep Date:	11/17/2015	RunNo:	48539			
Client ID:	ZZZZZZ	Batch ID:	17372	TestNo:	SW7471A	SW7471A		Analysis Date:	11/17/2015	SeqNo:	1184529			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 0.80 0.09 0.78 0 102 75 125 0.82 2.42 20

Sample ID	MB-17372	SampType:	MBLK	TestCode:	HG_S_7471A	Units:	mg/Kg	Prep Date:	11/17/2015	RunNo:	48539			
Client ID:	PBS	Batch ID:	17372	TestNo:	SW7471A	SW7471A		Analysis Date:	11/17/2015	SeqNo:	1184591			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury < 0.10 0.10

Sample ID	LCS-17372	SampType:	LCS	TestCode:	HG_S_7471A	Units:	mg/Kg	Prep Date:	11/17/2015	RunNo:	48539			
Client ID:	LCSS	Batch ID:	17372	TestNo:	SW7471A	SW7471A		Analysis Date:	11/17/2015	SeqNo:	1184592			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 0.90 0.10 0.83 0 107 80 120

Qualifiers:

- | | | |
|--|---|---|
| * Value exceeds Maximum Contaminant Level. | H Holding times for preparation or analysis exceeded | M Matrix Interference |
| ND Not Detected at the Reporting Limit | RL Reporting Limit | S Spike Recovery outside accepted recovery limits |
| U Analyte not detected | W Sample container temperature is out of limit as specified at testcode | |



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QC SUMMARY REPORT

WO#: 15110631
 18-Dec-15

Client: Michael Pisani & Associates

Project: East White Lake 07-47

BatchID: 17372

Sample ID	LCSD-17372	SampType:	LCSD	TestCode:	HG_S_7471A	Units:	mg/Kg	Prep Date:	11/17/2015	RunNo:	48539		
Client ID:	LCSS02	Batch ID:	17372	TestNo:	SW7471A	SW7471A		Analysis Date:	11/17/2015	SeqNo:	1184593		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.89		0.10	0.83	0	106	80	120	0.90	0.94	20	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- ND Not Detected at the Reporting Limit
- U Analyte not detected
- H Holding times for preparation or analysis exceeded
- RL Reporting Limit
- W Sample container temperature is out of limit as specified at testcode
- M Matrix Interference
- S Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: 15110631
 18-Dec-15

Client: Michael Pisani & Associates

Project: East White Lake 07-47

BatchID: 17373

Sample ID	MB-17373	SampType:	MBLK	TestCode:	HG_S_7471A	Units:	mg/Kg	Prep Date:	11/17/2015	RunNo:	48539			
Client ID:	PBS	Batch ID:	17373	TestNo:	SW7471A	SW7471A		Analysis Date:	11/17/2015	SeqNo:	1184567			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury < 0.10 0.10

Sample ID	LCS-17373	SampType:	LCS	TestCode:	HG_S_7471A	Units:	mg/Kg	Prep Date:	11/17/2015	RunNo:	48539			
Client ID:	LCSS	Batch ID:	17373	TestNo:	SW7471A	SW7471A		Analysis Date:	11/17/2015	SeqNo:	1184568			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 0.96 0.10 0.83 0 115 80 120

Sample ID	LCSD-17373	SampType:	LCSD	TestCode:	HG_S_7471A	Units:	mg/Kg	Prep Date:	11/17/2015	RunNo:	48539			
Client ID:	LCSS02	Batch ID:	17373	TestNo:	SW7471A	SW7471A		Analysis Date:	11/17/2015	SeqNo:	1184569			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 0.96 0.10 0.83 0 115 80 120 0.96 0.05 20

Sample ID	15110631-009AMS	SampType:	MS	TestCode:	HG_S_7471A	Units:	mg/Kg	Prep Date:	11/17/2015	RunNo:	48539			
Client ID:	SS-22 (6-8 FT)	Batch ID:	17373	TestNo:	SW7471A	SW7471A		Analysis Date:	11/17/2015	SeqNo:	1184571			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 0.94 0.11 0.89 0 107 75 125

Qualifiers: * Value exceeds Maximum Contaminant Level. H Holding times for preparation or analysis exceeded M Matrix Interference
 ND Not Detected at the Reporting Limit RL Reporting Limit S Spike Recovery outside accepted recovery limits
 U Analyte not detected W Sample container temperature is out of limit as specified at testcode



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QC SUMMARY REPORT

WO#: 15110631
 18-Dec-15

Client: Michael Pisani & Associates
Project: East White Lake 07-47

BatchID: 17373

Sample ID	15110631-009AMSD	SampType:	MSD	TestCode:	HG_S_7471A	Units:	mg/Kg	Prep Date:	11/17/2015	RunNo:	48539		
Client ID:	SS-22 (6-8 FT)	Batch ID:	17373	TestNo:	SW7471A	SW7471A		Analysis Date:	11/17/2015	SeqNo:	1184574		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.97		0.11	0.88	0	110	75	125	0.94	2.40	20	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- ND Not Detected at the Reporting Limit
- U Analyte not detected
- H Holding times for preparation or analysis exceeded
- RL Reporting Limit
- W Sample container temperature is out of limit as specified at testcode
- M Matrix Interference
- S Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: 15110631
 18-Dec-15

Client: Michael Pisani & Associates
Project: East White Lake 07-47

BatchID: 17392

Sample ID	MB-17392	SampType:	MBLK	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	11/17/2015	RunNo:	48581
Client ID:	PBS	Batch ID:	17392	TestNo:	LDNR 29-B			Analysis Date:	11/18/2015	SeqNo:	1186323
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
True Total Barium		< 50.0		50.0							

Sample ID	LCS-17392	SampType:	LCS	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	11/17/2015	RunNo:	48581
Client ID:	LCSS	Batch ID:	17392	TestNo:	LDNR 29-B			Analysis Date:	11/18/2015	SeqNo:	1186324
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
True Total Barium		6,210		50.0	5,000	0	124	75	125		

Sample ID	LCSD-17392	SampType:	LCSD	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	11/17/2015	RunNo:	48581
Client ID:	LCSS02	Batch ID:	17392	TestNo:	LDNR 29-B			Analysis Date:	11/18/2015	SeqNo:	1186325
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
True Total Barium		6,160		50.0	5,000	0	123	75	125	6,210	0.808 20

Sample ID	15110630-005AMS	SampType:	MS	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	11/17/2015	RunNo:	48581
Client ID:	ZZZZZZ	Batch ID:	17392	TestNo:	LDNR 29-B			Analysis Date:	11/18/2015	SeqNo:	1186331
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
True Total Barium		4,730		46.9	4,695	44.53	99.9	75	125		

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 15110631
 18-Dec-15

Client: Michael Pisani & Associates

Project: East White Lake 07-47

BatchID: 17392

Sample ID	15110630-005AMSD	SampType:	MSD	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	11/17/2015	RunNo:	48581		
Client ID:	ZZZZZZ	Batch ID:	17392	TestNo:	LDNR 29-B	Analysis Date:	11/18/2015	SeqNo:	1186332				
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium		4,680		46.9	4,686	44.53	98.8	75	125	4,732	1.19	20	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- ND Not Detected at the Reporting Limit
- U Analyte not detected
- H Holding times for preparation or analysis exceeded
- RL Reporting Limit
- W Sample container temperature is out of limit as specified at testcode
- M Matrix Interference
- S Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: 15110631
 18-Dec-15

Client: Michael Pisani & Associates
Project: East White Lake 07-47

BatchID: 17428

Sample ID	15110631-001ADUP	SampType:	DUP	TestCode:	SAR_S	Units:		Prep Date:	11/18/2015	RunNo:	48626		
Client ID:	SS-19 (0-2 FT)	Batch ID:	17428	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	11/19/2015	SeqNo:	1187375		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium Adsorption Ratio		7.38		0.100						7.636	3.45	20	
Soluble Calcium		13.3		1.00						13.76	3.77	20	
Soluble Magnesium		36.8		1.00						38.96	5.71	20	
Soluble Sodium		36.9		1.00						39.21	6.05	20	

Sample ID	15110631-014ADUP	SampType:	DUP	TestCode:	SAR_S	Units:		Prep Date:	11/18/2015	RunNo:	48626		
Client ID:	SS-26 (0-2 FT)	Batch ID:	17428	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	11/19/2015	SeqNo:	1187389		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium Adsorption Ratio		24.1		0.100						24.02	0.362	20	*
Soluble Calcium		2.77		1.00						2.761	0.379	20	
Soluble Magnesium		3.82		1.00						3.810	0.194	20	
Soluble Sodium		43.8		1.00						43.54	0.498	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 15110631
 18-Dec-15

Client: Michael Pisani & Associates

Project: East White Lake 07-47

BatchID: 17448

Sample ID	MB-17448	SampType:	MBLK	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	11/20/2015	RunNo:	48735
Client ID:	PBS	Batch ID:	17448	TestNo:	LDNR 29-B			Analysis Date:	11/24/2015	SeqNo:	1190233
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
True Total Barium		< 50.0		50.0							

Sample ID	LCS-17448	SampType:	LCS	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	11/20/2015	RunNo:	48735
Client ID:	LCSS	Batch ID:	17448	TestNo:	LDNR 29-B			Analysis Date:	11/24/2015	SeqNo:	1190234
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
True Total Barium		5,310		50.0	5,000	0	106	75	125		

Sample ID	LCSD-17448	SampType:	LCSD	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	11/20/2015	RunNo:	48735
Client ID:	LCSS02	Batch ID:	17448	TestNo:	LDNR 29-B			Analysis Date:	11/24/2015	SeqNo:	1190235
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
True Total Barium		5,340		50.0	5,000	0	107	75	125	5,310	0.657 20

Sample ID	15110638-007AMS	SampType:	MS	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	11/20/2015	RunNo:	48735
Client ID:	ZZZZZZ	Batch ID:	17448	TestNo:	LDNR 29-B			Analysis Date:	11/24/2015	SeqNo:	1190241
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
True Total Barium		5,650		47.7	4,766	615.0	106	75	125		

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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 Website: www.element.com

QC SUMMARY REPORT

WO#: 15110631
 18-Dec-15

Client: Michael Pisani & Associates

Project: East White Lake 07-47

BatchID: 17448

Sample ID	15110638-007AMSD	SampType:	MSD	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	11/20/2015	RunNo:	48735		
Client ID:	ZZZZZZ	Batch ID:	17448	TestNo:	LDNR 29-B			Analysis Date:	11/24/2015	SeqNo:	1190242		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium		5,820		47.7	4,771	615.0	109	75	125	5,648	3.01	20	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- ND Not Detected at the Reporting Limit
- U Analyte not detected
- H Holding times for preparation or analysis exceeded
- RL Reporting Limit
- W Sample container temperature is out of limit as specified at testcode
- M Matrix Interference
- S Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: 15110631
 18-Dec-15

Client: Michael Pisani & Associates

Project: East White Lake 07-47

BatchID: 17455

Sample ID	15110631-001ADUP	SampType:	dup	TestCode:	ESP_S	Units:	%	Prep Date:	11/19/2015	RunNo:	48665
Client ID:	SS-19 (0-2 FT)	Batch ID:	17455	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	11/20/2015	SeqNo:	1188845
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Exchangeable Sodium %		1.21		0.100						1.113	8.70 20

Sample ID	15110631-014ADUP	SampType:	dup	TestCode:	ESP_S	Units:	%	Prep Date:	11/19/2015	RunNo:	48665
Client ID:	SS-26 (0-2 FT)	Batch ID:	17455	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	11/20/2015	SeqNo:	1188859
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Exchangeable Sodium %		13.5		0.100						13.90	3.14 20

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- ND Not Detected at the Reporting Limit
- U Analyte not detected
- H Holding times for preparation or analysis exceeded
- RL Reporting Limit
- W Sample container temperature is out of limit as specified at testcode
- M Matrix Interference
- S Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: 15110631
 18-Dec-15

Client: Michael Pisani & Associates

Project: East White Lake 07-47

BatchID: 17456

Sample ID	15110631-001ADUP	SampType:	dup	TestCode:	CEC	Units:	meq/100g	Prep Date:	11/19/2015	RunNo:	48664
Client ID:	SS-19 (0-2 FT)	Batch ID:	17456	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	11/20/2015	SeqNo:	1188824
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Cation Exchange Capacity		48.5		0.100						46.33	4.53 20

Sample ID	15110631-014ADUP	SampType:	dup	TestCode:	CEC	Units:	meq/100g	Prep Date:	11/19/2015	RunNo:	48664
Client ID:	SS-26 (0-2 FT)	Batch ID:	17456	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	11/20/2015	SeqNo:	1188838
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Cation Exchange Capacity		52.9		0.100						52.81	0.132 20

Sample ID	Ics-17456	SampType:	Ics	TestCode:	CEC	Units:	meq/100g	Prep Date:	11/19/2015	RunNo:	48664
Client ID:	LCSS	Batch ID:	17456	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	11/20/2015	SeqNo:	1188842
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Cation Exchange Capacity		20.5		0.100	25.00	0	81.9	76	124		

Sample ID	Icsd-17456	SampType:	Icsd	TestCode:	CEC	Units:	meq/100g	Prep Date:	11/19/2015	RunNo:	48664
Client ID:	LCSS02	Batch ID:	17456	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	11/20/2015	SeqNo:	1188843
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Cation Exchange Capacity		20.2		0.100	25.00	0	80.6	76	124	20.47	1.54 20

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 15110631
 18-Dec-15

Client: Michael Pisani & Associates

Project: East White Lake 07-47

BatchID: R48569

Sample ID	MB-R48569	SampType:	MBLK	TestCode:	EC_S	Units:	mmhos/cm	Prep Date:		RunNo:	48569
Client ID:	PBS	Batch ID:	R48569	TestNo:	LDNR 29-B			Analysis Date:	11/18/2015	SeqNo:	1185948
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Electrical Conductivity < 0.10 0.10

Sample ID	R48569LCS1	SampType:	LCS1	TestCode:	EC_S	Units:	mmhos/cm	Prep Date:		RunNo:	48569
Client ID:	ZZZZZ	Batch ID:	R48569	TestNo:	LDNR 29-B			Analysis Date:	11/18/2015	SeqNo:	1185949
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Electrical Conductivity 0.49 0.10 0.47 0 103 89.87 110.12

Sample ID	R48569LCS2	SampType:	LCS2	TestCode:	EC_S	Units:	mmhos/cm	Prep Date:		RunNo:	48569
Client ID:	ZZZZZ	Batch ID:	R48569	TestNo:	LDNR 29-B			Analysis Date:	11/18/2015	SeqNo:	1185950
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Electrical Conductivity 57.7 0.10 53.00 0 109 90 110

Sample ID	15110631-001ADUP	SampType:	DUP	TestCode:	EC_S	Units:	mmhos/cm	Prep Date:		RunNo:	48569
Client ID:	SS-19 (0-2 FT)	Batch ID:	R48569	TestNo:	LDNR 29-B			Analysis Date:	11/18/2015	SeqNo:	1185958
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Electrical Conductivity 8.98 0.10 9.31 3.61 20 *

Qualifiers: * Value exceeds Maximum Contaminant Level. H Holding times for preparation or analysis exceeded M Matrix Interference
 ND Not Detected at the Reporting Limit RL Reporting Limit S Spike Recovery outside accepted recovery limits
 U Analyte not detected W Sample container temperature is out of limit as specified at testcode



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QC SUMMARY REPORT

WO#: 15110631
 18-Dec-15

Client: Michael Pisani & Associates

Project: East White Lake 07-47

BatchID: R48591

Sample ID	MB-R48591	SampType:	MBLK	TestCode:	EC_S	Units:	mmhos/cm	Prep Date:		RunNo:	48591
Client ID:	PBS	Batch ID:	R48591	TestNo:	LDNR 29-B			Analysis Date:	11/19/2015	SeqNo:	1186838
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Electrical Conductivity < 0.10 0.10

Sample ID	R48591LCS1	SampType:	LCS1	TestCode:	EC_S	Units:	mmhos/cm	Prep Date:		RunNo:	48591
Client ID:	ZZZZZ	Batch ID:	R48591	TestNo:	LDNR 29-B			Analysis Date:	11/19/2015	SeqNo:	1186839
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Electrical Conductivity 0.48 0.10 0.47 0 101 89.87 110.12

Sample ID	R48591LCS2	SampType:	LCS2	TestCode:	EC_S	Units:	mmhos/cm	Prep Date:		RunNo:	48591
Client ID:	ZZZZZ	Batch ID:	R48591	TestNo:	LDNR 29-B			Analysis Date:	11/19/2015	SeqNo:	1186840
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Electrical Conductivity 57.1 0.10 53.00 0 108 90 110

Sample ID	15110631-014ADUP	SampType:	DUP	TestCode:	EC_S	Units:	mmhos/cm	Prep Date:		RunNo:	48591
Client ID:	SS-26 (0-2 FT)	Batch ID:	R48591	TestNo:	LDNR 29-B			Analysis Date:	11/19/2015	SeqNo:	1186842
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Electrical Conductivity 6.22 0.10 6.02 3.27 20

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 15110631
 18-Dec-15

Client: Michael Pisani & Associates

Project: East White Lake 07-47

BatchID: R48670

Sample ID	MB-R48670	SampType:	MBLK	TestCode:	HEM_S	Units:	% dry wt	Prep Date:		RunNo:	48670
Client ID:	PBS	Batch ID:	R48670	TestNo:	SW9071B			Analysis Date:	11/23/2015	SeqNo:	1190070
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

HEM, Oil & Grease

< 0.05 0.05

Sample ID	LCS-R48670	SampType:	LCS	TestCode:	HEM_S	Units:	% dry wt	Prep Date:		RunNo:	48670
Client ID:	LCSS	Batch ID:	R48670	TestNo:	SW9071B			Analysis Date:	11/23/2015	SeqNo:	1190071
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

HEM, Oil & Grease

0.20 0.05 0.20 0 101 70 130

Sample ID	LCSD-R48670	SampType:	LCSD	TestCode:	HEM_S	Units:	% dry wt	Prep Date:		RunNo:	48670
Client ID:	LCSS02	Batch ID:	R48670	TestNo:	SW9071B			Analysis Date:	11/23/2015	SeqNo:	1190072
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

HEM, Oil & Grease

0.21 0.05 0.20 0 104 70 130 0.20 3.17 40

Sample ID	15110631-001AMS	SampType:	MS	TestCode:	HEM_S	Units:	% dry wt	Prep Date:		RunNo:	48670
Client ID:	SS-19 (0-2 FT)	Batch ID:	R48670	TestNo:	SW9071B			Analysis Date:	11/23/2015	SeqNo:	1190073
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

HEM, Oil & Grease

1.02 0.05 0.52 0.38 125 70 130

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- ND Not Detected at the Reporting Limit
- U Analyte not detected
- H Holding times for preparation or analysis exceeded
- RL Reporting Limit
- W Sample container temperature is out of limit as specified at testcode
- M Matrix Interference
- S Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: 15110631
 18-Dec-15

Client: Michael Pisani & Associates

Project: East White Lake 07-47

BatchID: R48670

Sample ID	15110631-001ADUP	SampType:	DUP	TestCode:	HEM_S	Units:	% dry wt	Prep Date:		RunNo:	48670											
Client ID:	SS-19 (0-2 FT)	Batch ID:	R48670	TestNo:	SW9071B			Analysis Date:	11/23/2015	SeqNo:	1190074											
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC		LowLimit		HighLimit		RPD Ref Val		%RPD		RPDLimit		Qual
HEM, Oil & Grease		0.40		0.05												0.38		6.37		40		

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- ND Not Detected at the Reporting Limit
- U Analyte not detected
- H Holding times for preparation or analysis exceeded
- RL Reporting Limit
- W Sample container temperature is out of limit as specified at testcode
- M Matrix Interference
- S Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: 15110631
 18-Dec-15

Client: Michael Pisani & Associates

Project: East White Lake 07-47

BatchID: R48697

Sample ID	15110631-001ADUP	SampType:	DUP	TestCode:	PMOIST	Units:	wt%	Prep Date:		RunNo:	48697		
Client ID:	SS-19 (0-2 FT)	Batch ID:	R48697	TestNo:	LDNR 29-B			Analysis Date:	11/13/2015	SeqNo:	1189457		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture		60.6		1.00						61.36	1.32	20	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- ND Not Detected at the Reporting Limit
- U Analyte not detected
- H Holding times for preparation or analysis exceeded
- RL Reporting Limit
- W Sample container temperature is out of limit as specified at testcode
- M Matrix Interference
- S Spike Recovery outside accepted recovery limits



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QC SUMMARY REPORT

WO#: 15110631
 18-Dec-15

Client: Michael Pisani & Associates
Project: East White Lake 07-47

BatchID: R48698

Sample ID	15110631-014ADUP	SampType:	DUP	TestCode:	PMOIST	Units:	wt%	Prep Date:		RunNo:	48698
Client ID:	SS-26 (0-2 FT)	Batch ID:	R48698	TestNo:	LDNR 29-B			Analysis Date:	11/13/2015	SeqNo:	1189471
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Percent Moisture		53.0		1.00						51.91	1.99 20

Sample ID	15110495-001ADUP	SampType:	dup	TestCode:	PMOIST	Units:	wt%	Prep Date:		RunNo:	48698
Client ID:	ZZZZZZ	Batch ID:	R48698	TestNo:	LDNR 29-B			Analysis Date:	11/16/2015	SeqNo:	1189479
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Percent Moisture		28.7		1.00						30.13	4.89 20

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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Sample Log-In Check List

Client Name: **M_PISANI_NO** Work Order Number: **15110631** RcptNo: **1**

Logged by:	Karen Detraz	11/13/2015 12:45:00 PM	<i>Karen J. Detraz</i>
Completed By:	Karen Detraz	11/13/2015 3:08:31 PM	<i>Karen J. Detraz</i>
Reviewed By:	Caitlin Duplantis	11/18/2015 11:19:33 AM	<i>Caitlin Duplantis</i>

Chain of Custody

1. Is Chain of Custody complete? Yes No Not Present
 2. How was the sample delivered? Client

Log In

3. Coolers are present? Yes No NA
 4. Shipping container/cooler in good condition? Yes No
 Custody seals intact on shipping container/cooler? Yes No Not Present
 No. Seal Date: Signed By:
 5. Was an attempt made to cool the samples? Yes No NA
 6. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
 7. Sample(s) in proper container(s)? Yes No
 8. Sufficient sample volume for indicated test(s)? Yes No
 9. Are samples (except VOA and ONG) properly preserved? Yes No
 10. Was preservative added to bottles? Yes No NA
 11. Is the headspace in the VOA vials less than 1/4 inch or 6 mm? Yes No No VOA Vials
 12. Were any sample containers received broken? Yes No
 13. Does paperwork match bottle labels? Yes No
 (Note discrepancies on chain of custody)
 14. Are matrices correctly identified on Chain of Custody? Yes No
 15. Is it clear what analyses were requested? Yes No
 16. Were all holding times able to be met? Yes No
 (If no, notify customer for authorization.)

Special Handling (if applicable)

17. Was client notified of all discrepancies with this order? Yes No NA

Person Notified:	<input type="text"/>	Date	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

18. Additional remarks:
 Improper error correction(s) made by client

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.6	Good	Not Present			
2	4.8	Good	Not Present			



Chain of Custody

pg 1 of 2

Laboratory Number: 15110631

Client Information:		Billing Information:		PO Number:	Project Name/Number:	Page 1 of 2
Company Name: MICHAEL PISANI & ASSOC.					EAST WHITE LAKE	Matrix Code
Contact Name: TROY N TELFER		SAME		Quote Number:	07-47	DW = Drinking Water
Address: 1100 POWDRAS ST						WW = Waste Water
SUITE 1430				Required QC Level	<i>[Signature]</i>	GW = Ground Water
City, State Zip: NEW ORLEANS LA 70163				Bill Monthly		AQ = Aqueous
Phone Number: 415 8476793 Ext:		Ext:		<input type="checkbox"/> Yes	Shipping Method:	OT = Other
Fax Number:				<input checked="" type="checkbox"/> No	UPS / FedEx / Airborne	SL = Sludge SOL = Solid
E-mail Address: telfer@mpisani.com					DHL / Element / <u>Hand</u> / Mail	O = Oil SO = Soil
						F = Food SW = Swab
						NG = Natural Gas
						NGL = Natural Gas Liquid
						PW = Produced Water
						CF = Completion Fluid

Which Regulations Apply:	Turn Time	Collection Information			Container	Pres.	Requested Tests			Comments			
							Quantity	Type	HCl, HNO ₃ , H ₂ SO ₄ , NaOH, Na ₂ S ₂ O ₃				
<input type="checkbox"/> RCRA <input type="checkbox"/> POTW <input type="checkbox"/> NPDES <input type="checkbox"/> USDA/FDA <input type="checkbox"/> RECAP/RISC <input type="checkbox"/> Drinking Water <input type="checkbox"/> Distribution <input type="checkbox"/> Special <input type="checkbox"/> State <input type="checkbox"/> Other	<input checked="" type="checkbox"/> Standard <input type="checkbox"/> RUSH <input type="checkbox"/> 1 Day <input type="checkbox"/> 2 Day <input type="checkbox"/> Other	Date	Time	Grab / Composite	Matrix	Quantity	Type P=Plastic, G=Glass, V=Vial	HCl, HNO ₃ , H ₂ SO ₄ , NaOH, Na ₂ S ₂ O ₃	HEM0065	29B METALS	29B SALTS		
Sample ID/Description													
SS-11 (0-2 FT)		11/12/15	905	GRAB	SO	1	G	N/A	X	X	X		
SS-11 (2-4 FT)			910										
SS-12 (0-2 FT)			1015										
SS-12 (2-4 FT)			1020										
SS-12 (4-6 FT)			1025										
SS-14 (0-2 FT)			1205										
SS-14 (2-4 FT)			1210										
SS-14 (4-6 FT)			1215										
SS-14 (6-8 FT)			1220										

	Relinquished by	Date/Time	Received by	Date/Time	Field Notes:
1	<i>[Signature]</i>	11-13-15 1245	<i>[Signature]</i>	11-13-15 1245	
2					Received at lab on ice? 0.6°C
3					<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Temp: 4.8°C

All samples submitted to Element Materials Technology for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples. Element Materials Technology reserves the right to return unused sample portions.

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2629 Washington St. Suite 300 Columbus, IN 47201-6231 USA P 812-375-0531 F 812-375-0731

2121 East Washington Boulevard Fort Wayne, IN 46803-1328 USA P 260-471-7000 F 260-471-7777

560 South Zimmer Road Warsaw, IN 46580-2368 USA P 574-267-3305 F 574-269-6569

3371 Cleveland Road, Suite 100A South Bend, IN 46628-9780 USA P 574-277-0707 F 574-273-5699

2417 W. Pinhook Rd Lafayette, LA 70508-3344 USA P 337-235-0483 F 337-233-6540



Chain of Custody

pg 2 of 2

Laboratory Number: 15110631

Company Name: Contact Name: Address: City, State Zip: Phone Number: Fax Number: E-mail Address:	Client Information:	Billing Information:	PO Number:	Project Name/Number: EAST WHITE LAKE 07-47	Page 2 of 2 Matrix Code DW = Drinking Water WW = Waste Water GW = Ground Water AQ = Aqueous OT = Other SL = Sludge SOL = Solid O = Oil SO = Soil F = Food SW = Swab NG = Natural Gas NGL = Natural Gas Liquid PW = Produced Water CF = Completion Fluid
	SEE PAGE ONE		Quote Number:	Sampler's Signature 	
			Required QC Level		
	415 847 6795 Ext:		Ext:	Bill Monthly <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Shipping Method: UPS / FedEx / Airborne DHL / Element / Hand / Mail

Which Regulations Apply: <input type="checkbox"/> RCRA <input type="checkbox"/> POTW <input type="checkbox"/> NPDES <input type="checkbox"/> USDA/FDA <input type="checkbox"/> RECAP/RISC <input type="checkbox"/> Drinking Water <input type="checkbox"/> Distribution <input type="checkbox"/> Special <input type="checkbox"/> State <input type="checkbox"/> Other	Turn Time <input type="checkbox"/> Standard RUSH <input type="checkbox"/> 1 Day <input type="checkbox"/> 2 Day <input type="checkbox"/> Other	(Rush turn times will incur a surcharge and must be pre-approved by lab.)			Container		Pres. HCl, HNO ₃ , H ₂ SO ₄ , NaOH, Na ₂ S ₂ O ₃	Requested Tests			Comments
					Quantity	Type P=Plastic, G=Glass, V=Vial		HCl, HNO ₃ , H ₂ SO ₄ , NaOH, Na ₂ S ₂ O ₃			
Collection Information				Matrix	Quantity	Type P=Plastic, G=Glass, V=Vial	HCl, HNO ₃ , H ₂ SO ₄ , NaOH, Na ₂ S ₂ O ₃	HEM 0+6	298 METERS	298 SAITS	
Sample ID/Description	Date	Time	Grab / Composite								
SS-09 (0-2 FT)	11/12/15	1420	GRAB	So	1	GLASS	N/A	X	X	X	LIMITED RECOVERY AVAILABLE FOR SS-18 (2-4 FT) CALL IF CAN'T RUN ALL TESTS
SS-09 (2-4 FT)		1425						X			
SS-09 (4-6 FT)		1430						X			
SS-09 (6-8 FT)		1436						X			
SS-18 (0-2 FT)		1550						X			
SS-18 (2-4 FT)		1555						X			
SS-09 (0-2 FT)	11/13/15	1000									
SS-09 (2-4 FT)		1005									
SS-09 (4-6 FT)		1010									

	Relinquished by	Date/Time	Received by	Date/Time	Field Notes:
1		11-13-15 1245		11-13-15 1245	
2					Received at lab on ice? 0.6°C
3					<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Temp: 4.5°C

All samples submitted to Element Materials Technology for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples. Element Materials Technology reserves the right to return unused sample portions.

9301 Innovation Drive, Suite 115 Daleville, IN 47334-0569 USA P 765-378-4103 F 765-378-4109

629 Washington St. Suite 300 Columbus, IN 47201-6231 USA P 812-375-0531 F 812-375-0731

2121 East Washington Boulevard Fort Wayne, IN 46803-1328 USA P 260-471-7000 F 260-471-7777

560 South Zimmer Road Warsaw, IN 46580-2368 USA P 574-267-3305 F 574-269-6569

3371 Cleveland Road, Suite 100A South Bend, IN 46628-9780 USA P 574-277-0707 F 574-273-5699

2417 W. Pinhook Rd Lafayette, LA 70508-3344 USA P 337-235-0483 F 337-233-6540

Caitlin Duplantis

From: Toby Celler <tceller@mpisani.com>
Sent: Wednesday, November 18, 2015 8:28 AM
To: Caitlin Duplantis
Cc: Dave Angle; Lance Cooper; Charles Trahan
Subject: Re: Priority List Requested: 15110631, East White Lake 07-47

Good Morning Caitlin,

I spoke with ICON this morning and it appears that the sample IDs from this event have to be changed. Please add 8 to the existing IDs. Therefore SS-08 becomes SS-16, SS-09 to SS-17, etc. please let me know if you have any questions.

Toby C

Sent from my iPhone

> On Nov 17, 2015, at 09:49, "CustomerService.Lafayette@Element.com" <CustomerService.Lafayette@Element.com> wrote:

>
> Good Morning,
>
> Due to limited volumes received for some of the samples listed on the attached COC and the samples being very wet, the lab asked for a priority list for the requested testing. Can you please provide so we know how to proceed with the samples?

>
> Please feel free to contact me by email at Caitlin.Duplantis@element.com with any questions.

>
> Sincerely,

>
> Caitlin Duplantis
> Project Manager
> Caitlin.Duplantis@element.com
> 2417 W. Pinhook Road
> Lafayette, LA 70508-3344
> Element Materials Technology Lafayette
> TEL: (337) 235-0483 ()
> FAX: (337) 233-6540
> www.element.com
> <COC_15110631_15110631_v1.pdf>



Element Materials Technology Lafayette
2417 W. Pinhook Road
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December 18, 2015

Dave Angle
Michael Pisani & Associates Inc
1100 Poydras Street, Suite 1430
NEW ORLEANS, LA 70163
TEL: (281) 242-5700
FAX (281) 242-1737

RE: East White Lake 07-47

Order No.: 15110726

Dear Dave Angle:

Element Materials Technology Lafayette received 9 sample(s) on 11/17/2015 for the analyses presented in the following report.

In accordance with your instructions Element Lafayette conducted the analysis shown on the following pages on samples submitted by your company. The results related only to the items tested. Unless otherwise noted, all analyses were conducted using EPA approved methodologies and all test results meet all requirements of TNI. All relevant sampling information is on the attached Chain-of-Custody form.

All soil data, except for 29-B, are on a wet-weight basis unless otherwise indicated in the units field as –dry.

LELAP Certification No.: 01997. TCEQ Certification No.: T104704261-14-6. A scope of accredited parameters is available upon request. A "#" by the test method or analyte indicates this parameter is outside the scope of accreditation.

Estimated uncertainty is available upon request. This report shall not be reproduced except in full, without the written approval of the laboratory.

If you have any questions regarding these test results, please feel free to call.

A handwritten signature in blue ink, appearing to read 'Cristina Thibeaux', is written over a light blue horizontal line.

Cristina Thibeaux
Customer Service Supervisor
2417 W. Pinhook Road
Lafayette, LA 70508-3344



Element Materials Technology Lafayette
2417 W. Pinhook Road
Lafayette, LA 70508-3344
TEL: (337) 235-0483 FAX: (337) 233-6540
Website: www.element.com

Case Narrative

WO#: 15110726
Date: 12/18/2015

CLIENT: Michael Pisani & Associates Inc
Project: East White Lake 07-47

12/18/15: This report is being re-issued and replaces the original report in its entirety. As requested, the sample moisture content was to be added to the SS-23 (2-4') sample.

Unless specified by the client, a duplicate or MS/MSD, wherever applicable, is randomly selected and analyzed from each analytical batch provided sample volume is sufficient. The sample chosen for duplicate or MS/MSD may or may not be a sample submitted in this workorder. A method blank and/or a lab control sample (LCS)/lab control sample duplicate (LCSD), wherever applicable, are processed as a quality control check for each analytical batch. When the matrix QC data is not available due to insufficient sample volume or when the results indicate possible matrix effect, the validity of the batch is determined by the method blank and LCS/LCSD.

The results of the laboratory internal quality control data are provided in the QC Summary Report section of the report for your review. Laboratory-related QC exceptions that may impact the validity of data are discussed in the case narrative. Sample-related QC exceptions are flagged either in the results page(s) or in the QC report page(s). End users should consider QC exceptions when evaluating sample data against data quality objectives.

Any other exceptions associated with this report will be footnoted in the results page(s) or the QC summary page(s).



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Analytical Report

(consolidated)

WO#: 15110726

Date Reported: 12/18/2015

CLIENT: Michael Pisani & Associates Inc **Collection Date:** 11/16/2015 12:25:00 PM
Project: East White Lake 07-47
Lab ID: 15110726-001 **Matrix:** SOIL
Client Sample ID SS-21 (0-2')

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LA STATEWIDE ORDER 29-B TESTING						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	65.2	0.100		meq/100g	1	11/25/2015 1:05:00 PM
LA STATEWIDE ORDER 29-B TESTING						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	14.7	0.10	*	mmhos/cm	1	11/24/2015 2:28:00 PM
LA STATEWIDE ORDER 29-B TESTING						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	14.8	0.100		%	1	11/25/2015 1:05:00 PM
LA STATEWIDE ORDER 29-B TESTING						
HEM, OIL & GREASE						
HEM, Oil & Grease	1.10	0.05	*	% dry wt	1	11/24/2015 7:00:00 AM
LA STATEWIDE ORDER 29-B TESTING						
PH MEASUREMENT						
pH Measurement	5.94	1.68	C	S.U.	1	11/25/2015 10:50:00 AM
LA STATEWIDE ORDER 29-B TESTING						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	32.5	0.100	*		1	11/24/2015
Soluble Calcium	7.39	1.00		meq/L	1	11/24/2015
Soluble Magnesium	13.4	1.00		meq/L	1	11/24/2015
Soluble Sodium	105	1.00		meq/L	1	11/24/2015
LA STATEWIDE ORDER 29-B TESTING						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.11	0.11		mg/Kg	1	11/19/2015 10:16:01 AM
LA STATEWIDE ORDER 29-B TESTING						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	2.86	1.01		mg/Kg	1	11/19/2015 4:23:47 PM
Barium	183	0.506		mg/Kg	1	11/19/2015 4:23:47 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	C	Value is below Minimum Compound Limit.
H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 15110726

Date Reported: 12/18/2015

CLIENT: Michael Pisani & Associates Inc

Collection Date: 11/16/2015 12:25:00 PM

Project: East White Lake 07-47

Lab ID: 15110726-001

Matrix: SOIL

Client Sample ID SS-21 (0-2')

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LA STATEWIDE ORDER 29-B TESTING METALS IN SOIL OR SLUDGE BY ICP					SW6010B	SW3050B Analyst: STS
Cadmium	< 0.253	0.253		mg/Kg	1	11/19/2015 4:23:47 PM
Chromium	5.57	0.506		mg/Kg	1	11/19/2015 4:23:47 PM
Lead	9.14	0.506		mg/Kg	1	11/19/2015 4:23:47 PM
Selenium	< 1.01	1.01		mg/Kg	1	11/19/2015 4:23:47 PM
Silver	< 0.253	0.253		mg/Kg	1	11/19/2015 4:23:47 PM
Zinc	24.9	0.506		mg/Kg	1	11/19/2015 4:23:47 PM
LA STATEWIDE ORDER 29-B TESTING TRUE TOTAL BARIUM					LDNR 29-B	Analyst: STS
True Total Barium	809	46.7		mg/Kg-dry	1	11/25/2015 6:16:15 AM
LA STATEWIDE ORDER 29-B TESTING PERCENT MOISTURE					LDNR 29-B	Analyst: MMT
Percent Moisture	59.2	1.00		wt%	1	11/17/2015 2:00:00 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	C	Value is below Minimum Compound Limit.
H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 15110726

Date Reported: 12/18/2015

CLIENT: Michael Pisani & Associates Inc

Collection Date: 11/16/2015 12:30:00 PM

Project: East White Lake 07-47

Lab ID: 15110726-002

Matrix: SOIL

Client Sample ID SS-21 (2-4')

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LA STATEWIDE ORDER 29-B TESTING						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	117	0.100		meq/100g	1	11/25/2015 1:05:00 PM
LDNR 29-B						
Analyst: MMT						
LA STATEWIDE ORDER 29-B TESTING						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	95.7	0.10	*	mmhos/cm	1	11/24/2015 2:28:00 PM
LDNR 29-B						
Analyst: MRM						
LA STATEWIDE ORDER 29-B TESTING						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	18.1	0.100	*	%	1	11/25/2015 1:05:00 PM
LDNR 29-B						
Analyst: MMT						
LA STATEWIDE ORDER 29-B TESTING						
HEM, OIL & GREASE						
HEM, Oil & Grease	0.56	0.05		% dry wt	1	11/24/2015 7:00:00 AM
SW9071B						
Analyst: MMT						
LA STATEWIDE ORDER 29-B TESTING						
PH MEASUREMENT						
pH Measurement	5.76	1.68	C	S.U.	1	11/25/2015 10:50:00 AM
LDNR 29-B						
Analyst: MMT						
LA STATEWIDE ORDER 29-B TESTING						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	94.9	0.100	*		1	11/24/2015
Soluble Calcium	80.5	1.00		meq/L	1	11/24/2015
Soluble Magnesium	84.5	1.00		meq/L	1	11/24/2015
Soluble Sodium	862	1.00		meq/L	1	11/24/2015
LDNR 29-B						
Analyst: STS						
LA STATEWIDE ORDER 29-B TESTING						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg	1	11/19/2015 10:23:54 AM
SW7471A						
SW7471A						
Analyst: BAS						
LA STATEWIDE ORDER 29-B TESTING						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	2.12	1.02		mg/Kg	1	11/19/2015 4:33:54 PM
Barium	86.5	0.511		mg/Kg	1	11/19/2015 4:33:54 PM
SW6010B						
SW3050B						
Analyst: STS						

Qualifiers:

- | | | | |
|----|---|----|--|
| * | Value exceeds Maximum Contaminant Level. | C | Value is below Minimum Compound Limit. |
| H | Holding times for preparation or analysis exceeded | M | Matrix Interference |
| ND | Not Detected at the Reporting Limit | RL | Reporting Limit |
| S | Spike Recovery outside accepted recovery limits | U | Analyte not detected |
| W | Sample container temperature is out of limit as specified at testcode | | |



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 Website: www.element.com

Analytical Report

(consolidated)

WO#: 15110726

Date Reported: 12/18/2015

CLIENT: Michael Pisani & Associates Inc

Collection Date: 11/16/2015 12:30:00 PM

Project: East White Lake 07-47

Lab ID: 15110726-002

Matrix: SOIL

Client Sample ID SS-21 (2-4')

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LA STATEWIDE ORDER 29-B TESTING METALS IN SOIL OR SLUDGE BY ICP					SW6010B	SW3050B Analyst: STS
Cadmium	< 0.255	0.255		mg/Kg	1	11/19/2015 4:33:54 PM
Chromium	1.36	0.511		mg/Kg	1	11/19/2015 4:33:54 PM
Lead	1.59	0.511		mg/Kg	1	11/19/2015 4:33:54 PM
Selenium	< 1.02	1.02		mg/Kg	1	11/19/2015 4:33:54 PM
Silver	< 0.255	0.255		mg/Kg	1	11/19/2015 4:33:54 PM
Zinc	4.41	0.511		mg/Kg	1	11/19/2015 4:33:54 PM
LA STATEWIDE ORDER 29-B TESTING TRUE TOTAL BARIUM					LDNR 29-B	Analyst: STS
True Total Barium	606	49.4		mg/Kg-dry	1	11/25/2015 6:29:38 AM
LA STATEWIDE ORDER 29-B TESTING PERCENT MOISTURE					LDNR 29-B	Analyst: MMT
Percent Moisture	82.3	1.00		wt%	1	11/17/2015 2:00:00 PM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	C Value is below Minimum Compound Limit.
	H Holding times for preparation or analysis exceeded	M Matrix Interference
	ND Not Detected at the Reporting Limit	RL Reporting Limit
	S Spike Recovery outside accepted recovery limits	U Analyte not detected
	W Sample container temperature is out of limit as specified at testcode	



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Analytical Report

(consolidated)

WO#: 15110726

Date Reported: 12/18/2015

CLIENT: Michael Pisani & Associates Inc **Collection Date:** 11/16/2015 1:05:00 PM
Project: East White Lake 07-47
Lab ID: 15110726-003 **Matrix:** SOIL
Client Sample ID SS-23 (0-2')

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LA STATEWIDE ORDER 29-B TESTING						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	64.5	0.100		meq/100g	1	11/25/2015 1:05:00 PM
LDNR 29-B						
LDNR 29-B Analyst: MMT						
LA STATEWIDE ORDER 29-B TESTING						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	10.3	0.10	*	mmhos/cm	1	11/24/2015 2:28:00 PM
LDNR 29-B						
LDNR 29-B Analyst: MRM						
LA STATEWIDE ORDER 29-B TESTING						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	13.9	0.100		%	1	11/25/2015 1:05:00 PM
LDNR 29-B						
LDNR 29-B Analyst: MMT						
LA STATEWIDE ORDER 29-B TESTING						
HEM, OIL & GREASE						
HEM, Oil & Grease	0.11	0.05		% dry wt	1	11/24/2015 7:00:00 AM
SW9071B						
SW9071B Analyst: MMT						
LA STATEWIDE ORDER 29-B TESTING						
PH MEASUREMENT						
pH Measurement	6.31	1.68		S.U.	1	11/25/2015 10:50:00 AM
LDNR 29-B						
LDNR 29-B Analyst: MMT						
LA STATEWIDE ORDER 29-B TESTING						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	19.9	0.100	*		1	11/24/2015
Soluble Calcium	8.41	1.00		meq/L	1	11/24/2015
Soluble Magnesium	16.2	1.00		meq/L	1	11/24/2015
Soluble Sodium	69.9	1.00		meq/L	1	11/24/2015
LDNR 29-B						
LDNR 29-B Analyst: STS						
LA STATEWIDE ORDER 29-B TESTING						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.11	0.11		mg/Kg	1	11/24/2015 8:20:32 AM
SW7471A						
SW7471A Analyst: BAS						
LA STATEWIDE ORDER 29-B TESTING						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	4.24	1.06		mg/Kg	1	11/19/2015 4:37:33 PM
Barium	102	0.531		mg/Kg	1	11/19/2015 4:37:33 PM
SW6010B						
SW3050B Analyst: STS						

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	C	Value is below Minimum Compound Limit.
H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 15110726

Date Reported: 12/18/2015

CLIENT: Michael Pisani & Associates Inc

Collection Date: 11/16/2015 1:05:00 PM

Project: East White Lake 07-47

Lab ID: 15110726-003

Matrix: SOIL

Client Sample ID SS-23 (0-2')

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LA STATEWIDE ORDER 29-B TESTING METALS IN SOIL OR SLUDGE BY ICP					SW6010B	SW3050B Analyst: STS
Cadmium	< 0.266	0.266		mg/Kg	1	11/19/2015 4:37:33 PM
Chromium	6.99	0.531		mg/Kg	1	11/19/2015 4:37:33 PM
Lead	7.65	0.531		mg/Kg	1	11/19/2015 4:37:33 PM
Selenium	< 1.06	1.06		mg/Kg	1	11/19/2015 4:37:33 PM
Silver	< 0.266	0.266		mg/Kg	1	11/19/2015 4:37:33 PM
Zinc	34.7	0.531		mg/Kg	1	11/19/2015 4:37:33 PM
LA STATEWIDE ORDER 29-B TESTING TRUE TOTAL BARIUM					LDNR 29-B	Analyst: STS
True Total Barium	373	48.8		mg/Kg-dry	1	11/25/2015 6:34:05 AM
LA STATEWIDE ORDER 29-B TESTING PERCENT MOISTURE					LDNR 29-B	Analyst: MMT
Percent Moisture	52.7	1.00		wt%	1	11/17/2015 2:00:00 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	C	Value is below Minimum Compound Limit.
H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 15110726

Date Reported: 12/18/2015

CLIENT: Michael Pisani & Associates Inc

Collection Date: 11/16/2015 1:10:00 PM

Project: East White Lake 07-47

Lab ID: 15110726-004

Matrix: SOIL

Client Sample ID SS-23 (2-4')

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
29B SALTS CATION EXCHANGE CAPACITY					LDNR 29-B	LDNR 29-B Analyst: MMT
Cation Exchange Capacity	119	0.100		meq/100g	1	11/25/2015 1:05:00 PM
29B SALTS ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B	Analyst: MRM
Electrical Conductivity	29.9	0.10	*	mmhos/cm	1	11/24/2015 2:28:00 PM
29B SALTS EXCHANGEABLE SODIUM PERCENTAGE					LDNR 29-B	LDNR 29-B Analyst: MMT
Exchangeable Sodium %	9.26	0.100		%	1	11/25/2015 1:05:00 PM
29B SALTS SODIUM ADSORPTION RATIO					LDNR 29-B	LDNR 29-B Analyst: STS
Sodium Adsorption Ratio	27.6	0.100	*		1	11/24/2015
Soluble Calcium	39.9	1.00		meq/L	1	11/24/2015
Soluble Magnesium	78.8	1.00		meq/L	1	11/24/2015
Soluble Sodium	212	1.00		meq/L	1	11/24/2015
29B METALS MERCURY IN SOIL OR SLUDGE					SW7471A	SW7471A Analyst: BAS
Mercury	< 0.10	0.10		mg/Kg	1	11/19/2015 10:27:20 AM
29B METALS METALS IN SOIL OR SLUDGE BY ICP					SW6010B	SW3050B Analyst: STS
Arsenic	2.75	1.09		mg/Kg	1	11/19/2015 4:41:05 PM
Barium	42.6	0.546		mg/Kg	1	11/19/2015 4:41:05 PM
Cadmium	< 0.273	0.273		mg/Kg	1	11/19/2015 4:41:05 PM
Chromium	1.67	0.546		mg/Kg	1	11/19/2015 4:41:05 PM
Lead	1.44	0.546		mg/Kg	1	11/19/2015 4:41:05 PM
Selenium	< 1.09	1.09		mg/Kg	1	11/19/2015 4:41:05 PM
Silver	< 0.273	0.273		mg/Kg	1	11/19/2015 4:41:05 PM
Zinc	5.00	0.546		mg/Kg	1	11/19/2015 4:41:05 PM
29B METALS TRUE TOTAL BARIUM					LDNR 29-B	Analyst: STS

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	C	Value is below Minimum Compound Limit.
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike Recovery outside accepted recovery limits	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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 Website: www.element.com

Analytical Report

(consolidated)

WO#: 15110726

Date Reported: 12/18/2015

CLIENT: Michael Pisani & Associates Inc **Collection Date:** 11/16/2015 1:10:00 PM
Project: East White Lake 07-47
Lab ID: 15110726-004 **Matrix:** SOIL
Client Sample ID SS-23 (2-4')

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
29B METALS						Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	319	45.8		mg/Kg-dry	1	11/25/2015 6:38:34 AM
PERCENT MOISTURE						Analyst: MMT
Percent Moisture	81.7	1.00		wt%	1	11/17/2015 2:00:00 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	C	Value is below Minimum Compound Limit.
H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode		



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 Website: www.element.com

Analytical Report

(consolidated)

WO#: 15110726

Date Reported: 12/18/2015

CLIENT: Michael Pisani & Associates Inc **Collection Date:** 11/16/2015 2:00:00 PM
Project: East White Lake 07-47
Lab ID: 15110726-005 **Matrix:** SOIL
Client Sample ID SS-24 (0-2')

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LA STATEWIDE ORDER 29-B TESTING						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	69.8	0.100		meq/100g	1	11/25/2015 1:05:00 PM
LA STATEWIDE ORDER 29-B TESTING						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	8.23	0.10	*	mmhos/cm	1	11/24/2015 2:28:00 PM
LA STATEWIDE ORDER 29-B TESTING						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	6.28	0.100		%	1	11/25/2015 1:05:00 PM
LA STATEWIDE ORDER 29-B TESTING						
HEM, OIL & GREASE						
HEM, Oil & Grease	0.41	0.05		% dry wt	1	11/24/2015 7:00:00 AM
LA STATEWIDE ORDER 29-B TESTING						
PH MEASUREMENT						
pH Measurement	6.40	1.68		S.U.	1	11/25/2015 10:50:00 AM
LA STATEWIDE ORDER 29-B TESTING						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	12.5	0.100	*		1	11/24/2015
Soluble Calcium	10.9	1.00		meq/L	1	11/24/2015
Soluble Magnesium	25.0	1.00		meq/L	1	11/24/2015
Soluble Sodium	52.9	1.00		meq/L	1	11/24/2015
LA STATEWIDE ORDER 29-B TESTING						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.09	0.09		mg/Kg	1	11/19/2015 10:29:42 AM
LA STATEWIDE ORDER 29-B TESTING						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	3.38	1.06		mg/Kg	1	11/19/2015 4:55:05 PM
Barium	51.9	0.530		mg/Kg	1	11/19/2015 4:55:05 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	C	Value is below Minimum Compound Limit.
H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 15110726

Date Reported: 12/18/2015

CLIENT: Michael Pisani & Associates Inc **Collection Date:** 11/16/2015 2:00:00 PM
Project: East White Lake 07-47
Lab ID: 15110726-005 **Matrix:** SOIL
Client Sample ID SS-24 (0-2')

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LA STATEWIDE ORDER 29-B TESTING METALS IN SOIL OR SLUDGE BY ICP					SW6010B	SW3050B Analyst: STS
Cadmium	< 0.265	0.265		mg/Kg	1	11/19/2015 4:55:05 PM
Chromium	5.52	0.530		mg/Kg	1	11/19/2015 4:55:05 PM
Lead	5.78	0.530		mg/Kg	1	11/19/2015 4:55:05 PM
Selenium	< 1.06	1.06		mg/Kg	1	11/19/2015 4:55:05 PM
Silver	< 0.265	0.265		mg/Kg	1	11/19/2015 4:55:05 PM
Zinc	22.2	0.530		mg/Kg	1	11/19/2015 4:55:05 PM
LA STATEWIDE ORDER 29-B TESTING TRUE TOTAL BARIUM					LDNR 29-B	Analyst: STS
True Total Barium	246	46.4		mg/Kg-dry	1	11/25/2015 6:43:03 AM
LA STATEWIDE ORDER 29-B TESTING PERCENT MOISTURE					LDNR 29-B	Analyst: MMT
Percent Moisture	63.5	1.00		wt%	1	11/17/2015 2:00:00 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	C	Value is below Minimum Compound Limit.
H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 15110726

Date Reported: 12/18/2015

CLIENT: Michael Pisani & Associates Inc **Collection Date:** 11/16/2015 2:05:00 PM
Project: East White Lake 07-47
Lab ID: 15110726-006 **Matrix:** SOIL
Client Sample ID SS-24 (2-4')

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LA STATEWIDE ORDER 29-B TESTING						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	121	0.100		meq/100g	1	11/25/2015 1:05:00 PM
LDNR 29-B						
Analyst: MMT						
LA STATEWIDE ORDER 29-B TESTING						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	16.8	0.10	*	mmhos/cm	1	11/24/2015 2:28:00 PM
LDNR 29-B						
Analyst: MRM						
LA STATEWIDE ORDER 29-B TESTING						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	5.25	0.100		%	1	11/25/2015 1:05:00 PM
LDNR 29-B						
Analyst: MMT						
LA STATEWIDE ORDER 29-B TESTING						
HEM, OIL & GREASE						
HEM, Oil & Grease	0.51	0.05		% dry wt	1	11/24/2015 7:00:00 AM
SW9071B						
Analyst: MMT						
LA STATEWIDE ORDER 29-B TESTING						
PH MEASUREMENT						
pH Measurement	5.78	1.68	C	S.U.	1	11/25/2015 10:50:00 AM
LDNR 29-B						
Analyst: MMT						
LA STATEWIDE ORDER 29-B TESTING						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	15.3	0.100	*		1	11/24/2015
Soluble Calcium	23.9	1.00		meq/L	1	11/24/2015
Soluble Magnesium	52.1	1.00		meq/L	1	11/24/2015
Soluble Sodium	94.3	1.00		meq/L	1	11/24/2015
LDNR 29-B						
Analyst: STS						
LA STATEWIDE ORDER 29-B TESTING						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg	1	11/19/2015 10:37:19 AM
SW7471A						
SW7471A						
Analyst: BAS						
LA STATEWIDE ORDER 29-B TESTING						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	2.10	1.11		mg/Kg	1	11/19/2015 4:58:36 PM
Barium	41.5	0.556		mg/Kg	1	11/19/2015 4:58:36 PM
SW6010B						
SW3050B						
Analyst: STS						

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	C	Value is below Minimum Compound Limit.
H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

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WO#: 15110726

Date Reported: 12/18/2015

CLIENT: Michael Pisani & Associates Inc

Collection Date: 11/16/2015 2:05:00 PM

Project: East White Lake 07-47

Lab ID: 15110726-006

Matrix: SOIL

Client Sample ID SS-24 (2-4')

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LA STATEWIDE ORDER 29-B TESTING METALS IN SOIL OR SLUDGE BY ICP					SW6010B	SW3050B Analyst: STS
Cadmium	< 0.278	0.278		mg/Kg	1	11/19/2015 4:58:36 PM
Chromium	1.31	0.556		mg/Kg	1	11/19/2015 4:58:36 PM
Lead	1.09	0.556		mg/Kg	1	11/19/2015 4:58:36 PM
Selenium	< 1.11	1.11		mg/Kg	1	11/19/2015 4:58:36 PM
Silver	< 0.278	0.278		mg/Kg	1	11/19/2015 4:58:36 PM
Zinc	3.44	0.556		mg/Kg	1	11/19/2015 4:58:36 PM
LA STATEWIDE ORDER 29-B TESTING TRUE TOTAL BARIUM					LDNR 29-B	Analyst: STS
True Total Barium	331	48.5		mg/Kg-dry	1	11/25/2015 6:56:12 AM
LA STATEWIDE ORDER 29-B TESTING PERCENT MOISTURE					LDNR 29-B	Analyst: MMT
Percent Moisture	84.3	1.00		wt%	1	11/17/2015 2:00:00 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	C	Value is below Minimum Compound Limit.
H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 15110726

Date Reported: 12/18/2015

CLIENT: Michael Pisani & Associates Inc **Collection Date:** 11/16/2015 3:50:00 PM
Project: East White Lake 07-47
Lab ID: 15110726-007 **Matrix:** SOIL
Client Sample ID SS-25 (0-2')

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LA STATEWIDE ORDER 29-B TESTING						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	66.8	0.100		meq/100g	1	11/25/2015 1:05:00 PM
LA STATEWIDE ORDER 29-B TESTING						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	10.2	0.10	*	mmhos/cm	1	11/24/2015 2:28:00 PM
LA STATEWIDE ORDER 29-B TESTING						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	6.23	0.100		%	1	11/25/2015 1:05:00 PM
LA STATEWIDE ORDER 29-B TESTING						
HEM, OIL & GREASE						
HEM, Oil & Grease	0.18	0.05		% dry wt	1	11/24/2015 7:00:00 AM
LA STATEWIDE ORDER 29-B TESTING						
PH MEASUREMENT						
pH Measurement	6.03	1.68		S.U.	1	11/25/2015 10:50:00 AM
LA STATEWIDE ORDER 29-B TESTING						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	14.6	0.100	*		1	11/24/2015
Soluble Calcium	9.05	1.00		meq/L	1	11/24/2015
Soluble Magnesium	26.3	1.00		meq/L	1	11/24/2015
Soluble Sodium	61.2	1.00		meq/L	1	11/24/2015
LA STATEWIDE ORDER 29-B TESTING						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg	1	11/19/2015 10:39:42 AM
LA STATEWIDE ORDER 29-B TESTING						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	2.24	1.13		mg/Kg	1	11/19/2015 5:02:04 PM
Barium	162	0.564		mg/Kg	1	11/19/2015 5:02:04 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	C	Value is below Minimum Compound Limit.
H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

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WO#: 15110726

Date Reported: 12/18/2015

CLIENT: Michael Pisani & Associates Inc **Collection Date:** 11/16/2015 3:50:00 PM
Project: East White Lake 07-47
Lab ID: 15110726-007 **Matrix:** SOIL
Client Sample ID SS-25 (0-2')

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LA STATEWIDE ORDER 29-B TESTING METALS IN SOIL OR SLUDGE BY ICP					SW6010B	SW3050B Analyst: STS
Cadmium	< 0.282	0.282		mg/Kg	1	11/19/2015 5:02:04 PM
Chromium	5.46	0.564		mg/Kg	1	11/19/2015 5:02:04 PM
Lead	6.80	0.564		mg/Kg	1	11/19/2015 5:02:04 PM
Selenium	< 1.13	1.13		mg/Kg	1	11/19/2015 5:02:04 PM
Silver	< 0.282	0.282		mg/Kg	1	11/19/2015 5:02:04 PM
Zinc	20.6	0.564		mg/Kg	1	11/19/2015 5:02:04 PM
LA STATEWIDE ORDER 29-B TESTING TRUE TOTAL BARIUM					LDNR 29-B	Analyst: STS
True Total Barium	599	46.2		mg/Kg-dry	1	11/25/2015 7:00:39 AM
LA STATEWIDE ORDER 29-B TESTING PERCENT MOISTURE					LDNR 29-B	Analyst: MMT
Percent Moisture	69.3	1.00		wt%	1	11/17/2015 2:00:00 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	C	Value is below Minimum Compound Limit.
H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	U	Analyte not detected
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Analytical Report

(consolidated)

WO#: 15110726

Date Reported: 12/18/2015

CLIENT: Michael Pisani & Associates Inc **Collection Date:** 11/16/2015 3:55:00 PM
Project: East White Lake 07-47
Lab ID: 15110726-008 **Matrix:** SOIL
Client Sample ID SS-25 (2-4')

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LA STATEWIDE ORDER 29-B TESTING						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	51.2	0.100		meq/100g	1	11/25/2015 1:05:00 PM
LDNR 29-B						
LDNR 29-B Analyst: MMT						
LA STATEWIDE ORDER 29-B TESTING						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	10.0	0.10	*	mmhos/cm	1	11/24/2015 2:28:00 PM
LDNR 29-B						
LDNR 29-B Analyst: MRM						
LA STATEWIDE ORDER 29-B TESTING						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	7.91	0.100		%	1	11/25/2015 1:05:00 PM
LDNR 29-B						
LDNR 29-B Analyst: MMT						
LA STATEWIDE ORDER 29-B TESTING						
HEM, OIL & GREASE						
HEM, Oil & Grease	0.50	0.05		% dry wt	1	11/24/2015 7:00:00 AM
SW9071B						
SW9071B Analyst: MMT						
LA STATEWIDE ORDER 29-B TESTING						
PH MEASUREMENT						
pH Measurement	5.82	1.68	C	S.U.	1	11/25/2015 10:50:00 AM
LDNR 29-B						
LDNR 29-B Analyst: MMT						
LA STATEWIDE ORDER 29-B TESTING						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	16.5	0.100	*		1	11/24/2015
Soluble Calcium	9.31	1.00		meq/L	1	11/24/2015
Soluble Magnesium	17.7	1.00		meq/L	1	11/24/2015
Soluble Sodium	60.8	1.00		meq/L	1	11/24/2015
LDNR 29-B						
LDNR 29-B Analyst: STS						
LA STATEWIDE ORDER 29-B TESTING						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg	1	11/19/2015 10:42:05 AM
SW7471A						
SW7471A Analyst: BAS						
LA STATEWIDE ORDER 29-B TESTING						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	3.44	1.08		mg/Kg	1	11/19/2015 5:05:35 PM
Barium	426	0.542		mg/Kg	1	11/19/2015 5:05:35 PM
SW6010B						
SW3050B Analyst: STS						

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	C	Value is below Minimum Compound Limit.
H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

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WO#: 15110726

Date Reported: 12/18/2015

CLIENT: Michael Pisani & Associates Inc

Collection Date: 11/16/2015 3:55:00 PM

Project: East White Lake 07-47

Lab ID: 15110726-008

Matrix: SOIL

Client Sample ID SS-25 (2-4')

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LA STATEWIDE ORDER 29-B TESTING METALS IN SOIL OR SLUDGE BY ICP					SW6010B	SW3050B Analyst: STS
Cadmium	< 0.271	0.271		mg/Kg	1	11/19/2015 5:05:35 PM
Chromium	6.33	0.542		mg/Kg	1	11/19/2015 5:05:35 PM
Lead	8.47	0.542		mg/Kg	1	11/19/2015 5:05:35 PM
Selenium	< 1.08	1.08		mg/Kg	1	11/19/2015 5:05:35 PM
Silver	< 0.271	0.271		mg/Kg	1	11/19/2015 5:05:35 PM
Zinc	26.4	0.542		mg/Kg	1	11/19/2015 5:05:35 PM
LA STATEWIDE ORDER 29-B TESTING TRUE TOTAL BARIUM					LDNR 29-B	Analyst: STS
True Total Barium	1,070	48.2		mg/Kg-dry	1	11/25/2015 7:05:07 AM
LA STATEWIDE ORDER 29-B TESTING PERCENT MOISTURE					LDNR 29-B	Analyst: MMT
Percent Moisture	63.2	1.00		wt%	1	11/17/2015 2:00:00 PM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	C Value is below Minimum Compound Limit.
	H Holding times for preparation or analysis exceeded	M Matrix Interference
	ND Not Detected at the Reporting Limit	RL Reporting Limit
	S Spike Recovery outside accepted recovery limits	U Analyte not detected
	W Sample container temperature is out of limit as specified at testcode	



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Analytical Report

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WO#: 15110726

Date Reported: 12/18/2015

CLIENT: Michael Pisani & Associates Inc

Collection Date: 11/16/2015 4:00:00 PM

Project: East White Lake 07-47

Lab ID: 15110726-009

Matrix: SOIL

Client Sample ID SS-25 (4-6')

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LA STATEWIDE ORDER 29-B TESTING						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	57.9	0.100		meq/100g	1	11/25/2015 1:05:00 PM
LA STATEWIDE ORDER 29-B TESTING						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	12.5	0.10	*	mmhos/cm	1	11/24/2015 2:28:00 PM
LA STATEWIDE ORDER 29-B TESTING						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	10.1	0.100		%	1	11/25/2015 1:05:00 PM
LA STATEWIDE ORDER 29-B TESTING						
HEM, OIL & GREASE						
HEM, Oil & Grease	0.30	0.05		% dry wt	1	11/24/2015 7:00:00 AM
LA STATEWIDE ORDER 29-B TESTING						
PH MEASUREMENT						
pH Measurement	5.60	1.68	C	S.U.	1	11/25/2015 10:50:00 AM
LA STATEWIDE ORDER 29-B TESTING						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	20.5	0.100	*		1	11/24/2015
Soluble Calcium	15.2	1.00		meq/L	1	11/24/2015
Soluble Magnesium	23.3	1.00		meq/L	1	11/24/2015
Soluble Sodium	89.8	1.00		meq/L	1	11/24/2015
LA STATEWIDE ORDER 29-B TESTING						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg	1	11/19/2015 10:44:54 AM
LA STATEWIDE ORDER 29-B TESTING						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	3.81	1.23		mg/Kg	1	11/19/2015 5:09:07 PM
Barium	218	0.614		mg/Kg	1	11/19/2015 5:09:07 PM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	C Value is below Minimum Compound Limit.
	H Holding times for preparation or analysis exceeded	M Matrix Interference
	ND Not Detected at the Reporting Limit	RL Reporting Limit
	S Spike Recovery outside accepted recovery limits	U Analyte not detected
	W Sample container temperature is out of limit as specified at testcode	



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Analytical Report

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WO#: 15110726

Date Reported: 12/18/2015

CLIENT: Michael Pisani & Associates Inc **Collection Date:** 11/16/2015 4:00:00 PM
Project: East White Lake 07-47
Lab ID: 15110726-009 **Matrix:** SOIL
Client Sample ID SS-25 (4-6')

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LA STATEWIDE ORDER 29-B TESTING METALS IN SOIL OR SLUDGE BY ICP					SW6010B	SW3050B Analyst: STS
Cadmium	< 0.307	0.307		mg/Kg	1	11/19/2015 5:09:07 PM
Chromium	6.50	0.614		mg/Kg	1	11/19/2015 5:09:07 PM
Lead	7.73	0.614		mg/Kg	1	11/19/2015 5:09:07 PM
Selenium	< 1.23	1.23		mg/Kg	1	11/19/2015 5:09:07 PM
Silver	< 0.307	0.307		mg/Kg	1	11/19/2015 5:09:07 PM
Zinc	24.1	0.614		mg/Kg	1	11/19/2015 5:09:07 PM
LA STATEWIDE ORDER 29-B TESTING TRUE TOTAL BARIUM					LDNR 29-B	Analyst: STS
True Total Barium	615	47.4		mg/Kg-dry	1	11/25/2015 7:09:36 AM
LA STATEWIDE ORDER 29-B TESTING PERCENT MOISTURE					LDNR 29-B	Analyst: MMT
Percent Moisture	60.5	1.00		wt%	1	11/17/2015 2:00:00 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	C	Value is below Minimum Compound Limit.
H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 15110726
 18-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: 17409

Sample ID	MB-17409	SampType:	MBLK	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	11/18/2015	RunNo:	48625					
Client ID:	PBS	Batch ID:	17409	TestNo:	SW6010B		SW3050B	Analysis Date:	11/19/2015	SeqNo:	1187299					
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		< 1.00		1.00												
Barium		< 0.500		0.500												
Cadmium		< 0.250		0.250												
Chromium		< 0.500		0.500												
Lead		< 0.500		0.500												
Selenium		< 1.00		1.00												
Silver		< 0.250		0.250												
Zinc		< 0.500		0.500												

Sample ID	LCS-17409	SampType:	LCS	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	11/18/2015	RunNo:	48625					
Client ID:	LCSS	Batch ID:	17409	TestNo:	SW6010B		SW3050B	Analysis Date:	11/19/2015	SeqNo:	1187300					
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		23.6		1.00		25.00		0		94.3	80	120				
Barium		23.9		0.500		25.00		0		95.4	80	120				
Cadmium		23.6		0.250		25.00		0		94.4	80	120				
Chromium		23.8		0.500		25.00		0		95.1	80	120				
Lead		23.7		0.500		25.00		0		94.8	80	120				
Selenium		23.4		1.00		25.00		0		93.6	80	120				
Silver		11.8		0.250		12.50		0		94.1	80	120				
Zinc		23.8		0.500		25.00		0		95.0	80	120				

Qualifiers:

- | | | |
|---|--|--|
| * Value exceeds Maximum Contaminant Level. | C Value is below Minimum Compound Limit. | H Holding times for preparation or analysis exceeded |
| M Matrix Interference | ND Not Detected at the Reporting Limit | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected | W Sample container temperature is out of limit as sp |



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 Website: www.element.com

QC SUMMARY REPORT

WO#: 15110726
 18-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: 17409

Sample ID	LCSD-17409	SampType:	LCSD	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	11/18/2015	RunNo:	48625
Client ID:	LCSS02	Batch ID:	17409	TestNo:	SW6010B		SW3050B	Analysis Date:	11/19/2015	SeqNo:	1187301
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	23.9	1.00	25.00	0	95.5	80	120	23.57	1.26	20	
Barium	23.7	0.500	25.00	0	94.8	80	120	23.86	0.673	20	
Cadmium	23.5	0.250	25.00	0	93.9	80	120	23.60	0.488	20	
Chromium	23.6	0.500	25.00	0	94.5	80	120	23.78	0.591	20	
Lead	23.9	0.500	25.00	0	95.5	80	120	23.70	0.673	20	
Selenium	23.5	1.00	25.00	0	93.8	80	120	23.40	0.235	20	
Silver	11.6	0.250	12.50	0	93.2	80	120	11.76	1.03	20	
Zinc	23.6	0.500	25.00	0	94.2	80	120	23.75	0.824	20	

Sample ID	15110726-001AMS	SampType:	MS	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	11/18/2015	RunNo:	48625
Client ID:	SS-21 (0-2')	Batch ID:	17409	TestNo:	SW6010B		SW3050B	Analysis Date:	11/19/2015	SeqNo:	1187320
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	28.4	1.05	26.13	2.865	97.8	75	125				
Barium	214	0.523	26.13	183.0	120	75	125				
Cadmium	25.1	0.261	26.13	0.1063	95.6	75	125				
Chromium	31.9	0.523	26.13	5.573	101	75	125				
Lead	34.4	0.523	26.13	9.136	96.8	75	125				
Selenium	22.8	1.05	26.13	0	87.3	75	125				
Silver	12.6	0.261	13.07	0	96.4	75	125				
Zinc	50.7	0.523	26.13	24.93	98.7	75	125				

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	C	Value is below Minimum Compound Limit.	H	Holding times for preparation or analysis exceeded
M	Matrix Interference	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	U	Analyte not detected	W	Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 15110726
 18-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: 17409

Sample ID	15110726-001AMSD	SampType:	MSD	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	11/18/2015	RunNo:	48625
Client ID:	SS-21 (0-2')	Batch ID:	17409	TestNo:	SW6010B		SW3050B	Analysis Date:	11/19/2015	SeqNo:	1187321
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	28.5	1.06	26.44	2.865	96.8	75	125	28.42	0.185	20	
Barium	213	0.529	26.44	183.0	115	75	125	214.3	0.415	20	
Cadmium	25.3	0.264	26.44	0.1063	95.1	75	125	25.08	0.703	20	
Chromium	32.0	0.529	26.44	5.573	100	75	125	31.87	0.475	20	
Lead	34.4	0.529	26.44	9.136	95.6	75	125	34.43	0.0542	20	
Selenium	22.9	1.06	26.44	0	86.7	75	125	22.80	0.539	20	
Silver	12.7	0.264	13.22	0	95.8	75	125	12.59	0.600	20	
Zinc	51.0	0.529	26.44	24.93	98.8	75	125	50.72	0.635	20	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- M Matrix Interference
- S Spike Recovery outside accepted recovery limits
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- RL Reporting Limit
- W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 15110726
 18-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: 17413

Sample ID	MB-17413	SampType:	MBLK	TestCode:	HG_S_7471A	Units:	mg/Kg	Prep Date:	11/19/2015	RunNo:	48588			
Client ID:	PBS	Batch ID:	17413	TestNo:	SW7471A	SW7471A		Analysis Date:	11/19/2015	SeqNo:	1186603			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury < 0.10 0.10

Sample ID	LCS-17413	SampType:	LCS	TestCode:	HG_S_7471A	Units:	mg/Kg	Prep Date:	11/19/2015	RunNo:	48588			
Client ID:	LCSS	Batch ID:	17413	TestNo:	SW7471A	SW7471A		Analysis Date:	11/19/2015	SeqNo:	1186604			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 0.82 0.10 0.83 0 98.7 80 120

Sample ID	LCSD-17413	SampType:	LCSD	TestCode:	HG_S_7471A	Units:	mg/Kg	Prep Date:	11/19/2015	RunNo:	48588			
Client ID:	LCSS02	Batch ID:	17413	TestNo:	SW7471A	SW7471A		Analysis Date:	11/19/2015	SeqNo:	1186605			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 0.82 0.10 0.83 0 98.2 80 120 0.82 0.46 20

Sample ID	15110726-001AMS	SampType:	MS	TestCode:	HG_S_7471A	Units:	mg/Kg	Prep Date:	11/19/2015	RunNo:	48588			
Client ID:	SS-21 (0-2')	Batch ID:	17413	TestNo:	SW7471A	SW7471A		Analysis Date:	11/19/2015	SeqNo:	1186607			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 0.87 0.10 0.82 0 106 75 125

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	C	Value is below Minimum Compound Limit.	H	Holding times for preparation or analysis exceeded
M	Matrix Interference	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	U	Analyte not detected	W	Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 15110726
 18-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: 17413

Sample ID	15110726-001AMSD	SampType:	MSD	TestCode:	HG_S_7471A	Units:	mg/Kg	Prep Date:	11/19/2015	RunNo:	48588		
Client ID:	SS-21 (0-2')	Batch ID:	17413	TestNo:	SW7471A	SW7471A		Analysis Date:	11/19/2015	SeqNo:	1186626		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.96		0.10	0.87	0	111	75	125	0.87	10.3	20	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- M Matrix Interference
- S Spike Recovery outside accepted recovery limits
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- RL Reporting Limit
- W Sample container temperature is out of limit as specified



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QC SUMMARY REPORT

WO#: 15110726
 18-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: 17466

Sample ID	MB-17466	SampType:	MBLK	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	11/23/2015	RunNo:	48813			
Client ID:	PBS	Batch ID:	17466	TestNo:	LDNR 29-B			Analysis Date:	11/25/2015	SeqNo:	1191988			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium		< 50.0		50.0										

Sample ID	LCS-17466	SampType:	LCS	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	11/23/2015	RunNo:	48813			
Client ID:	LCSS	Batch ID:	17466	TestNo:	LDNR 29-B			Analysis Date:	11/25/2015	SeqNo:	1191989			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium		5,050		50.0	5,000	0		101	75	125				

Sample ID	LCSD-17466	SampType:	LCSD	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	11/23/2015	RunNo:	48813			
Client ID:	LCSS02	Batch ID:	17466	TestNo:	LDNR 29-B			Analysis Date:	11/25/2015	SeqNo:	1191990			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium		5,030		50.0	5,000	0		101	75	125	5,045	0.298	20	

Sample ID	15110726-001AMS	SampType:	MS	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	11/23/2015	RunNo:	48813			
Client ID:	SS-21 (0-2')	Batch ID:	17466	TestNo:	LDNR 29-B			Analysis Date:	11/25/2015	SeqNo:	1191992			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium		5,590		47.2	4,721	809.3		101	75	125				

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	C	Value is below Minimum Compound Limit.	H	Holding times for preparation or analysis exceeded
M	Matrix Interference	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	U	Analyte not detected	W	Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 15110726
 18-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: 17466

Sample ID	15110726-001AMSD	SampType:	MSD	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	11/23/2015	RunNo:	48813		
Client ID:	SS-21 (0-2')	Batch ID:	17466	TestNo:	LDNR 29-B			Analysis Date:	11/25/2015	SeqNo:	1191993		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium		5,530		47.3	4,735	809.3	99.7	75	125	5,590	1.08	20	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- M Matrix Interference
- S Spike Recovery outside accepted recovery limits
- C Value is below Minimum Compound Limit.
- ND Not Detected at the Reporting Limit
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- H Holding times for preparation or analysis exceeded
- RL Reporting Limit
- W Sample container temperature is out of limit as specified



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QC SUMMARY REPORT

WO#: 15110726
 18-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: 17481

Sample ID	15110726-001ADUP	SampType:	DUP	TestCode:	SAR_S	Units:		Prep Date:	11/23/2015	RunNo:	48736
Client ID:	SS-21 (0-2')	Batch ID:	17481	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	11/24/2015	SeqNo:	1190260
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium Adsorption Ratio	32.3	0.100						32.55	0.732	20	*
Soluble Calcium	7.31	1.00						7.390	1.09	20	
Soluble Magnesium	13.3	1.00						13.40	0.493	20	
Soluble Sodium	104	1.00						104.9	1.08	20	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- M Matrix Interference
- S Spike Recovery outside accepted recovery limits
- C Value is below Minimum Compound Limit.
- ND Not Detected at the Reporting Limit
- U Analyte not detected
- H Holding times for preparation or analysis exceeded
- RL Reporting Limit
- W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 15110726
 18-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: 17497

Sample ID	15110726-001ADUP	SampType:	dup	TestCode:	ESP_S	Units:	%	Prep Date:	11/24/2015	RunNo:	48779											
Client ID:	SS-21 (0-2')	Batch ID:	17497	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	11/25/2015	SeqNo:	1191091											
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC		LowLimit		HighLimit		RPD Ref Val		%RPD		RPDLimit		Qual
Exchangeable Sodium %		14.1		0.100												14.79		4.58		20		

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- M Matrix Interference
- S Spike Recovery outside accepted recovery limits
- C Value is below Minimum Compound Limit.
- ND Not Detected at the Reporting Limit
- U Analyte not detected
- H Holding times for preparation or analysis exceeded
- RL Reporting Limit
- W Sample container temperature is out of limit as specified



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QC SUMMARY REPORT

WO#: 15110726
 18-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: 17498

Sample ID	15110726-001ADUP	SampType:	dup	TestCode:	CEC	Units:	meq/100g	Prep Date:	11/24/2015	RunNo:	48778
Client ID:	SS-21 (0-2')	Batch ID:	17498	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	11/25/2015	SeqNo:	1191088
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Cation Exchange Capacity		65.6		0.100						65.15	0.665 20

Sample ID	lcs-17498	SampType:	lcs	TestCode:	CEC	Units:	meq/100g	Prep Date:	11/24/2015	RunNo:	48778
Client ID:	LCSS	Batch ID:	17498	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	11/25/2015	SeqNo:	1191088
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Cation Exchange Capacity		22.5		0.100	25.00	0	90.1	76	124		

Sample ID	lcsd-17498	SampType:	lcsd	TestCode:	CEC	Units:	meq/100g	Prep Date:	11/24/2015	RunNo:	48778
Client ID:	LCSS02	Batch ID:	17498	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	11/25/2015	SeqNo:	1191089
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Cation Exchange Capacity		22.2		0.100	25.00	0	88.8	76	124	22.52	1.48 20

Qualifiers:

- | | | |
|---|--|--|
| * Value exceeds Maximum Contaminant Level. | C Value is below Minimum Compound Limit. | H Holding times for preparation or analysis exceeded |
| M Matrix Interference | ND Not Detected at the Reporting Limit | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected | W Sample container temperature is out of limit as sp |



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QC SUMMARY REPORT

WO#: 15110726
 18-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: R48700

Sample ID	MB-R48700	SampType:	MBLK	TestCode:	HEM_S	Units:	% dry wt	Prep Date:		RunNo:	48700			
Client ID:	PBS	Batch ID:	R48700	TestNo:	SW9071B			Analysis Date:	11/24/2015	SeqNo:	1190472			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

HEM, Oil & Grease

< 0.05 0.05

Sample ID	LCS-R48700	SampType:	LCS	TestCode:	HEM_S	Units:	% dry wt	Prep Date:		RunNo:	48700			
Client ID:	LCSS	Batch ID:	R48700	TestNo:	SW9071B			Analysis Date:	11/24/2015	SeqNo:	1190473			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

HEM, Oil & Grease

0.22 0.05 0.20 0 109 70 130

Sample ID	LCSD-R48700	SampType:	LCSD	TestCode:	HEM_S	Units:	% dry wt	Prep Date:		RunNo:	48700			
Client ID:	LCSS02	Batch ID:	R48700	TestNo:	SW9071B			Analysis Date:	11/24/2015	SeqNo:	1190474			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

HEM, Oil & Grease

0.21 0.05 0.20 0 103 70 130 0.22 5.67 40

Sample ID	15110726-001AMS	SampType:	MS	TestCode:	HEM_S	Units:	% dry wt	Prep Date:		RunNo:	48700			
Client ID:	SS-21 (0-2')	Batch ID:	R48700	TestNo:	SW9071B			Analysis Date:	11/24/2015	SeqNo:	1190475			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

HEM, Oil & Grease

2.25 0.05 0.49 1.10 234 70 130 S

NOTES:

S - Spike recovery indicates matrix interference. The method is in control as indicated by the Lab Control Sample.

Qualifiers:

- | | | |
|---|--|---|
| * Value exceeds Maximum Contaminant Level. | C Value is below Minimum Compound Limit. | H Holding times for preparation or analysis exceeded |
| M Matrix Interference | ND Not Detected at the Reporting Limit | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected | W Sample container temperature is out of limit as per |



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QC SUMMARY REPORT

WO#: 15110726
 18-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: R48700

Sample ID	15110726-001ADUP	SampType:	DUP	TestCode:	HEM_S	Units:	% dry wt	Prep Date:		RunNo:	48700		
Client ID:	SS-21 (0-2')	Batch ID:	R48700	TestNo:	SW9071B			Analysis Date:	11/24/2015	SeqNo:	1190476		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
HEM, Oil & Grease		1.19		0.05						1.10	7.40	40	*

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- M Matrix Interference
- S Spike Recovery outside accepted recovery limits
- C Value is below Minimum Compound Limit.
- ND Not Detected at the Reporting Limit
- U Analyte not detected
- H Holding times for preparation or analysis exceeded
- RL Reporting Limit
- W Sample container temperature is out of limit as specified



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QC SUMMARY REPORT

WO#: 15110726
 18-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: R48726

Sample ID	MB-R48726	SampType:	MBLK	TestCode:	EC_S	Units:	mmhos/cm	Prep Date:		RunNo:	48726
Client ID:	PBS	Batch ID:	R48726	TestNo:	LDNR 29-B			Analysis Date:	11/24/2015	SeqNo:	1190008
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Electrical Conductivity	< 0.10	0.10									
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Sample ID	R48726LCS1	SampType:	LCS1	TestCode:	EC_S	Units:	mmhos/cm	Prep Date:		RunNo:	48726
Client ID:	ZZZZZZ	Batch ID:	R48726	TestNo:	LDNR 29-B			Analysis Date:	11/24/2015	SeqNo:	1190009
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Electrical Conductivity	0.47	0.10	0.47	0	98.9	89.87	110.12				
-------------------------	------	------	------	---	------	-------	--------	--	--	--	--

Sample ID	R48726LCS2	SampType:	LCS2	TestCode:	EC_S	Units:	mmhos/cm	Prep Date:		RunNo:	48726
Client ID:	ZZZZZZ	Batch ID:	R48726	TestNo:	LDNR 29-B			Analysis Date:	11/24/2015	SeqNo:	1190010
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Electrical Conductivity	56.7	0.10	53.00	0	107	90	110				
-------------------------	------	------	-------	---	-----	----	-----	--	--	--	--

Sample ID	15110726-001ADUP	SampType:	DUP	TestCode:	EC_S	Units:	mmhos/cm	Prep Date:		RunNo:	48726
Client ID:	SS-21 (0-2')	Batch ID:	R48726	TestNo:	LDNR 29-B			Analysis Date:	11/24/2015	SeqNo:	1190012
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Electrical Conductivity	15.0	0.10								14.71	2.02	20	*
-------------------------	------	------	--	--	--	--	--	--	--	-------	------	----	---

Qualifiers:

* Value exceeds Maximum Contaminant Level.	C Value is below Minimum Compound Limit.	H Holding times for preparation or analysis exceeded
M Matrix Interference	ND Not Detected at the Reporting Limit	RL Reporting Limit
S Spike Recovery outside accepted recovery limits	U Analyte not detected	W Sample container temperature is out of limit as per



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 Website: www.element.com

QC SUMMARY REPORT

WO#: 15110726
 18-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: R48743

Sample ID	15110726-001ADUP	SampType:	dup	TestCode:	PMOIST	Units:	wt%	Prep Date:		RunNo:	48743		
Client ID:	SS-21 (0-2')	Batch ID:	R48743	TestNo:	LDNR 29-B			Analysis Date:	11/17/2015	SeqNo:	1190453		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture		59.0		1.00						59.24	0.486	20	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- M Matrix Interference
- S Spike Recovery outside accepted recovery limits
- C Value is below Minimum Compound Limit.
- ND Not Detected at the Reporting Limit
- U Analyte not detected
- H Holding times for preparation or analysis exceeded
- RL Reporting Limit
- W Sample container temperature is out of limit as specified



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QC SUMMARY REPORT

WO#: 15110726
 18-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: R48759

Sample ID	LCS-R48759	SampType:	LCS	TestCode:	PH_S	Units:	S.U.	Prep Date:		RunNo:	48759
Client ID:	LCSS	Batch ID:	R48759	TestNo:	LDNR 29-B			Analysis Date:	11/25/2015	SeqNo:	1190753
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

pH Measurement 7.02 1.68 7.00 0 100 97.14 102.86

Sample ID	15110897-001ADUP	SampType:	DUP	TestCode:	PH_S	Units:	S.U.	Prep Date:		RunNo:	48759
Client ID:	ZZZZZZ	Batch ID:	R48759	TestNo:	LDNR 29-B			Analysis Date:	11/25/2015	SeqNo:	1190764
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

pH Measurement 7.82 1.68 7.87 0.64 20

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	C	Value is below Minimum Compound Limit.	H	Holding times for preparation or analysis exceeded
M	Matrix Interference	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	U	Analyte not detected	W	Sample container temperature is out of limit as sp



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Sample Log-In Check List

Client Name: **M_PISANI_HOU**

Work Order Number: **15110726**

RcptNo: **1**

Logged by: **Tammy Thibodeaux** **11/17/2015 11:37:00 AM**

Tammy Thibodeaux

Completed By: **Tammy Thibodeaux** **11/17/2015 12:51:14 PM**

Tammy Thibodeaux

Reviewed By: **Caitlin Duplantis** **11/23/2015 11:35:28 AM**

Caitlin Duplantis

Chain of Custody

1. Is Chain of Custody complete? Yes No Not Present
 2. How was the sample delivered? Client

Log In

3. Coolers are present? Yes No NA
 4. Shipping container/cooler in good condition? Yes No
 Custody seals intact on shipping container/cooler? Yes No Not Present
 No. Seal Date: Signed By:
 5. Was an attempt made to cool the samples? Yes No NA
 6. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
 7. Sample(s) in proper container(s)? Yes No
 8. Sufficient sample volume for indicated test(s)? Yes No
 9. Are samples (except VOA and ONG) properly preserved? Yes No
 10. Was preservative added to bottles? Yes No NA
 11. Is the headspace in the VOA vials less than 1/4 inch or 6 mm? Yes No No VOA Vials
 12. Were any sample containers received broken? Yes No
 13. Does paperwork match bottle labels? Yes No
 (Note discrepancies on chain of custody)
 14. Are matrices correctly identified on Chain of Custody? Yes No
 15. Is it clear what analyses were requested? Yes No
 16. Were all holding times able to be met? Yes No
 (If no, notify customer for authorization.)

Special Handling (if applicable)

17. Was client notified of all discrepancies with this order? Yes No NA

Person Notified:	<input type="text"/>	Date	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

18. Additional remarks:

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.6	Good	Not Present			



element

Chain of Custody

Laboratory Number: 15110724

Client Information:	Billing Information:	PO Number:	Project Name/Number:	Page 1 of 1
Company Name: Michael Pisanio Associate	SAME		East White Lake	Matrix Code
Contact Name: Dave Anyle		Quote Number:	07-47	NG = NATURAL GAS NGL = NATURAL GAS LIQUID OT = OTHER
Address: 13313 Southwest Fwy #221			Sampler's Signature: <i>Michael Pisanio</i>	
City, State Zip: Sugarland TX 77478			Shipping Method:	
Phone Number: 281.242.5700 Ext.	Ext:	Bill Monthly	UPS / FedEx / Airborne	
Fax Number: 281.242.17		<input type="checkbox"/> Yes	DHL / Element <input checked="" type="checkbox"/> Hand / Mail	
E-mail Address: danyle@mpisani.com		<input type="checkbox"/> No		

Which Regulations Apply: <input type="checkbox"/> STATE <input type="checkbox"/> OTHER (PLEASE LIST)	Turn Time <input checked="" type="checkbox"/> Standard <input type="checkbox"/> RUSH <input type="checkbox"/> 1 Day <input type="checkbox"/> 2 Day <input type="checkbox"/> Other	Collection Information				Container		Requested Tests				Comments
						Quantity	Type P=Plastic, G=Glass, V=Vial, C=Cylinder, SC=Summa Canister					
Sample ID/Description	Date	Time	Grab / Composite	Matrix								
SS-13 0-2'	11/16/15	1225	G	SO	1	G	X					
SS-13 2-4'		1230					XX					
SS-15 0-2'		1305					XX					
SS-15 2-4'		1310					XX					
SS-16 0-2'		1400					XX					
SS-16 2-4'		1405					XX					
SS-17 0-2'		1550					XX					
SS-17 2-4'		1555					XX					
SS-17 4-6'		1600					XX					

Relinquished by	Date/Time	Received by	Date/Time	Field Notes:
<i>Michael Pisanio</i>	11/17/15 1137	<i>John</i>	11/17/15 1137	Temp: 3.6°C OH

All samples submitted to Element Materials Technology for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples. Element Materials Technology reserves the right to return unused sample portions.

105 Dalton St., Suite E
Shreveport, LA
71106 USA
P 318-670-3457
F 337-232-3621

2129 West Willow St.
Scott, LA
70583-5301 USA
P 337-232-3668
F 337-232-3621

65353 Highland Hills Road
Cambridge, OH
43725-9657 USA
P 740-255-5744
F 740-255-5817

Cristina Thibeaux

From: Tobyn Celler <tceller@mpisani.com>
Sent: Friday, November 20, 2015 9:06 AM
To: Cristina Thibeaux
Subject: FW: Priority List Requested: 15110631, East White Lake 07-47

Here you go Miss Cristina!

Thank you for taking care of this.

From: Tobyn Celler
Sent: Friday, November 20, 2015 8:55 AM
To: 'Caitlin Duplantis' <caitlin.duplantis@element.com>
Cc: Dave Angle <dangle@mpisani.com>; Lance Cooper <lcooper@mpisani.com>; Charles Trahan <ctrahan@mpisani.com>
Subject: RE: Priority List Requested: 15110631, East White Lake 07-47

Hello Caitlin,

Charles Trahan dropped off some samples on Tuesday 11/17/15, these sample IDs will also have to be changed. Please add 8 to the IDs on his chain as well.

Thank you,
Tobyn

From: Caitlin Duplantis [<mailto:caitlin.duplantis@element.com>]
Sent: Wednesday, November 18, 2015 11:10 AM
To: Tobyn Celler <tceller@mpisani.com>
Cc: Dave Angle <dangle@mpisani.com>; Lance Cooper <lcooper@mpisani.com>; Charles Trahan <ctrahan@mpisani.com>
Subject: RE: Priority List Requested: 15110631, East White Lake 07-47

Thank you. I will update the sample ID's on this workorder now.

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

From: Tobyn Celler [<mailto:tceller@mpisani.com>]
Sent: Wednesday, November 18, 2015 8:28 AM
To: Caitlin Duplantis
Cc: Dave Angle; Lance Cooper; Charles Trahan
Subject: Re: Priority List Requested: 15110631, East White Lake 07-47

Good Morning Caitlin,

I spoke with ICON this morning and it appears that the sample IDs from this event have to be changed. Please add 8 to the existing IDs. Therefore SS-08 becomes SS-16, SS-09 to SS-17, etc. please let me know if you have any questions.

Tobyn

Sent from my iPhone



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December 17, 2015

Dave Angle
Michael Pisani & Associates Inc
13313 Southwest Fwy #221
Sugar Land, TX 77478
TEL: (281) 242-5700
FAX:

RE: East White Lake 07-47

Order No.: 15111066

Dear Dave Angle:

Element Materials Technology Lafayette received 2 sample(s) on 11/25/2015 for the analyses presented in the following report.

In accordance with your instructions Element Lafayette conducted the analysis shown on the following pages on samples submitted by your company. The results related only to the items tested. Unless otherwise noted, all analyses were conducted using EPA approved methodologies and all test results meet all requirements of TNI. All relevant sampling information is on the attached Chain-of-Custody form.

All soil data, except for 29-B, are on a wet-weight basis unless otherwise indicated in the units field as –dry.

LELAP Certification No.: 01997. TCEQ Certification No.: T104704261-14-6. A scope of accredited parameters is available upon request. A "#" by the test method or analyte indicates this parameter is outside the scope of accreditation.

Estimated uncertainty is available upon request. This report shall not be reproduced except in full, without the written approval of the laboratory.

If you have any questions regarding these test results, please feel free to call.

A handwritten signature in blue ink, appearing to read 'Cristina Thibeaux', is written over a light blue horizontal line.

Cristina Thibeaux
Customer Service Supervisor
2417 W. Pinhook Road
Lafayette, LA 70508-3344



Element Materials Technology Lafayette
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Case Narrative

WO#: 15111066
Date: 12/17/2015

CLIENT: Michael Pisani & Associates Inc
Project: East White Lake 07-47

Unless specified by the client, a duplicate or MS/MSD, wherever applicable, is randomly selected and analyzed from each analytical batch provided sample volume is sufficient. The sample chosen for duplicate or MS/MSD may or may not be a sample submitted in this workorder. A method blank and/or a lab control sample (LCS)/lab control sample duplicate (LCSD), wherever applicable, are processed as a quality control check for each analytical batch. When the matrix QC data is not available due to insufficient sample volume or when the results indicate possible matrix effect, the validity of the batch is determined by the method blank and LCS/LCSD.

The results of the laboratory internal quality control data are provided in the QC Summary Report section of the report for your review. Laboratory-related QC exceptions that may impact the validity of data are discussed in the case narrative. Sample-related QC exceptions are flagged either in the results page(s) or in the QC report page(s). End users should consider QC exceptions when evaluating sample data against data quality objectives.

Any other exceptions associated with this report will be footnoted in the results page(s) or the QC summary page(s).



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Analytical Report

(consolidated)

WO#: 15111066

Date Reported: 12/17/2015

CLIENT: Michael Pisani & Associates Inc
Project: East White Lake 07-47
Lab ID: 15111066-001
Client Sample ID TBB-1D 0-5'

Collection Date: 11/25/2015 10:40:00 AM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LA STATEWIDE ORDER 29-B TESTING CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	109	0.100		meq/100g	1	12/9/2015 1:13:00 PM
LA STATEWIDE ORDER 29-B TESTING ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	7.08	0.10	*	mmhos/cm	1	12/10/2015 12:35:00 PM
LA STATEWIDE ORDER 29-B TESTING EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	7.02	0.100		%	1	12/9/2015 1:13:00 PM
LA STATEWIDE ORDER 29-B TESTING HEM, OIL & GREASE						
HEM, Oil & Grease	0.85	0.05		% dry wt	1	12/9/2015 8:01:00 AM
LA STATEWIDE ORDER 29-B TESTING PH MEASUREMENT						
pH Measurement	6.66	1.68		S.U.	1	12/9/2015 2:17:00 PM
LA STATEWIDE ORDER 29-B TESTING SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	19.4	0.100	*		1	12/7/2015
Soluble Calcium	8.38	1.00		meq/L	1	12/7/2015
Soluble Magnesium	9.14	1.00		meq/L	1	12/7/2015
Soluble Sodium	57.3	1.00		meq/L	1	12/7/2015
LA STATEWIDE ORDER 29-B TESTING MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg	1	11/30/2015 9:47:07 AM
LA STATEWIDE ORDER 29-B TESTING METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	1.77	1.05		mg/Kg	1	11/30/2015 9:01:24 PM
Barium	230	0.524		mg/Kg	1	11/30/2015 9:01:24 PM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
	M	Matrix Interference	ND	Not Detected at the Reporting Limit
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: 15111066

Date Reported: 12/17/2015

CLIENT: Michael Pisani & Associates Inc

Collection Date: 11/25/2015 10:40:00 AM

Project: East White Lake 07-47

Lab ID: 15111066-001

Matrix: SOIL

Client Sample ID TBB-1D 0-5'

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LA STATEWIDE ORDER 29-B TESTING METALS IN SOIL OR SLUDGE BY ICP					SW6010B	SW3050B Analyst: STS
Cadmium	< 0.262	0.262		mg/Kg	1	11/30/2015 9:01:24 PM
Chromium	3.42	0.524		mg/Kg	1	11/30/2015 9:01:24 PM
Lead	4.26	0.524		mg/Kg	1	11/30/2015 9:01:24 PM
Selenium	< 1.05	1.05		mg/Kg	1	11/30/2015 9:01:24 PM
Silver	< 0.262	0.262		mg/Kg	1	11/30/2015 9:01:24 PM
Zinc	35.4	0.524		mg/Kg	1	11/30/2015 9:01:24 PM
LA STATEWIDE ORDER 29-B TESTING TRUE TOTAL BARIUM					LDNR 29-B	Analyst: STS
True Total Barium	1,450	49.7		mg/Kg-dry	1	12/4/2015 7:14:56 PM
LA STATEWIDE ORDER 29-B TESTING PERCENT MOISTURE					LDNR 29-B	Analyst: MMT
Percent Moisture	75.6	1.00		wt%	1	11/30/2015 11:10:00 AM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
	M	Matrix Interference	ND	Not Detected at the Reporting Limit
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: 15111066

Date Reported: 12/17/2015

CLIENT: Michael Pisani & Associates Inc

Collection Date: 11/25/2015 10:45:00 AM

Project: East White Lake 07-47

Lab ID: 15111066-002

Matrix: SOIL

Client Sample ID TBB-1D 5-10'

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LA STATEWIDE ORDER 29-B TESTING						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	67.7	0.100		meq/100g	1	12/9/2015 1:13:00 PM
LDNR 29-B						
LDNR 29-B Analyst: MMT						
LA STATEWIDE ORDER 29-B TESTING						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	5.77	0.20	*	mmhos/cm	2	12/17/2015 2:20:00 PM
LDNR 29-B						
LDNR 29-B Analyst: MMT						
LA STATEWIDE ORDER 29-B TESTING						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	34.6	0.100	*	%	1	12/9/2015 1:13:00 PM
LA STATEWIDE ORDER 29-B TESTING						
HEM, OIL & GREASE						
HEM, Oil & Grease	0.20	0.05		% dry wt	1	12/9/2015 8:01:00 AM
SW9071B						
SW9071B Analyst: MMT						
LA STATEWIDE ORDER 29-B TESTING						
PH MEASUREMENT						
pH Measurement	7.15	1.68		S.U.	1	12/9/2015 2:17:00 PM
LDNR 29-B						
LDNR 29-B Analyst: IAI						
LA STATEWIDE ORDER 29-B TESTING						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	32.0	0.100	*		1	12/7/2015
Soluble Calcium	2.51	1.00		meq/L	1	12/7/2015
Soluble Magnesium	2.95	1.00		meq/L	1	12/7/2015
Soluble Sodium	52.8	1.00		meq/L	1	12/7/2015
LA STATEWIDE ORDER 29-B TESTING						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg	1	11/30/2015 9:49:27 AM
SW7471A						
SW7471A Analyst: BAS						
LA STATEWIDE ORDER 29-B TESTING						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	2.67	1.05		mg/Kg	1	11/30/2015 9:05:07 PM
Barium	80.0	0.525		mg/Kg	1	11/30/2015 9:05:07 PM
SW6010B						
SW3050B Analyst: STS						

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
	M	Matrix Interference	ND	Not Detected at the Reporting Limit
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: 15111066

Date Reported: 12/17/2015

CLIENT: Michael Pisani & Associates Inc

Collection Date: 11/25/2015 10:45:00 AM

Project: East White Lake 07-47

Lab ID: 15111066-002

Matrix: SOIL

Client Sample ID TBB-1D 5-10'

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LA STATEWIDE ORDER 29-B TESTING METALS IN SOIL OR SLUDGE BY ICP				SW6010B	SW3050B	Analyst: STS
Cadmium	< 0.263	0.263		mg/Kg	1	11/30/2015 9:05:07 PM
Chromium	5.45	0.525		mg/Kg	1	11/30/2015 9:05:07 PM
Lead	5.42	0.525		mg/Kg	1	11/30/2015 9:05:07 PM
Selenium	< 1.05	1.05		mg/Kg	1	11/30/2015 9:05:07 PM
Silver	< 0.263	0.263		mg/Kg	1	11/30/2015 9:05:07 PM
Zinc	20.9	0.525		mg/Kg	1	11/30/2015 9:05:07 PM
LA STATEWIDE ORDER 29-B TESTING TRUE TOTAL BARIUM				LDNR 29-B		Analyst: STS
True Total Barium	294	48.9		mg/Kg-dry	1	12/4/2015 7:19:24 PM
LA STATEWIDE ORDER 29-B TESTING PERCENT MOISTURE				LDNR 29-B		Analyst: MMT
Percent Moisture	53.8	1.00		wt%	1	11/30/2015 11:10:00 AM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
	M	Matrix Interference	ND	Not Detected at the Reporting Limit
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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QC SUMMARY REPORT

WO#: 15111066
 17-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: 17512

Sample ID: MB-17512	SampType: MBLK	TestCode: HG_S_7471A	Units: mg/Kg	Prep Date: 11/30/2015	RunNo: 48803						
Client ID: PBS	Batch ID: 17512	TestNo: SW7471A	SW7471A	Analysis Date: 11/30/2015	SeqNo: 1191528						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury < 0.10 0.10

Sample ID: LCS-17512	SampType: LCS	TestCode: HG_S_7471A	Units: mg/Kg	Prep Date: 11/30/2015	RunNo: 48803						
Client ID: LCSS	Batch ID: 17512	TestNo: SW7471A	SW7471A	Analysis Date: 11/30/2015	SeqNo: 1191529						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 0.87 0.10 0.83 0 104 80 120

Sample ID: LCSD-17512	SampType: LCSD	TestCode: HG_S_7471A	Units: mg/Kg	Prep Date: 11/30/2015	RunNo: 48803						
Client ID: LCSS02	Batch ID: 17512	TestNo: SW7471A	SW7471A	Analysis Date: 11/30/2015	SeqNo: 1191530						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 0.88 0.10 0.83 0 106 80 120 0.87 1.59 20

Sample ID: 15111027-004AMS	SampType: MS	TestCode: HG_S_7471A	Units: mg/Kg	Prep Date: 11/30/2015	RunNo: 48803						
Client ID: ZZZZZ	Batch ID: 17512	TestNo: SW7471A	SW7471A	Analysis Date: 11/30/2015	SeqNo: 1191532						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 0.85 0.10 0.86 0.03 95.7 75 125

Qualifiers: * Value exceeds Maximum Contaminant Level. H Holding times for preparation or analysis exceeded M Matrix Interference
 ND Not Detected at the Reporting Limit RL Reporting Limit S Spike Recovery outside accepted recovery limits
 U Analyte not detected W Sample container temperature is out of limit as specified at testcode



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 Website: www.element.com

QC SUMMARY REPORT

WO#: 15111066
 17-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: 17512

Sample ID: 15111027-004AMSD	SampType: MSD	TestCode: HG_S_7471A	Units: mg/Kg	Prep Date: 11/30/2015	RunNo: 48803						
Client ID: ZZZZZ	Batch ID: 17512	TestNo: SW7471A	SW7471A	Analysis Date: 11/30/2015	SeqNo: 1191533						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury	0.85	0.10	0.87	0.03	95.0	75	125	0.85	0.49	20
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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 15111066
 17-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: 17513

Sample ID: MB-17513	SampType: MBLK	TestCode: 6010_S	Units: mg/Kg	Prep Date: 11/30/2015	RunNo: 48827						
Client ID: PBS	Batch ID: 17513	TestNo: SW6010B	SW3050B	Analysis Date: 11/30/2015	SeqNo: 1192329						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	< 1.00	1.00									
Barium	< 0.500	0.500									
Cadmium	< 0.250	0.250									
Chromium	< 0.500	0.500									
Lead	< 0.500	0.500									
Selenium	< 1.00	1.00									
Silver	< 0.250	0.250									
Zinc	< 0.500	0.500									

Sample ID: LCS-17513	SampType: LCS	TestCode: 6010_S	Units: mg/Kg	Prep Date: 11/30/2015	RunNo: 48827						
Client ID: LCSS	Batch ID: 17513	TestNo: SW6010B	SW3050B	Analysis Date: 11/30/2015	SeqNo: 1192330						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	24.4	1.00	25.00	0	97.4	80	120				
Barium	24.6	0.500	25.00	0	98.4	80	120				
Cadmium	24.4	0.250	25.00	0	97.7	80	120				
Chromium	24.6	0.500	25.00	0	98.3	80	120				
Lead	24.5	0.500	25.00	0	97.9	80	120				
Selenium	25.2	1.00	25.00	0	101	80	120				
Silver	12.2	0.250	12.50	0	97.2	80	120				
Zinc	25.0	0.500	25.00	0	99.8	80	120				

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
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QC SUMMARY REPORT

WO#: 15111066
 17-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: 17513

Sample ID: LCSD-17513	SampType: LCSD	TestCode: 6010_S	Units: mg/Kg	Prep Date: 11/30/2015	RunNo: 48827						
Client ID: LCSS02	Batch ID: 17513	TestNo: SW6010B	SW3050B	Analysis Date: 11/30/2015	SeqNo: 1192331						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	24.4	1.00	25.00	0	97.6	80	120	24.35	0.164	20	
Barium	24.3	0.500	25.00	0	97.1	80	120	24.60	1.35	20	
Cadmium	24.1	0.250	25.00	0	96.5	80	120	24.42	1.26	20	
Chromium	24.2	0.500	25.00	0	96.8	80	120	24.56	1.46	20	
Lead	24.5	0.500	25.00	0	98.2	80	120	24.48	0.286	20	
Selenium	25.0	1.00	25.00	0	100	80	120	25.18	0.618	20	
Silver	11.9	0.250	12.50	0	95.5	80	120	12.15	1.79	20	
Zinc	24.6	0.500	25.00	0	98.3	80	120	24.96	1.55	20	

Sample ID: 15111027-004AMS	SampType: MS	TestCode: 6010_S	Units: mg/Kg	Prep Date: 11/30/2015	RunNo: 48827						
Client ID: ZZZZZZ	Batch ID: 17513	TestNo: SW6010B	SW3050B	Analysis Date: 11/30/2015	SeqNo: 1192333						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	35.4	1.03	25.77	6.776	111	75	125				
Barium	143	0.515	25.77	118.0	98.5	75	125				
Cadmium	28.2	0.258	25.77	0.2272	109	75	125				
Chromium	38.9	0.515	25.77	10.23	111	75	125				
Lead	38.9	0.515	25.77	11.03	108	75	125				
Selenium	22.9	1.03	25.77	0	88.9	75	125				
Silver	14.3	0.258	12.88	0	111	75	125				
Zinc	48.2	0.515	25.77	20.78	106	75	125				

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 15111066
 17-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: 17513

Sample ID: 15111027-004AMSD	SampType: MSD	TestCode: 6010_S	Units: mg/Kg	Prep Date: 11/30/2015	RunNo: 48827						
Client ID: ZZZZZ	Batch ID: 17513	TestNo: SW6010B	SW3050B	Analysis Date: 11/30/2015	SeqNo: 1192334						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	35.5	1.03	25.78	6.776	111	75	125	35.43	0.163	20	
Barium	144	0.516	25.78	118.0	101	75	125	143.3	0.405	20	
Cadmium	28.2	0.258	25.78	0.2272	109	75	125	28.22	0.0829	20	
Chromium	39.0	0.516	25.78	10.23	111	75	125	38.90	0.166	20	
Lead	39.1	0.516	25.78	11.03	109	75	125	38.94	0.377	20	
Selenium	23.6	1.03	25.78	0	91.6	75	125	22.90	3.04	20	
Silver	14.3	0.258	12.89	0	111	75	125	14.30	0.0464	20	
Zinc	48.3	0.516	25.78	20.78	107	75	125	48.21	0.281	20	

Qualifiers:

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U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 15111066
 17-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: 17549

Sample ID: MB-17549	SampType: MBLK	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 12/3/2015	RunNo: 48955						
Client ID: PBS	Batch ID: 17549	TestNo: LDNR 29-B		Analysis Date: 12/4/2015	SeqNo: 1194989						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

True Total Barium < 50.0 50.0

Sample ID: LCS-17549	SampType: LCS	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 12/3/2015	RunNo: 48955						
Client ID: LCSS	Batch ID: 17549	TestNo: LDNR 29-B		Analysis Date: 12/4/2015	SeqNo: 1194990						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

True Total Barium 5,180 50.0 5,000 0 104 75 125

Sample ID: LCSD-17549	SampType: LCSD	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 12/3/2015	RunNo: 48955						
Client ID: LCSS02	Batch ID: 17549	TestNo: LDNR 29-B		Analysis Date: 12/4/2015	SeqNo: 1194991						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

True Total Barium 5,180 50.0 5,000 0 104 75 125 5,175 0.0966 20

Sample ID: 15111064-001AMS	SampType: MS	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 12/3/2015	RunNo: 48955						
Client ID: ZZZZZZ	Batch ID: 17549	TestNo: LDNR 29-B		Analysis Date: 12/4/2015	SeqNo: 1194995						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

True Total Barium 7,160 49.3 4,931 1,500 115 75 125

Qualifiers: * Value exceeds Maximum Contaminant Level. H Holding times for preparation or analysis exceeded M Matrix Interference
 ND Not Detected at the Reporting Limit RL Reporting Limit S Spike Recovery outside accepted recovery limits
 U Analyte not detected W Sample container temperature is out of limit as specified at testcode



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QC SUMMARY REPORT

WO#: 15111066
 17-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: 17549

Sample ID: 15111064-001AMSD	SampType: MSD	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 12/3/2015	RunNo: 48955						
Client ID: ZZZZZ	Batch ID: 17549	TestNo: LDNR 29-B		Analysis Date: 12/4/2015	SeqNo: 1194996						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium	7,270	49.3	4,931	1,500	117	75	125	7,165	1.50	20	

Qualifiers:

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ND	Not Detected at the Reporting Limit	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 15111066
 17-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: 17569

Sample ID: 15111064-001ADUP	SampType: DUP	TestCode: SAR_S	Units:	Prep Date: 12/3/2015	RunNo: 48967						
Client ID: ZZZZZZ	Batch ID: 17569	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 12/7/2015	SeqNo: 1195336						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium Adsorption Ratio	31.0	0.100						31.01	0.0639	20	*
Soluble Calcium	10.5	1.00						10.34	1.29	20	
Soluble Magnesium	26.5	1.00						26.20	1.31	20	
Soluble Sodium	133	1.00						132.5	0.589	20	

Qualifiers:

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U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 15111066
 17-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: 17604

Sample ID: 15111064-001ADUP	SampType: dup	TestCode: ESP_S	Units: %	Prep Date: 12/3/2015	RunNo: 49035						
Client ID: ZZZZZZ	Batch ID: 17604	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 12/9/2015	SeqNo: 1196844						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Exchangeable Sodium %	19.3	0.100						18.47	4.36	20	*

Qualifiers:

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U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 15111066
 17-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: 17605

Sample ID: 15111064-001ADUP	SampType: dup	TestCode: CEC	Units: meq/100g	Prep Date: 12/3/2015	RunNo: 49034						
Client ID: ZZZZZ	Batch ID: 17605	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 12/9/2015	SeqNo: 1196826						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cation Exchange Capacity	54.2	0.100						58.08	6.83	20	

Sample ID: lcs-17605	SampType: lcs	TestCode: CEC	Units: meq/100g	Prep Date: 12/3/2015	RunNo: 49034						
Client ID: LCSS	Batch ID: 17605	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 12/9/2015	SeqNo: 1196839						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cation Exchange Capacity	22.7	0.100	25.00	0	90.6	76	124				

Sample ID: lcsd-17605	SampType: lcsd	TestCode: CEC	Units: meq/100g	Prep Date: 12/3/2015	RunNo: 49034						
Client ID: LCSS02	Batch ID: 17605	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 12/9/2015	SeqNo: 1196840						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cation Exchange Capacity	20.8	0.100	25.00	0	83.0	76	124	22.65	8.74	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
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U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 15111066
 17-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: R48957

Sample ID: 15111064-001ADUP	SampType: dup	TestCode: PMOIST	Units: wt%	Prep Date:	RunNo: 48957						
Client ID: ZZZZZ	Batch ID: R48957	TestNo: LDNR 29-B		Analysis Date: 11/30/2015	SeqNo: 1195049						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture	55.0	1.00						57.59	4.55	20	

Qualifiers:

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U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 15111066
 17-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: R49007

Sample ID: MB-R49007	SampType: MBLK	TestCode: HEM_S	Units: % dry wt	Prep Date:	RunNo: 49007						
Client ID: PBS	Batch ID: R49007	TestNo: SW9071B		Analysis Date: 12/9/2015	SeqNo: 1197214						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

HEM, Oil & Grease

< 0.05 0.05

Sample ID: LCS-R49007	SampType: LCS	TestCode: HEM_S	Units: % dry wt	Prep Date:	RunNo: 49007						
Client ID: LCSS	Batch ID: R49007	TestNo: SW9071B		Analysis Date: 12/9/2015	SeqNo: 1197215						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

HEM, Oil & Grease

0.19 0.05 0.20 0 96.2 70 130

Sample ID: LCSD-R49007	SampType: LCSD	TestCode: HEM_S	Units: % dry wt	Prep Date:	RunNo: 49007						
Client ID: LCSS02	Batch ID: R49007	TestNo: SW9071B		Analysis Date: 12/9/2015	SeqNo: 1197216						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

HEM, Oil & Grease

0.21 0.05 0.20 0 107 70 130 0.19 10.6 40

Sample ID: 15111064-001AMS	SampType: MS	TestCode: HEM_S	Units: % dry wt	Prep Date:	RunNo: 49007						
Client ID: ZZZZZZ	Batch ID: R49007	TestNo: SW9071B		Analysis Date: 12/9/2015	SeqNo: 1197217						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

HEM, Oil & Grease

1.75 0.05 0.47 1.21 114 70 130

Qualifiers: * Value exceeds Maximum Contaminant Level. H Holding times for preparation or analysis exceeded M Matrix Interference
 ND Not Detected at the Reporting Limit RL Reporting Limit S Spike Recovery outside accepted recovery limits
 U Analyte not detected W Sample container temperature is out of limit as specified at testcode



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QC SUMMARY REPORT

WO#: 15111066
 17-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: R49007

Sample ID: 15111064-001ADUP	SampType: DUP	TestCode: HEM_S	Units: % dry wt	Prep Date:	RunNo: 49007						
Client ID: ZZZZZ	Batch ID: R49007	TestNo: SW9071B		Analysis Date: 12/9/2015	SeqNo: 1197218						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
HEM, Oil & Grease	1.17	0.05						1.21	3.95	40	*

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 15111066
 17-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: R49033

Sample ID: LCS-R49033	SampType: LCS	TestCode: PH_S	Units: S.U.	Prep Date:	RunNo: 49033						
Client ID: LCSS	Batch ID: R49033	TestNo: LDNR 29-B		Analysis Date: 12/9/2015	SeqNo: 1196806						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

pH Measurement 7.07 1.68 7.00 0 101 97.14 102.86

Sample ID: 15111066-002ADUP	SampType: DUP	TestCode: PH_S	Units: S.U.	Prep Date:	RunNo: 49033						
Client ID: TBB-1D 5-10'	Batch ID: R49033	TestNo: LDNR 29-B		Analysis Date: 12/9/2015	SeqNo: 1196811						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

pH Measurement 7.19 1.68 7.15 0.56 20

Qualifiers: * Value exceeds Maximum Contaminant Level. H Holding times for preparation or analysis exceeded M Matrix Interference
 ND Not Detected at the Reporting Limit RL Reporting Limit S Spike Recovery outside accepted recovery limits
 U Analyte not detected W Sample container temperature is out of limit as specified at testcode



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QC SUMMARY REPORT

WO#: 15111066
 17-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: R49056

Sample ID: MB-R49056	SampType: MBLK	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 49056						
Client ID: PBS	Batch ID: R49056	TestNo: LDNR 29-B		Analysis Date: 12/10/2015	SeqNo: 1197297						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity < 0.10 0.10

Sample ID: R49056LCS1	SampType: LCS1	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 49056						
Client ID: ZZZZZ	Batch ID: R49056	TestNo: LDNR 29-B		Analysis Date: 12/10/2015	SeqNo: 1197298						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity 0.38 0.10 0.36 0 108 89.9 110.08

Sample ID: R49056LCS2	SampType: LCS2	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 49056						
Client ID: ZZZZZ	Batch ID: R49056	TestNo: LDNR 29-B		Analysis Date: 12/10/2015	SeqNo: 1197299						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity 56.7 0.10 53.00 0 107 90 110

Sample ID: 15111064-001ADUP	SampType: DUP	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 49056						
Client ID: ZZZZZ	Batch ID: R49056	TestNo: LDNR 29-B		Analysis Date: 12/10/2015	SeqNo: 1197303						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity 16.9 0.10 17.62 3.94 20 *

Qualifiers: * Value exceeds Maximum Contaminant Level. H Holding times for preparation or analysis exceeded M Matrix Interference
 ND Not Detected at the Reporting Limit RL Reporting Limit S Spike Recovery outside accepted recovery limits
 U Analyte not detected W Sample container temperature is out of limit as specified at testcode



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 Website: www.element.com

QC SUMMARY REPORT

WO#: 15111066
 17-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: R49056

Sample ID: 15120004-001ADUP	SampType: DUP	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 49056						
Client ID: ZZZZZ	Batch ID: R49056	TestNo: LDNR 29-B		Analysis Date: 12/10/2015	SeqNo: 1197319						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Electrical Conductivity	0.81	0.10						0.80	1.12	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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 Lafayette, LA 70508-3344
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 Website: www.element.com

QC SUMMARY REPORT

WO#: 15111066
 17-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: R49246

Sample ID: MB-R49246	SampType: MBLK	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 49246						
Client ID: PBS	Batch ID: R49246	TestNo: LDNR 29-B		Analysis Date: 12/17/2015	SeqNo: 1201579						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity < 0.10 0.10

Sample ID: R49246LCS1	SampType: LCS1	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 49246						
Client ID: ZZZZZ	Batch ID: R49246	TestNo: LDNR 29-B		Analysis Date: 12/17/2015	SeqNo: 1201580						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity 0.39 0.10 0.36 0 110 89.9 110.08

Sample ID: R49246LCS2	SampType: LCS2	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 49246						
Client ID: ZZZZZ	Batch ID: R49246	TestNo: LDNR 29-B		Analysis Date: 12/17/2015	SeqNo: 1201581						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity 56.1 0.10 53.00 0 106 90 110

Sample ID: 15120552-007ADUP	SampType: DUP	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 49246						
Client ID: ZZZZZ	Batch ID: R49246	TestNo: LDNR 29-B		Analysis Date: 12/17/2015	SeqNo: 1201586						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity 0.61 0.10 0.65 6.98 20

Qualifiers: * Value exceeds Maximum Contaminant Level. H Holding times for preparation or analysis exceeded M Matrix Interference
 ND Not Detected at the Reporting Limit RL Reporting Limit S Spike Recovery outside accepted recovery limits
 U Analyte not detected W Sample container temperature is out of limit as specified at testcode



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Sample Log-In Check List

Client Name: **M_PISANI_HOU** Work Order Number: **15111066** RcptNo: **1**

Logged by:	Danielle Hollier	11/25/2015 2:20:00 PM	<i>Danielle Hollier</i>
Completed By:	Danielle Hollier	11/25/2015 4:24:58 PM	<i>Danielle Hollier</i>
Reviewed By:	Caitlin Duplantis	12/1/2015 4:05:52 PM	<i>Caitlin Duplantis</i>

Chain of Custody

1. Is Chain of Custody complete? Yes No Not Present
2. How was the sample delivered? Client

Log In

3. Coolers are present? Yes No NA
4. Shipping container/cooler in good condition? Yes No
- Custody seals intact on shipping container/cooler? Yes No Not Present
- No. Seal Date: Signed By:
5. Was an attempt made to cool the samples? Yes No NA
6. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
7. Sample(s) in proper container(s)? Yes No
8. Sufficient sample volume for indicated test(s)? Yes No
9. Are samples (except VOA and ONG) properly preserved? Yes No
10. Was preservative added to bottles? Yes No NA
11. Is the headspace in the VOA vials less than 1/4 inch or 6 mm? Yes No No VOA Vials
12. Were any sample containers received broken? Yes No
13. Does paperwork match bottle labels?
 (Note discrepancies on chain of custody) Yes No
14. Are matrices correctly identified on Chain of Custody? Yes No
15. Is it clear what analyses were requested? Yes No
16. Were all holding times able to be met?
 (If no, notify customer for authorization.) Yes No

Special Handling (if applicable)

17. Was client notified of all discrepancies with this order? Yes No NA

Person Notified:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

18. Additional remarks:

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.9	Good	Not Present			



Chain of Custody

Laboratory Number: 15111066

Client Information:
 Michael Krasinski Associates
 Dave Anzell
 13313 Southcrest Fwy
 #221
 Sugarland TX 77478
 281-242-3100 Ext:
 281-242-1737
 daniel@mpisanicon

Company Name:
Contact Name:
Address:
City, State Zip:
Phone Number:
Fax Number:
E-mail Address:

PO Number:
Quote Number:
Required QC Level
Bill Monthly
 Yes
 No

Project Name/Number:
 East White Lake
 07-17
Sampler's Signature:
 [Signature]
Shipping Method:
 UPS / FedEx / NOW
 DHL / Element / Hand / Mail

Page 1 **of** 1
Matrix Code
 DW = Drinking Water
 WW = Waste Water
 GW = Ground Water
 AQ = Aqueous
 OT = Other
 SL = Sludge
 O = Oil
 F = Food
 NG = Natural Gas
 NGL = Natural Gas Liquid
 PW = Produced Water
 CF = Completion Fluid

Sample ID/Description	Turn Time		(Rush turn times will incur a surcharge and must be pre-approved by lab.)	Container Type	Quantity	Pres.	Requested Tests	Comments
	Date	Time						
TBB-10 0-5'	11/25/15	10:10	G	G	↓	HCl, HNO ₃ , H ₂ O ₂ , NaOH, Na ₂ S ₂ O ₃		
TBB-10 5-10'	11/25/15	10:15	G	G	↓			

Relinquished by	Date/Time	Received by	Date/Time	Field Notes:
[Signature]	11/25/15 14:18	[Signature]	11-25-15 14:20	Received at lab on ice? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Temp: 5.9°C

All samples submitted to Element Materials Technology for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples. Element Materials Technology reserves the right to return unused sample portions.

301 Innovation Drive, Suite 115
 Daleville, IN 47334-0569 USA
 P 765-378-4103
 F 765-378-4109

629 Washington St. Suite 300
 Columbus, IN 47201-6231 USA
 P 812-375-0531
 F 812-375-0731

2121 East Washington Boulevard
 Fort Wayne, IN 46803-1328 USA
 P 260-471-7000
 F 260-471-7177

909 Executive Dr
 Warsaw, IN 46580-2368 USA
 P 574-267-3305
 F 574-269-5589

3371 Cleveland Road, Suite 100A
 South Bend, IN 46628-9780 USA
 P 574-277-0707
 F 574-273-6540

2417 W. Pinhook Rd
 Lafayette, LA 70508-3344 USA
 P 337-235-0483
 F 337-233-6540



Element Materials Technology Lafayette
2417 W. Pinhook Road
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Website: www.element.com

December 14, 2015

Dave Angle
Michael Pisani & Associates Inc
13313 Southwest Fwy #221
Sugar Land, TX 77478
TEL: (281) 242-5700
FAX:

RE: East White Lake 07-47

Order No.: 15120014

Dear Dave Angle:

Element Materials Technology Lafayette received 1 sample(s) on 12/1/2015 for the analyses presented in the following report.

In accordance with your instructions Element Lafayette conducted the analysis shown on the following pages on samples submitted by your company. The results related only to the items tested. Unless otherwise noted, all analyses were conducted using EPA approved methodologies and all test results meet all requirements of TNI. All relevant sampling information is on the attached Chain-of-Custody form.

All soil data, except for 29-B, are on a wet-weight basis unless otherwise indicated in the units field as –dry.

LELAP Certification No.: 01997. TCEQ Certification No.: T104704261-14-6. A scope of accredited parameters is available upon request. A "#" by the test method or analyte indicates this parameter is outside the scope of accreditation.

Estimated uncertainty is available upon request. This report shall not be reproduced except in full, without the written approval of the laboratory.

If you have any questions regarding these test results, please feel free to call.

A handwritten signature in blue ink, appearing to read 'Cristina Thibeaux', is written over a light blue horizontal line.

Cristina Thibeaux
Customer Service Supervisor
2417 W. Pinhook Road
Lafayette, LA 70508-3344



Element Materials Technology Lafayette
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Lafayette, LA 70508-3344
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Website: www.element.com

Case Narrative

WO#: 15120014
Date: 12/14/2015

CLIENT: Michael Pisani & Associates Inc
Project: East White Lake 07-47

Unless specified by the client, a duplicate or MS/MSD, wherever applicable, is randomly selected and analyzed from each analytical batch provided sample volume is sufficient. The sample chosen for duplicate or MS/MSD may or may not be a sample submitted in this workorder. A method blank and/or a lab control sample (LCS)/lab control sample duplicate (LCSD), wherever applicable, are processed as a quality control check for each analytical batch. When the matrix QC data is not available due to insufficient sample volume or when the results indicate possible matrix effect, the validity of the batch is determined by the method blank and LCS/LCSD.

The results of the laboratory internal quality control data are provided in the QC Summary Report section of the report for your review. Laboratory-related QC exceptions that may impact the validity of data are discussed in the case narrative. Sample-related QC exceptions are flagged either in the results page(s) or in the QC report page(s). End users should consider QC exceptions when evaluating sample data against data quality objectives.

Any other exceptions associated with this report will be footnoted in the results page(s) or the QC summary page(s).



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Analytical Report

(consolidated)

WO#: 15120014

Date Reported: 12/14/2015

CLIENT: Michael Pisani & Associates Inc
Project: East White Lake 07-47
Lab ID: 15120014-001
Client Sample ID TBB-2D Grab

Collection Date: 12/1/2015 9:10:00 AM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LA STATEWIDE ORDER 29-B TESTING						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	67.8	0.100		meq/100g	1	12/10/2015 3:15:00 PM
LA STATEWIDE ORDER 29-B TESTING						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	6.61	0.10	*	mmhos/cm	1	12/10/2015 1:05:00 PM
LA STATEWIDE ORDER 29-B TESTING						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	9.91	0.100		%	1	12/10/2015 3:15:00 PM
LA STATEWIDE ORDER 29-B TESTING						
HEM, OIL & GREASE						
HEM, Oil & Grease	0.27	0.05		% dry wt	1	12/9/2015 8:01:00 AM
LA STATEWIDE ORDER 29-B TESTING						
PH MEASUREMENT						
pH Measurement	5.70	1.68	C	S.U.	1	12/9/2015 1:50:00 PM
LA STATEWIDE ORDER 29-B TESTING						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	18.8	0.100	*		1	12/7/2015
Soluble Calcium	5.68	1.00		meq/L	1	12/7/2015
Soluble Magnesium	12.0	1.00		meq/L	1	12/7/2015
Soluble Sodium	55.8	1.00		meq/L	1	12/7/2015
LA STATEWIDE ORDER 29-B TESTING						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg	1	12/4/2015 11:50:05 AM
LA STATEWIDE ORDER 29-B TESTING						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	3.15	1.02		mg/Kg	1	12/3/2015 7:31:11 PM
Barium	294	0.511		mg/Kg	1	12/3/2015 7:31:11 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	C	Value is below Minimum Compound Limit.
H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 15120014

Date Reported: 12/14/2015

CLIENT: Michael Pisani & Associates Inc

Collection Date: 12/1/2015 9:10:00 AM

Project: East White Lake 07-47

Lab ID: 15120014-001

Matrix: SOIL

Client Sample ID TBB-2D Grab

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LA STATEWIDE ORDER 29-B TESTING METALS IN SOIL OR SLUDGE BY ICP					SW6010B	SW3050B Analyst: STS
Cadmium	< 0.255	0.255		mg/Kg	1	12/3/2015 7:31:11 PM
Chromium	5.05	0.511		mg/Kg	1	12/3/2015 7:31:11 PM
Lead	7.26	0.511		mg/Kg	1	12/3/2015 7:31:11 PM
Selenium	< 1.02	1.02		mg/Kg	1	12/3/2015 7:31:11 PM
Silver	< 0.255	0.255		mg/Kg	1	12/3/2015 7:31:11 PM
Zinc	25.5	0.511		mg/Kg	1	12/3/2015 7:31:11 PM
LA STATEWIDE ORDER 29-B TESTING TRUE TOTAL BARIUM					LDNR 29-B	Analyst: STS
True Total Barium	1,100	47.9		mg/Kg-dry	1	12/9/2015 4:24:18 PM
LA STATEWIDE ORDER 29-B TESTING PERCENT MOISTURE					LDNR 29-B	Analyst: MMT
Percent Moisture	65.7	1.00		wt%	1	12/1/2015 2:45:00 PM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	C	Value is below Minimum Compound Limit.
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike Recovery outside accepted recovery limits	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 15120014
 14-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: 17528

Sample ID: MB-17528	SampType: MBLK	TestCode: 6010_S	Units: mg/Kg	Prep Date: 12/1/2015	RunNo: 48914						
Client ID: PBS	Batch ID: 17528	TestNo: SW6010B	SW3050B	Analysis Date: 12/3/2015	SeqNo: 1194065						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	< 1.00	1.00									
Barium	< 0.500	0.500									
Cadmium	< 0.250	0.250									
Chromium	< 0.500	0.500									
Lead	< 0.500	0.500									
Selenium	< 1.00	1.00									
Silver	< 0.250	0.250									
Zinc	< 0.500	0.500									

Sample ID: LCS-17528	SampType: LCS	TestCode: 6010_S	Units: mg/Kg	Prep Date: 12/1/2015	RunNo: 48914						
Client ID: LCSS	Batch ID: 17528	TestNo: SW6010B	SW3050B	Analysis Date: 12/3/2015	SeqNo: 1194066						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	26.0	1.00	25.00	0	104	80	120				
Barium	25.9	0.500	25.00	0	103	80	120				
Cadmium	25.4	0.250	25.00	0	102	80	120				
Chromium	25.7	0.500	25.00	0	103	80	120				
Lead	26.0	0.500	25.00	0	104	80	120				
Selenium	26.0	1.00	25.00	0	104	80	120				
Silver	12.8	0.250	12.50	0	102	80	120				
Zinc	25.9	0.500	25.00	0	104	80	120				

Qualifiers:

* Value exceeds Maximum Contaminant Level.	C Value is below Minimum Compound Limit.	H Holding times for preparation or analysis exceed
M Matrix Interference	ND Not Detected at the Reporting Limit	RL Reporting Limit
S Spike Recovery outside accepted recovery limits	U Analyte not detected	W Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 15120014
 14-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: 17528

Sample ID: LCSD-17528	SampType: LCSD	TestCode: 6010_S	Units: mg/Kg	Prep Date: 12/1/2015	RunNo: 48914						
Client ID: LCSS02	Batch ID: 17528	TestNo: SW6010B	SW3050B	Analysis Date: 12/3/2015	SeqNo: 1194067						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	26.1	1.00	25.00	0	104	80	120	26.02	0.230	20	
Barium	26.1	0.500	25.00	0	104	80	120	25.86	0.885	20	
Cadmium	25.7	0.250	25.00	0	103	80	120	25.40	1.19	20	
Chromium	26.0	0.500	25.00	0	104	80	120	25.72	0.871	20	
Lead	25.8	0.500	25.00	0	103	80	120	25.98	0.656	20	
Selenium	26.3	1.00	25.00	0	105	80	120	25.99	1.03	20	
Silver	13.0	0.250	12.50	0	104	80	120	12.75	1.60	20	
Zinc	26.3	0.500	25.00	0	105	80	120	25.94	1.42	20	

Sample ID: 15120004-020AMS	SampType: MS	TestCode: 6010_S	Units: mg/Kg	Prep Date: 12/1/2015	RunNo: 48914						
Client ID: ZZZZZZ	Batch ID: 17528	TestNo: SW6010B	SW3050B	Analysis Date: 12/3/2015	SeqNo: 1194069						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	30.9	1.02	25.43	4.887	102	75	125				
Barium	118	0.509	25.43	91.26	105	75	125				
Cadmium	25.8	0.254	25.43	0.1479	101	75	125				
Chromium	37.6	0.509	25.43	10.75	106	75	125				
Lead	34.5	0.509	25.43	7.473	106	75	125				
Selenium	19.4	1.02	25.43	0	76.4	75	125				
Silver	12.9	0.254	12.71	0	102	75	125				
Zinc	56.5	0.509	25.43	31.06	100	75	125				

Qualifiers:

* Value exceeds Maximum Contaminant Level.	C Value is below Minimum Compound Limit.	H Holding times for preparation or analysis exceed
M Matrix Interference	ND Not Detected at the Reporting Limit	RL Reporting Limit
S Spike Recovery outside accepted recovery limits	U Analyte not detected	W Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 15120014
 14-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: 17528

Sample ID: 15120004-020AMSD	SampType: MSD	TestCode: 6010_S	Units: mg/Kg	Prep Date: 12/1/2015	RunNo: 48914						
Client ID: ZZZZZ	Batch ID: 17528	TestNo: SW6010B	SW3050B	Analysis Date: 12/3/2015	SeqNo: 1194070						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	30.3	1.02	25.43	4.887	100	75	125	30.91	1.86	20	
Barium	118	0.509	25.43	91.26	105	75	125	118.0	0.0506	20	
Cadmium	25.6	0.254	25.43	0.1479	99.9	75	125	25.82	0.994	20	
Chromium	37.6	0.509	25.43	10.75	106	75	125	37.64	0.0185	20	
Lead	34.2	0.509	25.43	7.473	105	75	125	34.49	0.927	20	
Selenium	19.6	1.02	25.43	0	76.9	75	125	19.43	0.688	20	
Silver	13.0	0.254	12.72	0	102	75	125	12.93	0.154	20	
Zinc	56.5	0.509	25.43	31.06	100	75	125	56.50	0.0356	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.	C Value is below Minimum Compound Limit.	H Holding times for preparation or analysis exceed
M Matrix Interference	ND Not Detected at the Reporting Limit	RL Reporting Limit
S Spike Recovery outside accepted recovery limits	U Analyte not detected	W Sample container temperature is out of limit as sf



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QC SUMMARY REPORT

WO#: 15120014

14-Dec-15

Client: Michael Pisani & Associates Inc

Project: East White Lake 07-47

BatchID: 17562

Sample ID: MB-17562	SampType: MBLK	TestCode: HG_S_7471A	Units: mg/Kg	Prep Date: 12/4/2015	RunNo: 48916						
Client ID: PBS	Batch ID: 17562	TestNo: SW7471A	SW7471A	Analysis Date: 12/4/2015	SeqNo: 1194216						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	< 0.10	0.10									

Sample ID: LCS-17562	SampType: LCS	TestCode: HG_S_7471A	Units: mg/Kg	Prep Date: 12/4/2015	RunNo: 48916						
Client ID: LCSS	Batch ID: 17562	TestNo: SW7471A	SW7471A	Analysis Date: 12/4/2015	SeqNo: 1194217						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.85	0.10	0.83	0	102	80	120				

Sample ID: LCSD-17562	SampType: LCSD	TestCode: HG_S_7471A	Units: mg/Kg	Prep Date: 12/4/2015	RunNo: 48916						
Client ID: LCSS02	Batch ID: 17562	TestNo: SW7471A	SW7471A	Analysis Date: 12/4/2015	SeqNo: 1194218						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.86	0.10	0.83	0	103	80	120	0.85	1.24	20	

Sample ID: 15120014-001AMS	SampType: MS	TestCode: HG_S_7471A	Units: mg/Kg	Prep Date: 12/4/2015	RunNo: 48916						
Client ID: TBB-2D Grab	Batch ID: 17562	TestNo: SW7471A	SW7471A	Analysis Date: 12/4/2015	SeqNo: 1194222						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.85	0.10	0.86	0	99.6	75	125				

Qualifiers:

* Value exceeds Maximum Contaminant Level.	C Value is below Minimum Compound Limit.	H Holding times for preparation or analysis exceed
M Matrix Interference	ND Not Detected at the Reporting Limit	RL Reporting Limit
S Spike Recovery outside accepted recovery limits	U Analyte not detected	W Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 15120014
 14-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: 17562

Sample ID: 15120014-001AMSD	SampType: MSD	TestCode: HG_S_7471A	Units: mg/Kg	Prep Date: 12/4/2015	RunNo: 48916						
Client ID: TBB-2D Grab	Batch ID: 17562	TestNo: SW7471A	SW7471A	Analysis Date: 12/4/2015	SeqNo: 1194223						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.83	0.10	0.81	0	103	75	125	0.85	2.91	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.	C Value is below Minimum Compound Limit.	H Holding times for preparation or analysis exceed
M Matrix Interference	ND Not Detected at the Reporting Limit	RL Reporting Limit
S Spike Recovery outside accepted recovery limits	U Analyte not detected	W Sample container temperature is out of limit as of



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QC SUMMARY REPORT

WO#: 15120014
 14-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: 17571

Sample ID: 15120004-021ADUP	SampType: DUP	TestCode: SAR_S	Units:	Prep Date: 12/3/2015	RunNo: 48967						
Client ID: ZZZZZZ	Batch ID: 17571	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 12/7/2015	SeqNo: 1195370						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium Adsorption Ratio	3.08	0.100						3.181	3.29	20	
Soluble Calcium	< 1.00	1.00						0	0	20	
Soluble Magnesium	< 1.00	1.00						0	0	20	
Soluble Sodium	1.13	1.00						1.160	2.39	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	C	Value is below Minimum Compound Limit.	H	Holding times for preparation or analysis exceed
M	Matrix Interference	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	U	Analyte not detected	W	Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 15120014

14-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: 17589

Sample ID: MB-17589	SampType: MBLK	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 12/8/2015	RunNo: 49045						
Client ID: PBS	Batch ID: 17589	TestNo: LDNR 29-B		Analysis Date: 12/9/2015	SeqNo: 1196995						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

True Total Barium < 50.0 50.0

Sample ID: LCS-17589	SampType: LCS	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 12/8/2015	RunNo: 49045						
Client ID: LCSS	Batch ID: 17589	TestNo: LDNR 29-B		Analysis Date: 12/9/2015	SeqNo: 1196995						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

True Total Barium 4,660 50.0 5,000 0 93.2 75 125

Sample ID: LCSD-17589	SampType: LCSD	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 12/8/2015	RunNo: 49045						
Client ID: LCSS02	Batch ID: 17589	TestNo: LDNR 29-B		Analysis Date: 12/9/2015	SeqNo: 1196997						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

True Total Barium 4,640 50.0 5,000 0 92.8 75 125 4,660 0.409 20

Sample ID: 15120004-029AMS	SampType: MS	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 12/8/2015	RunNo: 49045						
Client ID: ZZZZZ	Batch ID: 17589	TestNo: LDNR 29-B		Analysis Date: 12/9/2015	SeqNo: 1196999						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

True Total Barium 4,310 46.0 4,596 120.0 91.2 75 125

Qualifiers:

* Value exceeds Maximum Contaminant Level.	C Value is below Minimum Compound Limit.	H Holding times for preparation or analysis exceed
M Matrix Interference	ND Not Detected at the Reporting Limit	RL Reporting Limit
S Spike Recovery outside accepted recovery limits	U Analyte not detected	W Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 15120014
 14-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: 17589

Sample ID: 15120004-029AMSD	SampType: MSD	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 12/8/2015	RunNo: 49045						
Client ID: ZZZZZZ	Batch ID: 17589	TestNo: LDNR 29-B		Analysis Date: 12/9/2015	SeqNo: 1197002						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium	4,280	45.7	4,575	120.0	90.9	75	125	4,311	0.779	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.	C Value is below Minimum Compound Limit.	H Holding times for preparation or analysis exceed
M Matrix Interference	ND Not Detected at the Reporting Limit	RL Reporting Limit
S Spike Recovery outside accepted recovery limits	U Analyte not detected	W Sample container temperature is out of limit as of



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QC SUMMARY REPORT

WO#: 15120014
 14-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: 17608

Sample ID: 15120004-021ADUP	SampType: dup	TestCode: ESP_S	Units: %	Prep Date: 12/3/2015	RunNo: 49076						
Client ID: ZZZZZZ	Batch ID: 17608	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 12/10/2015	SeqNo: 1197620						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Exchangeable Sodium %	2.35	0.100						2.533	7.47	20	

Sample ID: 15120222-002ADUP	SampType: dup	TestCode: ESP_S	Units: %	Prep Date: 12/3/2015	RunNo: 49076						
Client ID: ZZZZZZ	Batch ID: 17608	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 12/10/2015	SeqNo: 1197634						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Exchangeable Sodium %	23.6	0.100						20.90	12.1	20	*

Qualifiers:

* Value exceeds Maximum Contaminant Level.	C Value is below Minimum Compound Limit.	H Holding times for preparation or analysis exceed
M Matrix Interference	ND Not Detected at the Reporting Limit	RL Reporting Limit
S Spike Recovery outside accepted recovery limits	U Analyte not detected	W Sample container temperature is out of limit as sf



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QC SUMMARY REPORT

WO#: 15120014
 14-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: 17609

Sample ID: 15120004-021ADUP	SampType: dup	TestCode: CEC	Units: meq/100g	Prep Date: 12/3/2015	RunNo: 49075						
Client ID: ZZZZZ	Batch ID: 17609	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 12/10/2015	SeqNo: 1197599						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Cation Exchange Capacity	22.4	0.100						20.33	9.46	20	
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Sample ID: 15120222-002ADUP	SampType: dup	TestCode: CEC	Units: meq/100g	Prep Date: 12/3/2015	RunNo: 49075						
Client ID: ZZZZZ	Batch ID: 17609	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 12/10/2015	SeqNo: 1197613						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Cation Exchange Capacity	51.6	0.100						55.35	7.05	20	
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Sample ID: lcs-17609	SampType: lcs	TestCode: CEC	Units: meq/100g	Prep Date: 12/3/2015	RunNo: 49075						
Client ID: LCSS	Batch ID: 17609	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 12/10/2015	SeqNo: 1197617						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Cation Exchange Capacity	20.7	0.100	25.00	0	82.7	76	124				
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Sample ID: lcsd-17609	SampType: lcsd	TestCode: CEC	Units: meq/100g	Prep Date: 12/3/2015	RunNo: 49075						
Client ID: LCSS02	Batch ID: 17609	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 12/10/2015	SeqNo: 1197618						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Cation Exchange Capacity	20.9	0.100	25.00	0	83.6	76	124	20.67	1.13	20	
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Qualifiers:

* Value exceeds Maximum Contaminant Level.	C Value is below Minimum Compound Limit.	H Holding times for preparation or analysis exceed
M Matrix Interference	ND Not Detected at the Reporting Limit	RL Reporting Limit
S Spike Recovery outside accepted recovery limits	U Analyte not detected	W Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 15120014
 14-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: R48992

Sample ID: 15120004-021ADUP	SampType: dup	TestCode: PMOIST	Units: wt%	Prep Date:	RunNo: 48992						
Client ID: ZZZZZ	Batch ID: R48992	TestNo: LDNR 29-B		Analysis Date: 12/1/2015	SeqNo: 1195829						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture	18.9	1.00						18.91	0.134	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	C	Value is below Minimum Compound Limit.	H	Holding times for preparation or analysis exceed
M	Matrix Interference	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	U	Analyte not detected	W	Sample container temperature is out of limit as of



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QC SUMMARY REPORT

WO#: 15120014
 14-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: R49007

Sample ID: MB-R49007	SampType: MBLK	TestCode: HEM_S	Units: % dry wt	Prep Date:	RunNo: 49007						
Client ID: PBS	Batch ID: R49007	TestNo: SW9071B		Analysis Date: 12/9/2015	SeqNo: 1197214						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

HEM, Oil & Grease

< 0.05 0.05

Sample ID: LCS-R49007	SampType: LCS	TestCode: HEM_S	Units: % dry wt	Prep Date:	RunNo: 49007						
Client ID: LCSS	Batch ID: R49007	TestNo: SW9071B		Analysis Date: 12/9/2015	SeqNo: 1197215						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

HEM, Oil & Grease

0.19 0.05 0.20 0 96.2 70 130

Sample ID: LCSD-R49007	SampType: LCSD	TestCode: HEM_S	Units: % dry wt	Prep Date:	RunNo: 49007						
Client ID: LCSS02	Batch ID: R49007	TestNo: SW9071B		Analysis Date: 12/9/2015	SeqNo: 1197216						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

HEM, Oil & Grease

0.21 0.05 0.20 0 107 70 130 0.19 10.6 40

Sample ID: 15111064-001AMS	SampType: MS	TestCode: HEM_S	Units: % dry wt	Prep Date:	RunNo: 49007						
Client ID: ZZZZZ	Batch ID: R49007	TestNo: SW9071B		Analysis Date: 12/9/2015	SeqNo: 1197217						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

HEM, Oil & Grease

1.75 0.05 0.47 1.21 114 70 130

Qualifiers:

* Value exceeds Maximum Contaminant Level.	C Value is below Minimum Compound Limit.	H Holding times for preparation or analysis exceed
M Matrix Interference	ND Not Detected at the Reporting Limit	RL Reporting Limit
S Spike Recovery outside accepted recovery limits	U Analyte not detected	W Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 15120014
 14-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: R49007

Sample ID: 15111064-001ADUP	SampType: DUP	TestCode: HEM_S	Units: % dry wt	Prep Date:	RunNo: 49007						
Client ID: ZZZZZ	Batch ID: R49007	TestNo: SW9071B		Analysis Date: 12/9/2015	SeqNo: 1197218						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
HEM, Oil & Grease	1.17	0.05						1.21	3.95	40	*

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	C	Value is below Minimum Compound Limit.	H	Holding times for preparation or analysis exceed
M	Matrix Interference	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	U	Analyte not detected	W	Sample container temperature is out of limit as sf



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QC SUMMARY REPORT

WO#: 15120014
 14-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: R49031

Sample ID: LCS-R49031	SampType: LCS	TestCode: PH_S	Units: S.U.	Prep Date:	RunNo: 49031						
Client ID: LCSS	Batch ID: R49031	TestNo: LDNR 29-B		Analysis Date: 12/9/2015	SeqNo: 1196776						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

pH Measurement 7.07 1.68 7.00 0 101 97.14 102.86

Sample ID: 15120222-002ADUP	SampType: DUP	TestCode: PH_S	Units: S.U.	Prep Date:	RunNo: 49031						
Client ID: ZZZZZZ	Batch ID: R49031	TestNo: LDNR 29-B		Analysis Date: 12/9/2015	SeqNo: 1196790						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

pH Measurement 6.17 1.68 6.16 0.16 20

Qualifiers: * Value exceeds Maximum Contaminant Level. C Value is below Minimum Compound Limit. H Holding times for preparation or analysis exceed
 M Matrix Interference ND Not Detected at the Reporting Limit RL Reporting Limit
 S Spike Recovery outside accepted recovery limits U Analyte not detected W Sample container temperature is out of limit as sf



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QC SUMMARY REPORT

WO#: 15120014
 14-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: R49058

Sample ID: MB-R49058	SampType: MBLK	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 49058						
Client ID: PBS	Batch ID: R49058	TestNo: LDNR 29-B		Analysis Date: 12/10/2015	SeqNo: 1197352						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity < 0.10 0.10

Sample ID: R49058LCS1	SampType: LCS1	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 49058						
Client ID: ZZZZZ	Batch ID: R49058	TestNo: LDNR 29-B		Analysis Date: 12/10/2015	SeqNo: 1197353						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity 0.38 0.10 0.36 0 107 89.9 110.08

Sample ID: R49058LCS2	SampType: LCS2	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 49058						
Client ID: ZZZZZ	Batch ID: R49058	TestNo: LDNR 29-B		Analysis Date: 12/10/2015	SeqNo: 1197354						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity 56.3 0.10 53.00 0 106 90 110

Sample ID: 15120222-002ADUP	SampType: DUP	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 49058						
Client ID: ZZZZZ	Batch ID: R49058	TestNo: LDNR 29-B		Analysis Date: 12/10/2015	SeqNo: 1197363						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity 14.2 0.10 13.70 3.23 20 *

Qualifiers:

* Value exceeds Maximum Contaminant Level.	C Value is below Minimum Compound Limit.	H Holding times for preparation or analysis exceed
M Matrix Interference	ND Not Detected at the Reporting Limit	RL Reporting Limit
S Spike Recovery outside accepted recovery limits	U Analyte not detected	W Sample container temperature is out of limit as sj



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Sample Log-In Check List

Client Name: **M_PISANI_HOU** Work Order Number: **15120014** RcptNo: **1**

Logged by:	Tammy Thibodeaux	12/1/2015 1:10:00 PM	<i>Tammy Thibodeaux</i>
Completed By:	Tammy Thibodeaux	12/1/2015 1:18:20 PM	<i>Tammy Thibodeaux</i>
Reviewed By:	Caitlin Duplantis	12/7/2015 4:24:00 PM	<i>Caitlin Duplantis</i>

Chain of Custody

1. Is Chain of Custody complete? Yes No Not Present
 2. How was the sample delivered? Client

Log In

3. Coolers are present? Yes No NA
 4. Shipping container/cooler in good condition? Yes No
 Custody seals intact on shipping container/cooler? Yes No Not Present
 No. Seal Date: Signed By:
 5. Was an attempt made to cool the samples? Yes No NA
 6. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
 7. Sample(s) in proper container(s)? Yes No
 8. Sufficient sample volume for indicated test(s)? Yes No
 9. Are samples (except VOA and ONG) properly preserved? Yes No
 10. Was preservative added to bottles? Yes No NA
 11. Is the headspace in the VOA vials less than 1/4 inch or 6 mm? Yes No No VOA Vials
 12. Were any sample containers received broken? Yes No
 13. Does paperwork match bottle labels? Yes No
 (Note discrepancies on chain of custody)
 14. Are matrices correctly identified on Chain of Custody? Yes No
 15. Is it clear what analyses were requested? Yes No
 16. Were all holding times able to be met? Yes No
 (If no, notify customer for authorization.)

Special Handling (if applicable)

17. Was client notified of all discrepancies with this order? Yes No NA

Person Notified:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

18. Additional remarks:

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.4	Good	Not Present			



Chain of Custody

Laboratory Number: 15120014

Client Information: **Michael Riving Associates**
 Contact Name: **Dave Angle**
 Address: **13313 Southwest Fwy #221**
 City, State Zip: **Sugarland TX 77478**
 Phone Number: **281-242-5100**
 Fax Number: **281-242-1737**
 E-mail Address: **dmangle@mpisat.com**

Billing Information: **SAME**

PO Number: **07-47**

Quote Number: **07-47**

Required QC Level: **Bill Monthly**

Bill Monthly: Yes No

Shipping Method: **UPS / FedEx / NOW**
DHL / Element / Handy Mail

Project Name/Number: **East White Lake**

Sampler's Signature: *[Signature]*

Matrix Code: **DW = Drinking Water, WW = Waste Water, GW = Ground Water, AQ = Aqueous, OT = Other, SL = Sludge, O = Oil, F = Food, NGL = Natural Gas, PW = Produced Water, CF = Completion Fluid**

Sample ID/Description	Which Regulations Apply:		Turn Time	Rush turn times will incur a surcharge and must be pre-approved by (lab.)	Container	Pres.	Requested Tests	Comments
	<input type="checkbox"/> RCRA	<input type="checkbox"/> POTW						
Date	Time	Matrix	Collection Information		Quantity	Type	G=Glass, V=Vial	HCl, HNO ₃ , H ₂ SO ₄ , NaOH, Na ₂ S ₂ O ₈
			Date	Time				
TBB-20 Grab	12/15/09	G	SO	1	G	None	X	

Relinquished by: *[Signature]* Date/Time: 12/15/09 13:00

Received by: *[Signature]* Date/Time: 12/15/09 13:10

Field Notes: Received at lab on ice? Yes No Temp: 5.4°C

All samples submitted to Element Materials Technology for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples. Element Materials Technology reserves the right to return unused sample portions.

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 Columbus, IN 47201-6231 USA
 P 812-375-0531 F 812-375-0731

2121 East Washington Boulevard
 Fort Wayne, IN 46803-1328 USA
 P 260-471-7000 F 260-471-7777

909 Executive Dr
 Warsaw, IN 46080-2268 USA
 P 574-287-3305 F 574-289-6569

3371 Cleveland Road, Suite 100A
 South Bend, IN 46028-9780 USA
 P 574-277-8707 F 574-273-5699

2411 W. Pinhook Rd
 Lafayette, LA 70508-3344 USA
 P 337-335-0483 F 337-333-6546



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December 14, 2015

Dave Angle
Michael Pisani & Associates Inc
13313 Southwest Fwy #221
Sugar Land, TX 77478
TEL: (281) 242-5700
FAX:

RE: East White Lake 07-47

Order No.: 15120197

Dear Dave Angle:

Element Materials Technology Lafayette received 2 sample(s) on 12/3/2015 for the analyses presented in the following report.

In accordance with your instructions Element Lafayette conducted the analysis shown on the following pages on samples submitted by your company. The results related only to the items tested. Unless otherwise noted, all analyses were conducted using EPA approved methodologies and all test results meet all requirements of TNI. All relevant sampling information is on the attached Chain-of-Custody form.

All soil data, except for 29-B, are on a wet-weight basis unless otherwise indicated in the units field as –dry.

LELAP Certification No.: 01997. TCEQ Certification No.: T104704261-14-6. A scope of accredited parameters is available upon request. A "#" by the test method or analyte indicates this parameter is outside the scope of accreditation.

Estimated uncertainty is available upon request. This report shall not be reproduced except in full, without the written approval of the laboratory.

If you have any questions regarding these test results, please feel free to call.

A handwritten signature in blue ink, appearing to read 'Cristina Thibeaux', is written over a light blue horizontal line.

Cristina Thibeaux
Customer Service Supervisor
2417 W. Pinhook Road
Lafayette, LA 70508-3344



Element Materials Technology Lafayette
2417 W. Pinhook Road
Lafayette, LA 70508-3344
TEL: (337) 235-0483 FAX: (337) 233-6540
Website: www.element.com

Case Narrative

WO#: 15120197
Date: 12/14/2015

CLIENT: Michael Pisani & Associates Inc
Project: East White Lake 07-47

Unless specified by the client, a duplicate or MS/MSD, wherever applicable, is randomly selected and analyzed from each analytical batch provided sample volume is sufficient. The sample chosen for duplicate or MS/MSD may or may not be a sample submitted in this workorder. A method blank and/or a lab control sample (LCS)/lab control sample duplicate (LCSD), wherever applicable, are processed as a quality control check for each analytical batch. When the matrix QC data is not available due to insufficient sample volume or when the results indicate possible matrix effect, the validity of the batch is determined by the method blank and LCS/LCSD.

The results of the laboratory internal quality control data are provided in the QC Summary Report section of the report for your review. Laboratory-related QC exceptions that may impact the validity of data are discussed in the case narrative. Sample-related QC exceptions are flagged either in the results page(s) or in the QC report page(s). End users should consider QC exceptions when evaluating sample data against data quality objectives.

Any other exceptions associated with this report will be footnoted in the results page(s) or the QC summary page(s).



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 Website: www.element.com

Analytical Report

(consolidated)

WO#: 15120197

Date Reported: 12/14/2015

CLIENT: Michael Pisani & Associates Inc

Collection Date: 12/2/2015 11:50:00 AM

Project: East White Lake 07-47

Lab ID: 15120197-001

Matrix: SOIL

Client Sample ID TBB-2M 0-7'

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LA STATEWIDE ORDER 29-B TESTING CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	59.9	0.100		meq/100g	1	12/10/2015 3:15:00 PM
LA STATEWIDE ORDER 29-B TESTING ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	22.5	0.10	*	mmhos/cm	1	12/10/2015 1:05:00 PM
LA STATEWIDE ORDER 29-B TESTING EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	15.8	0.100	*	%	1	12/10/2015 3:15:00 PM
LA STATEWIDE ORDER 29-B TESTING HEM, OIL & GREASE						
HEM, Oil & Grease	0.23	0.05		% dry wt	1	12/10/2015 7:54:00 AM
LA STATEWIDE ORDER 29-B TESTING PH MEASUREMENT						
pH Measurement	6.11	1.68		S.U.	1	12/9/2015 1:50:00 PM
LA STATEWIDE ORDER 29-B TESTING SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	40.1	0.100	*		1	12/10/2015
Soluble Calcium	15.3	1.00		meq/L	1	12/10/2015
Soluble Magnesium	26.0	1.00		meq/L	1	12/10/2015
Soluble Sodium	182	1.00		meq/L	1	12/10/2015
LA STATEWIDE ORDER 29-B TESTING MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg	1	12/8/2015 2:57:20 PM
LA STATEWIDE ORDER 29-B TESTING METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	3.44	1.09		mg/Kg	1	12/8/2015 10:29:11 PM
Barium	113	0.545		mg/Kg	1	12/8/2015 10:29:11 PM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
	M	Matrix Interference	ND	Not Detected at the Reporting Limit
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: 15120197

Date Reported: 12/14/2015

CLIENT: Michael Pisani & Associates Inc

Collection Date: 12/2/2015 11:50:00 AM

Project: East White Lake 07-47

Lab ID: 15120197-001

Matrix: SOIL

Client Sample ID TBB-2M 0-7'

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LA STATEWIDE ORDER 29-B TESTING METALS IN SOIL OR SLUDGE BY ICP					SW6010B	SW3050B Analyst: STS
Cadmium	< 0.272	0.272		mg/Kg	1	12/8/2015 10:29:11 PM
Chromium	7.27	0.545		mg/Kg	1	12/8/2015 10:29:11 PM
Lead	7.56	0.545		mg/Kg	1	12/8/2015 10:29:11 PM
Selenium	< 1.09	1.09		mg/Kg	1	12/8/2015 10:29:11 PM
Silver	< 0.272	0.272		mg/Kg	1	12/8/2015 10:29:11 PM
Zinc	21.2	0.545		mg/Kg	1	12/8/2015 10:29:11 PM
LA STATEWIDE ORDER 29-B TESTING TRUE TOTAL BARIUM					LDNR 29-B	Analyst: STS
True Total Barium	308	46.9		mg/Kg-dry	1	12/9/2015 4:26:59 PM
LA STATEWIDE ORDER 29-B TESTING PERCENT MOISTURE					LDNR 29-B	Analyst: MMT
Percent Moisture	52.4	1.00		wt%	1	12/4/2015 3:00:00 PM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
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Analytical Report

(consolidated)

WO#: 15120197

Date Reported: 12/14/2015

CLIENT: Michael Pisani & Associates Inc

Collection Date: 12/2/2015 12:00:00 PM

Project: East White Lake 07-47

Lab ID: 15120197-002

Matrix: SOIL

Client Sample ID TBB-2M 7-15'

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LA STATEWIDE ORDER 29-B TESTING						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	73.8	0.100		meq/100g	1	12/10/2015 3:15:00 PM
LDNR 29-B						
Analyst: MMT						
LA STATEWIDE ORDER 29-B TESTING						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	45.2	0.10	*	mmhos/cm	1	12/10/2015 1:05:00 PM
LDNR 29-B						
Analyst: MMT						
LA STATEWIDE ORDER 29-B TESTING						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	11.1	0.100		%	1	12/10/2015 3:15:00 PM
LDNR 29-B						
Analyst: MMT						
LA STATEWIDE ORDER 29-B TESTING						
HEM, OIL & GREASE						
HEM, Oil & Grease	0.34	0.05		% dry wt	1	12/10/2015 7:54:00 AM
SW9071B						
Analyst: MMT						
LA STATEWIDE ORDER 29-B TESTING						
PH MEASUREMENT						
pH Measurement	6.21	1.68		S.U.	1	12/9/2015 1:50:00 PM
LDNR 29-B						
Analyst: IAI						
LA STATEWIDE ORDER 29-B TESTING						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	35.3	0.100	*		1	12/10/2015
Soluble Calcium	43.6	1.00		meq/L	1	12/10/2015
Soluble Magnesium	110	1.00		meq/L	1	12/10/2015
Soluble Sodium	310	1.00		meq/L	1	12/10/2015
LDNR 29-B						
Analyst: STS						
LA STATEWIDE ORDER 29-B TESTING						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg	1	12/8/2015 3:09:57 PM
SW7471A						
SW7471A						
Analyst: TJH						
LA STATEWIDE ORDER 29-B TESTING						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	2.43	1.00		mg/Kg	1	12/8/2015 10:39:42 PM
Barium	38.8	0.502		mg/Kg	1	12/8/2015 10:39:42 PM
SW6010B						
SW3050B						
Analyst: STS						

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
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	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: 15120197

Date Reported: 12/14/2015

CLIENT: Michael Pisani & Associates Inc

Collection Date: 12/2/2015 12:00:00 PM

Project: East White Lake 07-47

Lab ID: 15120197-002

Matrix: SOIL

Client Sample ID TBB-2M 7-15'

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
LA STATEWIDE ORDER 29-B TESTING METALS IN SOIL OR SLUDGE BY ICP					SW6010B	SW3050B Analyst: STS
Cadmium	< 0.251	0.251		mg/Kg	1	12/8/2015 10:39:42 PM
Chromium	5.06	0.502		mg/Kg	1	12/8/2015 10:39:42 PM
Lead	5.36	0.502		mg/Kg	1	12/8/2015 10:39:42 PM
Selenium	< 1.00	1.00		mg/Kg	1	12/8/2015 10:39:42 PM
Silver	< 0.251	0.251		mg/Kg	1	12/8/2015 10:39:42 PM
Zinc	16.5	0.502		mg/Kg	1	12/8/2015 10:39:42 PM
LA STATEWIDE ORDER 29-B TESTING TRUE TOTAL BARIUM					LDNR 29-B	Analyst: STS
True Total Barium	200	46.5		mg/Kg-dry	1	12/9/2015 4:29:40 PM
LA STATEWIDE ORDER 29-B TESTING PERCENT MOISTURE					LDNR 29-B	Analyst: MMT
Percent Moisture	68.2	1.00		wt%	1	12/4/2015 3:00:00 PM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
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QC SUMMARY REPORT

WO#: 15120197

14-Dec-15

Client: Michael Pisani & Associates Inc

Project: East White Lake 07-47

BatchID: 17589

Sample ID: MB-17589	SampType: MBLK	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 12/8/2015	RunNo: 49045						
Client ID: PBS	Batch ID: 17589	TestNo: LDNR 29-B		Analysis Date: 12/9/2015	SeqNo: 1196995						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

True Total Barium < 50.0 50.0

Sample ID: LCS-17589	SampType: LCS	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 12/8/2015	RunNo: 49045						
Client ID: LCSS	Batch ID: 17589	TestNo: LDNR 29-B		Analysis Date: 12/9/2015	SeqNo: 1196996						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

True Total Barium 4,660 50.0 5,000 0 93.2 75 125

Sample ID: LCSD-17589	SampType: LCSD	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 12/8/2015	RunNo: 49045						
Client ID: LCSS02	Batch ID: 17589	TestNo: LDNR 29-B		Analysis Date: 12/9/2015	SeqNo: 1196997						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

True Total Barium 4,640 50.0 5,000 0 92.8 75 125 4,660 0.409 20

Sample ID: 15120004-029AMS	SampType: MS	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 12/8/2015	RunNo: 49045						
Client ID: ZZZZZ	Batch ID: 17589	TestNo: LDNR 29-B		Analysis Date: 12/9/2015	SeqNo: 1196999						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

True Total Barium 4,310 46.0 4,596 120.0 91.2 75 125

Qualifiers: * Value exceeds Maximum Contaminant Level. H Holding times for preparation or analysis exceeded M Matrix Interference
 ND Not Detected at the Reporting Limit RL Reporting Limit S Spike Recovery outside accepted recovery limits
 U Analyte not detected W Sample container temperature is out of limit as specified at testcode



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QC SUMMARY REPORT

WO#: 15120197

14-Dec-15

Client: Michael Pisani & Associates Inc

Project: East White Lake 07-47

BatchID: 17589

Sample ID: 15120004-029AMSD	SampType: MSD	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 12/8/2015	RunNo: 49045						
Client ID: ZZZZZZ	Batch ID: 17589	TestNo: LDNR 29-B		Analysis Date: 12/9/2015	SeqNo: 1197002						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium	4,280	45.7	4,575	120.0	90.9	75	125	4,311	0.779	20	

Qualifiers:

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U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 15120197

14-Dec-15

Client: Michael Pisani & Associates Inc

Project: East White Lake 07-47

BatchID: 17590

Sample ID: MB-17590	SampType: MBLK	TestCode: HG_S_7471A	Units: mg/Kg	Prep Date: 12/8/2015	RunNo: 48998						
Client ID: PBS	Batch ID: 17590	TestNo: SW7471A	SW7471A	Analysis Date: 12/8/2015	SeqNo: 1195984						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury < 0.10 0.10

Sample ID: LCS-17590	SampType: LCS	TestCode: HG_S_7471A	Units: mg/Kg	Prep Date: 12/8/2015	RunNo: 48998						
Client ID: LCSS	Batch ID: 17590	TestNo: SW7471A	SW7471A	Analysis Date: 12/8/2015	SeqNo: 1195985						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 0.90 0.10 0.83 0 108 80 120

Sample ID: LCSD-17590	SampType: LCSD	TestCode: HG_S_7471A	Units: mg/Kg	Prep Date: 12/8/2015	RunNo: 48998						
Client ID: LCSS02	Batch ID: 17590	TestNo: SW7471A	SW7471A	Analysis Date: 12/8/2015	SeqNo: 1195986						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 0.88 0.10 0.83 0 106 80 120 0.90 1.86 20

Sample ID: 15120197-001AMS	SampType: MS	TestCode: HG_S_7471A	Units: mg/Kg	Prep Date: 12/8/2015	RunNo: 48998						
Client ID: TBB-2M 0-7'	Batch ID: 17590	TestNo: SW7471A	SW7471A	Analysis Date: 12/8/2015	SeqNo: 1195990						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 0.86 0.10 0.85 0 101 75 125

Qualifiers: * Value exceeds Maximum Contaminant Level. H Holding times for preparation or analysis exceeded M Matrix Interference
 ND Not Detected at the Reporting Limit RL Reporting Limit S Spike Recovery outside accepted recovery limits
 U Analyte not detected W Sample container temperature is out of limit as specified at testcode



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QC SUMMARY REPORT

WO#: 15120197
 14-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: 17590

Sample ID: 15120197-001AMSD	SampType: MSD	TestCode: HG_S_7471A	Units: mg/Kg	Prep Date: 12/8/2015	RunNo: 48998						
Client ID: TBB-2M 0-7'	Batch ID: 17590	TestNo: SW7471A	SW7471A	Analysis Date: 12/8/2015	SeqNo: 1195991						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.86	0.10	0.84	0	102	75	125	0.86	0.68	20	

Qualifiers:

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U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 15120197
 14-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: 17594

Sample ID: MB-17594	SampType: MBLK	TestCode: 6010_S	Units: mg/Kg	Prep Date: 12/7/2015	RunNo: 49025						
Client ID: PBS	Batch ID: 17594	TestNo: SW6010B	SW3050B	Analysis Date: 12/8/2015	SeqNo: 1196601						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	< 1.00	1.00									
Barium	< 0.500	0.500									
Cadmium	< 0.250	0.250									
Chromium	< 0.500	0.500									
Lead	< 0.500	0.500									
Selenium	< 1.00	1.00									
Silver	< 0.250	0.250									
Zinc	< 0.500	0.500									

Sample ID: LCS-17594	SampType: LCS	TestCode: 6010_S	Units: mg/Kg	Prep Date: 12/7/2015	RunNo: 49025						
Client ID: LCSS	Batch ID: 17594	TestNo: SW6010B	SW3050B	Analysis Date: 12/8/2015	SeqNo: 1196602						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	23.9	1.00	25.00	0	95.7	80	120				
Barium	24.3	0.500	25.00	0	97.1	80	120				
Cadmium	24.2	0.250	25.00	0	96.7	80	120				
Chromium	24.2	0.500	25.00	0	96.8	80	120				
Lead	24.7	0.500	25.00	0	98.9	80	120				
Selenium	24.0	1.00	25.00	0	96.1	80	120				
Silver	12.0	0.250	12.50	0	95.6	80	120				
Zinc	24.4	0.500	25.00	0	97.4	80	120				

Qualifiers:

* Value exceeds Maximum Contaminant Level.	H Holding times for preparation or analysis exceeded	M Matrix Interference
ND Not Detected at the Reporting Limit	RL Reporting Limit	S Spike Recovery outside accepted recovery limits
U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 15120197

14-Dec-15

Client: Michael Pisani & Associates Inc

Project: East White Lake 07-47

BatchID: 17594

Sample ID: LCSD-17594	SampType: LCSD	TestCode: 6010_S	Units: mg/Kg	Prep Date: 12/7/2015	RunNo: 49025						
Client ID: LCSS02	Batch ID: 17594	TestNo: SW6010B	SW3050B	Analysis Date: 12/8/2015	SeqNo: 1196603						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	23.8	1.00	25.00	0	95.2	80	120	23.92	0.461	20	
Barium	23.9	0.500	25.00	0	95.5	80	120	24.27	1.64	20	
Cadmium	23.7	0.250	25.00	0	94.9	80	120	24.18	1.92	20	
Chromium	23.8	0.500	25.00	0	95.0	80	120	24.19	1.81	20	
Lead	24.4	0.500	25.00	0	97.6	80	120	24.72	1.30	20	
Selenium	24.3	1.00	25.00	0	97.3	80	120	24.02	1.22	20	
Silver	11.8	0.250	12.50	0	94.0	80	120	11.95	1.69	20	
Zinc	23.9	0.500	25.00	0	95.6	80	120	24.36	1.86	20	

Sample ID: 15120197-001AMS	SampType: MS	TestCode: 6010_S	Units: mg/Kg	Prep Date: 12/7/2015	RunNo: 49025						
Client ID: TBB-2M 0-7'	Batch ID: 17594	TestNo: SW6010B	SW3050B	Analysis Date: 12/8/2015	SeqNo: 1196605						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	30.2	1.05	26.32	3.441	102	75	125				
Barium	134	0.526	26.32	113.4	79.4	75	125				
Cadmium	26.8	0.263	26.32	0.1470	101	75	125				
Chromium	34.5	0.526	26.32	7.275	103	75	125				
Lead	34.2	0.526	26.32	7.558	101	75	125				
Selenium	24.6	1.05	26.32	0	93.5	75	125				
Silver	13.3	0.263	13.16	0	101	75	125				
Zinc	46.8	0.526	26.32	21.17	97.3	75	125				

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 15120197
 14-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: 17594

Sample ID: 15120197-001AMSD	SampType: MSD	TestCode: 6010_S	Units: mg/Kg	Prep Date: 12/7/2015	RunNo: 49025						
Client ID: TBB-2M 0-7'	Batch ID: 17594	TestNo: SW6010B	SW3050B	Analysis Date: 12/8/2015	SeqNo: 1196606						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	30.7	1.06	26.41	3.441	103	75	125	30.23	1.48	20	
Barium	135	0.528	26.41	113.4	83.2	75	125	134.3	0.805	20	
Cadmium	27.1	0.264	26.41	0.1470	102	75	125	26.84	0.844	20	
Chromium	34.6	0.528	26.41	7.275	104	75	125	34.48	0.435	20	
Lead	34.8	0.528	26.41	7.558	103	75	125	34.19	1.72	20	
Selenium	24.9	1.06	26.41	0	94.1	75	125	24.61	0.993	20	
Silver	13.4	0.264	13.21	0	101	75	125	13.30	0.533	20	
Zinc	47.1	0.528	26.41	21.17	98.2	75	125	46.77	0.689	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 15120197
 14-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: 17608

Sample ID: 15120004-021ADUP	SampType: dup	TestCode: ESP_S	Units: %	Prep Date: 12/3/2015	RunNo: 49076						
Client ID: ZZZZZZ	Batch ID: 17608	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 12/10/2015	SeqNo: 1197620						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Exchangeable Sodium %	2.35	0.100						2.533	7.47	20	
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Sample ID: 15120222-002ADUP	SampType: dup	TestCode: ESP_S	Units: %	Prep Date: 12/3/2015	RunNo: 49076						
Client ID: ZZZZZZ	Batch ID: 17608	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 12/10/2015	SeqNo: 1197634						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Exchangeable Sodium %	23.6	0.100						20.90	12.1	20	*
-----------------------	------	-------	--	--	--	--	--	-------	------	----	---

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



Element Materials Technology Lafayette
 2417 W. Pinhook Road
 Lafayette, LA 70508-3344
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 Website: www.element.com

QC SUMMARY REPORT

WO#: 15120197

14-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: 17609

Sample ID: 15120004-021ADUP	SampType: dup	TestCode: CEC	Units: meq/100g	Prep Date: 12/3/2015	RunNo: 49075						
Client ID: ZZZZZ	Batch ID: 17609	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 12/10/2015	SeqNo: 1197599						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cation Exchange Capacity	22.4	0.100						20.33	9.46	20	

Sample ID: 15120222-002ADUP	SampType: dup	TestCode: CEC	Units: meq/100g	Prep Date: 12/3/2015	RunNo: 49075						
Client ID: ZZZZZ	Batch ID: 17609	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 12/10/2015	SeqNo: 1197613						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cation Exchange Capacity	51.6	0.100						55.35	7.05	20	

Sample ID: lcs-17609	SampType: lcs	TestCode: CEC	Units: meq/100g	Prep Date: 12/3/2015	RunNo: 49075						
Client ID: LCSS	Batch ID: 17609	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 12/10/2015	SeqNo: 1197617						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cation Exchange Capacity	20.7	0.100	25.00	0	82.7	76	124				

Sample ID: lcsd-17609	SampType: lcsd	TestCode: CEC	Units: meq/100g	Prep Date: 12/3/2015	RunNo: 49075						
Client ID: LCSS02	Batch ID: 17609	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 12/10/2015	SeqNo: 1197618						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cation Exchange Capacity	20.9	0.100	25.00	0	83.6	76	124	20.67	1.13	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 15120197
 14-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: 17622

Sample ID: 15120222-002ADUP	SampType: DUP	TestCode: SAR_S	Units:	Prep Date: 12/9/2015	RunNo: 49071						
Client ID: ZZZZZZ	Batch ID: 17622	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 12/10/2015	SeqNo: 1197669						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium Adsorption Ratio	36.0	0.100						36.16	0.438	20	*
Soluble Calcium	5.99	1.00						6.063	1.24	20	
Soluble Magnesium	10.1	1.00						10.20	1.38	20	
Soluble Sodium	102	1.00						103.1	1.10	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 15120197

14-Dec-15

Client: Michael Pisani & Associates Inc

Project: East White Lake 07-47

BatchID: R48992

Sample ID: 15120004-021ADUP	SampType: dup	TestCode: PMOIST	Units: wt%	Prep Date:	RunNo: 48992						
Client ID: ZZZZZ	Batch ID: R48992	TestNo: LDNR 29-B		Analysis Date: 12/1/2015	SeqNo: 1195829						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture	18.9	1.00						18.91	0.134	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 15120197
 14-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: R49031

Sample ID: LCS-R49031	SampType: LCS	TestCode: PH_S	Units: S.U.	Prep Date:	RunNo: 49031						
Client ID: LCSS	Batch ID: R49031	TestNo: LDNR 29-B		Analysis Date: 12/9/2015	SeqNo: 1196776						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

pH Measurement 7.07 1.68 7.00 0 101 97.14 102.86

Sample ID: 15120222-002ADUP	SampType: DUP	TestCode: PH_S	Units: S.U.	Prep Date:	RunNo: 49031						
Client ID: ZZZZZZ	Batch ID: R49031	TestNo: LDNR 29-B		Analysis Date: 12/9/2015	SeqNo: 1196790						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

pH Measurement 6.17 1.68 6.16 0.16 20

Qualifiers: * Value exceeds Maximum Contaminant Level. H Holding times for preparation or analysis exceeded M Matrix Interference
 ND Not Detected at the Reporting Limit RL Reporting Limit S Spike Recovery outside accepted recovery limits
 U Analyte not detected W Sample container temperature is out of limit as specified at testcode



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QC SUMMARY REPORT

WO#: 15120197

14-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: R49046

Sample ID: MB-R49046	SampType: MBLK	TestCode: HEM_S	Units: % dry wt	Prep Date:	RunNo: 49046						
Client ID: PBS	Batch ID: R49046	TestNo: SW9071B		Analysis Date: 12/10/2015	SeqNo: 1197508						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
HEM, Oil & Grease	< 0.05	0.05									

Sample ID: LCS-R49046	SampType: LCS	TestCode: HEM_S	Units: % dry wt	Prep Date:	RunNo: 49046						
Client ID: LCSS	Batch ID: R49046	TestNo: SW9071B		Analysis Date: 12/10/2015	SeqNo: 1197509						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
HEM, Oil & Grease	0.23	0.05	0.20	0	116	70	130				

Sample ID: LCSD-R49046	SampType: LCSD	TestCode: HEM_S	Units: % dry wt	Prep Date:	RunNo: 49046						
Client ID: LCSS02	Batch ID: R49046	TestNo: SW9071B		Analysis Date: 12/10/2015	SeqNo: 1197510						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
HEM, Oil & Grease	0.21	0.05	0.20	0	107	70	130	0.23	7.84	40	

Sample ID: 15120222-002BMS	SampType: MS	TestCode: HEM_S	Units: % dry wt	Prep Date:	RunNo: 49046						
Client ID: ZZZZZ	Batch ID: R49046	TestNo: SW9071B		Analysis Date: 12/10/2015	SeqNo: 1197511						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
HEM, Oil & Grease	0.82	0.05	0.37	0.22	164	70	130				S

NOTES:
 S - Spike recovery indicates matrix interference. The method is in control as indicated by the Lab Control Sample.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 15120197

14-Dec-15

Client: Michael Pisani & Associates Inc

Project: East White Lake 07-47

BatchID: R49046

Sample ID: 15120222-002BDUP	SampType: DUP	TestCode: HEM_S	Units: % dry wt	Prep Date:	RunNo: 49046						
Client ID: ZZZZZZ	Batch ID: R49046	TestNo: SW9071B		Analysis Date: 12/10/2015	SeqNo: 1197512						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
HEM, Oil & Grease	0.26	0.05						0.22	18.3	40	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 15120197

14-Dec-15

Client: Michael Pisani & Associates Inc
Project: East White Lake 07-47

BatchID: R49058

Sample ID: MB-R49058	SampType: MBLK	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 49058						
Client ID: PBS	Batch ID: R49058	TestNo: LDNR 29-B		Analysis Date: 12/10/2015	SeqNo: 1197352						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Electrical Conductivity	< 0.10	0.10									

Sample ID: R49058LCS1	SampType: LCS1	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 49058						
Client ID: ZZZZZ	Batch ID: R49058	TestNo: LDNR 29-B		Analysis Date: 12/10/2015	SeqNo: 1197353						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Electrical Conductivity	0.38	0.10	0.36	0	107	89.9	110.08				

Sample ID: R49058LCS2	SampType: LCS2	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 49058						
Client ID: ZZZZZ	Batch ID: R49058	TestNo: LDNR 29-B		Analysis Date: 12/10/2015	SeqNo: 1197354						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Electrical Conductivity	56.3	0.10	53.00	0	106	90	110				

Sample ID: 15120222-002ADUP	SampType: DUP	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 49058						
Client ID: ZZZZZ	Batch ID: R49058	TestNo: LDNR 29-B		Analysis Date: 12/10/2015	SeqNo: 1197363						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Electrical Conductivity	14.2	0.10						13.70	3.23	20	*

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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Sample Log-In Check List

Client Name: **M_PISANI_HOU** Work Order Number: **15120197** RcptNo: **1**

Logged by:	Danielle Hollier	12/3/2015 4:18:00 PM	<i>Danielle Hollier</i>
Completed By:	Danielle Hollier	12/4/2015 10:53:38 AM	<i>Danielle Hollier</i>
Reviewed By:	Caitlin Duplantis	12/9/2015 3:48:51 PM	<i>Caitlin Duplantis</i>

Chain of Custody

1. Is Chain of Custody complete? Yes No Not Present
 2. How was the sample delivered? Client

Log In

3. Coolers are present? Yes No NA
 4. Shipping container/cooler in good condition? Yes No
 Custody seals intact on shipping container/cooler? Yes No Not Present
 No. Seal Date: Signed By:
 5. Was an attempt made to cool the samples? Yes No NA
 6. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
 7. Sample(s) in proper container(s)? Yes No
 8. Sufficient sample volume for indicated test(s)? Yes No
 9. Are samples (except VOA and ONG) properly preserved? Yes No
 10. Was preservative added to bottles? Yes No NA
 11. Is the headspace in the VOA vials less than 1/4 inch or 6 mm? Yes No No VOA Vials
 12. Were any sample containers received broken? Yes No
 13. Does paperwork match bottle labels? Yes No
 (Note discrepancies on chain of custody)
 14. Are matrices correctly identified on Chain of Custody? Yes No
 15. Is it clear what analyses were requested? Yes No
 16. Were all holding times able to be met? Yes No
 (If no, notify customer for authorization.)

Special Handling (if applicable)

17. Was client notified of all discrepancies with this order? Yes No NA

Person Notified:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

18. Additional remarks:

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.7	Good	Not Present			



Chain of Custody

Laboratory Number: 15120197

Client Information:
 Company Name: Michael Pisinger Associates
 Contact Name: Dave Ansel
 Address: 13313 Southwind - Hwy
 P-221
 City, State Zip: Sugar Land, TX 77478
 Phone Number: 281-242-5137
 Ext: 281-242-1137
 Fax Number: 281-242-1137
 E-mail Address: dave@pisinger.com

Billing Information:
 Same

PO Number:
 Quote Number:
 Required QC Level:
 Bill Monthly:
 Yes
 No

Project Name/Number:
 East White Lake
 07-47

Sampler's Signature:
 [Signature]

Shipping Method:
 UPS / FedEx / NOW
 DHL / Element / Hand / Mail

Page 1 of 1
Matrix Code
 DW = Drinking Water
 WW = Waste Water
 GW = Ground Water
 AQ = Aqueous
 OT = Other
 SL = Sludge
 O = Oil
 F = Food
 NG = Natural Gas
 PW = Produced Water
 CF = Completion Fluid
 SOL = Solid
 SO = Soil
 SW = Swab
 NGL = Natural Gas Liquid

Sample ID/Description	Which Regulations Apply:			Turn Time	Rush turn times will incur a surcharge and must be pre-approved by (lab.)	Container	Pres.	Requested Tests	Comments					
	RCRA	POTW	NPOES							USDA/FDA	RECAP/RISC	Date	Time	Matrix
TBB-2M 0-7'	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> Standard	G	None							
TBB-2M 7-15'	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> RUSH	L	None							
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> 1 Day	V								
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> 2 Day	V								
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Other	V								

Collection Information:
 Date: 12/3/15 11:50
 Time: 12/3/15 12:00
 Matrix: G

Quantity:
 G = Glass, V = Vial
 T = Plastic
 L
 V
 V

Received by:
 1. [Signature]
 2.
 3.

Date/Time:
 12/3/15 16:18
 12-3-15 16:16

Field Notes:
 Received at lab on ice? Yes No
 Temp: 4.7°C

All samples submitted to Element Materials Technology for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples. Element Materials Technology reserves the right to return unused sample portions.

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 Danville, IN 47334-0669 USA
 P 765-378-4103
 F 765-378-4108

629 Washington St, Suite 300
 Columbus, IN 47201-6231 USA
 P 812-375-6531
 F 812-375-0731

2121 East Washington Boulevard
 Fort Wayne, IN 46803-1328 USA
 P 260-471-7080
 F 260-471-7777

908 Executive Dr
 Warsaw, IN 46580-2385 USA
 P 574-267-3355
 F 574-268-6569

3371 Cleveland Road, Suite 100A
 South Bend, IN 46628-8789 USA
 P 574-277-0707
 F 574-273-6699

2417 W. Pinhook Rd
 Lafayette, LA 70508-3344 USA
 P 337-235-0483
 F 337-233-6540

ANALYTICAL RESULTS

PERFORMED BY

GCAL, LLC

7979 Innovation Park Dr.
Baton Rouge, LA 70820

Report Date 11/25/2015

GCAL Report 215111605



Project 07-47 East White Lake

Deliver To

Dave Angle

Michael Pisani and Associates

13313 Southwest Freeway

Suite 221

Sugar Land, TX 77478

281-242-5700

Additional Recipients

Tobyn Celler, Michael Pisani &
Associates

Lance Cooper, Michael Pisani &
Associates

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
DL	Diluted analysis – when appended to Client Sample ID
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
00:01	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

J or I	Indicates the result is between the MDL and LOQ
J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
U	Indicates the compound was analyzed for but not detected
B or V	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*	Indicates a non-compliant or not applicable QC recovery or RPD – see narrative
E	The result is estimated because it exceeded the instrument calibration range
E	Metals - % difference for the serial dilution is > 10%

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with the NELAC Institute standard and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

Authorized Signature
GCAL Report 215111605

Certifications

10/02/2015

Certification	Certification Number
DOD ELAP	L14-243
Alabama	01955
Arizona	AZ0718
Arkansas	12-060-0
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
USDA Soil Permit	P330-10-00117

Case Narrative

Client: Michael Pisani & Associates **Report:** 215111605

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

SEMI-VOLATILES GAS CHROMATOGRAPHY

In the MADEP VPH Revision 1.1 analysis, all samples were analyzed at a dilution; however, project detection limit requirements were still met.

For the EPH Aliphatic analysis of samples 21511060506 (SS-22 (0-2FT)) and 21511060507 (SS-22 (2-4FT)), the surrogate is outside the control limits due to obvious matrix interference.

In the MADEP EPH Revision 1.1 analysis, samples 21511160508 (SS-22 (4-6FT)), 21511160514 (SS-26 (0-2FT)) and 21511160515 (SS-26 (2-4FT)) had to be diluted to bracket target compounds within the calibration range of the instrument. This is reflected in elevated detection limits. The recovery for the surrogate(s) is reported as diluted out for those analyses performed at a 10 or higher dilution.

In the MADEP EPH Revision 1.1 analysis, the recovery for the surrogate, 2-Bromonaphthalene is above the upper control limit for sample 21511160503 (SS-20 (0-2FT)). No target compounds were detected in the sample; therefore the data is reportable.

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21511160501	SS-19 (0-2FT)	Solid	11/12/2015 09:05	11/13/2015 14:23
21511160502	SS-19 (2-4FT)	Solid	11/12/2015 09:10	11/13/2015 14:23
21511160503	SS-20 (0-2FT)	Solid	11/12/2015 10:15	11/13/2015 14:23
21511160504	SS-20 (2-4FT)	Solid	11/12/2015 10:20	11/13/2015 14:23
21511160505	SS-20 (4-6FT)	Solid	11/12/2015 10:25	11/13/2015 14:23
21511160506	SS-22 (0-2FT)	Solid	11/12/2015 12:05	11/13/2015 14:23
21511160507	SS-22 (2-4FT)	Solid	11/12/2015 12:10	11/13/2015 14:23
21511160508	SS-22 (4-6FT)	Solid	11/12/2015 12:15	11/13/2015 14:23
21511160509	SS-22 (6-8FT)	Solid	11/12/2015 12:20	11/13/2015 14:23
21511160510	SS-17 (0-2FT)	Solid	11/12/2015 14:20	11/13/2015 14:23
21511160511	SS-17 (2-4FT)	Solid	11/12/2015 14:25	11/13/2015 14:23
21511160512	SS-17 (4-6FT)	Solid	11/12/2015 14:30	11/13/2015 14:23
21511160513	SS-17 (6-8FT)	Solid	11/12/2015 14:35	11/13/2015 14:23
21511160514	SS-26 (0-2FT)	Solid	11/12/2015 15:50	11/13/2015 14:23
21511160515	SS-26 (2-4FT)	Solid	11/12/2015 15:55	11/13/2015 14:23
21511160516	SS-16 (0-2FT)	Solid	11/13/2015 10:00	11/13/2015 14:23
21511160517	SS-16 (2-4FT)	Solid	11/13/2015 10:05	11/13/2015 14:23
21511160518	SS-16 (4-6FT)	Solid	11/13/2015 10:10	11/13/2015 14:23

Sample Results

SS-19 (0-2FT)	Collect Date	11/12/2015 09:05	GCAL ID	21511160501
	Receive Date	11/13/2015 14:23	Matrix	Solid

MADEP VPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1000	11/17/2015 17:27	JAR	572673

CAS#	Parameter	Result	LOQ	Units
GCSV-02-10	Aliphatic >C8-C10	ND	29.3	mg/kg
GCSV-02-30	Aliphatic C6-C8	ND	29.3	mg/kg
GCSV-02-14	Aromatic >C8-C10	ND	29.3	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
GCV-00-7	2,5-Dibromotoluene (PID)	48.80	47.8	ug/Kg	98	60 - 140
GCV-00-8	2,5-Dibromotoluene (FID)	48.80	51.2	ug/Kg	105	60 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/20/2015 09:45	572633	MADEP EPH Revision 1.1	1	11/21/2015 18:35	SDD	573100

CAS#	Parameter	Result	LOQ	Units
GCSV-02-15	Aromatic >C10-C12	ND	6.00	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	6.00	mg/kg
GCSV-02-17	Aromatic >C16-C21	14.9	6.00	mg/kg
GCSV-05-18	Aromatic >C21-C35	27.3	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	4	3.32	ug/Kg	83	40 - 140
580-13-2	2-Bromonaphthalene	4	3.46	ug/Kg	87	40 - 140
321-60-8	2-Fluorobiphenyl	4	3.32	ug/Kg	83	40 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/20/2015 09:45	572633	MADEP EPH Revision 1.1	1	11/21/2015 18:35	SDD	573099

CAS#	Parameter	Result	LOQ	Units
GCSV-02-11	Aliphatic >C10-C12	ND	6.00	mg/kg
GCSV-02-12	Aliphatic >C12-C16	22.1	6.00	mg/kg
GCSV-02-31	Aliphatic >C16-C35	128	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
3386-33-2	1-Chlorooctadecane	4	1.83	ug/Kg	46	40 - 140

Sample Results

SS-19 (2-4FT)	Collect Date	11/12/2015 09:10	GCAL ID	21511160502
	Receive Date	11/13/2015 14:23	Matrix	Solid

MADEP VPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1000	11/17/2015 18:34	JAR	572673

CAS#	Parameter	Result	LOQ	Units
GCSV-02-10	Aliphatic >C8-C10	ND	29.8	mg/kg
GCSV-02-30	Aliphatic C6-C8	ND	29.8	mg/kg
GCSV-02-14	Aromatic >C8-C10	ND	29.8	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
GCV-00-7	2,5-Dibromotoluene (PID)	49.70	47.5	ug/Kg	96	60 - 140
GCV-00-8	2,5-Dibromotoluene (FID)	49.70	54.8	ug/Kg	110	60 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/20/2015 09:45	572633	MADEP EPH Revision 1.1	1	11/21/2015 19:33	SDD	573100

CAS#	Parameter	Result	LOQ	Units
GCSV-02-15	Aromatic >C10-C12	ND	6.00	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	6.00	mg/kg
GCSV-02-17	Aromatic >C16-C21	ND	6.00	mg/kg
GCSV-05-18	Aromatic >C21-C35	ND	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	4	2.67	ug/Kg	67	40 - 140
580-13-2	2-Bromonaphthalene	4	3.64	ug/Kg	91	40 - 140
321-60-8	2-Fluorobiphenyl	4	3.7	ug/Kg	93	40 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/20/2015 09:45	572633	MADEP EPH Revision 1.1	1	11/21/2015 19:33	SDD	573099

CAS#	Parameter	Result	LOQ	Units
GCSV-02-11	Aliphatic >C10-C12	ND	6.00	mg/kg
GCSV-02-12	Aliphatic >C12-C16	ND	6.00	mg/kg
GCSV-02-31	Aliphatic >C16-C35	39.0	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
3386-33-2	1-Chlorooctadecane	4	2.1	ug/Kg	53	40 - 140

Sample Results

SS-20 (0-2FT)	Collect Date	11/12/2015 10:15	GCAL ID	21511160503
	Receive Date	11/13/2015 14:23	Matrix	Solid

MADEP VPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1000	11/17/2015 19:01	JAR	572673

CAS#	Parameter	Result	LOQ	Units
GCSV-02-10	Aliphatic >C8-C10	ND	29.6	mg/kg
GCSV-02-30	Aliphatic C6-C8	ND	29.6	mg/kg
GCSV-02-14	Aromatic >C8-C10	ND	29.6	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
GCV-00-7	2,5-Dibromotoluene (PID)	49.30	45.4	ug/Kg	92	60 - 140
GCV-00-8	2,5-Dibromotoluene (FID)	49.30	49.5	ug/Kg	100	60 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/20/2015 09:45	572633	MADEP EPH Revision 1.1	1	11/21/2015 19:53	SDD	573100

CAS#	Parameter	Result	LOQ	Units
GCSV-02-15	Aromatic >C10-C12	ND	6.00	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	6.00	mg/kg
GCSV-02-17	Aromatic >C16-C21	ND	6.00	mg/kg
GCSV-05-18	Aromatic >C21-C35	ND	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	4	2.48	ug/Kg	62	40 - 140
580-13-2	2-Bromonaphthalene	4	75.2	ug/Kg	1880*	40 - 140
321-60-8	2-Fluorobiphenyl	4	3.67	ug/Kg	92	40 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/20/2015 09:45	572633	MADEP EPH Revision 1.1	1	11/21/2015 19:53	SDD	573099

CAS#	Parameter	Result	LOQ	Units
GCSV-02-11	Aliphatic >C10-C12	ND	6.00	mg/kg
GCSV-02-12	Aliphatic >C12-C16	ND	6.00	mg/kg
GCSV-02-31	Aliphatic >C16-C35	10.4	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
3386-33-2	1-Chlorooctadecane	4	4.25	ug/Kg	106	40 - 140

Sample Results

SS-20 (2-4FT)	Collect Date	11/12/2015 10:20	GCAL ID	21511160504
	Receive Date	11/13/2015 14:23	Matrix	Solid

MADEP VPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1000	11/17/2015 19:28	JAR	572673

CAS#	Parameter	Result	LOQ	Units
GCSV-02-10	Aliphatic >C8-C10	ND	29.0	mg/kg
GCSV-02-30	Aliphatic C6-C8	ND	29.0	mg/kg
GCSV-02-14	Aromatic >C8-C10	ND	29.0	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
GCV-00-7	2,5-Dibromotoluene (PID)	48.40	45.5	ug/Kg	94	60 - 140
GCV-00-8	2,5-Dibromotoluene (FID)	48.40	52.5	ug/Kg	109	60 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/20/2015 09:45	572633	MADEP EPH Revision 1.1	1	11/21/2015 20:12	SDD	573100

CAS#	Parameter	Result	LOQ	Units
GCSV-02-15	Aromatic >C10-C12	ND	6.00	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	6.00	mg/kg
GCSV-02-17	Aromatic >C16-C21	ND	6.00	mg/kg
GCSV-05-18	Aromatic >C21-C35	ND	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	4	2.83	ug/Kg	71	40 - 140
580-13-2	2-Bromonaphthalene	4	4.42	ug/Kg	111	40 - 140
321-60-8	2-Fluorobiphenyl	4	4.46	ug/Kg	112	40 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/20/2015 09:45	572633	MADEP EPH Revision 1.1	1	11/21/2015 20:12	SDD	573099

CAS#	Parameter	Result	LOQ	Units
GCSV-02-11	Aliphatic >C10-C12	ND	6.00	mg/kg
GCSV-02-12	Aliphatic >C12-C16	ND	6.00	mg/kg
GCSV-02-31	Aliphatic >C16-C35	25.7	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
3386-33-2	1-Chlorooctadecane	4	3.61	ug/Kg	90	40 - 140

Sample Results

SS-20 (4-6FT)	Collect Date	11/12/2015 10:25	GCAL ID	21511160505
	Receive Date	11/13/2015 14:23	Matrix	Solid

MADEP VPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1000	11/17/2015 19:54	JAR	572673

CAS#	Parameter	Result	LOQ	Units
GCSV-02-10	Aliphatic >C8-C10	ND	29.2	mg/kg
GCSV-02-30	Aliphatic C6-C8	ND	29.2	mg/kg
GCSV-02-14	Aromatic >C8-C10	ND	29.2	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
GCV-00-7	2,5-Dibromotoluene (PID)	48.70	46.8	ug/Kg	96	60 - 140
GCV-00-8	2,5-Dibromotoluene (FID)	48.70	50	ug/Kg	103	60 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/20/2015 09:45	572633	MADEP EPH Revision 1.1	1	11/21/2015 20:31	SDD	573100

CAS#	Parameter	Result	LOQ	Units
GCSV-02-15	Aromatic >C10-C12	ND	6.00	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	6.00	mg/kg
GCSV-02-17	Aromatic >C16-C21	9.75	6.00	mg/kg
GCSV-05-18	Aromatic >C21-C35	16.4	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	4	3	ug/Kg	75	40 - 140
580-13-2	2-Bromonaphthalene	4	3.69	ug/Kg	92	40 - 140
321-60-8	2-Fluorobiphenyl	4	3.63	ug/Kg	91	40 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/20/2015 09:45	572633	MADEP EPH Revision 1.1	1	11/21/2015 20:31	SDD	573099

CAS#	Parameter	Result	LOQ	Units
GCSV-02-11	Aliphatic >C10-C12	ND	6.00	mg/kg
GCSV-02-12	Aliphatic >C12-C16	13.9	6.00	mg/kg
GCSV-02-31	Aliphatic >C16-C35	71.4	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
3386-33-2	1-Chlorooctadecane	4	4.82	ug/Kg	121	40 - 140

Sample Results

SS-22 (0-2FT)	Collect Date	11/12/2015 12:05	GCAL ID	21511160506
	Receive Date	11/13/2015 14:23	Matrix	Solid

MADEP VPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1000	11/17/2015 22:23	JAR	572673

CAS#	Parameter	Result	LOQ	Units
GCSV-02-10	Aliphatic >C8-C10	ND	29.5	mg/kg
GCSV-02-30	Aliphatic C6-C8	ND	29.5	mg/kg
GCSV-02-14	Aromatic >C8-C10	ND	29.5	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
GCV-00-7	2,5-Dibromotoluene (PID)	49.10	40	ug/Kg	81	60 - 140
GCV-00-8	2,5-Dibromotoluene (FID)	49.10	43.2	ug/Kg	88	60 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/20/2015 09:45	572633	MADEP EPH Revision 1.1	1	11/21/2015 20:50	SDD	573100

CAS#	Parameter	Result	LOQ	Units
GCSV-02-15	Aromatic >C10-C12	ND	6.00	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	6.00	mg/kg
GCSV-02-17	Aromatic >C16-C21	16.7	6.00	mg/kg
GCSV-05-18	Aromatic >C21-C35	62.2	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	4	1.97	ug/Kg	49	40 - 140
580-13-2	2-Bromonaphthalene	4	3.24	ug/Kg	81	40 - 140
321-60-8	2-Fluorobiphenyl	4	3.13	ug/Kg	78	40 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/20/2015 09:45	572633	MADEP EPH Revision 1.1	1	11/21/2015 20:50	SDD	573099

CAS#	Parameter	Result	LOQ	Units
GCSV-02-11	Aliphatic >C10-C12	ND	6.00	mg/kg
GCSV-02-12	Aliphatic >C12-C16	22.7	6.00	mg/kg
GCSV-02-31	Aliphatic >C16-C35	254	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
3386-33-2	1-Chlorooctadecane	4	1.36	ug/Kg	34*	40 - 140

Sample Results

SS-22 (2-4FT)	Collect Date	11/12/2015 12:10	GCAL ID	21511160507
	Receive Date	11/13/2015 14:23	Matrix	Solid

MADEP VPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1000	11/17/2015 22:57	JAR	572673

CAS#	Parameter	Result	LOQ	Units
GCSV-02-10	Aliphatic >C8-C10	ND	29.4	mg/kg
GCSV-02-30	Aliphatic C6-C8	ND	29.4	mg/kg
GCSV-02-14	Aromatic >C8-C10	ND	29.4	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
GCV-00-7	2,5-Dibromotoluene (PID)	48.90	50.4	ug/Kg	103	60 - 140
GCV-00-8	2,5-Dibromotoluene (FID)	48.90	61.5	ug/Kg	126	60 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/20/2015 09:45	572633	MADEP EPH Revision 1.1	1	11/21/2015 21:10	SDD	573100

CAS#	Parameter	Result	LOQ	Units
GCSV-02-15	Aromatic >C10-C12	ND	6.00	mg/kg
GCSV-02-16	Aromatic >C12-C16	8.02	6.00	mg/kg
GCSV-02-17	Aromatic >C16-C21	24.4	6.00	mg/kg
GCSV-05-18	Aromatic >C21-C35	50.7	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	4	2.69	ug/Kg	67	40 - 140
580-13-2	2-Bromonaphthalene	4	5.19	ug/Kg	130	40 - 140
321-60-8	2-Fluorobiphenyl	4	5.1	ug/Kg	128	40 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/20/2015 09:45	572633	MADEP EPH Revision 1.1	1	11/21/2015 21:10	SDD	573099

CAS#	Parameter	Result	LOQ	Units
GCSV-02-11	Aliphatic >C10-C12	ND	6.00	mg/kg
GCSV-02-12	Aliphatic >C12-C16	34.8	6.00	mg/kg
GCSV-02-31	Aliphatic >C16-C35	309	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
3386-33-2	1-Chlorooctadecane	4	1.56	ug/Kg	39*	40 - 140

Sample Results

SS-22 (4-6FT)	Collect Date	11/12/2015 12:15	GCAL ID	21511160508
	Receive Date	11/13/2015 14:23	Matrix	Solid

MADEP VPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1000	11/17/2015 23:26	JAR	572673

CAS#	Parameter	Result	LOQ	Units
GCSV-02-10	Aliphatic >C8-C10	ND	29.1	mg/kg
GCSV-02-30	Aliphatic C6-C8	ND	29.1	mg/kg
GCSV-02-14	Aromatic >C8-C10	ND	29.1	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
GCV-00-7	2,5-Dibromotoluene (PID)	48.50	51.1	ug/Kg	105	60 - 140
GCV-00-8	2,5-Dibromotoluene (FID)	48.50	54.9	ug/Kg	113	60 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/20/2015 09:45	572633	MADEP EPH Revision 1.1	5	11/22/2015 11:04	SDD	573114

CAS#	Parameter	Result	LOQ	Units
GCSV-02-11	Aliphatic >C10-C12	ND	30.0	mg/kg
GCSV-02-12	Aliphatic >C12-C16	84.6	30.0	mg/kg
GCSV-02-31	Aliphatic >C16-C35	391	30.0	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
3386-33-2	1-Chlorooctadecane	4	1.99	ug/Kg	50	40 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/20/2015 09:45	572633	MADEP EPH Revision 1.1	2	11/22/2015 11:04	SDD	573113

CAS#	Parameter	Result	LOQ	Units
GCSV-02-15	Aromatic >C10-C12	ND	12.0	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	12.0	mg/kg
GCSV-02-17	Aromatic >C16-C21	36.8	12.0	mg/kg
GCSV-05-18	Aromatic >C21-C35	73.5	12.0	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	4	4.42	ug/Kg	111	40 - 140
580-13-2	2-Bromonaphthalene	4	4.51	ug/Kg	113	40 - 140
321-60-8	2-Fluorobiphenyl	4	3.81	ug/Kg	95	40 - 140

Sample Results

SS-22 (6-8FT)	Collect Date	11/12/2015 12:20	GCAL ID	21511160509
	Receive Date	11/13/2015 14:23	Matrix	Solid

MADEP VPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1000	11/17/2015 23:52	JAR	572673

CAS#	Parameter	Result	LOQ	Units
GCSV-02-10	Aliphatic >C8-C10	ND	29.1	mg/kg
GCSV-02-30	Aliphatic C6-C8	ND	29.1	mg/kg
GCSV-02-14	Aromatic >C8-C10	ND	29.1	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
GCV-00-7	2,5-Dibromotoluene (PID)	48.40	47.1	ug/Kg	97	60 - 140
GCV-00-8	2,5-Dibromotoluene (FID)	48.40	51.4	ug/Kg	106	60 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/20/2015 09:45	572633	MADEP EPH Revision 1.1	1	11/21/2015 22:07	SDD	573100

CAS#	Parameter	Result	LOQ	Units
GCSV-02-15	Aromatic >C10-C12	ND	6.00	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	6.00	mg/kg
GCSV-02-17	Aromatic >C16-C21	13.1	6.00	mg/kg
GCSV-05-18	Aromatic >C21-C35	23.7	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	4	2.84	ug/Kg	71	40 - 140
580-13-2	2-Bromonaphthalene	4	1.7	ug/Kg	43	40 - 140
321-60-8	2-Fluorobiphenyl	4	3.19	ug/Kg	80	40 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/20/2015 09:45	572633	MADEP EPH Revision 1.1	1	11/21/2015 22:07	SDD	573099

CAS#	Parameter	Result	LOQ	Units
GCSV-02-11	Aliphatic >C10-C12	ND	6.00	mg/kg
GCSV-02-12	Aliphatic >C12-C16	22.2	6.00	mg/kg
GCSV-02-31	Aliphatic >C16-C35	144	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
3386-33-2	1-Chlorooctadecane	4	2.26	ug/Kg	57	40 - 140

Sample Results

SS-17 (0-2FT)	Collect Date	11/12/2015 14:20	GCAL ID	21511160510
	Receive Date	11/13/2015 14:23	Matrix	Solid

MADEP VPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1000	11/18/2015 00:19	JAR	572673

CAS#	Parameter	Result	LOQ	Units
GCSV-02-10	Aliphatic >C8-C10	ND	29.0	mg/kg
GCSV-02-30	Aliphatic C6-C8	ND	29.0	mg/kg
GCSV-02-14	Aromatic >C8-C10	ND	29.0	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
GCV-00-7	2,5-Dibromotoluene (PID)	48.40	47.4	ug/Kg	98	60 - 140
GCV-00-8	2,5-Dibromotoluene (FID)	48.40	53.3	ug/Kg	110	60 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/20/2015 09:45	572633	MADEP EPH Revision 1.1	1	11/21/2015 22:26	SDD	573099

CAS#	Parameter	Result	LOQ	Units
GCSV-02-11	Aliphatic >C10-C12	ND	5.88	mg/kg
GCSV-02-12	Aliphatic >C12-C16	5.96	5.88	mg/kg
GCSV-02-31	Aliphatic >C16-C35	62.2	5.88	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
3386-33-2	1-Chlorooctadecane	3.92	3.98	ug/Kg	101	40 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/20/2015 09:45	572633	MADEP EPH Revision 1.1	1	11/21/2015 22:26	SDD	573100

CAS#	Parameter	Result	LOQ	Units
GCSV-02-15	Aromatic >C10-C12	ND	5.88	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	5.88	mg/kg
GCSV-02-17	Aromatic >C16-C21	ND	5.88	mg/kg
GCSV-05-18	Aromatic >C21-C35	16.2	5.88	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	3.92	2.27	ug/Kg	58	40 - 140
580-13-2	2-Bromonaphthalene	3.92	3.57	ug/Kg	91	40 - 140
321-60-8	2-Fluorobiphenyl	3.92	3.54	ug/Kg	90	40 - 140

Sample Results

SS-17 (2-4FT)	Collect Date	11/12/2015 14:25	GCAL ID	21511160511
	Receive Date	11/13/2015 14:23	Matrix	Solid

MADEP VPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1000	11/18/2015 01:57	JAR	572673

CAS#	Parameter	Result	LOQ	Units
GCSV-02-10	Aliphatic >C8-C10	ND	28.9	mg/kg
GCSV-02-30	Aliphatic C6-C8	ND	28.9	mg/kg
GCSV-02-14	Aromatic >C8-C10	ND	28.9	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
GCV-00-7	2,5-Dibromotoluene (PID)	48.20	47.9	ug/Kg	99	60 - 140
GCV-00-8	2,5-Dibromotoluene (FID)	48.20	58	ug/Kg	120	60 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/20/2015 09:45	572633	MADEP EPH Revision 1.1	1	11/21/2015 22:45	SDD	573100

CAS#	Parameter	Result	LOQ	Units
GCSV-02-15	Aromatic >C10-C12	ND	6.00	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	6.00	mg/kg
GCSV-02-17	Aromatic >C16-C21	ND	6.00	mg/kg
GCSV-05-18	Aromatic >C21-C35	ND	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	4	3.11	ug/Kg	78	40 - 140
580-13-2	2-Bromonaphthalene	4	3.74	ug/Kg	94	40 - 140
321-60-8	2-Fluorobiphenyl	4	3.59	ug/Kg	90	40 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/20/2015 09:45	572633	MADEP EPH Revision 1.1	1	11/21/2015 22:45	SDD	573099

CAS#	Parameter	Result	LOQ	Units
GCSV-02-11	Aliphatic >C10-C12	ND	6.00	mg/kg
GCSV-02-12	Aliphatic >C12-C16	13.9	6.00	mg/kg
GCSV-02-31	Aliphatic >C16-C35	63.7	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
3386-33-2	1-Chlorooctadecane	4	5.56	ug/Kg	139	40 - 140

Sample Results

SS-17 (4-6FT)	Collect Date	11/12/2015 14:30	GCAL ID	21511160512
	Receive Date	11/13/2015 14:23	Matrix	Solid

MADEP VPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1000	11/18/2015 02:25	JAR	572673

CAS#	Parameter	Result	LOQ	Units
GCSV-02-10	Aliphatic >C8-C10	ND	28.9	mg/kg
GCSV-02-30	Aliphatic C6-C8	ND	28.9	mg/kg
GCSV-02-14	Aromatic >C8-C10	ND	28.9	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
GCV-00-7	2,5-Dibromotoluene (PID)	48.20	48	ug/Kg	100	60 - 140
GCV-00-8	2,5-Dibromotoluene (FID)	48.20	53.7	ug/Kg	111	60 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/20/2015 09:45	572633	MADEP EPH Revision 1.1	1	11/21/2015 23:04	SDD	573100

CAS#	Parameter	Result	LOQ	Units
GCSV-02-15	Aromatic >C10-C12	ND	6.00	mg/kg
GCSV-02-16	Aromatic >C12-C16	8.46	6.00	mg/kg
GCSV-02-17	Aromatic >C16-C21	30.7	6.00	mg/kg
GCSV-05-18	Aromatic >C21-C35	39.4	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	4	3.57	ug/Kg	89	40 - 140
580-13-2	2-Bromonaphthalene	4	4.26	ug/Kg	107	40 - 140
321-60-8	2-Fluorobiphenyl	4	3.41	ug/Kg	85	40 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/20/2015 09:45	572633	MADEP EPH Revision 1.1	1	11/21/2015 23:04	SDD	573099

CAS#	Parameter	Result	LOQ	Units
GCSV-02-11	Aliphatic >C10-C12	6.73	6.00	mg/kg
GCSV-02-12	Aliphatic >C12-C16	77.5	6.00	mg/kg
GCSV-02-31	Aliphatic >C16-C35	255	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
3386-33-2	1-Chlorooctadecane	4	2.29	ug/Kg	57	40 - 140

Sample Results

SS-17 (6-8FT)	Collect Date	11/12/2015 14:35	GCAL ID	21511160513
	Receive Date	11/13/2015 14:23	Matrix	Solid

MADEP VPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1000	11/18/2015 02:52	JAR	572673

CAS#	Parameter	Result	LOQ	Units
GCSV-02-10	Aliphatic >C8-C10	ND	29.6	mg/kg
GCSV-02-30	Aliphatic C6-C8	ND	29.6	mg/kg
GCSV-02-14	Aromatic >C8-C10	ND	29.6	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
GCV-00-7	2,5-Dibromotoluene (PID)	49.30	48	ug/Kg	97	60 - 140
GCV-00-8	2,5-Dibromotoluene (FID)	49.30	52.1	ug/Kg	106	60 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/20/2015 09:45	572633	MADEP EPH Revision 1.1	1	11/21/2015 23:23	SDD	573100

CAS#	Parameter	Result	LOQ	Units
GCSV-02-15	Aromatic >C10-C12	ND	6.00	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	6.00	mg/kg
GCSV-02-17	Aromatic >C16-C21	14.9	6.00	mg/kg
GCSV-05-18	Aromatic >C21-C35	19.4	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	4	3.25	ug/Kg	81	40 - 140
580-13-2	2-Bromonaphthalene	4	4.05	ug/Kg	101	40 - 140
321-60-8	2-Fluorobiphenyl	4	3.85	ug/Kg	96	40 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/20/2015 09:45	572633	MADEP EPH Revision 1.1	1	11/21/2015 23:23	SDD	573099

CAS#	Parameter	Result	LOQ	Units
GCSV-02-11	Aliphatic >C10-C12	ND	6.00	mg/kg
GCSV-02-12	Aliphatic >C12-C16	23.7	6.00	mg/kg
GCSV-02-31	Aliphatic >C16-C35	88.4	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
3386-33-2	1-Chlorooctadecane	4	4.39	ug/Kg	110	40 - 140

Sample Results

SS-26 (0-2FT)	Collect Date	11/12/2015 15:50	GCAL ID	21511160514
	Receive Date	11/13/2015 14:23	Matrix	Solid

MADEP VPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1000	11/18/2015 03:17	JAR	572673

CAS#	Parameter	Result	LOQ	Units
GCSV-02-10	Aliphatic >C8-C10	ND	29.2	mg/kg
GCSV-02-30	Aliphatic C6-C8	ND	29.2	mg/kg
GCSV-02-14	Aromatic >C8-C10	ND	29.2	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
GCV-00-7	2,5-Dibromotoluene (PID)	48.70	47.8	ug/Kg	98	60 - 140
GCV-00-8	2,5-Dibromotoluene (FID)	48.70	53.5	ug/Kg	110	60 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/20/2015 09:45	572633	MADEP EPH Revision 1.1	50	11/22/2015 12:11	SDD	573114

CAS#	Parameter	Result	LOQ	Units
GCSV-02-11	Aliphatic >C10-C12	ND	286	mg/kg
GCSV-02-12	Aliphatic >C12-C16	1400	286	mg/kg
GCSV-02-31	Aliphatic >C16-C35	6640	286	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
3386-33-2	1-Chlorooctadecane	3.81	Diluted Out	ug/Kg	0*	40 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/20/2015 09:45	572633	MADEP EPH Revision 1.1	20	11/22/2015 11:23	SDD	573113

CAS#	Parameter	Result	LOQ	Units
GCSV-02-15	Aromatic >C10-C12	ND	114	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	114	mg/kg
GCSV-02-17	Aromatic >C16-C21	496	114	mg/kg
GCSV-05-18	Aromatic >C21-C35	958	114	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	3.81	Diluted Out	ug/Kg	0*	40 - 140
580-13-2	2-Bromonaphthalene	3.81	Diluted Out	ug/Kg	0*	40 - 140
321-60-8	2-Fluorobiphenyl	3.81	Diluted Out	ug/Kg	0*	40 - 140

Sample Results

SS-26 (2-4FT)	Collect Date	11/12/2015 15:55	GCAL ID	21511160515
	Receive Date	11/13/2015 14:23	Matrix	Solid

MADEP VPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1000	11/18/2015 03:46	JAR	572673

CAS#	Parameter	Result	LOQ	Units
GCSV-02-10	Aliphatic >C8-C10	ND	29.1	mg/kg
GCSV-02-30	Aliphatic C6-C8	ND	29.1	mg/kg
GCSV-02-14	Aromatic >C8-C10	ND	29.1	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
GCV-00-7	2,5-Dibromotoluene (PID)	48.50	50.4	ug/Kg	104	60 - 140
GCV-00-8	2,5-Dibromotoluene (FID)	48.50	53.8	ug/Kg	111	60 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/20/2015 09:45	572633	MADEP EPH Revision 1.1	5	11/22/2015 11:43	SDD	573114

CAS#	Parameter	Result	LOQ	Units
GCSV-02-11	Aliphatic >C10-C12	ND	28.8	mg/kg
GCSV-02-12	Aliphatic >C12-C16	194	28.8	mg/kg
GCSV-02-31	Aliphatic >C16-C35	1060	28.8	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
3386-33-2	1-Chlorooctadecane	3.85	3	ug/Kg	78	40 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/20/2015 09:45	572633	MADEP EPH Revision 1.1	5	11/22/2015 11:43	SDD	573113

CAS#	Parameter	Result	LOQ	Units
GCSV-02-15	Aromatic >C10-C12	ND	28.8	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	28.8	mg/kg
GCSV-02-17	Aromatic >C16-C21	98.9	28.8	mg/kg
GCSV-05-18	Aromatic >C21-C35	220	28.8	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	3.85	3.75	ug/Kg	98	40 - 140
580-13-2	2-Bromonaphthalene	3.85	4.27	ug/Kg	111	40 - 140
321-60-8	2-Fluorobiphenyl	3.85	4.45	ug/Kg	116	40 - 140

Sample Results

SS-16 (0-2FT)	Collect Date	11/13/2015 10:00	GCAL ID	21511160516
	Receive Date	11/13/2015 14:23	Matrix	Solid

MADEP VPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1000	11/18/2015 04:17	JAR	572673

CAS#	Parameter	Result	LOQ	Units
GCSV-02-10	Aliphatic >C8-C10	ND	29.7	mg/kg
GCSV-02-30	Aliphatic C6-C8	ND	29.7	mg/kg
GCSV-02-14	Aromatic >C8-C10	ND	29.7	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
GCV-00-7	2,5-Dibromotoluene (PID)	49.50	48.3	ug/Kg	98	60 - 140
GCV-00-8	2,5-Dibromotoluene (FID)	49.50	51.7	ug/Kg	104	60 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/20/2015 09:45	572633	MADEP EPH Revision 1.1	1	11/22/2015 10:45	SDD	573114

CAS#	Parameter	Result	LOQ	Units
GCSV-02-11	Aliphatic >C10-C12	ND	6.00	mg/kg
GCSV-02-12	Aliphatic >C12-C16	18.3	6.00	mg/kg
GCSV-02-31	Aliphatic >C16-C35	108	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
3386-33-2	1-Chlorooctadecane	4	1.74	ug/Kg	44	40 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/20/2015 09:45	572633	MADEP EPH Revision 1.1	1	11/22/2015 10:45	SDD	573113

CAS#	Parameter	Result	LOQ	Units
GCSV-02-15	Aromatic >C10-C12	ND	6.00	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	6.00	mg/kg
GCSV-02-17	Aromatic >C16-C21	15.8	6.00	mg/kg
GCSV-05-18	Aromatic >C21-C35	33.2	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	4	2.9	ug/Kg	73	40 - 140
580-13-2	2-Bromonaphthalene	4	3.71	ug/Kg	93	40 - 140
321-60-8	2-Fluorobiphenyl	4	3.57	ug/Kg	89	40 - 140

Sample Results

SS-16 (2-4FT)	Collect Date	11/13/2015 10:05	GCAL ID	21511160517
	Receive Date	11/13/2015 14:23	Matrix	Solid

MADEP VPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1000	11/18/2015 04:46	JAR	572673

CAS#	Parameter	Result	LOQ	Units
GCSV-02-10	Aliphatic >C8-C10	ND	29.9	mg/kg
GCSV-02-30	Aliphatic C6-C8	ND	29.9	mg/kg
GCSV-02-14	Aromatic >C8-C10	ND	29.9	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
GCV-00-7	2,5-Dibromotoluene (PID)	49.80	49.5	ug/Kg	99	60 - 140
GCV-00-8	2,5-Dibromotoluene (FID)	49.80	62.6	ug/Kg	126	60 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/20/2015 09:45	572633	MADEP EPH Revision 1.1	1	11/22/2015 00:39	SDD	573100

CAS#	Parameter	Result	LOQ	Units
GCSV-02-15	Aromatic >C10-C12	ND	6.00	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	6.00	mg/kg
GCSV-02-17	Aromatic >C16-C21	ND	6.00	mg/kg
GCSV-05-18	Aromatic >C21-C35	ND	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	4	1.61	ug/Kg	40	40 - 140
580-13-2	2-Bromonaphthalene	4	3.42	ug/Kg	86	40 - 140
321-60-8	2-Fluorobiphenyl	4	3.46	ug/Kg	87	40 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/20/2015 09:45	572633	MADEP EPH Revision 1.1	1	11/22/2015 00:39	SDD	573099

CAS#	Parameter	Result	LOQ	Units
GCSV-02-11	Aliphatic >C10-C12	ND	6.00	mg/kg
GCSV-02-12	Aliphatic >C12-C16	ND	6.00	mg/kg
GCSV-02-31	Aliphatic >C16-C35	ND	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
3386-33-2	1-Chlorooctadecane	4	3.11	ug/Kg	78	40 - 140

Sample Results

SS-16 (4-6FT)	Collect Date	11/13/2015 10:10	GCAL ID	21511160518
	Receive Date	11/13/2015 14:23	Matrix	Solid

MADEP VPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1000	11/18/2015 05:13	JAR	572673

CAS#	Parameter	Result	LOQ	Units
GCSV-02-10	Aliphatic >C8-C10	ND	29.3	mg/kg
GCSV-02-30	Aliphatic C6-C8	ND	29.3	mg/kg
GCSV-02-14	Aromatic >C8-C10	ND	29.3	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
GCV-00-7	2,5-Dibromotoluene (PID)	48.80	49.8	ug/Kg	102	60 - 140
GCV-00-8	2,5-Dibromotoluene (FID)	48.80	55	ug/Kg	113	60 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/20/2015 09:45	572633	MADEP EPH Revision 1.1	1	11/22/2015 00:58	SDD	573100

CAS#	Parameter	Result	LOQ	Units
GCSV-02-15	Aromatic >C10-C12	ND	6.00	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	6.00	mg/kg
GCSV-02-17	Aromatic >C16-C21	ND	6.00	mg/kg
GCSV-05-18	Aromatic >C21-C35	ND	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	4	2.27	ug/Kg	57	40 - 140
580-13-2	2-Bromonaphthalene	4	3.28	ug/Kg	82	40 - 140
321-60-8	2-Fluorobiphenyl	4	3.5	ug/Kg	88	40 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/20/2015 09:45	572633	MADEP EPH Revision 1.1	1	11/22/2015 00:58	SDD	573099

CAS#	Parameter	Result	LOQ	Units
GCSV-02-11	Aliphatic >C10-C12	ND	6.00	mg/kg
GCSV-02-12	Aliphatic >C12-C16	ND	6.00	mg/kg
GCSV-02-31	Aliphatic >C16-C35	ND	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
3386-33-2	1-Chlorooctadecane	4	2.96	ug/Kg	74	40 - 140

GC Volatiles QC Summary

Analytical Batch 572673		Client ID GCAL ID Sample Type Prep Date Analysis Date Matrix	MB572673 1510737 MB NA 11/17/2015 16:22 Solid	LCS572673 1510738 LCS NA 11/17/2015 14:02 Solid	LCSD572673 1510739 LCSD NA 11/17/2015 15:02 Solid					
MADEP VPH Revision 1.1		Units Result	mg/kg LOQ	Spike Added	Result %R	Control Limits%R	Spike Added	Result %R	RPD	RPD Limit
Aliphatic >C8-C10	GCSV-02-10	ND	1.50	5.00	5.81 116	60 - 140	5.00	5.41 108	7	30
Aliphatic C6-C8	GCSV-02-30	ND	1.50	7.50	9.04 121	60 - 140	7.50	7.77 104	15	30
Aromatic >C8-C10	GCSV-02-14	ND	1.50	7.50	7.76 103	60 - 140	7.50	7.46 99	4	30
Surrogate										
2,5-Dibromotoluene (FID)	GCV-00-8	2.53	101	2.5	2.87 115	60 - 140	2.5	2.94 118	2	NA
2,5-Dibromotoluene (PID)	GCV-00-7	2.37	95	2.5	2.88 115	60 - 140	2.5	2.55 102	12	NA

Analytical Batch 572673		Client ID GCAL ID Sample Type Prep Date Analysis Date Matrix	SS-16 (4-6FT) 21511160518 SAMPLE NA 11/18/2015 05:13 Solid	1510322MS 1512273 MS NA 11/18/2015 11:39 Solid	1510322MSD 1512274 MSD NA 11/18/2015 12:10 Solid					
MADEP VPH Revision 1.1		Units Result	mg/kg LOQ	Spike Added	Result %R	Control Limits%R	Spike Added	Result %R	RPD	RPD Limit
Aliphatic >C8-C10	GCSV-02-10	0.00	29.3	97.7	117 120	60 - 140	97.7	106 109	10	30
Aliphatic C6-C8	GCSV-02-30	0.00	29.3	146	174 119	60 - 140	146	151 103	14	30
Aromatic >C8-C10	GCSV-02-14	0.00	29.3	146	148 101	60 - 140	146	141 96	5	30
Surrogate										
2,5-Dibromotoluene (FID)	GCV-00-8	55	113	48.8	51.9 106	60 - 140	48.8	54.8 112	5	NA
2,5-Dibromotoluene (PID)	GCV-00-7	49.8	102	48.8	50.7 104	60 - 140	48.8	47.6 97	6	NA

GC Semi-Volatiles QC Summary

Analytical Batch 573099		Client ID	MB572633	LCS572633			LCSD572633						
Prep Batch 572633		GCAL ID	1510572	1510573			1510574						
Prep Method MADEP EPH Revision 1.1		Sample Type	MB	LCS			LCSD						
		Prep Date	11/20/2015 09:45	11/20/2015 09:45			11/20/2015 09:45						
		Analysis Date	11/21/2015 17:37	11/21/2015 17:57			11/21/2015 18:16						
		Matrix	Solid	Solid			Solid						
MADEP EPH Revision 1.1			Units Result	mg/kg LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Aliphatic >C10-C12	GCSV-02-11		ND	6.00	10.0	7.88	79	30 - 140	10.0	8.42	84	7	25
Aliphatic >C12-C16	GCSV-02-12		ND	6.00	10.0	8.69	87	40 - 140	10.0	8.58	86	1	25
Aliphatic >C16-C35	GCSV-02-31		ND	6.00	45.0	43.9	98	40 - 140	45.0	42.0	93	4	25
Surrogate													
1-Chlorooctadecane	3386-33-2		4.28	107	4	4.61	115	40 - 140	4	3.19	80	36	NA

Analytical Batch 573099		Client ID	SS-19 (0-2FT)	1510305MS			1510305MSD						
Prep Batch 572633		GCAL ID	21511160501	1510575			1510576						
Prep Method MADEP EPH Revision 1.1		Sample Type	SAMPLE	MS			MSD						
		Prep Date	11/20/2015 09:45	11/20/2015 09:45			11/20/2015 09:45						
		Analysis Date	11/21/2015 18:35	11/21/2015 18:55			11/21/2015 19:14						
		Matrix	Solid	Solid			Solid						
MADEP EPH Revision 1.1			Units Result	mg/kg LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Aliphatic >C10-C12	GCSV-02-11		0.882	6.00	10.0	8.29	74	30 - 140	10.0	8.99	81	8	25
Aliphatic >C12-C16	GCSV-02-12		22.1	6.00	10.0	28.5	64	40 - 140	10.0	31.5	94	10	25
Aliphatic >C16-C35	GCSV-02-31		128	6.00	45.0	168	89	40 - 140	45.0	167	86	1	25
Surrogate													
1-Chlorooctadecane	3386-33-2		1.83	46	4	2.46	62	40 - 140	4	2.37	59	4	NA

Analytical Batch 573100		Client ID	MB572633	LCS572633			LCSD572633						
Prep Batch 572633		GCAL ID	1510572	1510573			1510574						
Prep Method MADEP EPH Revision 1.1		Sample Type	MB	LCS			LCSD						
		Prep Date	11/20/2015 09:45	11/20/2015 09:45			11/20/2015 09:45						
		Analysis Date	11/21/2015 17:37	11/21/2015 17:57			11/21/2015 18:16						
		Matrix	Solid	Solid			Solid						
MADEP EPH Revision 1.1			Units Result	mg/kg LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Aromatic >C10-C12	GCSV-02-15		ND	6.00	5.00	3.53	71	30 - 140	5.00	3.88	78	9	25
Aromatic >C12-C16	GCSV-02-16		ND	6.00	20.0	14.2	71	40 - 140	20.0	15.0	75	5	25
Aromatic >C16-C21	GCSV-02-17		ND	6.00	10.0	7.52	75	40 - 140	10.0	7.62	76	1	25
Aromatic >C21-C35	GCSV-05-18		ND	6.00	50.0	30.3	61	40 - 140	50.0	31.1	62	3	25
Surrogate													
2-Bromonaphthalene	580-13-2		3.32	83	4	3.45	86	40 - 140	4	3.32	83	4	NA
2-Fluorobiphenyl	321-60-8		3.43	86	4	3.59	90	40 - 140	4	3.22	81	11	NA
o-Terphenyl	84-15-1		2.34	59	4	2.99	75	40 - 140	4	2.71	68	10	NA

Analytical Batch 573100		Client ID	SS-19 (0-2FT)	1510305MS			1510305MSD						
Prep Batch 572633		GCAL ID	21511160501	1510575			1510576						
Prep Method MADEP EPH Revision 1.1		Sample Type	SAMPLE	MS			MSD						
		Prep Date	11/20/2015 09:45	11/20/2015 09:45			11/20/2015 09:45						
		Analysis Date	11/21/2015 18:35	11/21/2015 18:55			11/21/2015 19:14						
		Matrix	Solid	Solid			Solid						
MADEP EPH Revision 1.1			Units Result	mg/kg LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Aromatic >C10-C12	GCSV-02-15		0.233	6.00	5.00	4.39	83	30 - 140	5.00	4.08	77	7	25
Aromatic >C12-C16	GCSV-02-16		3.32	6.00	20.0	15.3	60	40 - 140	20.0	14.3	55	7	25
Aromatic >C16-C21	GCSV-02-17		14.9	6.00	10.0	28.1	131	40 - 140	10.0	26.1	111	7	25
Aromatic >C21-C35	GCSV-05-18		27.3	6.00	50.0	65.9	77	40 - 140	50.0	61.9	69	6	25
Surrogate													
2-Bromonaphthalene	580-13-2		3.46	87	4	4.01	100	40 - 140	4	3.6	90	11	NA
2-Fluorobiphenyl	321-60-8		3.32	83	4	3.82	96	40 - 140	4	3.55	89	7	NA
o-Terphenyl	84-15-1		3.32	83	4	3.8	95	40 - 140	4	3.34	84	13	NA



CHAIN OF CUSTODY RECORD

7979 Innovation Park Dr., Baton Rouge, LA 70820-7402
Phone: 225.769.4900 • Fax: 225.767.5717 • www.gcal.com

pg 1 of 2

Client ID: 4271 - Michael Pisani & Associates
SDG: 215111605
PM: RKW



Report to: Client: MICHAEL PISANI & ASSOC Address: 1100 PONDRAIS ST SUITE 1430, NOLA Contact: TOBYN CELLER Phone: 415 847 6793 E-mail: tceller@mpisani.com		Bill to: Client: Address: SAME Contact: Phone:		Analytical Requests & Method				GCAL use only: Custody Seal used <input type="checkbox"/> yes <input type="checkbox"/> no intact <input type="checkbox"/> yes <input type="checkbox"/> no Temperature °C 3.0E26	
---	--	---	--	---	--	--	--	--	--

P.O. Number	Project Name/Number 07-47 EAST WHITE LAKE
Sampled By: TUC	

Matrix ¹	Date	Time (2400)	Comp	Grab	Sample Description	No Containers	Preservative	
So	11/18/15	905		X	SS-1119 (0-2 FT)	1		1
		910		X	SS-1119 (2-4 FT)	1		2
		1015		X	SS-1220 (0-2 FT)	1		3
		1020		X	SS-1220 (2-4 FT)	1		4
		1025		X	SS-1220 (4-6 FT)	1		5
		1105		X	SS-1422 (0-2 FT)	1		6
		1210		X	SS-1422 (2-4 FT)	1		7
		1215		X	SS-1422 (4-6 FT)	1		8
		1220		X	SS-1422 (6-8 FT)	1		9
		1420		X	SS-0917 (0-2 FT)	1		10
		1425		X	SS-0917 (2-4 FT)	1		11
		1430		X	SS-0917 (4-6 FT)	1		12
		1435		X	SS-0917 (6-8 FT)	1		13

Air Bill No: *ID changes made per client email RKV 11/18/15

Turn Around Time (Business Days): 24h* 48h* 3 days* 1 week* Standard (Per Contract/Quote)

Relinquished by: (Signature)	Date: 11-13-15	Time: 1423	Received by: (Signature)	Date: 11-13-15	Time: 1423	Note: TPH FRACTIONS - MADEP METHOD MASSA
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:	
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:	

Matrix¹: W = water, S = solid, L = liquid, T = tissue *Requires prior approval, rush charges may apply. We cannot accept verbal changes. Please email written changes to your PM.

WHITE: CLIENT FINAL REPORT - CANARY: CLIENT



CHAIN OF CUSTODY RECORD

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Pg 2 of 2

Client ID: 4271 - Michael Pisani & Associates

SDG: 215111605



PM: RKW

Report to: Client: <u>MP & A</u> Address: _____ Contact: <u>TOBYN CULLER</u> Phone: _____ E-mail: _____		Bill to: Client: _____ Address: _____ Contact: <u>SAME</u> Phone: _____ E-mail: _____		Analytical Requests & Method				GCAL use only: Custody Seal used <input type="checkbox"/> yes <input type="checkbox"/> no intact <input type="checkbox"/> yes <input type="checkbox"/> no Temperature °C <u>3.0^{E26}</u>	
---	--	---	--	---	--	--	--	--	--

P.O. Number	Project Name/Number <u>07-47 EAST WHITE LAKE</u>
Sampled By: <u>TBC</u>	

Matrix ¹	Date	Time (2400)	Comp	Grab	Sample Description	No Con-tainers ↓												Preservative
	<u>11/12/15</u>	<u>1550</u>		<u>X</u>	<u>SS-1826 (0-2 FT)</u>	<u>1</u>	<u>X</u>											<u>14</u>
	<u>↓</u>	<u>↓</u>		<u>X</u>	<u>SS-1826 (2-4 FT)</u>	<u>1</u>	<u>X</u>											<u>15</u>
<u>So</u>	<u>11/13/15</u>	<u>1000</u>		<u>X</u>	<u>SS-0816 (0-2 FT)</u>	<u>1</u>	<u>X</u>											<u>16</u>
	<u>↓</u>	<u>↓</u>		<u>X</u>	<u>SS-0816 (2-4 FT)</u>	<u>1</u>	<u>X</u>											<u>17</u>
	<u>↓</u>	<u>↓</u>		<u>X</u>	<u>SS-0816 (4-6 FT)</u>	<u>1</u>	<u>X</u>											<u>18</u>

Air Bill No: *ID changes made per client email RKW 11/18/15

Turn Around Time (Business Days): 24h* 48h* 3 days* 1 week* Standard (Per Contract/Quote)

Relinquished by: (Signature) <u>[Signature]</u>	Date: <u>11-13-15</u> Time: <u>1423</u>	Received by: (Signature) <u>[Signature]</u>	Date: <u>11-13-15</u> Time: <u>1423</u>	Note: <u>TPH FRACTIONS - MADEP METHOD</u>
Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	
Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	

Matrix¹: W = water, S = solid, L = liquid, T = tissue *Requires prior approval, rush charges may apply. We cannot accept verbal changes. Please email written changes to your PM.

WHITE: CLIENT FINAL REPORT - CANARY: CLIENT



SAMPLE RECEIVING CHECKLIST



SAMPLE DELIVERY GROUP 215111605		CHECKLIST			
		YES	NO	NA	
Client 4271 - Michael Pisani & Associates	PM RKW Transport Method CUST	Were all samples received using proper thermal preservation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		When used, were all custody seals intact?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		Were all samples received in proper containers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Profile Number 174115	Received By McCune, Dodie N.	Were all samples received using proper chemical preservation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		Was preservative added to any container at the lab?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		Were all containers received in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Line Item(s) 6 - Soil	Receive Date(s) 11/13/15	Were all VOC water samples received without head space?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		Do all sample labels match the Chain of Custody?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Did the Chain of Custody list the sampling technician?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Was the COC maintained i.e. all signatures, dates and time of receipt included?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COOLERS		DISCREPANCIES			
Airbill	Thermometer ID: E26	Temp(°C)	None		
		3.0	<i>5/21/10/12</i> <i>with proper thermal preservation</i>		
LAB PRESERVATIONS		None			
NOTES					

ANALYTICAL RESULTS

PERFORMED BY

GCAL, LLC

7979 Innovation Park Dr.
Baton Rouge, LA 70820

Report Date 12/02/2015

GCAL Report 215112003



Project 07-47 East White Lake

Deliver To

Dave Angle

Michael Pisani and Associates

13313 Southwest Freeway

Suite 221

Sugar Land, TX 77478

281-242-5700

Additional Recipients

Tobyn Celler, Michael Pisani &
Associates

Lance Cooper, Michael Pisani &
Associates

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
DL	Diluted analysis – when appended to Client Sample ID
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
00:01	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

J or I	Indicates the result is between the MDL and LOQ
J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
U	Indicates the compound was analyzed for but not detected
B or V	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*	Indicates a non-compliant or not applicable QC recovery or RPD – see narrative
E	The result is estimated because it exceeded the instrument calibration range
E	Metals - % difference for the serial dilution is > 10%

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with the NELAC Institute standard and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

Authorized Signature
GCAL Report 215112003

Certifications

10/02/2015

Certification	Certification Number
DOD ELAP	L14-243
Alabama	01955
Arizona	AZ0718
Arkansas	12-060-0
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
USDA Soil Permit	P330-10-00117

Case Narrative

Client: Michael Pisani & Associates **Report:** 215112003

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

VOLATILES GAS CHROMATOGRAPHY

In the MADEP VPH Revision 1.1 analysis, all samples were analyzed at a dilution; however, project detection limit requirements were still met.

SEMI-VOLATILES GAS CHROMATOGRAPHY

In the MADEP EPH analysis of samples 21511200301 (SS-21 0-2), the associated MS (1512348) and 215200307 (SS-25 2-4), the surrogate recovery for 1-Chlorooctadecane is outside of control limits due to obvious matrix interference.

In the MADEP EPH Revision 1.1 analysis, the recovery for the surrogate, 2-Bromonaphthalene is outside control limits for the MS (1512347) in prep batch 573008.

In the MADEP EPH Revision 1.1 analysis for prep batch 573008, the MS/MSD exhibited recovery and RPD failures. The LCS/LCSD recoveries and RPDs are acceptable.

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21511200301	SS-21 0-2	Solid	11/16/2015 12:25	11/20/2015 08:28
21511200302	SS-21 2-4	Solid	11/16/2015 12:30	11/20/2015 08:28
21511200303	SS-23 0-2	Solid	11/16/2015 13:05	11/20/2015 08:28
21511200304	SS-24 0-2	Solid	11/16/2015 14:00	11/20/2015 08:28
21511200305	SS-24 2-4	Solid	11/16/2015 14:05	11/20/2015 08:28
21511200306	SS-25 0-2	Solid	11/16/2015 15:50	11/20/2015 08:28
21511200307	SS-25 2-4	Solid	11/16/2015 15:55	11/20/2015 08:28
21511200308	SS-25 4-6	Solid	11/16/2015 16:00	11/20/2015 08:28

Sample Results

SS-21 0-2	Collect Date 11/16/2015 12:25	GCAL ID 21511200301
	Receive Date 11/20/2015 08:28	Matrix Solid

MADEP VPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1000	12/01/2015 00:53	JAR	573606

CAS#	Parameter	Result	LOQ	Units
GCSV-02-10	Aliphatic >C8-C10	ND	29.6	mg/kg
GCSV-02-30	Aliphatic C6-C8	ND	29.6	mg/kg
GCSV-02-14	Aromatic >C8-C10	ND	29.6	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
GCV-00-7	2,5-Dibromotoluene (PID)	49.30	51.6	ug/Kg	105	60 - 140
GCV-00-8	2,5-Dibromotoluene (FID)	49.30	63.2	ug/Kg	128	60 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/21/2015 18:00	573008	MADEP EPH Revision 1.1	1	11/24/2015 08:51	SDD	573384

CAS#	Parameter	Result	LOQ	Units
GCSV-02-11	Aliphatic >C10-C12	ND	6.00	mg/kg
GCSV-02-12	Aliphatic >C12-C16	6.86	6.00	mg/kg
GCSV-02-31	Aliphatic >C16-C35	350	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
3386-33-2	1-Chlorooctadecane	4	1.34	ug/Kg	34*	40 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/21/2015 18:00	573008	MADEP EPH Revision 1.1	1	11/24/2015 08:51	SDD	573385

CAS#	Parameter	Result	LOQ	Units
GCSV-02-15	Aromatic >C10-C12	ND	6.00	mg/kg
GCSV-02-16	Aromatic >C12-C16	12.2	6.00	mg/kg
GCSV-02-17	Aromatic >C16-C21	41.9	6.00	mg/kg
GCSV-05-18	Aromatic >C21-C35	41.2	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	4	3.62	ug/Kg	91	40 - 140
580-13-2	2-Bromonaphthalene	4	5.25	ug/Kg	131	40 - 140
321-60-8	2-Fluorobiphenyl	4	4.02	ug/Kg	101	40 - 140

Sample Results

SS-21 2-4	Collect Date	11/16/2015 12:30	GCAL ID	21511200302
	Receive Date	11/20/2015 08:28	Matrix	Solid

MADEP VPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1000	12/01/2015 02:10	JAR	573606

CAS#	Parameter	Result	LOQ	Units
GCSV-02-10	Aliphatic >C8-C10	ND	29.8	mg/kg
GCSV-02-30	Aliphatic C6-C8	ND	29.8	mg/kg
GCSV-02-14	Aromatic >C8-C10	ND	29.8	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
GCV-00-7	2,5-Dibromotoluene (PID)	49.60	49.3	ug/Kg	99	60 - 140
GCV-00-8	2,5-Dibromotoluene (FID)	49.60	53.2	ug/Kg	107	60 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/21/2015 18:00	573008	MADEP EPH Revision 1.1	1	11/24/2015 09:49	SDD	573385

CAS#	Parameter	Result	LOQ	Units
GCSV-02-15	Aromatic >C10-C12	ND	6.00	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	6.00	mg/kg
GCSV-02-17	Aromatic >C16-C21	ND	6.00	mg/kg
GCSV-05-18	Aromatic >C21-C35	ND	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	4	2.72	ug/Kg	68	40 - 140
580-13-2	2-Bromonaphthalene	4	3.46	ug/Kg	87	40 - 140
321-60-8	2-Fluorobiphenyl	4	3.35	ug/Kg	84	40 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/21/2015 18:00	573008	MADEP EPH Revision 1.1	1	11/24/2015 09:49	SDD	573384

CAS#	Parameter	Result	LOQ	Units
GCSV-02-11	Aliphatic >C10-C12	ND	6.00	mg/kg
GCSV-02-12	Aliphatic >C12-C16	ND	6.00	mg/kg
GCSV-02-31	Aliphatic >C16-C35	61.2	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
3386-33-2	1-Chlorooctadecane	4	1.63	ug/Kg	41	40 - 140

Sample Results

SS-23 0-2	Collect Date	11/16/2015 13:05	GCAL ID	21511200303
	Receive Date	11/20/2015 08:28	Matrix	Solid

MADEP VPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1000	12/01/2015 02:35	JAR	573606

CAS#	Parameter	Result	LOQ	Units
GCSV-02-10	Aliphatic >C8-C10	ND	27.8	mg/kg
GCSV-02-30	Aliphatic C6-C8	ND	27.8	mg/kg
GCSV-02-14	Aromatic >C8-C10	ND	27.8	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
GCV-00-7	2,5-Dibromotoluene (PID)	46.30	46.1	ug/Kg	100	60 - 140
GCV-00-8	2,5-Dibromotoluene (FID)	46.30	52	ug/Kg	112	60 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/21/2015 18:00	573008	MADEP EPH Revision 1.1	1	11/24/2015 10:09	SDD	573384

CAS#	Parameter	Result	LOQ	Units
GCSV-02-11	Aliphatic >C10-C12	ND	6.00	mg/kg
GCSV-02-12	Aliphatic >C12-C16	ND	6.00	mg/kg
GCSV-02-31	Aliphatic >C16-C35	ND	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
3386-33-2	1-Chlorooctadecane	4	3.06	ug/Kg	77	40 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/21/2015 18:00	573008	MADEP EPH Revision 1.1	1	11/24/2015 10:09	SDD	573385

CAS#	Parameter	Result	LOQ	Units
GCSV-02-15	Aromatic >C10-C12	ND	6.00	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	6.00	mg/kg
GCSV-02-17	Aromatic >C16-C21	ND	6.00	mg/kg
GCSV-05-18	Aromatic >C21-C35	ND	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	4	2.95	ug/Kg	74	40 - 140
580-13-2	2-Bromonaphthalene	4	3.73	ug/Kg	93	40 - 140
321-60-8	2-Fluorobiphenyl	4	3.74	ug/Kg	94	40 - 140

Sample Results

SS-24 0-2	Collect Date	11/16/2015 14:00	GCAL ID	21511200304
	Receive Date	11/20/2015 08:28	Matrix	Solid

MADEP VPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1000	12/01/2015 03:04	JAR	573606

CAS#	Parameter	Result	LOQ	Units
GCSV-02-10	Aliphatic >C8-C10	ND	27.0	mg/kg
GCSV-02-30	Aliphatic C6-C8	ND	27.0	mg/kg
GCSV-02-14	Aromatic >C8-C10	ND	27.0	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
GCV-00-7	2,5-Dibromotoluene (PID)	45	43	ug/Kg	96	60 - 140
GCV-00-8	2,5-Dibromotoluene (FID)	45	50.9	ug/Kg	113	60 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/21/2015 18:00	573008	MADEP EPH Revision 1.1	1	11/24/2015 10:28	SDD	573384

CAS#	Parameter	Result	LOQ	Units
GCSV-02-11	Aliphatic >C10-C12	ND	5.88	mg/kg
GCSV-02-12	Aliphatic >C12-C16	ND	5.88	mg/kg
GCSV-02-31	Aliphatic >C16-C35	14.9	5.88	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
3386-33-2	1-Chlorooctadecane	3.92	2.96	ug/Kg	75	40 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/21/2015 18:00	573008	MADEP EPH Revision 1.1	1	11/24/2015 10:28	SDD	573385

CAS#	Parameter	Result	LOQ	Units
GCSV-02-15	Aromatic >C10-C12	ND	5.88	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	5.88	mg/kg
GCSV-02-17	Aromatic >C16-C21	ND	5.88	mg/kg
GCSV-05-18	Aromatic >C21-C35	ND	5.88	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	3.92	2.68	ug/Kg	68	40 - 140
580-13-2	2-Bromonaphthalene	3.92	3.5	ug/Kg	89	40 - 140
321-60-8	2-Fluorobiphenyl	3.92	3.58	ug/Kg	91	40 - 140

Sample Results

SS-24 2-4	Collect Date	11/16/2015 14:05	GCAL ID	21511200305
	Receive Date	11/20/2015 08:28	Matrix	Solid

MADEP VPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1000	12/01/2015 03:31	JAR	573606

CAS#	Parameter	Result	LOQ	Units
GCSV-02-10	Aliphatic >C8-C10	ND	28.7	mg/kg
GCSV-02-30	Aliphatic C6-C8	ND	28.7	mg/kg
GCSV-02-14	Aromatic >C8-C10	ND	28.7	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
GCV-00-7	2,5-Dibromotoluene (PID)	47.90	46.1	ug/Kg	96	60 - 140
GCV-00-8	2,5-Dibromotoluene (FID)	47.90	51.1	ug/Kg	107	60 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/21/2015 18:00	573008	MADEP EPH Revision 1.1	1	11/24/2015 10:47	SDD	573384

CAS#	Parameter	Result	LOQ	Units
GCSV-02-11	Aliphatic >C10-C12	ND	6.00	mg/kg
GCSV-02-12	Aliphatic >C12-C16	ND	6.00	mg/kg
GCSV-02-31	Aliphatic >C16-C35	9.68	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
3386-33-2	1-Chlorooctadecane	4	3.6	ug/Kg	90	40 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/21/2015 18:00	573008	MADEP EPH Revision 1.1	1	11/24/2015 10:47	SDD	573385

CAS#	Parameter	Result	LOQ	Units
GCSV-02-15	Aromatic >C10-C12	ND	6.00	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	6.00	mg/kg
GCSV-02-17	Aromatic >C16-C21	ND	6.00	mg/kg
GCSV-05-18	Aromatic >C21-C35	ND	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	4	2.72	ug/Kg	68	40 - 140
580-13-2	2-Bromonaphthalene	4	3.38	ug/Kg	85	40 - 140
321-60-8	2-Fluorobiphenyl	4	3.45	ug/Kg	86	40 - 140

Sample Results

SS-25 0-2	Collect Date	11/16/2015 15:50	GCAL ID	21511200306
	Receive Date	11/20/2015 08:28	Matrix	Solid

MADEP VPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1000	12/01/2015 03:56	JAR	573606

CAS#	Parameter	Result	LOQ	Units
GCSV-02-10	Aliphatic >C8-C10	ND	29.4	mg/kg
GCSV-02-30	Aliphatic C6-C8	ND	29.4	mg/kg
GCSV-02-14	Aromatic >C8-C10	ND	29.4	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
GCV-00-7	2,5-Dibromotoluene (PID)	49	47.8	ug/Kg	98	60 - 140
GCV-00-8	2,5-Dibromotoluene (FID)	49	51.9	ug/Kg	106	60 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/21/2015 18:00	573008	MADEP EPH Revision 1.1	1	11/24/2015 11:07	SDD	573384

CAS#	Parameter	Result	LOQ	Units
GCSV-02-11	Aliphatic >C10-C12	ND	5.77	mg/kg
GCSV-02-12	Aliphatic >C12-C16	ND	5.77	mg/kg
GCSV-02-31	Aliphatic >C16-C35	17.1	5.77	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
3386-33-2	1-Chlorooctadecane	3.85	3.37	ug/Kg	88	40 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/21/2015 18:00	573008	MADEP EPH Revision 1.1	1	11/24/2015 11:07	SDD	573385

CAS#	Parameter	Result	LOQ	Units
GCSV-02-15	Aromatic >C10-C12	ND	5.77	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	5.77	mg/kg
GCSV-02-17	Aromatic >C16-C21	ND	5.77	mg/kg
GCSV-05-18	Aromatic >C21-C35	ND	5.77	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	3.85	2.46	ug/Kg	64	40 - 140
580-13-2	2-Bromonaphthalene	3.85	3.49	ug/Kg	91	40 - 140
321-60-8	2-Fluorobiphenyl	3.85	3.53	ug/Kg	92	40 - 140

Sample Results

SS-25 2-4	Collect Date	11/16/2015 15:55	GCAL ID	21511200307
	Receive Date	11/20/2015 08:28	Matrix	Solid

MADEP VPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1000	12/01/2015 04:24	JAR	573606

CAS#	Parameter	Result	LOQ	Units
GCSV-02-10	Aliphatic >C8-C10	ND	28.1	mg/kg
GCSV-02-30	Aliphatic C6-C8	ND	28.1	mg/kg
GCSV-02-14	Aromatic >C8-C10	ND	28.1	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
GCV-00-7	2,5-Dibromotoluene (PID)	46.80	46.5	ug/Kg	99	60 - 140
GCV-00-8	2,5-Dibromotoluene (FID)	46.80	52.6	ug/Kg	112	60 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/21/2015 18:00	573008	MADEP EPH Revision 1.1	1	11/24/2015 11:26	SDD	573385

CAS#	Parameter	Result	LOQ	Units
GCSV-02-15	Aromatic >C10-C12	ND	6.00	mg/kg
GCSV-02-16	Aromatic >C12-C16	7.15	6.00	mg/kg
GCSV-02-17	Aromatic >C16-C21	34.9	6.00	mg/kg
GCSV-05-18	Aromatic >C21-C35	43.8	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	4	3.44	ug/Kg	86	40 - 140
580-13-2	2-Bromonaphthalene	4	4.28	ug/Kg	107	40 - 140
321-60-8	2-Fluorobiphenyl	4	3.4	ug/Kg	85	40 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/21/2015 18:00	573008	MADEP EPH Revision 1.1	1	11/24/2015 11:26	SDD	573384

CAS#	Parameter	Result	LOQ	Units
GCSV-02-11	Aliphatic >C10-C12	ND	6.00	mg/kg
GCSV-02-12	Aliphatic >C12-C16	62.6	6.00	mg/kg
GCSV-02-31	Aliphatic >C16-C35	340	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
3386-33-2	1-Chlorooctadecane	4	1.5	ug/Kg	38*	40 - 140

Sample Results

SS-25 4-6	Collect Date	11/16/2015 16:00	GCAL ID	21511200308
	Receive Date	11/20/2015 08:28	Matrix	Solid

MADEP VPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1000	12/01/2015 04:51	JAR	573606

CAS#	Parameter	Result	LOQ	Units
GCSV-02-10	Aliphatic >C8-C10	ND	30.0	mg/kg
GCSV-02-30	Aliphatic C6-C8	ND	30.0	mg/kg
GCSV-02-14	Aromatic >C8-C10	ND	30.0	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
GCV-00-7	2,5-Dibromotoluene (PID)	50	49.3	ug/Kg	99	60 - 140
GCV-00-8	2,5-Dibromotoluene (FID)	50	53.8	ug/Kg	108	60 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/21/2015 18:00	573008	MADEP EPH Revision 1.1	1	11/24/2015 11:46	SDD	573384

CAS#	Parameter	Result	LOQ	Units
GCSV-02-11	Aliphatic >C10-C12	ND	5.94	mg/kg
GCSV-02-12	Aliphatic >C12-C16	15.0	5.94	mg/kg
GCSV-02-31	Aliphatic >C16-C35	125	5.94	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
3386-33-2	1-Chlorooctadecane	3.96	1.74	ug/Kg	44	40 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
11/21/2015 18:00	573008	MADEP EPH Revision 1.1	1	11/24/2015 11:46	SDD	573385

CAS#	Parameter	Result	LOQ	Units
GCSV-02-15	Aromatic >C10-C12	ND	5.94	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	5.94	mg/kg
GCSV-02-17	Aromatic >C16-C21	12.0	5.94	mg/kg
GCSV-05-18	Aromatic >C21-C35	15.7	5.94	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	3.96	2.78	ug/Kg	70	40 - 140
580-13-2	2-Bromonaphthalene	3.96	3.93	ug/Kg	99	40 - 140
321-60-8	2-Fluorobiphenyl	3.96	3.5	ug/Kg	88	40 - 140

GC Volatiles QC Summary

Analytical Batch		Client ID	MB573606	LCS573606				LCSD573606					
573606		GCAL ID	1514637	1514638				1514639					
		Sample Type	MB	LCS				LCSD					
		Prep Date	NA	NA				NA					
		Analysis Date	11/30/2015 23:39	11/30/2015 21:42				11/30/2015 22:18					
		Matrix	Solid	Solid				Solid					
MADEP VPH Revision 1.1			Units Result	mg/kg LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Aliphatic >C8-C10		GCSV-02-10	ND	1.50	5.00	5.94	119	60 - 140	5.00	5.60	112	6	30
Aliphatic C6-C8		GCSV-02-30	ND	1.50	7.50	8.74	117	60 - 140	7.50	7.90	105	10	30
Aromatic >C8-C10		GCSV-02-14	ND	1.50	7.50	7.79	104	60 - 140	7.50	7.58	101	3	30
Surrogate													
2,5-Dibromotoluene (FID)		GCV-00-8	3.08	123	2.5	2.85	114	60 - 140	2.5	2.89	116		NA
2,5-Dibromotoluene (PID)		GCV-00-7	2.42	97	2.5	2.75	110	60 - 140	2.5	2.57	103		NA

GC Semi-Volatiles QC Summary

Analytical Batch 573384		Client ID	MB573008	LCS573008			LCSD573008						
Prep Batch 573008		GCAL ID	1512344	1512345			1512346						
Prep Method MADEP EPH Revision 1.1		Sample Type	MB	LCS			LCSD						
		Prep Date	11/21/2015 18:00	11/21/2015 18:00			11/21/2015 18:00						
		Analysis Date	11/24/2015 07:53	11/24/2015 08:12			11/24/2015 08:31						
		Matrix	Solid	Solid			Solid						
MADEP EPH Revision 1.1			Units Result	mg/kg LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Aliphatic >C10-C12	GCSV-02-11		ND	6.00	10.0	7.78	78	30 - 140	10.0	7.05	71	10	25
Aliphatic >C12-C16	GCSV-02-12		ND	6.00	10.0	6.12	61	40 - 140	10.0	6.87	69	12	25
Aliphatic >C16-C35	GCSV-02-31		ND	6.00	45.0	36.4	81	40 - 140	45.0	39.8	88	9	25
Surrogate													
1-Chlorooctadecane	3386-33-2		2.57	64	4	1.78	45	40 - 140	4	3.7	93		NA

Analytical Batch 573384		Client ID	SS-21 0-2	1512075MS			1512075MSD						
Prep Batch 573008		GCAL ID	21511200301	1512347			1512348						
Prep Method MADEP EPH Revision 1.1		Sample Type	SAMPLE	MS			MSD						
		Prep Date	11/21/2015 18:00	11/21/2015 18:00			11/21/2015 18:00						
		Analysis Date	11/24/2015 08:51	11/24/2015 09:10			11/24/2015 09:30						
		Matrix	Solid	Solid			Solid						
MADEP EPH Revision 1.1			Units Result	mg/kg LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Aliphatic >C10-C12	GCSV-02-11		5.39	5.94	9.90	5.76	4*	30 - 140	9.52	7.30	20*	24	25
Aliphatic >C12-C16	GCSV-02-12		6.86	5.94	9.90	5.76	-11*	40 - 140	9.52	75.6	722*	172*	25
Aliphatic >C16-C35	GCSV-02-31		350	5.94	44.6	259	-203*	40 - 140	42.9	295	-128*	13	25
Surrogate													
1-Chlorooctadecane	3386-33-2		1.34	34*	3.96	5.35	135	40 - 140	3.81	1.36	36*		NA

Analytical Batch 573385		Client ID	MB573008	LCS573008			LCSD573008						
Prep Batch 573008		GCAL ID	1512344	1512345			1512346						
Prep Method MADEP EPH Revision 1.1		Sample Type	MB	LCS			LCSD						
		Prep Date	11/21/2015 18:00	11/21/2015 18:00			11/21/2015 18:00						
		Analysis Date	11/24/2015 07:53	11/24/2015 08:12			11/24/2015 08:31						
		Matrix	Solid	Solid			Solid						
MADEP EPH Revision 1.1			Units Result	mg/kg LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Aromatic >C10-C12	GCSV-02-15		ND	6.00	5.00	3.52	70	30 - 140	5.00	3.95	79	12	25
Aromatic >C12-C16	GCSV-02-16		ND	6.00	20.0	14.7	74	40 - 140	20.0	14.8	74	1	25
Aromatic >C16-C21	GCSV-02-17		ND	6.00	10.0	7.77	78	40 - 140	10.0	7.32	73	6	25
Aromatic >C21-C35	GCSV-05-18		ND	6.00	50.0	30.9	62	40 - 140	50.0	30.3	61	2	25
Surrogate													
2-Bromonaphthalene	580-13-2		3.57	89	4	3.76	94	40 - 140	4	3.67	92		NA
2-Fluorobiphenyl	321-60-8		3.52	88	4	3.76	94	40 - 140	4	3.75	94		NA
o-Terphenyl	84-15-1		2.86	72	4	3.02	76	40 - 140	4	2.85	71		NA

Analytical Batch 573385		Client ID	SS-21 0-2	1512075MS			1512075MSD						
Prep Batch 573008		GCAL ID	21511200301	1512347			1512348						
Prep Method MADEP EPH Revision 1.1		Sample Type	SAMPLE	MS			MSD						
		Prep Date	11/21/2015 18:00	11/21/2015 18:00			11/21/2015 18:00						
		Analysis Date	11/24/2015 08:51	11/24/2015 09:10			11/24/2015 09:30						
		Matrix	Solid	Solid			Solid						
MADEP EPH Revision 1.1			Units Result	mg/kg LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Aromatic >C10-C12	GCSV-02-15		1.01	5.94	4.95	4.48	70	30 - 140	4.76	3.82	59	16	25
Aromatic >C12-C16	GCSV-02-16		12.2	5.94	19.8	24.6	63	40 - 140	19.0	24.7	66	0	25
Aromatic >C16-C21	GCSV-02-17		41.9	5.94	9.90	41.9	0*	40 - 140	9.52	46.9	52	11	25
Aromatic >C21-C35	GCSV-05-18		41.2	5.94	49.5	59.8	38*	40 - 140	47.6	74.2	69	21	25
Surrogate													
2-Bromonaphthalene	580-13-2		5.25	131	3.96	6.74	170*	40 - 140	3.81	4.53	119		NA
2-Fluorobiphenyl	321-60-8		4.02	101	3.96	4.27	108	40 - 140	3.81	3.83	101		NA
o-Terphenyl	84-15-1		3.62	91	3.96	2.86	72	40 - 140	3.81	2.77	73		NA



CHAIN OF CUSTODY RECORD

7979 Innovation Park Dr., Baton Rouge, LA 70820-7402
 Phone: 225.769.4900 • Fax: 225.767.5717 • www.gcal.com

Client ID: 4271 - Michael Pisani & Associates

SDG: 215112003

PM: RKW



Report to: Client: <u>Michael Pisani & Associates</u> Address: <u>13313 Southwest Fwy #221</u> <u>Sugar Land TX 77478</u> Contact: <u>Dave Angle</u> Phone: <u>281.242.5700</u> E-mail: <u>dangle@mpisani.com</u>		Bill to: Client: <u>JAMIE</u> Address: _____ Contact: _____ Phone: _____ E-mail: _____		Analytical Requests & Method				GCAL use only: Custody Seal used <input checked="" type="checkbox"/> yes <input type="checkbox"/> no intact <input checked="" type="checkbox"/> yes <input type="checkbox"/> no Temperature °C <u>41.26</u>	
--	--	--	--	------------------------------	--	--	--	---	--

P.O. Number	Project Name/Number <u>East White Lake / 07-47</u>
Sampled By: <u>R. Charles Trehan</u>	

Matrix ¹	Date	Time (2400)	Comp	Grab	Sample Description	No Con-tainers	Preservative
S	11/16/15	1225		X	SS-21 0-2'	1 X	
		1230			SS-21 2-4'	1 X	
		1305			SS-23 0-2'	1 X	
		1400			SS-24 0-2'	1 X	
		145			SS-24 2-4'	1 X	
		1550			SS-25 0-2'	1 X	
		1555			SS-25 2-4'	1 X	
		1600			SS-25 4-6'	1 X	

Air Bill No: 8063 3490 6742

Turn-Around Time (Business Days): 24h* 48h* 3 days* 1 week* Standard (Per Contract/Quote)

Relinquished by: (Signature) <u>[Signature]</u>	Date: 11/19/15	Time: 1830	Received by: (Signature) <u>[Signature]</u>	Date: 11-20-15	Time: 0828	Note: By submitting these samples, you agree to GCAL's terms and conditions contained in our most recent schedule of services.
Relinquished by: (Signature) <u>[Signature]</u>	Date: 11-20-15	Time: 0828	Received by: (Signature) <u>[Signature]</u>	Date: 11-20-15	Time: 0828	
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:	

Matrix¹: W = water, S = solid, L = liquid, T = tissue *Requires prior approval, rush charges may apply. We cannot accept verbal changes. Please email written changes to your PM.

WHITE: CLIENT FINAL REPORT - CANARY: CLIENT



SAMPLE RECEIVING CHECKLIST



SAMPLE DELIVERY GROUP 215112003			CHECKLIST			YES	NO	NA
Client	PM RKW	Transport Method	Were all samples received using proper thermal preservation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
4271 - Michael Pisani & Associates		FEDEX	When used, were all custody seals intact?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Profile Number		Received By	Were all samples received in proper containers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
174115		McCune, Dodie N.	Were all samples received using proper chemical preservation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Line Item(s)		Receive Date(s)	Was preservative added to any container at the lab?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
6 - Soil		11/20/15	Were all containers received in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
			Were all VOC water samples received without head space?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
			Do all sample labels match the Chain of Custody?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
			Did the Chain of Custody list the sampling technician?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
			Was the COC maintained i.e. all signatures, dates and time of receipt included?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
COOLERS			DISCREPANCIES			LAB PRESERVATIONS		
Airbill	Thermometer ID: E26	Temp(°C)	None			None		
806334906742		4.1						
NOTES								



NELAP CERTIFICATE NUMBER: 01955
DOD ELAP CERTIFICATE NUMBER: L14-243

ANALYTICAL RESULTS

PERFORMED BY

GCAL, LLC

7979 Innovation Park Dr.
Baton Rouge, LA 70820

Report Date 12/14/2015

GCAL Report 215120151



Project 07-47 East White Lake

Deliver To

Dave Angle

Michael Pisani and Associates

13313 Southwest Freeway

Suite 221

Sugar Land, TX 77478

281-242-5700

Additional Recipients

Tobyn Celler, Michael Pisani &
Associates

Lance Cooper, Michael Pisani &
Associates



Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
DL	Diluted analysis – when appended to Client Sample ID
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
00:01	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

J or I	Indicates the result is between the MDL and LOQ
J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
U	Indicates the compound was analyzed for but not detected
B or V	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*	Indicates a non-compliant or not applicable QC recovery or RPD – see narrative
E	The result is estimated because it exceeded the instrument calibration range
E	Metals - % difference for the serial dilution is > 10%

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with the NELAC Institute standard and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

Authorized Signature
GCAL Report 215120151

Certifications

10/02/2015

Certification	Certification Number
DOD ELAP	L14-243
Alabama	01955
Arizona	AZ0718
Arkansas	12-060-0
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
USDA Soil Permit	P330-10-00117

Case Narrative

Client: Michael Pisani & Associates **Report:** 215120151

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

VOLATILES GAS CHROMATOGRAPHY

In the MADEP VPH Revision 1.1 analysis, samples 21512015101 (TBB-1D 0-5) and 21512015102 (TBB-1D 5-10) were analyzed at a dilution; however, project detection limit requirements were still met.

SEMI-VOLATILES GAS CHROMATOGRAPHY

In the MADEP EPH Revision 1.1 analysis for prep batch 573752, the MS/MSD exhibited recovery and RPD failures. The LCS/LCSD recoveries are acceptable.

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21512015101	TBB-1D 0-5	Solid	11/25/2015 10:40	12/01/2015 13:26
21512015102	TBB-1D 5-10	Solid	11/25/2015 10:45	12/01/2015 13:26

Sample Results

TBB-1D 0-5	Collect Date	11/25/2015 10:40	GCAL ID	21512015101
	Receive Date	12/01/2015 13:26	Matrix	Solid

MADEP VPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1000	12/07/2015 18:14	JAR	574066

CAS#	Parameter	Result	LOQ	Units
GCSV-02-10	Aliphatic >C8-C10	ND	28.5	mg/kg
GCSV-02-30	Aliphatic C6-C8	ND	28.5	mg/kg
GCSV-02-14	Aromatic >C8-C10	ND	28.5	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
GCV-00-7	2,5-Dibromotoluene (PID)	47.40	45.4	ug/Kg	96	60 - 140
GCV-00-8	2,5-Dibromotoluene (FID)	47.40	48.4	ug/Kg	102	60 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/06/2015 16:30	573752	MADEP EPH Revision 1.1	1	12/07/2015 09:02	DLB	574063

CAS#	Parameter	Result	LOQ	Units
GCSV-02-15	Aromatic >C10-C12	ND	6.00	mg/kg
GCSV-02-16	Aromatic >C12-C16	7.46	6.00	mg/kg
GCSV-02-17	Aromatic >C16-C21	9.42	6.00	mg/kg
GCSV-05-18	Aromatic >C21-C35	8.51	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	4	2.51	ug/Kg	63	40 - 140
580-13-2	2-Bromonaphthalene	4	4.65	ug/Kg	116	40 - 140
321-60-8	2-Fluorobiphenyl	4	3.96	ug/Kg	99	40 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/06/2015 16:30	573752	MADEP EPH Revision 1.1	1	12/06/2015 17:48	DLB	574037

CAS#	Parameter	Result	LOQ	Units
GCSV-02-11	Aliphatic >C10-C12	16.7	6.00	mg/kg
GCSV-02-12	Aliphatic >C12-C16	60.7	6.00	mg/kg
GCSV-02-31	Aliphatic >C16-C35	153	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
3386-33-2	1-Chlorooctadecane	4	1.78	ug/Kg	45	40 - 140

Sample Results

TBB-1D 5-10	Collect Date	11/25/2015 10:45	GCAL ID	21512015102
	Receive Date	12/01/2015 13:26	Matrix	Solid

MADEP VPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1000	12/07/2015 18:40	JAR	574066

CAS#	Parameter	Result	LOQ	Units
GCSV-02-10	Aliphatic >C8-C10	ND	29.2	mg/kg
GCSV-02-30	Aliphatic C6-C8	ND	29.2	mg/kg
GCSV-02-14	Aromatic >C8-C10	ND	29.2	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
GCV-00-7	2,5-Dibromotoluene (PID)	48.70	47.6	ug/Kg	98	60 - 140
GCV-00-8	2,5-Dibromotoluene (FID)	48.70	51.9	ug/Kg	106	60 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/06/2015 16:30	573752	MADEP EPH Revision 1.1	1	12/06/2015 18:08	DLB	574038

CAS#	Parameter	Result	LOQ	Units
GCSV-02-15	Aromatic >C10-C12	ND	6.00	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	6.00	mg/kg
GCSV-02-17	Aromatic >C16-C21	ND	6.00	mg/kg
GCSV-05-18	Aromatic >C21-C35	ND	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	4	2.3	ug/Kg	58	40 - 140
580-13-2	2-Bromonaphthalene	4	3.42	ug/Kg	86	40 - 140
321-60-8	2-Fluorobiphenyl	4	3.52	ug/Kg	88	40 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/06/2015 16:30	573752	MADEP EPH Revision 1.1	1	12/06/2015 18:08	DLB	574037

CAS#	Parameter	Result	LOQ	Units
GCSV-02-11	Aliphatic >C10-C12	ND	6.00	mg/kg
GCSV-02-12	Aliphatic >C12-C16	ND	6.00	mg/kg
GCSV-02-31	Aliphatic >C16-C35	18.6	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
3386-33-2	1-Chlorooctadecane	4	2.12	ug/Kg	53	40 - 140

GC Volatiles QC Summary

Analytical Batch 574066		Client ID MB574066	GCAL ID 1516801	Sample Type MB	Prep Date NA	Analysis Date 12/07/2015 17:45	Matrix Solid	LCS574066 1516802	LCS NA	12/07/2015 15:00	Solid	LCSD574066 1516803	LCSD NA	12/07/2015 16:24	Solid
MADEP VPH Revision 1.1		Units Result	mg/kg LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit			
Aliphatic >C8-C10	GCSV-02-10	ND	1.50	5.00	6.08	122	60 - 140	5.00	5.40	108	12	30			
Aliphatic C6-C8	GCSV-02-30	ND	1.50	7.50	8.72	116	60 - 140	7.50	7.69	103	13	30			
Aromatic >C8-C10	GCSV-02-14	ND	1.50	7.50	7.92	106	60 - 140	7.50	7.47	100	6	30			
Surrogate															
2,5-Dibromotoluene (FID)	GCV-00-8	2.77	111	2.5	2.47	99	60 - 140	2.5	2.64	106		NA			
2,5-Dibromotoluene (PID)	GCV-00-7	2.29	92	2.5	2.4	96	60 - 140	2.5	2.36	94		NA			

GC Semi-Volatiles QC Summary

Analytical Batch 574037		Client ID GCAL ID	MB573752 1515337	LCS573752 1515338			LCSD573752 1515339						
Prep Batch 573752		Sample Type Prep Date	MB 12/06/2015 16:30	LCS 12/06/2015 16:30			LCSD 12/06/2015 16:30						
Prep Method MADEP EPH Revision 1.1		Analysis Date Matrix	12/06/2015 16:51 Solid	12/06/2015 17:10 Solid			12/06/2015 17:29 Solid						
MADEP EPH Revision 1.1			Units Result	mg/kg LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Aliphatic >C10-C12	GCSV-02-11	ND	6.00	10.0	5.84	58	30 - 140	10.0	6.31	63	8	25	
Aliphatic >C12-C16	GCSV-02-12	ND	6.00	10.0	6.64	66	40 - 140	10.0	6.93	69	4	25	
Aliphatic >C16-C35	GCSV-02-31	ND	6.00	45.0	30.7	68	40 - 140	45.0	32.2	72	5	25	
Surrogate 1-Chlorooctadecane	3386-33-2	3.57	89	4	2.66	67	40 - 140	4	2.53	63		NA	

Analytical Batch 574037		Client ID GCAL ID	TBB-1D 5-10 21512015102	1514906MS 1515340			1514906MSD 1515341						
Prep Batch 573752		Sample Type Prep Date	SAMPLE 12/06/2015 16:30	MS 12/06/2015 16:30			MSD 12/06/2015 16:30						
Prep Method MADEP EPH Revision 1.1		Analysis Date Matrix	12/06/2015 18:08 Solid	12/06/2015 18:27 Solid			12/06/2015 18:46 Solid						
MADEP EPH Revision 1.1			Units Result	mg/kg LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Aliphatic >C10-C12	GCSV-02-11	2.41	6.00	10.0	5.44	30	30 - 140	10.0	5.75	33	6	25	
Aliphatic >C12-C16	GCSV-02-12	0.424	6.00	10.0	4.99	46	40 - 140	10.0	6.55	61	27*	25	
Aliphatic >C16-C35	GCSV-02-31	18.6	6.00	45.0	33.8	34*	40 - 140	45.0	34.9	36*	3	25	
Surrogate 1-Chlorooctadecane	3386-33-2	2.12	53	4	3.59	90	40 - 140	4	2.68	67		NA	

Analytical Batch 574038		Client ID GCAL ID	MB573752 1515337	LCS573752 1515338			LCSD573752 1515339						
Prep Batch 573752		Sample Type Prep Date	MB 12/06/2015 16:30	LCS 12/06/2015 16:30			LCSD 12/06/2015 16:30						
Prep Method MADEP EPH Revision 1.1		Analysis Date Matrix	12/06/2015 16:51 Solid	12/06/2015 17:10 Solid			12/06/2015 17:29 Solid						
MADEP EPH Revision 1.1			Units Result	mg/kg LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Aromatic >C10-C12	GCSV-02-15	ND	6.00	5.00	3.90	78	30 - 140	5.00	3.59	72	8	25	
Aromatic >C12-C16	GCSV-02-16	ND	6.00	20.0	15.1	76	40 - 140	20.0	14.0	70	8	25	
Aromatic >C16-C21	GCSV-02-17	ND	6.00	10.0	7.81	78	40 - 140	10.0	7.44	74	5	25	
Aromatic >C21-C35	GCSV-05-18	ND	6.00	50.0	34.6	69	40 - 140	50.0	32.3	65	7	25	
Surrogate 2-Bromonaphthalene	580-13-2	2.4	60	4	3.21	80	40 - 140	4	3.46	87		NA	
2-Fluorobiphenyl	321-60-8	1.84	46	4	3.78	95	40 - 140	4	3.53	88		NA	
o-Terphenyl	84-15-1	2.62	66	4	2.91	73	40 - 140	4	2.77	69		NA	

Analytical Batch 574038		Client ID GCAL ID	TBB-1D 5-10 21512015102	1514906MS 1515340			1514906MSD 1515341						
Prep Batch 573752		Sample Type Prep Date	SAMPLE 12/06/2015 16:30	MS 12/06/2015 16:30			MSD 12/06/2015 16:30						
Prep Method MADEP EPH Revision 1.1		Analysis Date Matrix	12/06/2015 18:08 Solid	12/06/2015 18:27 Solid			12/06/2015 18:46 Solid						
MADEP EPH Revision 1.1			Units Result	mg/kg LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Aromatic >C10-C12	GCSV-02-15	0.00	6.00	5.00	3.27	65	30 - 140	5.00	3.30	66	1	25	
Aromatic >C12-C16	GCSV-02-16	0.00	6.00	20.0	12.9	65	40 - 140	20.0	13.3	67	3	25	
Aromatic >C16-C21	GCSV-02-17	0.00	6.00	10.0	6.74	67	40 - 140	10.0	6.57	66	3	25	
Aromatic >C21-C35	GCSV-05-18	0.00	6.00	50.0	29.5	59	40 - 140	50.0	29.2	58	1	25	
Surrogate 2-Bromonaphthalene	580-13-2	3.42	86	4	3.43	86	40 - 140	4	3.53	88		NA	
2-Fluorobiphenyl	321-60-8	3.52	88	4	3.51	88	40 - 140	4	3.65	91		NA	
o-Terphenyl	84-15-1	2.3	58	4	2.35	59	40 - 140	4	2.34	59		NA	



SAMPLE RECEIVING CHECKLIST



SAMPLE DELIVERY GROUP 215120151			CHECKLIST			YES	NO	NA
Client PM RKW 4271 - Michael Pisani & Associates	Transport Method COURIER		Were all samples received using proper thermal preservation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Profile Number 174115	Received By McCune, Dodie N.		When used, were all custody seals intact?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Line Item(s) 6 - Soil	Receive Date(s) 12/01/15		Were all samples received in proper containers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
			Were all samples received using proper chemical preservation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
			Was preservative added to any container at the lab?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
			Were all containers received in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
			Were all VOC water samples received without head space?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
			Do all sample labels match the Chain of Custody?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
			Did the Chain of Custody list the sampling technician?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
			Was the COC maintained i.e. all signatures, dates and time of receipt included?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
COOLERS			DISCREPANCIES			LAB PRESERVATIONS		
Airbill	Thermometer ID: E24	Temp(°C)	None			None		
		3.3						
NOTES								

ANALYTICAL RESULTS

PERFORMED BY

GCAL, LLC
7979 Innovation Park Dr.
Baton Rouge, LA 70820

Report Date 12/14/2015

GCAL Report 215120210



Project 07-47 East White Lake

Deliver To

Dave Angle

Michael Pisani and Associates

13313 Southwest Freeway

Suite 221

Sugar Land, TX 77478

281-242-5700

Additional Recipients

Tobyn Celler, Michael Pisani &
Associates

Lance Cooper, Michael Pisani &
Associates

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
DL	Diluted analysis – when appended to Client Sample ID
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
00:01	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

J or I	Indicates the result is between the MDL and LOQ
J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
U	Indicates the compound was analyzed for but not detected
B or V	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*	Indicates a non-compliant or not applicable QC recovery or RPD – see narrative
E	The result is estimated because it exceeded the instrument calibration range
E	Metals - % difference for the serial dilution is > 10%

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I certify that this data package is in compliance with the NELAC Institute standard and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

Authorized Signature
GCAL Report 215120210

Certifications

10/02/2015

Certification	Certification Number
DOD ELAP	L14-243
Alabama	01955
Arizona	AZ0718
Arkansas	12-060-0
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
USDA Soil Permit	P330-10-00117

Case Narrative

Client: Michael Pisani & Associates **Report:** 215120210

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SEMI- VOLATILES GAS CHROMATOGRAPHY

In the MADEP EPH Revision 1.1 analysis, the recovery for the surrogate, 1-Chlorooctadecane is above the upper control limit for sample 21512021001 (TBB-2D GRAB). This is attributed to an obvious matrix interference.

In the MADEP EPH Revision 1.1 analysis for prep batch 573752, the MS/MSD exhibited recovery and RPD failures. All LCS/LCSD recoveries and RPDs are acceptable.

VOLATILES GAS CHROMATOGRAPHY

In the MADEP VPH Revision 1.1 analysis, sample 21512021001 (TBB-2D GRAB) was analyzed at a dilution; however, project detection limit requirements were still met.

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21512021001	TBB-2D GRAB	Solid	12/01/2015 09:10	12/02/2015 10:05

Sample Results

TBB-2D GRAB	Collect Date	12/01/2015 09:10	GCAL ID	21512021001
	Receive Date	12/02/2015 10:05	Matrix	Solid

MADEP VPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1000	12/07/2015 19:07	JAR	574066

CAS#	Parameter	Result	LOQ	Units
GCSV-02-10	Aliphatic >C8-C10	ND	28.1	mg/kg
GCSV-02-30	Aliphatic C6-C8	ND	28.1	mg/kg
GCSV-02-14	Aromatic >C8-C10	ND	28.1	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
GCV-00-7	2,5-Dibromotoluene (PID)	46.80	47.1	ug/Kg	101	60 - 140
GCV-00-8	2,5-Dibromotoluene (FID)	46.80	50.4	ug/Kg	108	60 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/06/2015 16:30	573752	MADEP EPH Revision 1.1	1	12/06/2015 19:06	DLB	574037

CAS#	Parameter	Result	LOQ	Units
GCSV-02-11	Aliphatic >C10-C12	ND	6.00	mg/kg
GCSV-02-12	Aliphatic >C12-C16	22.8	6.00	mg/kg
GCSV-02-31	Aliphatic >C16-C35	92.4	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
3386-33-2	1-Chlorooctadecane	4	6.77	ug/Kg	169*	40 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/06/2015 16:30	573752	MADEP EPH Revision 1.1	1	12/06/2015 19:06	DLB	574038

CAS#	Parameter	Result	LOQ	Units
GCSV-02-15	Aromatic >C10-C12	ND	6.00	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	6.00	mg/kg
GCSV-02-17	Aromatic >C16-C21	ND	6.00	mg/kg
GCSV-05-18	Aromatic >C21-C35	21.5	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	4	2.34	ug/Kg	59	40 - 140
580-13-2	2-Bromonaphthalene	4	3.53	ug/Kg	88	40 - 140
321-60-8	2-Fluorobiphenyl	4	3.54	ug/Kg	89	40 - 140

GC Volatiles QC Summary

Analytical Batch 574066		Client ID MB574066	GCAL ID 1516801	Sample Type MB	Prep Date NA	Analysis Date 12/07/2015 17:45	Matrix Solid	LCS574066 1516802	LCS NA	12/07/2015 15:00	Solid	LCSD574066 1516803	LCSD NA	12/07/2015 16:24	Solid
MADEP VPH Revision 1.1		Units Result	mg/kg LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit			
Aliphatic >C8-C10	GCSV-02-10	ND	1.50	5.00	6.08	122	60 - 140	5.00	5.40	108	12	30			
Aliphatic C6-C8	GCSV-02-30	ND	1.50	7.50	8.72	116	60 - 140	7.50	7.69	103	13	30			
Aromatic >C8-C10	GCSV-02-14	ND	1.50	7.50	7.92	106	60 - 140	7.50	7.47	100	6	30			
Surrogate															
2,5-Dibromotoluene (FID)	GCV-00-8	2.77	111	2.5	2.47	99	60 - 140	2.5	2.64	106		NA			
2,5-Dibromotoluene (PID)	GCV-00-7	2.29	92	2.5	2.4	96	60 - 140	2.5	2.36	94		NA			

GC Semi-Volatiles QC Summary

Analytical Batch		Client ID	LCS573752			LCSD573752						
574037		MB573752	1515338			1515339						
Prep Batch		Sample Type	LCS			LCSD						
573752		MB	12/06/2015 16:30			12/06/2015 16:30						
Prep Method		Analysis Date	12/06/2015 16:51			12/06/2015 17:10						
MADEP EPH Revision 1.1		Matrix	Solid			Solid						
MADEP EPH Revision 1.1		Units Result	mg/kg LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Aliphatic >C10-C12	GCSV-02-11	ND	6.00	10.0	5.84	58	30 - 140	10.0	6.31	63	8	25
Aliphatic >C12-C16	GCSV-02-12	ND	6.00	10.0	6.64	66	40 - 140	10.0	6.93	69	4	25
Aliphatic >C16-C35	GCSV-02-31	ND	6.00	45.0	30.7	68	40 - 140	45.0	32.2	72	5	25
Surrogate												
1-Chlorooctadecane	3386-33-2	3.57	89	4	2.66	67	40 - 140	4	2.53	63		NA

Analytical Batch		Client ID	1514906MS			1514906MSD						
574037		TBB-1D 5-10	1515340			1515341						
Prep Batch		Sample Type	SAMPLE			MSD						
573752		SAMPLE	12/06/2015 16:30			12/06/2015 16:30						
Prep Method		Analysis Date	12/06/2015 17:48			12/06/2015 18:27						
MADEP EPH Revision 1.1		Matrix	Solid			Solid						
MADEP EPH Revision 1.1		Units Result	mg/kg LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Aliphatic >C10-C12	GCSV-02-11	2.41	6.00	10.0	5.44	30	30 - 140	10.0	5.75	33	6	25
Aliphatic >C12-C16	GCSV-02-12	0.424	6.00	10.0	4.99	46	40 - 140	10.0	6.55	61	27*	25
Aliphatic >C16-C35	GCSV-02-31	18.6	6.00	45.0	33.8	34*	40 - 140	45.0	34.9	36*	3	25
Surrogate												
1-Chlorooctadecane	3386-33-2	1.78	45	4	3.59	90	40 - 140	4	2.68	67		NA

Analytical Batch		Client ID	LCS573752			LCSD573752						
574038		MB573752	1515338			1515339						
Prep Batch		Sample Type	LCS			LCSD						
573752		MB	12/06/2015 16:30			12/06/2015 16:30						
Prep Method		Analysis Date	12/06/2015 16:51			12/06/2015 17:10						
MADEP EPH Revision 1.1		Matrix	Solid			Solid						
MADEP EPH Revision 1.1		Units Result	mg/kg LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Aromatic >C10-C12	GCSV-02-15	ND	6.00	5.00	3.90	78	30 - 140	5.00	3.59	72	8	25
Aromatic >C12-C16	GCSV-02-16	ND	6.00	20.0	15.1	76	40 - 140	20.0	14.0	70	8	25
Aromatic >C16-C21	GCSV-02-17	ND	6.00	10.0	7.81	78	40 - 140	10.0	7.44	74	5	25
Aromatic >C21-C35	GCSV-05-18	ND	6.00	50.0	34.6	69	40 - 140	50.0	32.3	65	7	25
Surrogate												
2-Bromonaphthalene	580-13-2	2.4	60	4	3.21	80	40 - 140	4	3.46	87		NA
2-Fluorobiphenyl	321-60-8	1.84	46	4	3.78	95	40 - 140	4	3.53	88		NA
o-Terphenyl	84-15-1	2.62	66	4	2.91	73	40 - 140	4	2.77	69		NA

Analytical Batch		Client ID	1514906MS			1514906MSD						
574038		TBB-1D 5-10	1515340			1515341						
Prep Batch		Sample Type	SAMPLE			MSD						
573752		SAMPLE	12/06/2015 16:30			12/06/2015 16:30						
Prep Method		Analysis Date	12/07/2015 09:02			12/06/2015 18:27						
MADEP EPH Revision 1.1		Matrix	Solid			Solid						
MADEP EPH Revision 1.1		Units Result	mg/kg LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Aromatic >C10-C12	GCSV-02-15	0.00	6.00	5.00	3.27	65	30 - 140	5.00	3.30	66	1	25
Aromatic >C12-C16	GCSV-02-16	0.00	6.00	20.0	12.9	65	40 - 140	20.0	13.3	67	3	25
Aromatic >C16-C21	GCSV-02-17	0.00	6.00	10.0	6.74	67	40 - 140	10.0	6.57	66	3	25
Aromatic >C21-C35	GCSV-05-18	0.00	6.00	50.0	29.5	59	40 - 140	50.0	29.2	58	1	25
Surrogate												
2-Bromonaphthalene	580-13-2	4.65	116	4	3.43	86	40 - 140	4	3.53	88		NA
2-Fluorobiphenyl	321-60-8	3.96	99	4	3.51	88	40 - 140	4	3.65	91		NA
o-Terphenyl	84-15-1	2.51	63	4	2.35	59	40 - 140	4	2.34	59		NA



7979 Innovation Park Dr., Baton Rouge, LA 70820-7402
Phone: 225.769.4900 • Fax: 225.767.5717 • www.gcal.com

CHAIN OF CUSTODY RECORD

Client ID: 4271 - Michael Pisani & Associates
SDG: 215120210
PM: RKW



Report to: Client: Michael Pisani & Associates Address: 13313 Southwest Fwy #221 Sugar Land, TX 77478 Contact: Dave Angle Phone: 281-242-5700 E-mail: danglk@mpisani.com				Bill to: Client: SAME Address: Contact: Phone: E-mail:				Analytical Requests & Method								GCAL use only: Custody Seal used <input checked="" type="checkbox"/> yes <input type="checkbox"/> no intact <input type="checkbox"/> yes <input type="checkbox"/> no Temperature °C <u>3.0524</u> <input type="checkbox"/> Dissolved Analysis Requested <input type="checkbox"/> Field filtered <input type="checkbox"/> Lab filtered	
P.O. Number		Project Name/Number <u>East White Lake / 07-47</u>						Vertical text: WIPH - EPH/VPH									
Sampled By: <u>R. Charles Trahan</u>																	
Matrix ¹	Date	Time (2400)	Comp	Grab	Sample Description	No Containers									Preservative		
<u>S</u>	<u>12/15/09</u>			<u>X</u>	<u>TBB-20 Grab</u>	<u>1</u>									<u>-1</u>		
Air Bill No: <u>7818 2817 4079</u>																	
Turn Around Time (Business Days): <input type="checkbox"/> 24h* <input type="checkbox"/> 48h* <input type="checkbox"/> 3 days* <input type="checkbox"/> 1 week* <input checked="" type="checkbox"/> Standard (Per Contract/Quote)																	
Relinquished by: (Signature) <u>Michael Pisani</u>		Date: <u>12/15/09</u> Time: <u>11:30</u>		Received by: (Signature) <u>Cherie P. Ford</u>		Date: <u>12-2-15</u> Time: <u>1005</u>		Note: By submitting these samples, you agree to GCAL's terms and conditions contained in our most recent schedule of services.									
Relinquished by: (Signature) <u>Fedex</u>		Date: <u>12-2-15</u> Time: <u>1005</u>		Received by: (Signature) <u>Cherie P. Ford</u>		Date: <u>12-2-15</u> Time: <u>1005</u>											

WHITE: CLIENT FINAL REPORT - CANARY: CLIENT

Matrix: W = water, S = solid, L = liquid, T = tissue

*Requires prior approval, rush charges may apply.

We cannot accept verbal changes. Please email written changes to your PM.



SAMPLE RECEIVING CHECKLIST



SAMPLE DELIVERY GROUP 215120210			CHECKLIST	YES	NO	NA
Client PM RKW 4271 - Michael Pisani & Associates	Transport Method FEDEX		Were all samples received using proper thermal preservation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			When used, were all custody seals intact?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Were all samples received in proper containers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Profile Number 174115	Received By Lofton, Katie E.		Were all samples received using proper chemical preservation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
			Was preservative added to any container at the lab?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Line Item(s) 6 - Soil	Receive Date(s) 12/02/15		Were all containers received in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Were all VOC water samples received without head space?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
			Do all sample labels match the Chain of Custody?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Did the Chain of Custody list the sampling technician?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Was the COC maintained i.e. all signatures, dates and time of receipt included?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COOLERS			DISCREPANCIES	LAB PRESERVATIONS		
Airbill	Thermometer ID: E24	Temp(°C)	None	None		
		3.0				
NOTES						

ANALYTICAL RESULTS

PERFORMED BY

GCAL, LLC
7979 Innovation Park Dr.
Baton Rouge, LA 70820

Report Date 12/16/2015

GCAL Report 215120867



Project 07-47 East White Lake

Deliver To

Dave Angle

Michael Pisani and Associates

13313 Southwest Freeway

Suite 221

Sugar Land, TX 77478

281-242-5700

Additional Recipients

Tobyn Celler, Michael Pisani &
Associates

Lance Cooper, Michael Pisani &
Associates

Laboratory Endorsement

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LOQ	Limit of Quantitation
RE	Re-analysis
00:01	Reported as a time equivalent to 12:00 AM

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J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
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B or V	Indicates the analyte was detected in the associated Method Blank
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*	Indicates a non-compliant or not applicable QC recovery or RPD – see narrative
E	The result is estimated because it exceeded the instrument calibration range
E	Metals - % difference for the serial dilution is > 10%

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I certify that this data package is in compliance with the NELAC Institute standard and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

Authorized Signature
GCAL Report 215120867

Certifications

10/02/2015

Certification	Certification Number
DOD ELAP	L14-243
Alabama	01955
Arizona	AZ0718
Arkansas	12-060-0
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
USDA Soil Permit	P330-10-00117

Case Narrative

Client: Michael Pisani & Associates **Report:** 215120867

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

VOLATILES GAS CHROMATOGRAPHY

In the MADEP VPH Revision 1.1 analysis, samples 21512086701 (TBB-2M 0-7) and 21512086702 (TBB-2M 7-15) was analyzed at a dilution; however, project detection limit requirements were still met.

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21512086701	TBB-2M 0-7	Solid	12/02/2015 11:50	12/08/2015 13:11
21512086702	TBB-2M 7-15	Solid	12/02/2015 12:00	12/08/2015 13:11

Sample Results

TBB-2M 0-7	Collect Date	12/02/2015 11:50	GCAL ID	21512086701
	Receive Date	12/08/2015 13:11	Matrix	Solid

MADEP VPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1000	12/14/2015 18:47	JAR	574625

CAS#	Parameter	Result	LOQ	Units
GCSV-02-10	Aliphatic >C8-C10	ND	29.3	mg/kg
GCSV-02-30	Aliphatic C6-C8	ND	29.3	mg/kg
GCSV-02-14	Aromatic >C8-C10	ND	29.3	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
GCV-00-7	2,5-Dibromotoluene (PID)	48.80	48.4	ug/Kg	99	60 - 140
GCV-00-8	2,5-Dibromotoluene (FID)	48.80	50	ug/Kg	102	60 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/09/2015 16:34	574218	MADEP EPH Revision 1.1	1	12/14/2015 13:39	SDD	574605

CAS#	Parameter	Result	LOQ	Units
GCSV-02-15	Aromatic >C10-C12	ND	6.00	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	6.00	mg/kg
GCSV-02-17	Aromatic >C16-C21	ND	6.00	mg/kg
GCSV-05-18	Aromatic >C21-C35	ND	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	4	2.82	ug/Kg	71	40 - 140
580-13-2	2-Bromonaphthalene	4	3.36	ug/Kg	84	40 - 140
321-60-8	2-Fluorobiphenyl	4	3.55	ug/Kg	89	40 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/09/2015 16:34	574218	MADEP EPH Revision 1.1	1	12/14/2015 13:39	SDD	574603

CAS#	Parameter	Result	LOQ	Units
GCSV-02-11	Aliphatic >C10-C12	ND	6.00	mg/kg
GCSV-02-12	Aliphatic >C12-C16	ND	6.00	mg/kg
GCSV-02-31	Aliphatic >C16-C35	ND	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
3386-33-2	1-Chlorooctadecane	4	2.28	ug/Kg	57	40 - 140

Sample Results

TBB-2M 7-15	Collect Date	12/02/2015 12:00	GCAL ID	21512086702
	Receive Date	12/08/2015 13:11	Matrix	Solid

MADEP VPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1000	12/14/2015 19:31	JAR	574625

CAS#	Parameter	Result	LOQ	Units
GCSV-02-10	Aliphatic >C8-C10	ND	29.0	mg/kg
GCSV-02-30	Aliphatic C6-C8	ND	29.0	mg/kg
GCSV-02-14	Aromatic >C8-C10	ND	29.0	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
GCV-00-7	2,5-Dibromotoluene (PID)	48.30	43.2	ug/Kg	90	60 - 140
GCV-00-8	2,5-Dibromotoluene (FID)	48.30	46.8	ug/Kg	97	60 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/09/2015 16:34	574218	MADEP EPH Revision 1.1	1	12/14/2015 13:58	SDD	574603

CAS#	Parameter	Result	LOQ	Units
GCSV-02-11	Aliphatic >C10-C12	ND	6.00	mg/kg
GCSV-02-12	Aliphatic >C12-C16	ND	6.00	mg/kg
GCSV-02-31	Aliphatic >C16-C35	ND	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
3386-33-2	1-Chlorooctadecane	4	1.78	ug/Kg	45	40 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/09/2015 16:34	574218	MADEP EPH Revision 1.1	1	12/14/2015 13:58	SDD	574605

CAS#	Parameter	Result	LOQ	Units
GCSV-02-15	Aromatic >C10-C12	ND	6.00	mg/kg
GCSV-02-16	Aromatic >C12-C16	ND	6.00	mg/kg
GCSV-02-17	Aromatic >C16-C21	ND	6.00	mg/kg
GCSV-05-18	Aromatic >C21-C35	ND	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	4	2.43	ug/Kg	61	40 - 140
580-13-2	2-Bromonaphthalene	4	3.25	ug/Kg	81	40 - 140
321-60-8	2-Fluorobiphenyl	4	3.38	ug/Kg	85	40 - 140

GC Volatiles QC Summary

Analytical Batch 574625		Client ID GCAL ID Sample Type Prep Date Analysis Date Matrix	MB574625 1519410 MB NA 12/14/2015 18:07 Solid	LCS574625 1519411 LCS NA 12/14/2015 03:15 Solid	LCSD574625 1519412 LCSD NA 12/14/2015 16:46 Solid							
MADEP VPH Revision 1.1		Units Result	mg/kg LOQ	Spike Added	Result %R	Control Limits%R	Spike Added	Result %R	RPD	RPD Limit		
Aliphatic >C8-C10	GCSV-02-10	ND	1.50	5.00	5.24	105	60 - 140	5.00	5.03	101	4	30
Aliphatic C6-C8	GCSV-02-30	ND	1.50	7.50	8.13	108	60 - 140	7.50	7.36	98	10	30
Aromatic >C8-C10	GCSV-02-14	ND	1.50	7.50	8.02	107	60 - 140	7.50	7.35	98	9	30
Surrogate												
2,5-Dibromotoluene (FID)	GCV-00-8	2.77	111	2.5	3.02	121	60 - 140	2.5	3.03	121		NA
2,5-Dibromotoluene (PID)	GCV-00-7	2.45	98	2.5	2.82	113	60 - 140	2.5	2.45	98		NA

Analytical Batch 574625		Client ID GCAL ID Sample Type Prep Date Analysis Date Matrix	TBB-2M 7-15 21512086702 SAMPLE NA 12/14/2015 19:31 Solid	1517376MS 1519413 MS NA 12/14/2015 19:58 Solid	1517376MSD 1519414 MSD NA 12/14/2015 20:25 Solid							
MADEP VPH Revision 1.1		Units Result	mg/kg LOQ	Spike Added	Result %R	Control Limits%R	Spike Added	Result %R	RPD	RPD Limit		
Aliphatic >C8-C10	GCSV-02-10	0.00	29.0	96.5	98.1	102	60 - 140	96.5	97.2	101	1	30
Aliphatic C6-C8	GCSV-02-30	0.00	29.0	145	145	100	60 - 140	145	144	99	1	30
Aromatic >C8-C10	GCSV-02-14	0.00	29.0	145	136	94	60 - 140	145	140	97	3	30
Surrogate												
2,5-Dibromotoluene (FID)	GCV-00-8	46.8	97	48.3	53.5	111	60 - 140	48.3	48.3	100		NA
2,5-Dibromotoluene (PID)	GCV-00-7	43.2	90	48.3	44.8	93	60 - 140	48.3	44.7	93		NA

GC Semi-Volatiles QC Summary

Analytical Batch 574482		Client ID	MB574218	LCS574218				LCSD574218					
Prep Batch 574218		GCAL ID	1517636	1517637				1517638					
Prep Method MADEP EPH Revision 1.1		Sample Type	MB	LCS				LCSD					
		Prep Date	12/09/2015 16:34	12/09/2015 16:34				12/09/2015 16:34					
		Analysis Date	12/12/2015 11:31	12/12/2015 11:51				12/12/2015 12:10					
		Matrix	Solid	Solid				Solid					
MADEP EPH Revision 1.1			Units Result	mg/kg LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Aliphatic >C10-C12	GCSV-02-11		ND	6.00	10.0	6.67	67	30 - 140	10.0	6.52	65	2	25
Aliphatic >C12-C16	GCSV-02-12		ND	6.00	10.0	8.17	82	40 - 140	10.0	7.79	78	5	25
Aliphatic >C16-C35	GCSV-02-31		ND	6.00	45.0	42.3	94	40 - 140	45.0	40.9	91	3	25
Surrogate													
1-Chlorooctadecane	3386-33-2		3.31	83	4	3.34	84	40 - 140	4	3.24	81		NA

Analytical Batch 574603		Client ID	TBB-2M 7-15	1517376MS				1517376MSD					
Prep Batch 574218		GCAL ID	21512086702	1517639				1517640					
Prep Method MADEP EPH Revision 1.1		Sample Type	SAMPLE	MS				MSD					
		Prep Date	12/09/2015 16:34	12/09/2015 16:34				12/09/2015 16:34					
		Analysis Date	12/14/2015 13:58	12/14/2015 14:17				12/14/2015 14:36					
		Matrix	Solid	Solid				Solid					
MADEP EPH Revision 1.1			Units Result	mg/kg LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Aliphatic >C10-C12	GCSV-02-11		0.00	6.00	10.0	4.85	49	30 - 140	9.90	6.14	62	23	25
Aliphatic >C12-C16	GCSV-02-12		0.00	6.00	10.0	4.89	49	40 - 140	9.90	6.03	61	21	25
Aliphatic >C16-C35	GCSV-02-31		0.00	6.00	45.0	29.6	66	40 - 140	44.6	35.4	79	18	25
Surrogate													
1-Chlorooctadecane	3386-33-2		1.78	45	4	2.16	54	40 - 140	3.96	2.58	65		NA

Analytical Batch 574481		Client ID	MB574218	LCS574218				LCSD574218					
Prep Batch 574218		GCAL ID	1517636	1517637				1517638					
Prep Method MADEP EPH Revision 1.1		Sample Type	MB	LCS				LCSD					
		Prep Date	12/09/2015 16:34	12/09/2015 16:34				12/09/2015 16:34					
		Analysis Date	12/12/2015 12:49	12/12/2015 13:08				12/12/2015 13:28					
		Matrix	Solid	Solid				Solid					
MADEP EPH Revision 1.1			Units Result	mg/kg LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Aromatic >C10-C12	GCSV-02-15		ND	6.00	5.00	4.29	86	30 - 140	5.00	4.21	84	2	25
Aromatic >C12-C16	GCSV-02-16		ND	6.00	20.0	15.5	78	40 - 140	20.0	15.3	77	1	25
Aromatic >C16-C21	GCSV-02-17		ND	6.00	10.0	7.67	77	40 - 140	10.0	7.71	77	1	25
Aromatic >C21-C35	GCSV-05-18		ND	6.00	50.0	31.1	62	40 - 140	50.0	30.6	61	2	25
Surrogate													
2-Bromonaphthalene	580-13-2		3.98	100	4	4.13	103	40 - 140	4	4.09	102		NA
2-Fluorobiphenyl	321-60-8		4	100	4	4.13	103	40 - 140	4	4.16	104		NA
o-Terphenyl	84-15-1		2.97	74	4	2.67	67	40 - 140	4	2.63	66		NA

Analytical Batch 574605		Client ID	TBB-2M 7-15	1517376MS				1517376MSD					
Prep Batch 574218		GCAL ID	21512086702	1517639				1517640					
Prep Method MADEP EPH Revision 1.1		Sample Type	SAMPLE	MS				MSD					
		Prep Date	12/09/2015 16:34	12/09/2015 16:34				12/09/2015 16:34					
		Analysis Date	12/14/2015 13:58	12/14/2015 14:17				12/14/2015 14:36					
		Matrix	Solid	Solid				Solid					
MADEP EPH Revision 1.1			Units Result	mg/kg LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Aromatic >C10-C12	GCSV-02-15		0.00	6.00	5.00	2.88	58	30 - 140	4.95	3.80	77	28*	25
Aromatic >C12-C16	GCSV-02-16		0.00	6.00	20.0	11.6	58	40 - 140	19.8	14.4	73	22	25
Aromatic >C16-C21	GCSV-02-17		0.00	6.00	10.0	6.36	64	40 - 140	9.90	7.70	78	19	25
Aromatic >C21-C35	GCSV-05-18		0.00	6.00	50.0	30.2	60	40 - 140	49.5	35.5	72	16	25
Surrogate													
2-Bromonaphthalene	580-13-2		3.25	81	4	3.03	76	40 - 140	3.96	3.71	94		NA
2-Fluorobiphenyl	321-60-8		3.38	85	4	3.09	77	40 - 140	3.96	3.77	95		NA
o-Terphenyl	84-15-1		2.43	61	4	2.18	55	40 - 140	3.96	2.86	72		NA



CHAIN OF CUSTODY RECORD

7979 Innovation Park Dr., Baton Rouge, LA 70820-7402
 Phone: 225.769.4900 • Fax: 225.767.5717 • www.gcal.com

Client ID: 4271 - Michael Pisani & Associates

SDG: 215120867

PM: RKW



Report to: Client: Michael Pisani & Associates Address: 3313 Southwest Fwy #221 Sugar Land TX 77478 Contact: Dave Angle Phone: 281.242.5700 E-mail: dangle@mpisani.com		Bill to: Client: SAME Address: Contact: Phone: E-mail:		Analytical Requests & Method TPB - EPA/VPH	GCAL use only: Custody Seal used <input type="checkbox"/> yes <input checked="" type="checkbox"/> no intact <input type="checkbox"/> yes <input checked="" type="checkbox"/> no Temperature °C 34.24 <input type="checkbox"/> Dissolved Analysis Requested <input type="checkbox"/> Field filtered <input type="checkbox"/> Lab filtered
--	--	--	--	---	--

P.O. Number _____ Project Name/Number East White Lake / 07-47
 Sampled By: R. Charles Trahan

Matrix ¹	Date	Time (2400)	Comp	Grab	Sample Description	No. Containers	Preservative
S	12/15	1150		X	TBB-2M 0-7'	1 X	1
L	12/15	1200		X	TBB-2M 7-15'	1 X	2

Air Bill No: _____

Turn Around Time (Business Days): 24h* 48h* 3 days* 1 week* Standard (Per Contract/Quote)

Relinquished by: (Signature) [Signature]	Date: 12/4/15	Time: 1420	Received by: (Signature) [Signature]	Date: 12/4/15	Time: 1420
Relinquished by: (Signature) [Signature]	Date: 12/8/15	Time:	Received by: (Signature) [Signature]	Date: 12/8/15	Time:
Relinquished by: (Signature) [Signature]	Date: 12-8-15	Time: 15:11	Received by: (Signature) [Signature]	Date: 12-8-15	Time: 15:11

Note: By submitting these samples, you agree to GCAL's terms and conditions contained in our most recent schedule of services.

Matrix¹: W = water, S = solid, L = liquid, T = tissue *Requires prior approval, rush charges may apply. We cannot accept verbal changes. Please email written changes to your PM.

WHITE: CLIENT FINAL REPORT - CANARY: CLIENT



SAMPLE RECEIVING CHECKLIST



SAMPLE DELIVERY GROUP 215120867			CHECKLIST			YES	NO	NA
Client	PM RKW 4271 - Michael Pisani & Associates	Transport Method COURIER	Were all samples received using proper thermal preservation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
			When used, were all custody seals intact?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
			Were all samples received in proper containers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Profile Number	174115	Received By McCune, Dodie N.	Were all samples received using proper chemical preservation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
			Was preservative added to any container at the lab?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Line Item(s)	6 - Soil	Receive Date(s) 12/08/15	Were all containers received in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
			Were all VOC water samples received without head space?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
			Do all sample labels match the Chain of Custody?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
			Did the Chain of Custody list the sampling technician?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
			Was the COC maintained i.e. all signatures, dates and time of receipt included?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
COOLERS			DISCREPANCIES			LAB PRESERVATIONS		
Airbill	Thermometer ID: E24	Temp(°C)	None			None		
		3.4						
NOTES								

ANALYTICAL RESULTS

PERFORMED BY

GCAL, LLC
7979 Innovation Park Dr.
Baton Rouge, LA 70820

Report Date 12/21/2015

GCAL Report 215121116



Project 07-47 East White Lake

Deliver To

Dave Angle

Michael Pisani and Associates

13313 Southwest Freeway

Suite 221

Sugar Land, TX 77478

281-242-5700

Additional Recipients

Tobyn Celler, Michael Pisani &
Associates

Lance Cooper, Michael Pisani &
Associates

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
DL	Diluted analysis – when appended to Client Sample ID
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
00:01	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

J or I	Indicates the result is between the MDL and LOQ
J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
U	Indicates the compound was analyzed for but not detected
B or V	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*	Indicates a non-compliant or not applicable QC recovery or RPD – see narrative
E	The result is estimated because it exceeded the instrument calibration range
E	Metals - % difference for the serial dilution is > 10%

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with the NELAC Institute standard and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

Authorized Signature
GCAL Report 215121116

Certifications

10/02/2015

Certification	Certification Number
DOD ELAP	L14-243
Alabama	01955
Arizona	AZ0718
Arkansas	12-060-0
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
USDA Soil Permit	P330-10-00117

Case Narrative

Client: Michael Pisani & Associates **Report:** 215121116

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

SEMI-VOLATILES MASS SPECTROMETRY

In the EPA 8270C analysis for prep batch 574446, the LCS/LCSD recoveries and RPD is outside control limits for Benzidine. This is a poor performing analyte. The LCS/LCSD RPD is above the control limit for Hexachlorocyclopentadiene. All other batch QC is acceptable.

VOLATILES GAS CHROMATOGRAPHY

In the EPA 8015C GRO analysis, sample 21512111601 (MUD PIT CONTENTS) was analyzed at a 50 (methanol extract) dilution. The detection limit is below the required limit at this dilution.

In the MADEP VPH Revision 1.1 analysis, sample 21512111601 (MUD PIT CONTENTS) was analyzed at a 1000 dilution. The detection limits are below the required limits at this dilution.

SEMI-VOLATILES GAS CHROMATOGRAPHY

In the EPA 8015C DRO analysis for prep batch 574367, the MS/MSD exhibited recovery and RPD failures. DRO may be non-homogeneous in the parent sample matrix. The LCS/LCSD recoveries and RPD are acceptable.

In the MADEP EPH Revision 1.1 analysis for prep batch 574508, the MS exhibited recovery and RPD failures. Some ranges may be non-homogeneous in the parent sample matrix. All LCS/LCSD recoveries and RPDs are acceptable.

MISCELLANEOUS

N-nitrosodiphenylamine decomposes in the GC inlet and cannot be separated from Diphenylamine. The laboratory uses N-nitrosodiphenylamine as the calibration and QC standard.

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21512111601	MUD PIT CONTENTS	Solid	12/07/2015 09:20	12/10/2015 10:20

Sample Results

MUD PIT CONTENTS	Collect Date	12/07/2015 09:20	GCAL ID	21512111601
	Receive Date	12/10/2015 10:20	Matrix	Solid

EPA 8270C

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/16/2015 14:00	574446	EPA 3550C	1	12/17/2015 11:54	JMC2	574959

CAS#	Parameter	Result	LOQ	Units
120-82-1	1,2,4-Trichlorobenzene	ND	0.330	mg/kg
95-50-1	1,2-Dichlorobenzene	ND	0.330	mg/kg
122-66-7	1,2Diphenylhydrazine/Azobenzen	ND	0.330	mg/kg
541-73-1	1,3-Dichlorobenzene	ND	0.330	mg/kg
106-46-7	1,4-Dichlorobenzene	ND	0.330	mg/kg
88-06-2	2,4,6-Trichlorophenol	ND	0.330	mg/kg
120-83-2	2,4-Dichlorophenol	ND	0.330	mg/kg
105-67-9	2,4-Dimethylphenol	ND	0.330	mg/kg
51-28-5	2,4-Dinitrophenol	ND	0.330	mg/kg
121-14-2	2,4-Dinitrotoluene	ND	0.330	mg/kg
606-20-2	2,6-Dinitrotoluene	ND	0.330	mg/kg
91-58-7	2-Chloronaphthalene	ND	0.330	mg/kg
95-57-8	2-Chlorophenol	ND	0.330	mg/kg
91-57-6	2-Methylnaphthalene	0.336	0.330	mg/kg
88-75-5	2-Nitrophenol	ND	0.330	mg/kg
91-94-1	3,3'-Dichlorobenzidine	ND	0.660	mg/kg
534-52-1	4,6-Dinitro-2-methylphenol	ND	1.65	mg/kg
101-55-3	4-Bromophenyl phenyl ether	ND	0.330	mg/kg
59-50-7	4-Chloro-3-methylphenol	ND	0.330	mg/kg
7005-72-3	4-Chlorophenyl phenyl ether	ND	0.330	mg/kg
100-02-7	4-Nitrophenol	ND	1.65	mg/kg
83-32-9	Acenaphthene	0.478	0.330	mg/kg
208-96-8	Acenaphthylene	ND	0.330	mg/kg
120-12-7	Anthracene	ND	0.330	mg/kg
92-87-5	Benzenzidine	ND	1.65	mg/kg
56-55-3	Benzo(a)anthracene	ND	0.330	mg/kg
50-32-8	Benzo(a)pyrene	ND	0.330	mg/kg
205-99-2	Benzo(b)fluoranthene	ND	0.330	mg/kg
191-24-2	Benzo(g,h,i)perylene	ND	0.330	mg/kg
207-08-9	Benzo(k)fluoranthene	ND	0.330	mg/kg
111-91-1	Bis(2-Chloroethoxy)methane	ND	0.330	mg/kg
111-44-4	Bis(2-Chloroethyl)ether	ND	0.330	mg/kg
108-60-1	Bis(2-Chloroisopropyl)ether	ND	0.330	mg/kg
117-81-7	Bis(2-Ethylhexyl)phthalate	ND	0.330	mg/kg
85-68-7	Butyl benzyl phthalate	ND	0.330	mg/kg
218-01-9	Chrysene	ND	0.330	mg/kg
53-70-3	Dibenz(a,h)anthracene	ND	0.330	mg/kg
84-66-2	Diethyl phthalate	ND	0.330	mg/kg
131-11-3	Dimethyl phthalate	ND	0.330	mg/kg
84-74-2	Di-n-butyl phthalate	ND	0.330	mg/kg
117-84-0	Di-n-octyl phthalate	ND	0.330	mg/kg
206-44-0	Fluoranthene	0.625	0.330	mg/kg
86-73-7	Fluorene	0.448	0.330	mg/kg
118-74-1	Hexachlorobenzene	ND	0.330	mg/kg
87-68-3	Hexachlorobutadiene	ND	0.330	mg/kg
77-47-4	Hexachlorocyclopentadiene	ND	0.330	mg/kg
67-72-1	Hexachloroethane	ND	0.330	mg/kg
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.330	mg/kg

Sample Results

MUD PIT CONTENTS	Collect Date	12/07/2015 09:20	GCAL ID	21512111601
	Receive Date	12/10/2015 10:20	Matrix	Solid

EPA 8270C (Continued)

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/16/2015 14:00	574446	EPA 3550C	1	12/17/2015 11:54	JMC2	574959

CAS#	Parameter	Result	LOQ	Units
78-59-1	Isophorone	ND	0.330	mg/kg
91-20-3	Naphthalene	1.11	0.330	mg/kg
98-95-3	Nitrobenzene	ND	0.330	mg/kg
62-75-9	n-Nitrosodimethylamine	ND	0.330	mg/kg
621-64-7	n-Nitrosodi-n-propylamine	ND	0.330	mg/kg
86-30-6	n-Nitrosodiphenylamine	ND	0.330	mg/kg
87-86-5	Pentachlorophenol	ND	1.65	mg/kg
85-01-8	Phenanthrene	1.58	0.330	mg/kg
108-95-2	Phenol	ND	0.330	mg/kg
129-00-0	Pyrene	0.614	0.330	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	1.67	1.26	ug/Kg	76	37 - 122
321-60-8	2-Fluorobiphenyl	1.67	1.32	ug/Kg	79	44 - 115
1718-51-0	Terphenyl-d14	1.67	1.76	ug/Kg	106	54 - 127
4165-62-2	Phenol-d5	3.33	2.44	ug/Kg	73	33 - 122
367-12-4	2-Fluorophenol	3.33	2.41	ug/Kg	72	35 - 115
118-79-6	2,4,6-Tribromophenol	3.33	1.54	ug/Kg	46	39 - 132

EPA 8015C GRO

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	50	12/17/2015 11:38	JAR	574860

CAS#	Parameter	Result	LOQ	Units
8006-61-9	Gasoline Range Organics	ND	4.91	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
106-39-8	Bromochlorobenzene	1.47	1.29	ug/Kg	88	47 - 164

Sample Results

MUD PIT CONTENTS	Collect Date	12/07/2015 09:20	GCAL ID	21512111601
	Receive Date	12/10/2015 10:20	Matrix	Solid

MADEP VPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1000	12/15/2015 18:33	JAR	574625

CAS#	Parameter	Result	LOQ	Units
GCSV-02-10	Aliphatic >C8-C10	ND	29.5	mg/kg
GCSV-02-30	Aliphatic C6-C8	ND	29.5	mg/kg
GCSV-02-14	Aromatic >C8-C10	ND	29.5	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
GCV-00-7	2,5-Dibromotoluene (PID)	49.10	46.7	ug/Kg	95	60 - 140
GCV-00-8	2,5-Dibromotoluene (FID)	49.10	51.1	ug/Kg	104	60 - 140

EPA 8015C DRO

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/15/2015 11:45	574367	EPA 3550C	1	12/16/2015 11:17	ARW	574788

CAS#	Parameter	Result	LOQ	Units
GCSV-00-4	Diesel Range Organics	23.6	3.99	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	1.66	.992	ug/Kg	60	45 - 130

EPA 8015C ORO

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/15/2015 11:45	574368	EPA 3550C	1	12/16/2015 11:17	ARW	574789

CAS#	Parameter	Result	LOQ	Units
GCSV-00-44	Oil Range Organics	ND	6.64	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	1.66	1.07	ug/Kg	64	45 - 130

Sample Results

MUD PIT CONTENTS	Collect Date	12/07/2015 09:20	GCAL ID	21512111601
	Receive Date	12/10/2015 10:20	Matrix	Solid

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/14/2015 08:15	574508	MADEP EPH Revision 1.1	1	12/16/2015 11:27	DLB	574830

CAS#	Parameter	Result	LOQ	Units
GCSV-02-15	Aromatic >C10-C12	ND	6.00	mg/kg
GCSV-02-16	Aromatic >C12-C16	7.70	6.00	mg/kg
GCSV-02-17	Aromatic >C16-C21	7.16	6.00	mg/kg
GCSV-05-18	Aromatic >C21-C35	7.76	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	4	3.33	ug/Kg	83	40 - 140
580-13-2	2-Bromonaphthalene	4	4.36	ug/Kg	109	40 - 140
321-60-8	2-Fluorobiphenyl	4	4.33	ug/Kg	108	40 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/14/2015 08:15	574508	MADEP EPH Revision 1.1	1	12/16/2015 09:22	DLB	574832

CAS#	Parameter	Result	LOQ	Units
GCSV-02-11	Aliphatic >C10-C12	ND	6.00	mg/kg
GCSV-02-12	Aliphatic >C12-C16	12.9	6.00	mg/kg
GCSV-02-31	Aliphatic >C16-C35	37.5	6.00	mg/kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
3386-33-2	1-Chlorooctadecane	4	1.94	ug/Kg	49	40 - 140

GC/MS Semi-Volatiles QC Summary

Analytical Batch		Client ID	MB574446	LCS574446				LCSD574446					
574959		GCAL ID	1518969	1518970				1518971					
Prep Batch		Sample Type	MB	LCS				LCSD					
574446		Prep Date	12/16/2015 14:00	12/16/2015 14:00				12/16/2015 14:00					
Prep Method		Analysis Date	12/17/2015 11:06	12/17/2015 11:22				12/17/2015 11:38					
EPA 3550C		Matrix	Solid	Solid				Solid					
EPA 8270C			Units Result	mg/kg LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
1,2,4-Trichlorobenzene	120-82-1	ND	0.330	1.67	1.39	83	34 - 118	1.67	1.27	76	9	30	
1,2-Dichlorobenzene	95-50-1	ND	0.330	1.67	1.21	73	33 - 117	1.67	1.20	72	1	30	
1,2-Diphenylhydrazine/Azobenzen	122-66-7	ND	0.330	1.67	1.47	88	41 - 125	1.67	1.48	89	1	30	
1,3-Dichlorobenzene	541-73-1	ND	0.330	1.67	1.21	73	30 - 115	1.67	1.18	71	3	30	
1,4-Dichlorobenzene	106-46-7	ND	0.330	1.67	1.21	73	31 - 115	1.67	1.21	73	0	30	
2,4,6-Trichlorophenol	88-06-2	ND	0.330	1.67	1.44	86	39 - 126	1.67	1.31	79	9	30	
2,4-Dichlorophenol	120-83-2	ND	0.330	1.67	1.45	87	40 - 122	1.67	1.28	77	12	30	
2,4-Dimethylphenol	105-67-9	ND	0.330	1.67	1.43	86	30 - 127	1.67	1.06	64	30	30	
2,4-Dinitrophenol	51-28-5	ND	0.330	1.67	1.08	65	14 - 120	1.67	0.883	53	20	30	
2,4-Dinitrotoluene	121-14-2	ND	0.330	1.67	1.29	77	48 - 126	1.67	1.04	62	21	30	
2,6-Dinitrotoluene	606-20-2	ND	0.330	1.67	1.33	80	46 - 124	1.67	1.17	70	13	30	
2-Chloronaphthalene	91-58-7	ND	0.330	1.67	1.40	84	41 - 114	1.67	1.38	83	1	30	
2-Chlorophenol	95-57-8	ND	0.330	1.67	1.34	80	34 - 121	1.67	1.34	80	0	30	
2-Methylnaphthalene	91-57-6	ND	0.330	1.67	1.39	83	38 - 122	1.67	1.28	77	8	30	
2-Nitrophenol	88-75-5	ND	0.330	1.67	1.39	83	36 - 123	1.67	1.27	76	9	30	
3,3'-Dichlorobenzidine	91-94-1	ND	0.660	1.67	0.714	43	22 - 121	1.67	0.664	40	7	30	
4,6-Dinitro-2-methylphenol	534-52-1	ND	1.65	1.67	1.36	82	29 - 132	1.67	1.21	73	12	30	
4-Bromophenyl phenyl ether	101-55-3	ND	0.330	1.67	1.46	88	46 - 124	1.67	1.46	88	0	30	
4-Chloro-3-methylphenol	59-50-7	ND	0.330	1.67	1.38	83	45 - 122	1.67	1.12	67	21	30	
4-Chlorophenyl phenyl ether	7005-72-3	ND	0.330	1.67	1.35	81	45 - 121	1.67	1.23	74	9	30	
4-Nitrophenol	100-02-7	ND	1.65	1.67	1.04	62	30 - 132	1.67	0.889	53	16	30	
Acenaphthene	83-32-9	ND	0.330	1.67	1.46	88	40 - 123	1.67	1.35	81	8	30	
Acenaphthylene	208-96-8	ND	0.330	1.67	1.44	86	32 - 132	1.67	1.36	82	6	30	
Anthracene	120-12-7	ND	0.330	1.67	1.49	89	47 - 123	1.67	1.41	85	6	30	
Benzidine	92-87-5	ND	1.65	1.67	0.077	5*	10 - 120	1.67	0.047	3*	48*	30	
Benzo(a)anthracene	56-55-3	ND	0.330	1.67	1.47	88	49 - 126	1.67	1.41	85	4	30	
Benzo(a)pyrene	50-32-8	ND	0.330	1.67	1.61	97	45 - 129	1.67	1.45	87	10	30	
Benzo(b)fluoranthene	205-99-2	ND	0.330	1.67	1.47	88	45 - 132	1.67	1.35	81	9	30	
Benzo(g,h,i)perylene	191-24-2	ND	0.330	1.67	1.51	91	43 - 134	1.67	1.32	79	13	30	
Benzo(k)fluoranthene	207-08-9	ND	0.330	1.67	1.63	98	47 - 132	1.67	1.53	92	6	30	
Bis(2-Chloroethoxy)methane	111-91-1	ND	0.330	1.67	1.41	85	36 - 121	1.67	1.29	77	9	30	
Bis(2-Chloroethyl)ether	111-44-4	ND	0.330	1.67	1.29	77	31 - 120	1.67	1.28	77	1	30	
Bis(2-Chloroisopropyl)ether	108-60-1	ND	0.330	1.67	1.25	75	33 - 131	1.67	1.23	74	2	30	
Bis(2-Ethylhexyl)phthalate	117-81-7	ND	0.330	1.67	1.51	91	51 - 133	1.67	1.37	82	10	30	
Butyl benzyl phthalate	85-68-7	ND	0.330	1.67	1.53	92	48 - 132	1.67	1.45	87	5	30	
Chrysene	218-01-9	ND	0.330	1.67	1.49	89	50 - 124	1.67	1.37	82	8	30	
Dibenz(a,h)anthracene	53-70-3	ND	0.330	1.67	1.53	92	45 - 134	1.67	1.31	79	15	30	
Diethyl phthalate	84-66-2	ND	0.330	1.67	1.32	79	50 - 124	1.67	1.10	66	18	30	
Dimethyl phthalate	131-11-3	ND	0.330	1.67	1.35	81	48 - 124	1.67	1.19	71	13	30	
Di-n-butyl phthalate	84-74-2	ND	0.330	1.67	1.35	81	51 - 128	1.67	1.23	74	9	30	
Di-n-octyl phthalate	117-84-0	ND	0.330	1.67	1.32	79	45 - 140	1.67	1.14	68	15	30	
Fluoranthene	206-44-0	ND	0.330	1.67	1.31	79	50 - 127	1.67	1.16	70	12	30	
Fluorene	86-73-7	ND	0.330	1.67	1.41	85	43 - 125	1.67	1.24	74	13	30	
Hexachlorobenzene	118-74-1	ND	0.330	1.67	1.43	86	45 - 122	1.67	1.35	81	6	30	
Hexachlorobutadiene	87-68-3	ND	0.330	1.67	1.38	83	32 - 123	1.67	1.28	77	8	30	
Hexachlorocyclopentadiene	77-47-4	ND	0.330	1.67	0.562	34	23 - 121	1.67	0.919	55	48*	30	
Hexachloroethane	67-72-1	ND	0.330	1.67	1.23	74	28 - 117	1.67	1.22	73	1	30	
Indeno(1,2,3-cd)pyrene	193-39-5	ND	0.330	1.67	1.62	97	45 - 133	1.67	1.35	81	18	30	
Isophorone	78-59-1	ND	0.330	1.67	1.47	88	30 - 122	1.67	1.36	82	8	30	
Naphthalene	91-20-3	ND	0.330	1.67	1.38	83	35 - 123	1.67	1.27	76	8	30	
Nitrobenzene	98-95-3	ND	0.330	1.67	1.44	86	34 - 122	1.67	1.31	79	9	30	
n-Nitrosodimethylamine	62-75-9	ND	0.330	1.67	1.27	76	23 - 120	1.67	1.22	73	4	30	
n-Nitrosodi-n-propylamine	621-64-7	ND	0.330	1.67	1.33	80	36 - 120	1.67	1.28	77	4	30	
n-Nitrosodiphenylamine	86-30-6	ND	0.330	1.67	1.37	82	38 - 127	1.67	1.36	82	1	30	
Pentachlorophenol	87-86-5	ND	1.65	1.67	1.28	77	25 - 133	1.67	1.16	70	10	30	
Phenanthrene	85-01-8	ND	0.330	1.67	1.41	85	50 - 121	1.67	1.31	79	7	30	
Phenol	108-95-2	ND	0.330	1.67	1.37	82	34 - 121	1.67	1.24	74	10	30	
Pyrene	129-00-0	ND	0.330	1.67	1.69	101	47 - 127	1.67	1.63	98	4	30	

GC/MS Semi-Volatiles QC Summary

EPA 8270C		Units Result	mg/kg LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Analytical Batch 574959	Client ID GCAL ID	MB574446 1518969		LCS574446 1518970			LCSD574446 1518971					
Prep Batch 574446	Sample Type	MB		LCS			LCSD					
Prep Method EPA 3550C	Prep Date	12/16/2015 14:00		12/16/2015 14:00			12/16/2015 14:00					
	Analysis Date	12/17/2015 11:06		12/17/2015 11:22			12/17/2015 11:38					
	Matrix	Solid		Solid			Solid					
Surrogate												
2,4,6-Tribromophenol	118-79-6	2.13	64	3.33	2.36	71	39 - 132	3.33	2.04	61		NA
2-Fluorobiphenyl	321-60-8	1.29	77	1.67	1.31	79	44 - 115	1.67	1.32	79		NA
2-Fluorophenol	367-12-4	2.44	73	3.33	2.47	74	35 - 115	3.33	2.4	72		NA
Nitrobenzene-d5	4165-60-0	1.24	74	1.67	1.27	76	37 - 122	1.67	1.21	73		NA
Phenol-d5	4165-62-2	2.53	76	3.33	2.49	75	33 - 122	3.33	2.48	74		NA
Terphenyl-d14	1718-51-0	1.85	111	1.67	1.68	101	54 - 127	1.67	1.66	100		NA

GC Volatiles QC Summary

Analytical Batch 574860		Client ID GCAL ID Sample Type Prep Date Analysis Date Matrix	MB574860 1520495 MB NA 12/17/2015 11:25 Solid	LCS574860 1520496 LCS NA 12/17/2015 11:12 Solid				
EPA 8015C GRO			Units Result	mg/kg LOQ	Spike Added	Result	%R	Control Limits%R
Gasoline Range Organics Surrogate Bromochlorobenzene	8006-61-9 106-39-8	ND .955	5.00 64	25.0 1.5	27.5 1.31	110 87	67 - 127 47 - 164	

Analytical Batch 574860		Client ID GCAL ID Sample Type Prep Date Analysis Date Matrix	MUD PIT CONTENTS 21512111601 SAMPLE NA 12/17/2015 11:38 Solid	1518432MS 1520497 MS NA 12/17/2015 11:51 Solid	1518432MSD 1520498 MSD NA 12/17/2015 12:01 Solid								
EPA 8015C GRO			Units Result	mg/kg LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Gasoline Range Organics Surrogate Bromochlorobenzene	8006-61-9 106-39-8	1.60 1.29	4.91 88	24.6 1.47	29.5 1.51	114 102	67 - 127 47 - 164	24.6 1.47	30.1 1.57	116 107	2 NA	40 NA	

Analytical Batch 574625		Client ID GCAL ID Sample Type Prep Date Analysis Date Matrix	MB574625 1519410 MB NA 12/14/2015 18:07 Solid	LCS574625 1519411 LCS NA 12/14/2015 03:15 Solid	LCSD574625 1519412 LCSD NA 12/14/2015 16:46 Solid								
MADEP VPH Revision 1.1			Units Result	mg/kg LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Aliphatic >C8-C10 Aliphatic C6-C8 Aromatic >C8-C10 Surrogate 2,5-Dibromotoluene (FID) 2,5-Dibromotoluene (PID)	GCSV-02-10 GCSV-02-30 GCSV-02-14 GCV-00-8 GCV-00-7	ND ND ND 2.77 2.45	1.50 1.50 1.50 111 98	5.00 7.50 7.50 2.5 2.5	5.24 8.13 8.02 3.02 2.82	105 108 107 121 113	60 - 140 60 - 140 60 - 140 60 - 140 60 - 140	5.00 7.50 7.50 2.5 2.5	5.03 7.36 7.35 3.03 2.45	101 98 98 121 98	4 10 9 NA NA	30 30 30 NA NA	

Analytical Batch 574625		Client ID GCAL ID Sample Type Prep Date Analysis Date Matrix	TBB-2M 7-15 21512086702 SAMPLE NA 12/14/2015 19:31 Solid	1517376MS 1519413 MS NA 12/14/2015 19:58 Solid	1517376MSD 1519414 MSD NA 12/14/2015 20:25 Solid								
MADEP VPH Revision 1.1			Units Result	mg/kg LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Aliphatic >C8-C10 Aliphatic C6-C8 Aromatic >C8-C10 Surrogate 2,5-Dibromotoluene (FID) 2,5-Dibromotoluene (PID)	GCSV-02-10 GCSV-02-30 GCSV-02-14 GCV-00-8 GCV-00-7	0.00 0.00 0.00 46.8 43.2	29.0 29.0 29.0 97 90	96.5 145 145	98.1 145 136	102 100 94	60 - 140 60 - 140 60 - 140 60 - 140 60 - 140	96.5 145 145	97.2 144 140	101 99 97	1 1 3	30 30 30 NA NA	

GC Semi-Volatiles QC Summary

Analytical Batch 574788	Client ID GCAL ID	MB574367 1518462	LCS574367 1518463					LCSD574367 1518464				
Prep Batch 574367	Sample Type Prep Date	MB 12/15/2015 11:45	LCS 12/15/2015 11:45					LCSD 12/15/2015 11:45				
Prep Method EPA 3550C	Analysis Date Matrix	12/16/2015 10:04 Solid	12/16/2015 10:19 Solid					12/16/2015 10:34 Solid				
EPA 8015C DRO		Units Result	mg/kg LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Diesel Range Organics	GCSV-00-4	ND	4.00	33.3	29.1	87	38 - 132	33.3	25.2	76	14	30
Surrogate o-Terphenyl	84-15-1	1.34	80	1.67	1.31	79		NA 1.67	1.31	79		NA

Analytical Batch 574788	Client ID GCAL ID	MUD PIT CONTENTS 21512111601	1518432MS 1518505					1518432MSD 1518506				
Prep Batch 574367	Sample Type Prep Date	SAMPLE 12/15/2015 11:45	MS 12/15/2015 11:45					MSD 12/15/2015 11:45				
Prep Method EPA 3550C	Analysis Date Matrix	12/16/2015 11:17 Solid	12/16/2015 11:32 Solid					12/16/2015 11:44 Solid				
EPA 8015C DRO		Units Result	mg/kg LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Diesel Range Organics	GCSV-00-4	23.6	4.00	33.3	40.7	52	38 - 132	33.3	143	357*	111*	30
Surrogate o-Terphenyl	84-15-1	.992	60	1.67	1.18	71	45 - 130	1.67	1.08	65		NA

Analytical Batch 574789	Client ID GCAL ID	MB574368 1518465	LCS574368 1518466					LCSD574368 1518467				
Prep Batch 574368	Sample Type Prep Date	MB 12/15/2015 11:45	LCS 12/15/2015 11:45					LCSD 12/15/2015 11:45				
Prep Method EPA 3550C	Analysis Date Matrix	12/16/2015 10:04 Solid	12/16/2015 10:48 Solid					12/16/2015 11:03 Solid				
EPA 8015C ORO		Units Result	mg/kg LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Oil Range Organics	GCSV-00-44	ND	6.66	66.7	45.6	68	39 - 106	66.7	50.2	75	10	40
Surrogate o-Terphenyl	84-15-1	1.45	87	1.67	1.44	86	45 - 130	1.67	1.41	85		NA

Analytical Batch 574789	Client ID GCAL ID	MUD PIT CONTENTS 21512111601	1518432MS 1518507					1518432MSD 1518508				
Prep Batch 574368	Sample Type Prep Date	SAMPLE 12/15/2015 11:45	MS 12/15/2015 11:45					MSD 12/15/2015 11:45				
Prep Method EPA 3550C	Analysis Date Matrix	12/16/2015 11:17 Solid	12/16/2015 12:01 Solid					12/16/2015 12:16 Solid				
EPA 8015C ORO		Units Result	mg/kg LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Oil Range Organics	GCSV-00-44	3.96	6.66	66.7	57.8	81	39 - 106	66.7	66.9	94	15	40
Surrogate o-Terphenyl	84-15-1	1.07	64	1.67	1.31	79	45 - 130	1.67	1.22	73		NA

Analytical Batch 574832	Client ID GCAL ID	MB574508 1519058	LCS574508 1519059					LCSD574508 1519060				
Prep Batch 574508	Sample Type Prep Date	MB 12/14/2015 08:15	LCS 12/14/2015 08:15					LCSD 12/14/2015 08:15				
Prep Method MADEP EPH Revision 1.1	Analysis Date Matrix	12/16/2015 15:37 Solid	12/16/2015 08:44 Solid					12/16/2015 09:03 Solid				
MADEP EPH Revision 1.1		Units Result	mg/kg LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Aliphatic >C10-C12	GCSV-02-11	ND	6.00	10.0	7.20	72	30 - 140	10.0	7.46	75	4	25
Aliphatic >C12-C16	GCSV-02-12	ND	6.00	10.0	8.29	83	40 - 140	10.0	8.80	88	6	25
Aliphatic >C16-C35	GCSV-02-31	ND	6.00	45.0	40.7	90	40 - 140	45.0	42.3	94	4	25
Surrogate 1-Chlorooctadecane	3386-33-2	1.79	45	4	1.7	43	40 - 140	4	2.28	57		NA

GC Semi-Volatiles QC Summary

Analytical Batch 574832		Client ID GCAL ID	MUD PIT CONTENTS 21512111601	1518432MS 1519062			
Prep Batch 574508		Sample Type	SAMPLE	MS			
Prep Method MADEP EPH Revision 1.1		Prep Date	12/14/2015 08:15	12/14/2015 08:15			
		Analysis Date	12/16/2015 09:22	12/16/2015 10:09			
		Matrix	Solid	Solid			
MADEP EPH Revision 1.1		Units Result	mg/kg LOQ	Spike Added	Result	%R	Control Limits%R
Aliphatic >C10-C12	GCSV-02-11	2.86	6.00	10.0	10.7	78	30 - 140
Aliphatic >C12-C16	GCSV-02-12	12.9	6.00	10.0	14.8	19*	40 - 140
Aliphatic >C16-C35	GCSV-02-31	37.5	6.00	45.0	102	143*	40 - 140
Surrogate							
1-Chlorooctadecane	3386-33-2	1.94	49	4	1.94	49	40 - 140

Analytical Batch 574830		Client ID GCAL ID	MB574508 1519058	LCS574508 1519059		LCSD574508 1519060						
Prep Batch 574508		Sample Type	MB	LCS		LCSD						
Prep Method MADEP EPH Revision 1.1		Prep Date	12/14/2015 08:15	12/14/2015 08:15		12/14/2015 08:15						
		Analysis Date	12/16/2015 10:29	12/16/2015 10:48		12/16/2015 11:08						
		Matrix	Solid	Solid		Solid						
MADEP EPH Revision 1.1		Units Result	mg/kg LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Aromatic >C10-C12	GCSV-02-15	ND	6.00	5.00	4.24	85	30 - 140	5.00	4.10	82	3	25
Aromatic >C12-C16	GCSV-02-16	ND	6.00	20.0	16.4	82	40 - 140	20.0	15.9	80	3	25
Aromatic >C16-C21	GCSV-02-17	ND	6.00	10.0	8.68	87	40 - 140	10.0	8.51	85	2	25
Aromatic >C21-C35	GCSV-05-18	ND	6.00	50.0	38.2	76	40 - 140	50.0	36.0	72	6	25
Surrogate												
2-Bromonaphthalene	580-13-2	3.66	92	4	3.81	95	40 - 140	4	3.43	86		NA
2-Fluorobiphenyl	321-60-8	3.68	92	4	3.91	98	40 - 140	4	3.45	86		NA
o-Terphenyl	84-15-1	3.26	82	4	3.4	85	40 - 140	4	2.99	75		NA

Analytical Batch 574830		Client ID GCAL ID	MUD PIT CONTENTS 21512111601	1518432MS 1519062			
Prep Batch 574508		Sample Type	SAMPLE	MS			
Prep Method MADEP EPH Revision 1.1		Prep Date	12/14/2015 08:15	12/14/2015 08:15			
		Analysis Date	12/16/2015 11:27	12/16/2015 10:09			
		Matrix	Solid	Solid			
MADEP EPH Revision 1.1		Units Result	mg/kg LOQ	Spike Added	Result	%R	Control Limits%R
Aromatic >C10-C12	GCSV-02-15	4.93	6.00	5.00	9.88	99	30 - 140
Aromatic >C12-C16	GCSV-02-16	7.70	6.00	20.0	28.8	105	40 - 140
Aromatic >C16-C21	GCSV-02-17	7.16	6.00	10.0	24.0	168*	40 - 140
Aromatic >C21-C35	GCSV-05-18	7.76	6.00	50.0	69.6	124	40 - 140
Surrogate							
2-Bromonaphthalene	580-13-2	4.36	109	4	5.28	132	40 - 140
2-Fluorobiphenyl	321-60-8	4.33	108	4	5.18	130	40 - 140
o-Terphenyl	84-15-1	3.33	83	4	4.84	121	40 - 140



CHAIN OF CUSTODY RECORD

7979 Innovation Park Dr., Baton Rouge, LA 70820-7402
 Phone: 225.769.4900 • Fax: 225.767.5717 • www.gcal.com

Client ID: 4271 - Michael Pisani & Associates

SDG: 215121116

PM: RKW



Report to: Client: <u>Michael Pisani & Associates</u> Address: <u>13313 Southwest Fwy #221 Sugar Land TX 77478</u> Contact: <u>Dave Angle</u> Phone: <u>281-242-5922</u> E-mail: <u>dangle@mpisani.com</u>		Bill to: Client: <u>SAME</u> Address: <u>↓</u> Contact: <u>↓</u> Phone: <u>↓</u> E-mail: <u>↓</u>		Analytical Requests & Method TPH - EPA / VPH TPH - D10 G 8270				GCAL use only: Custody Seal used <input checked="" type="checkbox"/> yes <input type="checkbox"/> no intact <input checked="" type="checkbox"/> yes <input type="checkbox"/> no Temperature °C <u>2.9 E26</u>	
--	--	---	--	---	--	--	--	---	--

P.O. Number	Project Name/Number
	<u>East White Lake / 07-47</u>
Sampled By: <u>R. Charles Trahan</u>	

Matrix	Date	Time (2400)	Comp	Grab	Sample Description	No Con-tainers ↓	1	2	3	4	5	6	7	8	9	10	11	12	Preservative
<u>S</u>	<u>12/15/09</u>	<u>0920</u>		<u>X</u>	<u>Mud Pit Contents</u>	<u>3</u>	<u>X</u>	<u>X</u>	<u>X</u>										

Air Bill No: 8086 149 2689

Turn Around Time (Business Days): 24h* 48h* 3 days* 1 week* Standard (Per Contract/Quote)

Released by: (Signature) <u>R. Charles Trahan</u> Date: <u>12/9/15</u> Time: <u>1645</u>	Received by: (Signature) <u>[Signature]</u> Date: <u>12-10-15</u> Time: <u>1020</u>	Note: <u>Call Dave Angle upon receipt</u> By submitting these samples, you agree to GCAL's terms and conditions contained in our most recent schedule of services.
Relinquished by: (Signature) <u>Fedex</u> Date: <u>12-10-15</u> Time: <u>1020</u>	Received by: (Signature) <u>[Signature]</u> Date: <u>12-10-15</u> Time: <u>1020</u>	
Relinquished by: (Signature)	Received by: (Signature)	

Matrix: W = water, S = solid, L = liquid, T = tissue *Requires prior approval, rush charges may apply. We cannot accept verbal changes. Please email written changes to your PM.

WHITE: CLIENT FINAL REPORT - CANARY: CLIENT



SAMPLE RECEIVING CHECKLIST



SAMPLE DELIVERY GROUP 215121116			CHECKLIST	YES	NO	NA
Client PM RKW 4271 - Michael Pisani & Associates	Transport Method FEDEX		Were all samples received using proper thermal preservation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			When used, were all custody seals intact?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Were all samples received in proper containers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Profile Number 174115	Received By McCune, Dodie N.		Were all samples received using proper chemical preservation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
			Was preservative added to any container at the lab?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
			Were all containers received in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Line Item(s) 2 - Sediment	Receive Date(s) 12/10/15		Were all VOC water samples received without head space?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
			Do all sample labels match the Chain of Custody?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Did the Chain of Custody list the sampling technician?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Was the COC maintained i.e. all signatures, dates and time of receipt included?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COOLERS			DISCREPANCIES	LAB PRESERVATIONS		
Airbill	Thermometer ID: E26	Temp(°C)	None	None		
808619692689		2.9				
NOTES						

ANALYTICAL RESULTS

PERFORMED BY

GCAL, LLC
7979 Innovation Park Dr.
Baton Rouge, LA 70820

Report Date 12/28/2015

GCAL Report 215121807



Project 07-47 East White Lake

Deliver To

Dave Angle

Michael Pisani and Associates

13313 Southwest Freeway

Suite 221

Sugar Land, TX 77478

281-242-5700

Additional Recipients

Jonathan Miller, Michael Pisani
& Associates

Lance Cooper, Michael Pisani &
Associates

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
DL	Diluted analysis – when appended to Client Sample ID
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
00:01	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

J or I	Indicates the result is between the MDL and LOQ
J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
U	Indicates the compound was analyzed for but not detected
B or V	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*	Indicates a non-compliant or not applicable QC recovery or RPD – see narrative
E	The result is estimated because it exceeded the instrument calibration range
E	Metals - % difference for the serial dilution is > 10%

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with the NELAC Institute standard and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

Authorized Signature
GCAL Report 215121807

Certifications

10/02/2015

Certification	Certification Number
DOD ELAP	L14-243
Alabama	01955
Arizona	AZ0718
Arkansas	12-060-0
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
USDA Soil Permit	P330-10-00117

Case Narrative

Client: Michael Pisani & Associates **Report:** 215121807

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

SEMI-VOLATILES MASS SPECTROMETRY

In the EPA 8270C analysis, sample 21512180703 (TBB-3D) had to be diluted to bracket the concentration of a target analyte within the calibration range of the instrument.

In the EPA 8270C analysis, the recoveries for all surrogates are below the lower control limits for sample 21512180704 (TBB-3D Purge Water @ 5 GAL). No sample volume was available to re-extract and re-analyze the sample. The extraction analyst recorded the sample had high solids content that causing interference in the extraction process.

In the EPA 8270C analysis for prep batch 574938, the LCS/LCSD exhibited recoveries above the established control limits for Benzidine. The LCS/LCSD RPD is above the control limit for Benzidine. This analyte was not detected in the associated samples.

VOLATILES GAS CHROMATOGRAPHY

In the MADEP VPH Revision 1.1 analysis, sample 21512180703 (TBB-3D) had to be diluted to bracket the concentration of a target range within the calibration range of the instrument.

SEMI-VOLATILES GAS CHROMATOGRAPHY

In the EPA 8015C DRO and ORO analyses, sample 21512180703 (TBB-3D) had to be diluted to bracket the DRO concentration within the calibration range of the instrument.

METALS

In the EPA 6020A analysis, a chemical or physical interference necessitated a dilution for sample 21512180701 (TBB-2M). This is reflected in the elevated detection limits that may exceed the regulatory limits.

In the EPA 6020A analysis, samples 21512180702 (TBB-2D), 21512180703 (TBB-3D) and 21512180705 (MC-1) were analyzed at a dilution. The reporting limits are at or below the regulatory limits at this dilution.

CONVENTIONALS

In the EPA 9056A analysis, all samples had to be diluted in order to bracket the concentration of target analytes within the calibration range of the instrument.

MISCELLANEOUS

N-nitrosodiphenylamine decomposes in the GC inlet and cannot be separated from Diphenylamine. The laboratory uses N-nitrosodiphenylamine as the calibration and QC standard.

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21512180701	TBB-2M	Water	12/14/2015 12:30	12/17/2015 15:45
21512180702	TBB-2D	Water	12/15/2015 11:00	12/17/2015 15:45
21512180703	TBB-3D	Water	12/15/2015 11:30	12/17/2015 15:45
21512180704	TBB-3D Purge Water @ 5 GAL	Water	12/15/2015 12:10	12/17/2015 15:45
21512180705	MC-1	Water	12/16/2015 11:30	12/17/2015 15:45

Sample Results

TBB-2M	Collect Date	12/14/2015 12:30	GCAL ID	21512180701
	Receive Date	12/17/2015 15:45	Matrix	Water

EPA 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	12/21/2015 21:15	CJR	575233

CAS#	Parameter	Result	LOQ	Units
71-43-2	Benzene	ND	0.00500	mg/L
100-41-4	Ethylbenzene	ND	0.00500	mg/L
108-88-3	Toluene	ND	0.00500	mg/L
1330-20-7	Xylene (total)	ND	0.015	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	0.05	.049	ug/L	98	78 - 130
1868-53-7	Dibromofluoromethane	0.05	.05	ug/L	100	77 - 127
2037-26-5	Toluene d8	0.05	.053	ug/L	105	76 - 134
17060-07-0	1,2-Dichloroethane-d4	0.05	.05	ug/L	99	71 - 127

EPA 8015C GRO

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	12/22/2015 12:11	JAR	575141

CAS#	Parameter	Result	LOQ	Units
8006-61-9	Gasoline Range Organics	ND	0.100	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
106-39-8	Bromochlorobenzene	0.03	.024	ug/L	78	49 - 136

MADEP VPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	12/22/2015 13:09	JAR	575224

CAS#	Parameter	Result	LOQ	Units
GCSV-02-10	Aliphatic >C8-C10	ND	0.020	mg/L
GCSV-02-30	Aliphatic C6-C8	ND	0.030	mg/L

Sample Results

TBB-2M	Collect Date	12/14/2015 12:30	GCAL ID	21512180701
	Receive Date	12/17/2015 15:45	Matrix	Water

MADEP VPH Revision 1.1 (Continued)

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch	
NA	NA	NA	1	12/22/2015 13:09	JAR	575224	
CAS#	Parameter			Result	LOQ	Units	
GCSV-02-14	Aromatic >C8-C10			ND	0.030	mg/L	
CAS#	Surrogate		Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
GCV-00-7	2,5-Dibromotoluene (PID)		0.05	.043	ug/L	87	70 - 130
GCV-00-8	2,5-Dibromotoluene (FID)		0.05	.05	ug/L	100	70 - 130

EPA 8015C DRO

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch	
12/19/2015 09:30	574951	EPA 3510C	1	12/19/2015 18:16	SDD	575073	
CAS#	Parameter			Result	LOQ	Units	
GCSV-00-4	Diesel Range Organics			0.236	0.125	mg/L	
CAS#	Surrogate		Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl		0.05	.043	ug/L	85	56 - 125

EPA 8015C ORO

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch	
12/19/2015 09:30	574952	EPA 3510C	1	12/19/2015 18:16	SDD	575074	
CAS#	Parameter			Result	LOQ	Units	
GCSV-00-44	Oil Range Organics			ND	0.125	mg/L	
CAS#	Surrogate		Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl		0.05	.046	ug/L	92	56 - 125

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/19/2015 07:00	574953	MADEP EPH Revision 1.1	1	12/23/2015 11:56	DLB	575405
CAS#	Parameter			Result	LOQ	Units
GCSV-02-11	Aliphatic >C10-C12			ND	0.100	mg/L

Sample Results

TBB-2M	Collect Date	12/14/2015 12:30	GCAL ID	21512180701
	Receive Date	12/17/2015 15:45	Matrix	Water

MADEP EPH Revision 1.1 (Continued)

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/19/2015 07:00	574953	MADEP EPH Revision 1.1 (Continued)	1	12/23/2015 11:56	DLB	575405

CAS#	Parameter	Result	LOQ	Units
GCSV-02-12	Aliphatic >C12-C16	ND	0.100	mg/L
GCSV-02-31	Aliphatic >C16-C35	ND	0.150	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
3386-33-2	1-Chlorooctadecane	0.04	.031	ug/L	76	40 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/19/2015 07:00	574953	MADEP EPH Revision 1.1	1	12/22/2015 11:02	DLB	575394

CAS#	Parameter	Result	LOQ	Units
GCSV-02-15	Aromatic >C10-C12	ND	0.100	mg/L
GCSV-02-16	Aromatic >C12-C16	ND	0.100	mg/L
GCSV-02-17	Aromatic >C16-C21	ND	0.150	mg/L
GCSV-05-18	Aromatic >C21-C35	ND	0.100	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	0.04	.026	ug/L	64	40 - 140
580-13-2	2-Bromonaphthalene	0.04	.042	ug/L	104	40 - 140
321-60-8	2-Fluorobiphenyl	0.04	.042	ug/L	106	40 - 140

EPA 6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/19/2015 09:55	575010	EPA 3010A	20	12/22/2015 12:14	AWG	575265

CAS#	Parameter	Result	LOQ	Units
7440-38-2	Arsenic	ND	0.020	mg/L
7440-43-9	Cadmium	ND	0.020	mg/L
7440-70-2	Calcium	574	10.0	mg/L
7440-47-3	Chromium	ND	0.020	mg/L
7439-89-6	Iron	15.8	2.00	mg/L
7439-92-1	Lead	ND	0.020	mg/L
7440-09-7	Potassium	8.71	2.00	mg/L
7440-66-6	Zinc	ND	0.40	mg/L

Sample Results

TBB-2M	Collect Date	12/14/2015 12:30	GCAL ID	21512180701
	Receive Date	12/17/2015 15:45	Matrix	Water

EPA 6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/19/2015 09:55	575010	EPA 3010A	500	12/22/2015 12:09	AWG	575265

CAS#	Parameter	Result	LOQ	Units
7440-39-3	Barium	6.1	0.50	mg/L
7439-95-4	Magnesium	316	50.0	mg/L
7439-96-5	Manganese	4.1	2.5	mg/L
7440-23-5	Sodium	2190	50.0	mg/L
7440-24-6	Strontium	5.82	0.50	mg/L

EPA 6020A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/18/2015 16:00	574994	EPA 3005A Dissolved	100	12/21/2015 22:57	AWG	575258

CAS#	Parameter	Result	LOQ	Units
7440-39-3	Barium	5.81	0.10	mg/L
7439-89-6	Iron	13.2	10.0	mg/L
7439-96-5	Manganese	3.60	0.50	mg/L
7440-24-6	Strontium	5.47	0.10	mg/L

EPA 6020A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/18/2015 16:00	574994	EPA 3005A Dissolved	20	12/22/2015 11:27	AWG	575265

CAS#	Parameter	Result	LOQ	Units
7440-38-2	Arsenic	ND	0.020	mg/L
7440-43-9	Cadmium	ND	0.020	mg/L
7440-47-3	Chromium	ND	0.020	mg/L
7439-92-1	Lead	ND	0.020	mg/L
7440-66-6	Zinc	ND	0.40	mg/L

EPA 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/19/2015 13:55	575012	EPA 7470A	1	12/21/2015 17:13	LWZ	575192

CAS#	Parameter	Result	LOQ	Units
7439-97-6	Mercury	ND	0.00020	mg/L

Sample Results

TBB-2M	Collect Date	12/14/2015 12:30	GCAL ID	21512180701
	Receive Date	12/17/2015 15:45	Matrix	Water

EPA 7470A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/19/2015 10:40	575013	EPA 7470A Dissolved	1	12/19/2015 15:27	LWZ	575023
CAS#	Parameter			Result	LOQ	Units
7439-97-6	Mercury			ND	0.00020	mg/L

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	2000	12/21/2015 10:21	JEM	575131
CAS#	Parameter			Result	LOQ	Units
16887-00-6	Chloride			4820	400	mg/L

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	50	12/21/2015 19:48	SMR	575131
CAS#	Parameter			Result	LOQ	Units
24959-67-9	Bromide			ND	10.0	mg/L
14808-79-8	Sulfate			ND	10.0	mg/L

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	12/22/2015 12:34	DMT	575286
CAS#	Parameter			Result	LOQ	Units
T-005-B	Bicarbonate Alkalinity			416	1.0	mg/L CaCO3

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	12/22/2015 12:34	DMT	575286
CAS#	Parameter			Result	LOQ	Units
T-005-C	Carbonate Alkalinity			ND	1.0	mg/L CaCO3

Sample Results

TBB-2M	Collect Date	12/14/2015 12:30	GCAL ID	21512180701
	Receive Date	12/17/2015 15:45	Matrix	Water

SM 2540 C-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	12/18/2015 13:22	WRW	574977

CAS#	Parameter	Result	LOQ	Units
WET-035	Total Dissolved Solids(TDS)	7160	10.0	mg/L

TBB-2D	Collect Date	12/15/2015 11:00	GCAL ID	21512180702
	Receive Date	12/17/2015 15:45	Matrix	Water

EPA 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	12/21/2015 21:38	CJR	575233

CAS#	Parameter	Result	LOQ	Units
71-43-2	Benzene	ND	0.00500	mg/L
100-41-4	Ethylbenzene	ND	0.00500	mg/L
108-88-3	Toluene	ND	0.00500	mg/L
1330-20-7	Xylene (total)	ND	0.015	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	0.05	.049	ug/L	98	78 - 130
1868-53-7	Dibromofluoromethane	0.05	.05	ug/L	101	77 - 127
2037-26-5	Toluene d8	0.05	.052	ug/L	103	76 - 134
17060-07-0	1,2-Dichloroethane-d4	0.05	.048	ug/L	95	71 - 127

EPA 8015C GRO

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	12/22/2015 12:23	JAR	575141

CAS#	Parameter	Result	LOQ	Units
8006-61-9	Gasoline Range Organics	ND	0.100	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
106-39-8	Bromochlorobenzene	0.03	.024	ug/L	79	49 - 136

Sample Results

TBB-2D	Collect Date	12/15/2015 11:00	GCAL ID	21512180702
	Receive Date	12/17/2015 15:45	Matrix	Water

MADEP VPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	12/22/2015 13:34	JAR	575224

CAS#	Parameter	Result	LOQ	Units
GCSV-02-10	Aliphatic >C8-C10	ND	0.020	mg/L
GCSV-02-30	Aliphatic C6-C8	ND	0.030	mg/L
GCSV-02-14	Aromatic >C8-C10	ND	0.030	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
GCV-00-7	2,5-Dibromotoluene (PID)	0.05	.048	ug/L	95	70 - 130
GCV-00-8	2,5-Dibromotoluene (FID)	0.05	.052	ug/L	104	70 - 130

EPA 8015C DRO

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/19/2015 09:30	574951	EPA 3510C	1	12/19/2015 18:30	SDD	575073

CAS#	Parameter	Result	LOQ	Units
GCSV-00-4	Diesel Range Organics	0.130	0.125	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	0.05	.035	ug/L	69	56 - 125

EPA 8015C ORO

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/19/2015 09:30	574952	EPA 3510C	1	12/19/2015 18:30	SDD	575074

CAS#	Parameter	Result	LOQ	Units
GCSV-00-44	Oil Range Organics	ND	0.125	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	0.05	.037	ug/L	74	56 - 125

Sample Results

TBB-2D	Collect Date	12/15/2015 11:00	GCAL ID	21512180702
	Receive Date	12/17/2015 15:45	Matrix	Water

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/19/2015 07:00	574953	MADEP EPH Revision 1.1	1	12/21/2015 11:27	DLB	575270

CAS#	Parameter	Result	LOQ	Units
GCSV-02-11	Aliphatic >C10-C12	ND	0.100	mg/L
GCSV-02-12	Aliphatic >C12-C16	ND	0.100	mg/L
GCSV-02-31	Aliphatic >C16-C35	ND	0.150	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
3386-33-2	1-Chlorooctadecane	0.04	.031	ug/L	77	40 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/19/2015 07:00	574953	MADEP EPH Revision 1.1	1	12/22/2015 11:23	DLB	575394

CAS#	Parameter	Result	LOQ	Units
GCSV-02-15	Aromatic >C10-C12	ND	0.100	mg/L
GCSV-02-16	Aromatic >C12-C16	ND	0.100	mg/L
GCSV-02-17	Aromatic >C16-C21	ND	0.150	mg/L
GCSV-05-18	Aromatic >C21-C35	ND	0.100	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	0.04	.029	ug/L	73	40 - 140
580-13-2	2-Bromonaphthalene	0.04	.038	ug/L	95	40 - 140
321-60-8	2-Fluorobiphenyl	0.04	.039	ug/L	99	40 - 140

EPA 6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/19/2015 09:55	575010	EPA 3010A	100	12/21/2015 23:34	AWG	575258

CAS#	Parameter	Result	LOQ	Units
7440-39-3	Barium	1.33	0.10	mg/L
7440-70-2	Calcium	162	50.0	mg/L
7439-89-6	Iron	19.9	10.0	mg/L
7439-95-4	Magnesium	67.1	10.0	mg/L
7439-96-5	Manganese	1.13	0.50	mg/L
7440-23-5	Sodium	661	10.0	mg/L
7440-24-6	Strontium	1.51	0.10	mg/L

Sample Results

TBB-2D	Collect Date	12/15/2015 11:00	GCAL ID	21512180702
	Receive Date	12/17/2015 15:45	Matrix	Water

EPA 6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/19/2015 09:55	575010	EPA 3010A	5	12/22/2015 12:25	AWG	575265

CAS#	Parameter	Result	LOQ	Units
7440-38-2	Arsenic	0.0062	0.0050	mg/L
7440-43-9	Cadmium	ND	0.0050	mg/L
7440-47-3	Chromium	0.012	0.0050	mg/L
7439-92-1	Lead	0.012	0.0050	mg/L
7440-09-7	Potassium	7.00	0.50	mg/L
7440-66-6	Zinc	ND	0.10	mg/L

EPA 6020A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/18/2015 16:00	574994	EPA 3005A Dissolved	100	12/21/2015 23:02	AWG	575258

CAS#	Parameter	Result	LOQ	Units
7440-39-3	Barium	1.06	0.10	mg/L
7439-96-5	Manganese	0.72	0.50	mg/L
7440-24-6	Strontium	1.35	0.10	mg/L

EPA 6020A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/18/2015 16:00	574994	EPA 3005A Dissolved	5	12/22/2015 11:37	AWG	575265

CAS#	Parameter	Result	LOQ	Units
7440-38-2	Arsenic	ND	0.0050	mg/L
7440-43-9	Cadmium	ND	0.0050	mg/L
7440-47-3	Chromium	ND	0.0050	mg/L
7439-89-6	Iron	4.37	0.50	mg/L
7439-92-1	Lead	ND	0.0050	mg/L
7440-66-6	Zinc	ND	0.10	mg/L

EPA 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/19/2015 13:55	575012	EPA 7470A	1	12/21/2015 17:15	LWZ	575192

CAS#	Parameter	Result	LOQ	Units
7439-97-6	Mercury	ND	0.00020	mg/L

Sample Results

TBB-2D	Collect Date	12/15/2015 11:00	GCAL ID	21512180702
	Receive Date	12/17/2015 15:45	Matrix	Water

EPA 7470A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/19/2015 10:40	575013	EPA 7470A Dissolved	1	12/19/2015 15:30	LWZ	575023
CAS#	Parameter			Result	LOQ	Units
7439-97-6	Mercury			ND	0.00020	mg/L

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	500	12/21/2015 11:48	JEM	575131
CAS#	Parameter			Result	LOQ	Units
16887-00-6	Chloride			1020	100	mg/L

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	5	12/21/2015 20:40	SMR	575131
CAS#	Parameter			Result	LOQ	Units
24959-67-9	Bromide			1.54	1.00	mg/L
14808-79-8	Sulfate			45.2	1.00	mg/L

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	12/22/2015 12:34	DMT	575286
CAS#	Parameter			Result	LOQ	Units
T-005-B	Bicarbonate Alkalinity			345	1.0	mg/L CaCO3

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	12/22/2015 12:34	DMT	575286
CAS#	Parameter			Result	LOQ	Units
T-005-C	Carbonate Alkalinity			ND	1.0	mg/L CaCO3

Sample Results

TBB-2D	Collect Date	12/15/2015 11:00	GCAL ID	21512180702
	Receive Date	12/17/2015 15:45	Matrix	Water

SM 2540 C-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	12/18/2015 13:22	WRW	574977

CAS#	Parameter	Result	LOQ	Units
WET-035	Total Dissolved Solids(TDS)	1910	10.0	mg/L

TBB-3D	Collect Date	12/15/2015 11:30	GCAL ID	21512180703
	Receive Date	12/17/2015 15:45	Matrix	Water

EPA 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	12/21/2015 22:00	CJR	575233

CAS#	Parameter	Result	LOQ	Units
71-43-2	Benzene	ND	0.00500	mg/L
100-41-4	Ethylbenzene	ND	0.00500	mg/L
108-88-3	Toluene	ND	0.00500	mg/L
1330-20-7	Xylene (total)	ND	0.015	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	0.05	.051	ug/L	103	78 - 130
1868-53-7	Dibromofluoromethane	0.05	.05	ug/L	100	77 - 127
2037-26-5	Toluene d8	0.05	.051	ug/L	102	76 - 134
17060-07-0	1,2-Dichloroethane-d4	0.05	.049	ug/L	98	71 - 127

EPA 8270C

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/19/2015 18:50	574938	EPA 3510C	1	12/22/2015 17:15	CEK	575332

CAS#	Parameter	Result	LOQ	Units
120-82-1	1,2,4-Trichlorobenzene	ND	0.010	mg/L
95-50-1	1,2-Dichlorobenzene	ND	0.010	mg/L
122-66-7	1,2Diphenylhydrazine/Azobenzen	ND	0.010	mg/L
541-73-1	1,3-Dichlorobenzene	ND	0.010	mg/L
106-46-7	1,4-Dichlorobenzene	ND	0.010	mg/L
88-06-2	2,4,6-Trichlorophenol	ND	0.010	mg/L
120-83-2	2,4-Dichlorophenol	ND	0.010	mg/L
105-67-9	2,4-Dimethylphenol	ND	0.010	mg/L
51-28-5	2,4-Dinitrophenol	ND	0.010	mg/L
121-14-2	2,4-Dinitrotoluene	ND	0.010	mg/L
606-20-2	2,6-Dinitrotoluene	ND	0.010	mg/L
91-58-7	2-Chloronaphthalene	ND	0.010	mg/L

Sample Results

TBB-3D	Collect Date	12/15/2015 11:30	GCAL ID	21512180703
	Receive Date	12/17/2015 15:45	Matrix	Water

EPA 8270C (Continued)

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/19/2015 18:50	574938	EPA 3510C	1	12/22/2015 17:15	CEK	575332

CAS#	Parameter	Result	LOQ	Units
95-57-8	2-Chlorophenol	ND	0.010	mg/L
91-57-6	2-Methylnaphthalene	0.111	0.010	mg/L
88-75-5	2-Nitrophenol	ND	0.010	mg/L
91-94-1	3,3'-Dichlorobenzidine	ND	0.010	mg/L
534-52-1	4,6-Dinitro-2-methylphenol	ND	0.010	mg/L
101-55-3	4-Bromophenyl phenyl ether	ND	0.010	mg/L
59-50-7	4-Chloro-3-methylphenol	ND	0.010	mg/L
7005-72-3	4-Chlorophenyl phenyl ether	ND	0.010	mg/L
100-02-7	4-Nitrophenol	ND	0.010	mg/L
83-32-9	Acenaphthene	0.122	0.010	mg/L
208-96-8	Acenaphthylene	ND	0.010	mg/L
120-12-7	Anthracene	0.018	0.010	mg/L
92-87-5	Benzdine	ND	0.051	mg/L
56-55-3	Benzo(a)anthracene	ND	0.010	mg/L
50-32-8	Benzo(a)pyrene	ND	0.010	mg/L
205-99-2	Benzo(b)fluoranthene	ND	0.010	mg/L
191-24-2	Benzo(g,h,i)perylene	ND	0.010	mg/L
207-08-9	Benzo(k)fluoranthene	ND	0.010	mg/L
111-91-1	Bis(2-Chloroethoxy)methane	ND	0.010	mg/L
111-44-4	Bis(2-Chloroethyl)ether	ND	0.010	mg/L
108-60-1	Bis(2-Chloroisopropyl)ether	ND	0.010	mg/L
117-81-7	Bis(2-Ethylhexyl)phthalate	ND	0.010	mg/L
85-68-7	Butyl benzyl phthalate	ND	0.010	mg/L
218-01-9	Chrysene	ND	0.010	mg/L
53-70-3	Dibenz(a,h)anthracene	ND	0.010	mg/L
84-66-2	Diethyl phthalate	ND	0.010	mg/L
131-11-3	Dimethyl phthalate	ND	0.010	mg/L
84-74-2	Di-n-butyl phthalate	ND	0.010	mg/L
117-84-0	Di-n-octyl phthalate	ND	0.010	mg/L
206-44-0	Fluoranthene	0.020	0.010	mg/L
86-73-7	Fluorene	0.096	0.010	mg/L
118-74-1	Hexachlorobenzene	ND	0.010	mg/L
87-68-3	Hexachlorobutadiene	ND	0.010	mg/L
77-47-4	Hexachlorocyclopentadiene	ND	0.010	mg/L
67-72-1	Hexachloroethane	ND	0.010	mg/L
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.010	mg/L
78-59-1	Isophorone	ND	0.010	mg/L
98-95-3	Nitrobenzene	ND	0.010	mg/L
62-75-9	n-Nitrosodimethylamine	ND	0.010	mg/L
621-64-7	n-Nitrosodi-n-propylamine	ND	0.010	mg/L
86-30-6	n-Nitrosodiphenylamine	ND	0.010	mg/L
87-86-5	Pentachlorophenol	ND	0.010	mg/L
85-01-8	Phenanthrene	0.140	0.010	mg/L
108-95-2	Phenol	ND	0.010	mg/L

Sample Results

TBB-3D	Collect Date	12/15/2015 11:30	GCAL ID	21512180703
	Receive Date	12/17/2015 15:45	Matrix	Water

EPA 8270C (Continued)

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/19/2015 18:50	574938	EPA 3510C	1	12/22/2015 17:15	CEK	575332

CAS#	Parameter	Result	LOQ	Units
129-00-0	Pyrene	0.010	0.010	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	0.0510	.04	ug/L	79	44 - 120
321-60-8	2-Fluorobiphenyl	0.0510	.042	ug/L	82	44 - 119
1718-51-0	Terphenyl-d14	0.0510	.048	ug/L	94	50 - 134
4165-62-2	Phenol-d5	0.1020	.04	ug/L	39	10 - 120
367-12-4	2-Fluorophenol	0.1020	.057	ug/L	56	19 - 119
118-79-6	2,4,6-Tribromophenol	0.1020	.094	ug/L	92	43 - 140

EPA 8270C

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/19/2015 18:50	574938	EPA 3510C	5	12/22/2015 17:49	CEK	575332

CAS#	Parameter	Result	LOQ	Units
91-20-3	Naphthalene	0.548	0.051	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	0.0510	.04	ug/L	79	44 - 120
321-60-8	2-Fluorobiphenyl	0.0510	.046	ug/L	90	44 - 119
1718-51-0	Terphenyl-d14	0.0510	.048	ug/L	95	50 - 134
4165-62-2	Phenol-d5	0.1020	.04	ug/L	40	10 - 120
367-12-4	2-Fluorophenol	0.1020	.059	ug/L	58	19 - 119
118-79-6	2,4,6-Tribromophenol	0.1020	.096	ug/L	94	43 - 140

Sample Results

TBB-3D	Collect Date	12/15/2015 11:30	GCAL ID	21512180703
	Receive Date	12/17/2015 15:45	Matrix	Water

EPA 8015C GRO

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch	
NA	NA	NA	1	12/22/2015 12:30	JAR	575141	
CAS#	Parameter			Result	LOQ	Units	
8006-61-9	Gasoline Range Organics			ND	0.100	mg/L	
CAS#	Surrogate		Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
106-39-8	Bromochlorobenzene		0.03	.036	ug/L	118	49 - 136

MADEP VPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch	
NA	NA	NA	10	12/22/2015 14:57	JAR	575224	
CAS#	Parameter			Result	LOQ	Units	
GCSV-02-10	Aliphatic >C8-C10			ND	0.200	mg/L	
GCSV-02-30	Aliphatic C6-C8			ND	0.300	mg/L	
GCSV-02-14	Aromatic >C8-C10			2.05	0.300	mg/L	
CAS#	Surrogate		Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
GCV-00-7	2,5-Dibromotoluene (PID)		0.50	.474	ug/L	95	70 - 130
GCV-00-8	2,5-Dibromotoluene (FID)		0.50	.581	ug/L	116	70 - 130

EPA 8015C DRO

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch	
12/19/2015 09:30	574951	EPA 3510C	2	12/20/2015 10:10	SDD	575086	
CAS#	Parameter			Result	LOQ	Units	
GCSV-00-4	Diesel Range Organics			2.13	0.250	mg/L	
CAS#	Surrogate		Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl		0.05	.04	ug/L	81	56 - 125

Sample Results

TBB-3D	Collect Date	12/15/2015 11:30	GCAL ID	21512180703
	Receive Date	12/17/2015 15:45	Matrix	Water

EPA 8015C ORO

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch	
12/19/2015 09:30	574952	EPA 3510C	2	12/20/2015 10:10	SDD	575085	
CAS#	Parameter			Result	LOQ	Units	
GCSV-00-44	Oil Range Organics			ND	0.250	mg/L	
CAS#	Surrogate		Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl		0.05	.043	ug/L	87	56 - 125

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch	
12/19/2015 07:00	574953	MADEP EPH Revision 1.1	1	12/21/2015 11:46	DLB	575270	
CAS#	Parameter			Result	LOQ	Units	
GCSV-02-11	Aliphatic >C10-C12			ND	0.100	mg/L	
GCSV-02-12	Aliphatic >C12-C16			ND	0.100	mg/L	
GCSV-02-31	Aliphatic >C16-C35			ND	0.150	mg/L	
CAS#	Surrogate		Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
3386-33-2	1-Chlorooctadecane		0.04	.026	ug/L	65	40 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch	
12/19/2015 07:00	574953	MADEP EPH Revision 1.1	1	12/22/2015 11:42	DLB	575394	
CAS#	Parameter			Result	LOQ	Units	
GCSV-02-15	Aromatic >C10-C12			ND	0.100	mg/L	
GCSV-02-16	Aromatic >C12-C16			ND	0.100	mg/L	
GCSV-02-17	Aromatic >C16-C21			ND	0.150	mg/L	
GCSV-05-18	Aromatic >C21-C35			ND	0.100	mg/L	
CAS#	Surrogate		Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl		0.04	.025	ug/L	63	40 - 140
580-13-2	2-Bromonaphthalene		0.04	.042	ug/L	105	40 - 140
321-60-8	2-Fluorobiphenyl		0.04	.043	ug/L	108	40 - 140

Sample Results

TBB-3D	Collect Date	12/15/2015 11:30	GCAL ID	21512180703
	Receive Date	12/17/2015 15:45	Matrix	Water

EPA 6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/19/2015 09:55	575010	EPA 3010A	100	12/21/2015 23:39	AWG	575258

CAS#	Parameter	Result	LOQ	Units
7440-39-3	Barium	1.07	0.10	mg/L
7440-70-2	Calcium	164	50.0	mg/L
7439-95-4	Magnesium	48.0	10.0	mg/L
7440-23-5	Sodium	404	10.0	mg/L
7440-24-6	Strontium	1.08	0.10	mg/L

EPA 6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/19/2015 09:55	575010	EPA 3010A	5	12/22/2015 12:35	AWG	575265

CAS#	Parameter	Result	LOQ	Units
7440-38-2	Arsenic	ND	0.0050	mg/L
7440-43-9	Cadmium	ND	0.0050	mg/L
7440-47-3	Chromium	0.0053	0.0050	mg/L
7439-89-6	Iron	1.86	0.50	mg/L
7439-92-1	Lead	ND	0.0050	mg/L
7439-96-5	Manganese	0.19	0.025	mg/L
7440-09-7	Potassium	5.17	0.50	mg/L
7440-66-6	Zinc	ND	0.10	mg/L

EPA 6020A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/18/2015 16:00	574994	EPA 3005A Dissolved	100	12/21/2015 23:08	AWG	575258

CAS#	Parameter	Result	LOQ	Units
7440-39-3	Barium	1.01	0.10	mg/L
7440-24-6	Strontium	1.07	0.10	mg/L

EPA 6020A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/18/2015 16:00	574994	EPA 3005A Dissolved	5	12/22/2015 11:48	AWG	575265

CAS#	Parameter	Result	LOQ	Units
7440-38-2	Arsenic	ND	0.0050	mg/L
7440-43-9	Cadmium	ND	0.0050	mg/L
7440-47-3	Chromium	ND	0.0050	mg/L

Sample Results

TBB-3D	Collect Date	12/15/2015 11:30	GCAL ID	21512180703
	Receive Date	12/17/2015 15:45	Matrix	Water

EPA 6020A Dissolved (Continued)

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/18/2015 16:00	574994	EPA 3005A Dissolved	5	12/22/2015 11:48	AWG	575265

CAS#	Parameter	Result	LOQ	Units
7439-89-6	Iron	ND	0.50	mg/L
7439-92-1	Lead	ND	0.0050	mg/L
7439-96-5	Manganese	0.16	0.025	mg/L
7440-66-6	Zinc	ND	0.10	mg/L

EPA 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/19/2015 13:55	575012	EPA 7470A	1	12/21/2015 17:17	LWZ	575192

CAS#	Parameter	Result	LOQ	Units
7439-97-6	Mercury	ND	0.00020	mg/L

EPA 7470A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/19/2015 10:40	575013	EPA 7470A Dissolved	1	12/19/2015 15:32	LWZ	575023

CAS#	Parameter	Result	LOQ	Units
7439-97-6	Mercury	ND	0.00020	mg/L

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	500	12/21/2015 12:05	JEM	575131

CAS#	Parameter	Result	LOQ	Units
16887-00-6	Chloride	721	100	mg/L

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	5	12/21/2015 20:58	SMR	575131

CAS#	Parameter	Result	LOQ	Units
24959-67-9	Bromide	1.18	1.00	mg/L

Sample Results

TBB-3D	Collect Date	12/15/2015 11:30	GCAL ID	21512180703
	Receive Date	12/17/2015 15:45	Matrix	Water

EPA 9056A (Continued)

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	5	12/21/2015 20:58	SMR	575131

CAS#	Parameter	Result	LOQ	Units
14808-79-8	Sulfate	7.06	1.00	mg/L

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	12/22/2015 12:34	DMT	575286

CAS#	Parameter	Result	LOQ	Units
T-005-B	Bicarbonate Alkalinity	320	1.0	mg/L CaCO3

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	12/22/2015 12:34	DMT	575286

CAS#	Parameter	Result	LOQ	Units
T-005-C	Carbonate Alkalinity	ND	1.0	mg/L CaCO3

SM 2540 C-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	12/18/2015 13:22	WRW	574977

CAS#	Parameter	Result	LOQ	Units
WET-035	Total Dissolved Solids(TDS)	1220	10.0	mg/L

Sample Results

TBB-3D Purge Water @ 5 GAL	Collect Date 12/15/2015 12:10	GCAL ID 21512180704
	Receive Date 12/17/2015 15:45	Matrix Water

EPA 8270C

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/19/2015 18:50	574938	EPA 3510C	1	12/22/2015 17:32	JMC2	575332

CAS#	Parameter	Result	LOQ	Units
120-82-1	1,2,4-Trichlorobenzene	ND	0.020	mg/L
95-50-1	1,2-Dichlorobenzene	ND	0.020	mg/L
122-66-7	1,2Diphenylhydrazine/Azobenzen	ND	0.020	mg/L
541-73-1	1,3-Dichlorobenzene	ND	0.020	mg/L
106-46-7	1,4-Dichlorobenzene	ND	0.020	mg/L
88-06-2	2,4,6-Trichlorophenol	ND	0.020	mg/L
120-83-2	2,4-Dichlorophenol	ND	0.020	mg/L
105-67-9	2,4-Dimethylphenol	ND	0.020	mg/L
51-28-5	2,4-Dinitrophenol	ND	0.020	mg/L
121-14-2	2,4-Dinitrotoluene	ND	0.020	mg/L
606-20-2	2,6-Dinitrotoluene	ND	0.020	mg/L
91-58-7	2-Chloronaphthalene	ND	0.020	mg/L
95-57-8	2-Chlorophenol	ND	0.020	mg/L
91-57-6	2-Methylnaphthalene	0.029	0.020	mg/L
88-75-5	2-Nitrophenol	ND	0.020	mg/L
91-94-1	3,3'-Dichlorobenzidine	ND	0.020	mg/L
534-52-1	4,6-Dinitro-2-methylphenol	ND	0.020	mg/L
101-55-3	4-Bromophenyl phenyl ether	ND	0.020	mg/L
59-50-7	4-Chloro-3-methylphenol	ND	0.020	mg/L
7005-72-3	4-Chlorophenyl phenyl ether	ND	0.020	mg/L
100-02-7	4-Nitrophenol	ND	0.020	mg/L
83-32-9	Acenaphthene	0.042	0.020	mg/L
208-96-8	Acenaphthylene	ND	0.020	mg/L
120-12-7	Anthracene	0.030	0.020	mg/L
92-87-5	Benzenzidine	ND	0.100	mg/L
56-55-3	Benzo(a)anthracene	ND	0.020	mg/L
50-32-8	Benzo(a)pyrene	ND	0.020	mg/L
205-99-2	Benzo(b)fluoranthene	ND	0.020	mg/L
191-24-2	Benzo(g,h,i)perylene	ND	0.020	mg/L
207-08-9	Benzo(k)fluoranthene	ND	0.020	mg/L
111-91-1	Bis(2-Chloroethoxy)methane	ND	0.020	mg/L
111-44-4	Bis(2-Chloroethyl)ether	ND	0.020	mg/L
108-60-1	Bis(2-Chloroisopropyl)ether	ND	0.020	mg/L
117-81-7	Bis(2-Ethylhexyl)phthalate	ND	0.020	mg/L
85-68-7	Butyl benzyl phthalate	ND	0.020	mg/L
218-01-9	Chrysene	ND	0.020	mg/L
53-70-3	Dibenz(a,h)anthracene	ND	0.020	mg/L
84-66-2	Diethyl phthalate	ND	0.020	mg/L
131-11-3	Dimethyl phthalate	ND	0.020	mg/L
84-74-2	Di-n-butyl phthalate	ND	0.020	mg/L
117-84-0	Di-n-octyl phthalate	ND	0.020	mg/L
206-44-0	Fluoranthene	0.077	0.020	mg/L
86-73-7	Fluorene	0.044	0.020	mg/L
118-74-1	Hexachlorobenzene	ND	0.020	mg/L
87-68-3	Hexachlorobutadiene	ND	0.020	mg/L
77-47-4	Hexachlorocyclopentadiene	ND	0.020	mg/L
67-72-1	Hexachloroethane	ND	0.020	mg/L
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.020	mg/L

Sample Results

TBB-3D Purge Water @ 5 GAL	Collect Date	12/15/2015 12:10	GCAL ID	21512180704
	Receive Date	12/17/2015 15:45	Matrix	Water

EPA 8270C (Continued)

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/19/2015 18:50	574938	EPA 3510C	1	12/22/2015 17:32	JMC2	575332

CAS#	Parameter	Result	LOQ	Units
78-59-1	Isophorone	ND	0.020	mg/L
91-20-3	Naphthalene	0.063	0.020	mg/L
98-95-3	Nitrobenzene	ND	0.020	mg/L
62-75-9	n-Nitrosodimethylamine	ND	0.020	mg/L
621-64-7	n-Nitrosodi-n-propylamine	ND	0.020	mg/L
86-30-6	n-Nitrosodiphenylamine	ND	0.020	mg/L
87-86-5	Pentachlorophenol	ND	0.020	mg/L
85-01-8	Phenanthrene	0.147	0.020	mg/L
108-95-2	Phenol	ND	0.020	mg/L
129-00-0	Pyrene	0.050	0.020	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	0.10	.00605	ug/L	6*	44 - 120
321-60-8	2-Fluorobiphenyl	0.10	.000912	ug/L	.9*	44 - 119
1718-51-0	Terphenyl-d14	0.10	.0012	ug/L	1*	50 - 134
4165-62-2	Phenol-d5	0.20	.00941	ug/L	5*	10 - 120
367-12-4	2-Fluorophenol	0.20	.00747	ug/L	4*	19 - 119
118-79-6	2,4,6-Tribromophenol	0.20	.00131	ug/L	.7*	43 - 140

MC-1	Collect Date	12/16/2015 11:30	GCAL ID	21512180705
	Receive Date	12/17/2015 15:45	Matrix	Water

EPA 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	12/21/2015 22:46	CJR	575233

CAS#	Parameter	Result	LOQ	Units
71-43-2	Benzene	ND	0.00500	mg/L
100-41-4	Ethylbenzene	ND	0.00500	mg/L
108-88-3	Toluene	ND	0.00500	mg/L
1330-20-7	Xylene (total)	ND	0.015	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	0.05	.049	ug/L	97	78 - 130
1868-53-7	Dibromofluoromethane	0.05	.049	ug/L	98	77 - 127
2037-26-5	Toluene d8	0.05	.052	ug/L	104	76 - 134
17060-07-0	1,2-Dichloroethane-d4	0.05	.049	ug/L	97	71 - 127

Sample Results

MC-1	Collect Date	12/16/2015 11:30	GCAL ID	21512180705
	Receive Date	12/17/2015 15:45	Matrix	Water

EPA 8015C GRO

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch	
NA	NA	NA	1	12/22/2015 12:49	JAR	575141	
CAS#	Parameter			Result	LOQ	Units	
8006-61-9	Gasoline Range Organics			ND	0.100	mg/L	
CAS#	Surrogate		Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
106-39-8	Bromochlorobenzene		0.03	.025	ug/L	83	49 - 136

MADEP VPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch	
NA	NA	NA	1	12/22/2015 16:19	JAR	575224	
CAS#	Parameter			Result	LOQ	Units	
GCSV-02-10	Aliphatic >C8-C10			ND	0.020	mg/L	
GCSV-02-30	Aliphatic C6-C8			ND	0.030	mg/L	
GCSV-02-14	Aromatic >C8-C10			ND	0.030	mg/L	
CAS#	Surrogate		Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
GCV-00-7	2,5-Dibromotoluene (PID)		0.05	.046	ug/L	93	70 - 130
GCV-00-8	2,5-Dibromotoluene (FID)		0.05	.051	ug/L	102	70 - 130

EPA 8015C DRO

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch	
12/19/2015 09:30	574951	EPA 3510C	1	12/19/2015 18:59	SDD	575073	
CAS#	Parameter			Result	LOQ	Units	
GCSV-00-4	Diesel Range Organics			ND	0.125	mg/L	
CAS#	Surrogate		Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl		0.05	.041	ug/L	81	56 - 125

Sample Results

MC-1	Collect Date	12/16/2015 11:30	GCAL ID	21512180705
	Receive Date	12/17/2015 15:45	Matrix	Water

EPA 8015C ORO

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/19/2015 09:30	574952	EPA 3510C	1	12/19/2015 18:59	SDD	575074

CAS#	Parameter	Result	LOQ	Units
GCSV-00-44	Oil Range Organics	ND	0.125	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	0.05	.044	ug/L	87	56 - 125

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/19/2015 07:00	574953	MADEP EPH Revision 1.1	1	12/21/2015 12:06	DLB	575270

CAS#	Parameter	Result	LOQ	Units
GCSV-02-11	Aliphatic >C10-C12	ND	0.100	mg/L
GCSV-02-12	Aliphatic >C12-C16	ND	0.100	mg/L
GCSV-02-31	Aliphatic >C16-C35	ND	0.150	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
3386-33-2	1-Chlorooctadecane	0.04	.024	ug/L	60	40 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/19/2015 07:00	574953	MADEP EPH Revision 1.1	1	12/21/2015 12:06	DLB	575269

CAS#	Parameter	Result	LOQ	Units
GCSV-02-15	Aromatic >C10-C12	ND	0.100	mg/L
GCSV-02-16	Aromatic >C12-C16	ND	0.100	mg/L
GCSV-02-17	Aromatic >C16-C21	ND	0.150	mg/L
GCSV-05-18	Aromatic >C21-C35	ND	0.100	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	0.04	.034	ug/L	85	40 - 140
580-13-2	2-Bromonaphthalene	0.04	.053	ug/L	133	40 - 140
321-60-8	2-Fluorobiphenyl	0.04	.054	ug/L	135	40 - 140

Sample Results

MC-1	Collect Date	12/16/2015 11:30	GCAL ID	21512180705
	Receive Date	12/17/2015 15:45	Matrix	Water

EPA 6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/19/2015 09:55	575010	EPA 3010A	100	12/21/2015 23:44	AWG	575258

CAS#	Parameter	Result	LOQ	Units
7440-39-3	Barium	1.85	0.10	mg/L
7440-70-2	Calcium	151	50.0	mg/L
7439-95-4	Magnesium	57.9	10.0	mg/L
7439-96-5	Manganese	0.67	0.50	mg/L
7440-23-5	Sodium	514	10.0	mg/L
7440-24-6	Strontium	1.54	0.10	mg/L

EPA 6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/19/2015 09:55	575010	EPA 3010A	5	12/22/2015 12:46	AWG	575265

CAS#	Parameter	Result	LOQ	Units
7440-38-2	Arsenic	ND	0.0050	mg/L
7440-43-9	Cadmium	ND	0.0050	mg/L
7440-47-3	Chromium	ND	0.0050	mg/L
7439-89-6	Iron	1.48	0.50	mg/L
7439-92-1	Lead	ND	0.0050	mg/L
7440-09-7	Potassium	6.11	0.50	mg/L
7440-66-6	Zinc	ND	0.10	mg/L

EPA 6020A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/18/2015 16:00	574994	EPA 3005A Dissolved	100	12/21/2015 23:13	AWG	575258

CAS#	Parameter	Result	LOQ	Units
7440-39-3	Barium	1.74	0.10	mg/L
7439-96-5	Manganese	0.65	0.50	mg/L
7440-24-6	Strontium	1.42	0.10	mg/L

EPA 6020A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/18/2015 16:00	574994	EPA 3005A Dissolved	5	12/22/2015 11:58	AWG	575265

CAS#	Parameter	Result	LOQ	Units
7440-38-2	Arsenic	ND	0.0050	mg/L
7440-43-9	Cadmium	ND	0.0050	mg/L

Sample Results

MC-1	Collect Date	12/16/2015 11:30	GCAL ID	21512180705
	Receive Date	12/17/2015 15:45	Matrix	Water

EPA 6020A Dissolved (Continued)

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/18/2015 16:00	574994	EPA 3005A Dissolved	5	12/22/2015 11:58	AWG	575265

CAS#	Parameter	Result	LOQ	Units
7440-47-3	Chromium	ND	0.0050	mg/L
7439-89-6	Iron	1.08	0.50	mg/L
7439-92-1	Lead	ND	0.0050	mg/L
7440-66-6	Zinc	ND	0.10	mg/L

EPA 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/19/2015 13:55	575012	EPA 7470A	1	12/21/2015 17:19	LWZ	575192

CAS#	Parameter	Result	LOQ	Units
7439-97-6	Mercury	0.0010	0.00020	mg/L

EPA 7470A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/19/2015 10:40	575013	EPA 7470A Dissolved	1	12/19/2015 15:34	LWZ	575023

CAS#	Parameter	Result	LOQ	Units
7439-97-6	Mercury	ND	0.00020	mg/L

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	500	12/21/2015 12:23	JEM	575131

CAS#	Parameter	Result	LOQ	Units
16887-00-6	Chloride	837	100	mg/L
14808-79-8	Sulfate	106	100	mg/L

Sample Results

MC-1	Collect Date	12/16/2015 11:30	GCAL ID	21512180705
	Receive Date	12/17/2015 15:45	Matrix	Water

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	5	12/21/2015 21:15	SMR	575131

CAS#	Parameter	Result	LOQ	Units
24959-67-9	Bromide	2.18	1.00	mg/L

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	12/22/2015 12:34	DMT	575286

CAS#	Parameter	Result	LOQ	Units
T-005-B	Bicarbonate Alkalinity	349	1.0	mg/L CaCO3

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	12/22/2015 12:34	DMT	575286

CAS#	Parameter	Result	LOQ	Units
T-005-C	Carbonate Alkalinity	ND	1.0	mg/L CaCO3

SM 2540 C-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	12/18/2015 13:22	WRW	574977

CAS#	Parameter	Result	LOQ	Units
WET-035	Total Dissolved Solids(TDS)	1750	10.0	mg/L

GC/MS Volatiles QC Summary

Analytical Batch 575233		Client ID GCAL ID Sample Type Prep Date Analysis Date Matrix	MB575233 1522538 MB NA 12/21/2015 19:35 Water	LCS575233 1522539 LCS NA 12/21/2015 18:04 Water	LCSD575233 1522540 LCSD NA 12/21/2015 18:27 Water							
EPA 8260B		Units Result	mg/L LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Benzene	71-43-2	ND	0.00500	0.050	0.053	106	70 - 129	0.050	0.055	111	3	20
Ethylbenzene	100-41-4	ND	0.00500	0.050	0.053	106	74 - 126	0.050	0.055	110	3	30
Toluene	108-88-3	ND	0.00500	0.050	0.051	103	72 - 120	0.050	0.053	106	3	20
Xylene (total)	1330-20-7	ND	0.015	0.150	0.155	103	74 - 127	0.150	0.159	106	3	30
Surrogate												
1,2-Dichloroethane-d4	17060-07-0	.0492	98	.05	.0512	102	71 - 127	.05	.0507	101		NA
4-Bromofluorobenzene	460-00-4	.048	96	.05	.0506	101	78 - 130	.05	.0513	103		NA
Dibromofluoromethane	1868-53-7	.0486	97	.05	.0494	99	77 - 127	.05	.049	98		NA
Toluene d8	2037-26-5	.0515	103	.05	.0498	100	76 - 134	.05	.0497	99		NA

GC/MS Semi-Volatiles QC Summary

Analytical Batch		Client ID	LCS574938			LCSD574938						
575332		MB574938	1520879			1520880						
Prep Batch		Sample Type	LCS			LCSD						
574938		Prep Date	12/19/2015 18:50			12/19/2015 18:50						
Prep Method		Analysis Date	12/22/2015 16:30			12/22/2015 16:47						
EPA 3510C		Matrix	Water			Water						
EPA 8270C		Units Result	mg/L LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
1,2,4-Trichlorobenzene	120-82-1	ND	0.010	0.050	0.024	47	29 - 116	0.050	0.022	43	9	30
1,2-Dichlorobenzene	95-50-1	ND	0.010	0.050	0.021	41	32 - 111	0.050	0.019	38	10	30
1,2-Diphenylhydrazine/Azobenzen	122-66-7	ND	0.010	0.050	0.043	86	49 - 122	0.050	0.043	86	0	30
1,3-Dichlorobenzene	541-73-1	ND	0.010	0.050	0.019	38	28 - 110	0.050	0.018	35	5	30
1,4-Dichlorobenzene	106-46-7	ND	0.010	0.050	0.019	39	29 - 112	0.050	0.018	35	5	30
2,4,6-Trichlorophenol	88-06-2	ND	0.010	0.050	0.048	95	50 - 125	0.050	0.048	95	0	30
2,4-Dichlorophenol	120-83-2	ND	0.010	0.050	0.044	88	47 - 121	0.050	0.046	91	4	30
2,4-Dimethylphenol	105-67-9	ND	0.010	0.050	0.038	77	31 - 124	0.050	0.039	78	3	30
2,4-Dinitrophenol	51-28-5	ND	0.010	0.050	0.042	83	23 - 143	0.050	0.044	88	5	30
2,4-Dinitrotoluene	121-14-2	ND	0.010	0.050	0.042	83	57 - 128	0.050	0.043	86	2	30
2,6-Dinitrotoluene	606-20-2	ND	0.010	0.050	0.045	90	57 - 124	0.050	0.047	94	4	30
2-Chloronaphthalene	91-58-7	ND	0.010	0.050	0.035	71	40 - 116	0.050	0.032	63	9	30
2-Chlorophenol	95-57-8	ND	0.010	0.050	0.041	82	38 - 117	0.050	0.041	82	0	30
2-Methylnaphthalene	91-57-6	ND	0.010	0.050	0.030	59	40 - 121	0.050	0.026	52	14	30
2-Nitrophenol	88-75-5	ND	0.010	0.050	0.048	97	47 - 123	0.050	0.048	96	0	30
3,3'-Dichlorobenzidine	91-94-1	ND	0.010	0.050	0.049	98	27 - 129	0.050	0.049	98	0	30
4,6-Dinitro-2-methylphenol	534-52-1	ND	0.010	0.050	0.047	94	44 - 137	0.050	0.048	97	2	30
4-Bromophenyl phenyl ether	101-55-3	ND	0.010	0.050	0.047	94	55 - 124	0.050	0.047	95	0	30
4-Chloro-3-methylphenol	59-50-7	ND	0.010	0.050	0.041	81	52 - 119	0.050	0.043	85	5	30
4-Chlorophenyl phenyl ether	7005-72-3	ND	0.010	0.050	0.040	80	53 - 121	0.050	0.040	80	0	30
4-Nitrophenol	100-02-7	ND	0.010	0.050	0.025	49	10 - 120	0.050	0.025	51	0	30
Acenaphthene	83-32-9	ND	0.010	0.050	0.040	79	47 - 122	0.050	0.037	75	8	30
Acenaphthylene	208-96-8	ND	0.010	0.050	0.041	82	41 - 130	0.050	0.039	77	5	30
Anthracene	120-12-7	ND	0.010	0.050	0.048	96	57 - 123	0.050	0.050	100	4	30
Benidine	92-87-5	ND	0.050	0.050	0.124	248*	10 - 120	0.050	0.087	174*	35*	30
Benzo(a)anthracene	56-55-3	ND	0.010	0.050	0.046	91	58 - 125	0.050	0.047	95	2	30
Benzo(a)pyrene	50-32-8	ND	0.010	0.050	0.051	101	54 - 128	0.050	0.052	104	2	30
Benzo(b)fluoranthene	205-99-2	ND	0.010	0.050	0.046	92	53 - 131	0.050	0.048	96	4	30
Benzo(g,h,i)perylene	191-24-2	ND	0.010	0.050	0.048	96	50 - 134	0.050	0.049	99	2	30
Benzo(k)fluoranthene	207-08-9	ND	0.010	0.050	0.050	100	57 - 129	0.050	0.050	99	0	30
Bis(2-Chloroethoxy)methane	111-91-1	ND	0.010	0.050	0.041	82	48 - 120	0.050	0.042	84	2	30
Bis(2-Chloroethyl)ether	111-44-4	ND	0.010	0.050	0.038	76	43 - 118	0.050	0.037	75	3	30
Bis(2-Chloroisopropyl)ether	108-60-1	ND	0.010	0.050	0.035	69	37 - 130	0.050	0.033	65	6	30
Bis(2-Ethylhexyl)phthalate	117-81-7	ND	0.010	0.050	0.042	84	55 - 135	0.050	0.043	86	2	30
Butyl benzyl phthalate	85-68-7	ND	0.010	0.050	0.044	88	53 - 134	0.050	0.045	90	2	30
Chrysene	218-01-9	ND	0.010	0.050	0.047	93	59 - 123	0.050	0.047	93	0	30
Dibenz(a,h)anthracene	53-70-3	ND	0.010	0.050	0.050	99	51 - 134	0.050	0.052	105	4	30
Diethyl phthalate	84-66-2	ND	0.010	0.050	0.040	79	56 - 125	0.050	0.042	83	5	30
Dimethyl phthalate	131-11-3	ND	0.010	0.050	0.042	83	45 - 127	0.050	0.043	87	2	30
Di-n-butyl phthalate	84-74-2	ND	0.010	0.050	0.042	84	59 - 127	0.050	0.043	86	2	30
Di-n-octyl phthalate	117-84-0	ND	0.010	0.050	0.038	75	51 - 140	0.050	0.038	76	0	30
Fluoranthene	206-44-0	ND	0.010	0.050	0.043	87	57 - 128	0.050	0.045	90	5	30
Fluorene	86-73-7	ND	0.010	0.050	0.042	85	52 - 124	0.050	0.042	83	0	30
Hexachlorobenzene	118-74-1	ND	0.010	0.050	0.048	97	53 - 125	0.050	0.050	100	4	30
Hexachlorobutadiene	87-68-3	ND	0.010	0.050	0.018	36	22 - 124	0.050	0.018	36	0	30
Hexachlorocyclopentadiene	77-47-4	ND	0.010	0.050	0.022	44	16 - 120	0.050	0.020	40	10	30
Hexachloroethane	67-72-1	ND	0.010	0.050	0.016	32	21 - 115	0.050	0.016	31	0	30
Indeno(1,2,3-cd)pyrene	193-39-5	ND	0.010	0.050	0.050	99	52 - 134	0.050	0.050	100	0	30
Isophorone	78-59-1	ND	0.010	0.050	0.043	86	42 - 124	0.050	0.044	88	2	30
Naphthalene	91-20-3	ND	0.010	0.050	0.030	60	40 - 121	0.050	0.027	53	11	30
Nitrobenzene	98-95-3	ND	0.010	0.050	0.041	81	45 - 121	0.050	0.040	79	2	30
n-Nitrosodimethylamine	62-75-9	ND	0.010	0.050	0.026	53	12 - 120	0.050	0.027	53	4	30
n-Nitrosodi-n-propylamine	621-64-7	ND	0.010	0.050	0.039	77	49 - 119	0.050	0.038	77	3	30
n-Nitrosodiphenylamine	86-30-6	ND	0.010	0.050	0.047	94	51 - 123	0.050	0.047	95	0	30
Pentachlorophenol	87-86-5	ND	0.010	0.050	0.046	92	35 - 138	0.050	0.047	94	2	30
Phenanthrene	85-01-8	ND	0.010	0.050	0.045	90	59 - 120	0.050	0.047	93	4	30
Phenol	108-95-2	ND	0.010	0.050	0.023	45	16 - 120	0.050	0.024	48	4	30
Pyrene	129-00-0	ND	0.010	0.050	0.052	104	57 - 126	0.050	0.052	105	0	30

GC/MS Semi-Volatiles QC Summary

EPA 8270C		Units Result	mg/L LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Analytical Batch 575332		Client ID	MB574938	LCS574938			LCSD574938					
Prep Batch 574938		GCAL ID	1520878	LCS574938			LCSD574938					
Prep Method EPA 3510C		Sample Type	MB	LCS			LCSD					
		Prep Date	12/19/2015 18:50	12/19/2015 18:50			12/19/2015 18:50					
		Analysis Date	12/22/2015 16:13	12/22/2015 16:30			12/22/2015 16:47					
		Matrix	Water	Water			Water					
Surrogate												
2,4,6-Tribromophenol	118-79-6	.0871	87	.1	.0842	84	43 - 140	.1	.0891	89		NA
2-Fluorobiphenyl	321-60-8	.0362	72	.05	.0405	81	44 - 119	.05	.0415	83		NA
2-Fluorophenol	367-12-4	.0494	49	.1	.0515	52	19 - 119	.1	.0556	56		NA
Nitrobenzene-d5	4165-60-0	.0375	75	.05	.0386	77	44 - 120	.05	.0392	78		NA
Phenol-d5	4165-62-2	.034	34	.1	.0372	37	10 - 120	.1	.0396	40		NA
Terphenyl-d14	1718-51-0	.0478	96	.05	.0515	103	50 - 134	.05	.0531	106		NA

GC Volatiles QC Summary

Analytical Batch 575141		Client ID GCAL ID Sample Type Prep Date Analysis Date Matrix	MB575141 1521966 MB NA 12/22/2015 11:58 Water	LCS575141 1521967 LCS NA 12/22/2015 11:32 Water	LCSD575141 1521968 LCSD NA 12/22/2015 11:41 Water								
EPA 8015C GRO			Units Result	mg/L LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Gasoline Range Organics	8006-61-9	ND	0.100	0.500	0.553	111	70 - 128	0.500	0.540	108	2	25	
Surrogate Bromochlorobenzene	106-39-8	.0233	78	.03	.0291	97	49 - 136	.03	.0278	93		NA	

Analytical Batch 575224		Client ID GCAL ID Sample Type Prep Date Analysis Date Matrix	MB575224 1522505 MB NA 12/22/2015 12:42 Water	LCS575224 1522506 LCS NA 12/22/2015 04:32 Water	LCSD575224 1522507 LCSD NA 12/22/2015 11:49 Water								
MADEP VPH Revision 1.1			Units Result	mg/L LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Aliphatic >C8-C10	GCSV-02-10	ND	0.020	0.100	0.116	116	60 - 140	0.100	0.106	106	9	30	
Aliphatic C6-C8	GCSV-02-30	ND	0.030	0.150	0.170	113	60 - 140	0.150	0.147	98	15	30	
Aromatic >C8-C10	GCSV-02-14	ND	0.030	0.150	0.157	105	60 - 140	0.150	0.146	97	7	30	
Surrogate 2,5-Dibromotoluene (FID)	GCV-00-8	.0574	115	.05	.0557	111	70 - 130	.05	.0511	102		NA	
2,5-Dibromotoluene (PID)	GCV-00-7	.0496	99	.05	.0538	108	70 - 130	.05	.0463	93		NA	

GC Semi-Volatiles QC Summary

Analytical Batch 575073		Client ID	MB574951	LCS574951				LCSD574951					
Prep Batch 574951		GCAL ID	1520949	1520950				1520951					
Prep Method EPA 3510C		Sample Type	MB	LCS				LCSD					
		Prep Date	12/19/2015 09:30	12/19/2015 09:30				12/19/2015 09:30					
		Analysis Date	12/19/2015 16:10	12/19/2015 16:34				12/19/2015 16:48					
		Matrix	Water	Water				Water					
EPA 8015C DRO			Units Result	mg/L LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Diesel Range Organics	GCSV-00-4		ND	0.125	1.00	0.685	69	47 - 120	1.00	0.764	76	11	30
Surrogate o-Terphenyl	84-15-1		.0377	75	.05	.0428	86	56 - 125	.05	.0444	89		NA

Analytical Batch 575074		Client ID	MB574952	LCS574952				LCSD574952					
Prep Batch 574952		GCAL ID	1520952	1520953				1520954					
Prep Method EPA 3510C		Sample Type	MB	LCS				LCSD					
		Prep Date	12/19/2015 09:30	12/19/2015 09:30				12/19/2015 09:30					
		Analysis Date	12/19/2015 16:10	12/19/2015 17:02				12/19/2015 17:17					
		Matrix	Water	Water				Water					
EPA 8015C ORO			Units Result	mg/L LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Oil Range Organics	GCSV-00-44		ND	0.125	2.00	1.80	90	41 - 113	2.00	1.79	89	1	40
Surrogate o-Terphenyl	84-15-1		.0406	81	.05	.0445	89	56 - 125	.05	.0447	89		NA

Analytical Batch 575270		Client ID	MB574953	LCS574953				LCSD574953					
Prep Batch 574953		GCAL ID	1520955	1520956				1520957					
Prep Method MADEP EPH Revision 1.1		Sample Type	MB	LCS				LCSD					
		Prep Date	12/19/2015 07:00	12/19/2015 07:00				12/19/2015 07:00					
		Analysis Date	12/21/2015 09:30	12/21/2015 09:49				12/21/2015 10:09					
		Matrix	Water	Water				Water					
MADEP EPH Revision 1.1			Units Result	mg/L LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Aliphatic >C10-C12	GCSV-02-11		ND	0.100	0.100	0.074	74	30 - 140	0.100	0.075	75	1	25
Aliphatic >C12-C16	GCSV-02-12		ND	0.100	0.100	0.089	89	40 - 140	0.100	0.096	96	8	25
Aliphatic >C16-C35	GCSV-02-31		ND	0.150	0.450	0.413	92	40 - 140	0.450	0.411	91	1	25
Surrogate 1-Chlorooctadecane	3386-33-2		.0191	48	.04	.0316	79	40 - 140	.04	.0269	67		NA

Analytical Batch 575269		Client ID	MB574953	LCS574953				LCSD574953					
Prep Batch 574953		GCAL ID	1520955	1520956				1520957					
Prep Method MADEP EPH Revision 1.1		Sample Type	MB	LCS				LCSD					
		Prep Date	12/19/2015 07:00	12/19/2015 07:00				12/19/2015 07:00					
		Analysis Date	12/21/2015 21:45	12/21/2015 22:05				12/21/2015 22:24					
		Matrix	Water	Water				Water					
MADEP EPH Revision 1.1			Units Result	mg/L LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Aromatic >C10-C12	GCSV-02-15		ND	0.100	0.050	0.038	77	30 - 140	0.050	0.043	87	12	25
Aromatic >C12-C16	GCSV-02-16		ND	0.100	0.200	0.163	82	40 - 140	0.200	0.174	87	7	25
Aromatic >C16-C21	GCSV-02-17		ND	0.150	0.100	0.090	90	40 - 140	0.100	0.092	92	2	25
Aromatic >C21-C35	GCSV-05-18		ND	0.100	0.500	0.412	82	40 - 140	0.500	0.384	77	7	25
Surrogate 2-Bromonaphthalene	580-13-2		.047	118	.04	.0389	97	40 - 140	.04	.0413	103		NA
2-Fluorobiphenyl	321-60-8		.0455	114	.04	.039	98	40 - 140	.04	.0422	106		NA
o-Terphenyl	84-15-1		.0413	103	.04	.0343	86	40 - 140	.04	.0338	85		NA

Inorganics QC Summary

Analytical Batch 575192	Client ID GCAL ID	MB575012 1521411	LCS575012 1521412			
Prep Batch 575012	Sample Type Prep Date	MB 12/19/2015 13:55	LCS 12/19/2015 13:55			
Prep Method EPA 7470A	Analysis Date Matrix	12/21/2015 16:32 Water	12/21/2015 16:38 Water			
EPA 7470A		Units Result	mg/L LOQ	Spike Added	Result %R	Control Limits%R
Mercury	7439-97-6	ND	0.00020	0.0050	0.0044 89	80 - 120

Analytical Batch 575023	Client ID GCAL ID	MB575013 1521413	LCS575013 1521414			
Prep Batch 575013	Sample Type Prep Date	MB 12/19/2015 10:40	LCS 12/19/2015 10:40			
Prep Method EPA 7470A	Analysis Date Matrix	12/19/2015 15:23 Water	12/19/2015 15:25 Water			
EPA 7470A Dissolved		Units Result	mg/L LOQ	Spike Added	Result %R	Control Limits%R
Mercury	7439-97-6	ND	0.00020	0.0050	0.0042 83	80 - 120

Analytical Batch 575023	Client ID GCAL ID	B90MWG415 21512182620	1521104MS 1521415		1521104MSD 1521416					
Prep Batch 575013	Sample Type Prep Date	SAMPLE 12/19/2015 10:40	MS 12/19/2015 10:40		MSD 12/19/2015 10:40					
Prep Method EPA 7470A	Analysis Date Matrix	12/19/2015 15:52 Water	12/19/2015 15:54 Water		12/19/2015 15:56 Water					
EPA 7470A Dissolved		Units Result	mg/L LOQ	Spike Added	Result %R	Control Limits%R	Spike Added	Result %R	RPD	RPD Limit
Mercury	7439-97-6	0.0	0.00020	0.0050	0.0044 89	80 - 120	0.0050	0.0042 85	5	20

Analytical Batch 575258	Client ID GCAL ID	MB575010 1521405	LCS575010 1521406			
Prep Batch 575010	Sample Type Prep Date	MB 12/19/2015 09:55	LCS 12/19/2015 09:55			
Prep Method EPA 3010A	Analysis Date Matrix	12/21/2015 23:18 Water	12/21/2015 23:23 Water			
EPA 6020A		Units Result	mg/L LOQ	Spike Added	Result %R	Control Limits%R
Arsenic	7440-38-2	ND	0.0010	0.050	0.055 109	80 - 120
Barium	7440-39-3	ND	0.0010	0.050	0.050 106	80 - 120
Cadmium	7440-43-9	ND	0.0010	0.050	0.053 106	80 - 120
Calcium	7440-70-2	ND	0.50	25.0	27.0 108	80 - 120
Chromium	7440-47-3	ND	0.0010	0.050	0.056 112	80 - 120
Iron	7439-89-6	ND	0.10	5.00	5.60 112	80 - 120
Lead	7439-92-1	ND	0.0010	0.050	0.054 108	80 - 120
Magnesium	7439-95-4	ND	0.10	5.00	5.48 110	80 - 120
Manganese	7439-96-5	ND	0.0050	0.050	0.060 113	80 - 120
Potassium	7440-09-7	ND	0.10	5.00	5.39 108	80 - 120
Sodium	7440-23-5	ND	0.10	5.00	5.46 109	80 - 120
Strontium	7440-24-6	ND	0.0010	0.050	0.056 112	80 - 120
Zinc	7440-66-6	ND	0.020	1.00	1.09 109	80 - 120

Inorganics QC Summary

Analytical Batch 575258		Client ID GCAL ID	MB574994 1521339	LCS574994 1521340			
Prep Batch 574994		Sample Type	MB	LCS			
Prep Method EPA 3005A Dissolved		Prep Date	12/18/2015 16:00	12/18/2015 16:00			
		Analysis Date	12/21/2015 22:46	12/21/2015 22:52			
		Matrix	Water	Water			
EPA 6020A Dissolved		Units Result	mg/L LOQ	Spike Added	Result	%R	Control Limits%R
Arsenic	7440-38-2	ND	0.0010	0.050	0.048	95	80 - 120
Barium	7440-39-3	ND	0.0010	0.050	0.047	94	80 - 120
Cadmium	7440-43-9	ND	0.0010	0.050	0.049	97	80 - 120
Chromium	7440-47-3	ND	0.0010	0.050	0.047	93	80 - 120
Iron	7439-89-6	ND	0.10	5.00	4.72	94	80 - 120
Lead	7439-92-1	ND	0.0010	0.050	0.048	95	80 - 120
Manganese	7439-96-5	ND	0.0050	0.050	0.049	97	80 - 120
Strontium	7440-24-6	ND	0.0010	0.050	0.048	96	80 - 120
Zinc	7440-66-6	ND	0.020	1.00	0.99	99	80 - 120

General Chemistry QC Summary

Analytical Batch 575286	Client ID GCAL ID Sample Type Prep Date Analysis Date Matrix	MC-1 21512180705 SAMPLE NA 12/22/2015 12:34 Water	1520930DUP 1522721 DUP NA 12/22/2015 12:34 Water			
SM 2320 B-2011		Units Result	mg/L CaCO3 LOQ	Result	RPD	RPD Limit
Bicarbonate Alkalinity	T-005-B	349	1.0	344	1	11

Analytical Batch 575131	Client ID GCAL ID Sample Type Prep Date Analysis Date Matrix	MB575131 1521929 MB NA 12/21/2015 09:46 Water	LCS575131 1521930 LCS NA 12/21/2015 09:29 Water				
EPA 9056A		Units Result	mg/L LOQ	Spike Added	Result	%R	Control Limits%R
Bromide	24959-67-9	ND	0.200	2.50	2.26	90	80 - 120
Chloride	16887-00-6	ND	0.200	2.50	2.53	101	80 - 120
Sulfate	14808-79-8	ND	0.200	2.50	2.46	98	80 - 120

Analytical Batch 575131	Client ID GCAL ID Sample Type Prep Date Analysis Date Matrix	TBB-2M 21512180701 SAMPLE NA 12/21/2015 10:21 Water	1520926MS 1521931 MS NA 12/21/2015 10:38 Water	1520926MSD 1521932 MSD NA 12/21/2015 10:56 Water								
EPA 9056A		Units Result	mg/L LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Chloride	16887-00-6	4820	400	5000	9200	88	80 - 120	5000	9380	91	2	15

Analytical Batch 575131	Client ID GCAL ID Sample Type Prep Date Analysis Date Matrix	TBB-2M 21512180701 SAMPLE NA 12/21/2015 19:48 Water	1520926MS 1521931 MS NA 12/21/2015 20:05 Water	1520926MSD 1521932 MSD NA 12/21/2015 20:23 Water								
EPA 9056A		Units Result	mg/L LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Bromide	24959-67-9	8.07	10.0	125	148	112	80 - 120	125	146	110	1	15
Sulfate	14808-79-8	7.92	10.0	125	129	97	80 - 120	125	127	95	2	15

Analytical Batch 574977	Client ID GCAL ID Sample Type Prep Date Analysis Date Matrix	MB574977 1521187 MB NA 12/18/2015 13:22 Water	LCS574977 1521188 LCS NA 12/18/2015 13:22 Water				
SM 2540 C-2011		Units Result	mg/L LOQ	Spike Added	Result	%R	Control Limits%R
Total Dissolved Solids(TDS)	WET-035	ND	10.0	1000	1000	100	80 - 120

General Chemistry QC Summary

Analytical Batch 574977		Client ID GCAL ID Sample Type Prep Date Analysis Date Matrix	MRAA-01D 21512176301 SAMPLE NA 12/18/2015 13:22 Water	1520847DUP 1521189 DUP NA 12/18/2015 13:22 Water			
SM 2540 C-2011			Units Result	mg/L LOQ	Result	RPD	RPD Limit
Total Dissolved Solids(TDS)	WET-035		13600	10.0	13600	0	5.4

Analytical Batch 574977		Client ID GCAL ID Sample Type Prep Date Analysis Date Matrix	LB-2D 21512180102 SAMPLE NA 12/18/2015 13:22 Water	1520894DUP 1521190 DUP NA 12/18/2015 13:22 Water			
SM 2540 C-2011			Units Result	mg/L LOQ	Result	RPD	RPD Limit
Total Dissolved Solids(TDS)	WET-035		6430	10.0	6410	0	5.4



CHAIN OF CUSTODY RECORD

Client ID: 4271 - Michael Pisani & Associates

SDG: 215121807



PM: RKW

7979 GSRI Ave., Baton Rouge, LA 70820-7402
Phone: 225.769.4900 • Fax: 225.767.5717 • www.gcal.com

Report to: Client: <u>Michael Pisani & Assoc</u> Address: <u>1100 Poydras St Suite 1430</u> Contact: <u>Dave Anyle</u> Phone: <u>281 512 5700</u> E-mail: _____		Bill to: Client: <u>←</u> Address: _____ Contact: _____ Phone: _____ E-mail: _____	
---	--	--	--

P.O. Number: <u>07-47</u>	Project Name/Number: <u>EWL - GW Sampling (oversight)</u>
Sampled By: <u>Jonathan Miller / [Signature]</u>	

Matrix ¹	Date	Time (2400)	Comp	Grab	Sample Description	No Containers ↓	Total Metals *	As	Cd	Cu	Fe	Mn	Ni	Pb	Sr	Zn	Preservative
GW	12/14	1030			TBB-2M		X	X	X	X	X	X	X	X	X	X	1
GW	12/15	1100			TBB-2D		X	X	X	X	X	X	X	X	X	X	2
GW	12/15	1130			TBB-3D		X	X	X	X	X	X	X	X	X	X	3
GW	12/15	1210			TBB-3D Purge Water @ Segal												4
GW	12-16	1130			MC-1		X	X	X	X	X	X	X	X	X	X	5

Air Bill No: _____

Turn Around Time (Business Days): 24h* 48h* 3 days* 1 week* Standard (Per Contract/Quote) Turnaround see Randy Whillinston

Relinquished by: (Signature) <u>[Signature]</u>	Date: _____ Time: _____	Received by: (Signature) <u>[Signature]</u>	Date: <u>12-17-15</u> Time: <u>1155</u>	Note: <u>* As, Ba, Cd, Cr, Fe, Mn, Pb, Sr, Zn, Hg</u> By submitting these samples, you agree to GCAL's terms and conditions contained in our most recent schedule of services.
Relinquished by: (Signature) <u>[Signature]</u>	Date: <u>12-17-15</u> Time: <u>1345</u>	Received by: (Signature) <u>[Signature]</u>	Date: <u>12-17-15</u> Time: <u>1345</u>	
Relinquished by: (Signature) _____	Date: _____ Time: _____	Received by: (Signature) _____	Date: _____ Time: _____	

Matrix¹: W = water, S = solid, L = liquid, T = tissue *Requires prior approval, rush charges may apply. We cannot accept verbal changes. Please email written changes to your PM.

WHITE: CLIENT FINAL REPORT - CANARY: CLIENT



SAMPLE RECEIVING CHECKLIST



SAMPLE DELIVERY GROUP 215121805		CHECKLIST	YES	NO	NA
Client 4183 - Louisiana Pigment	PM JLM Transport Method COURIER	Were all samples received using proper thermal preservation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		When used, were all custody seals intact?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Were all samples received in proper containers?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Profile Number 7787	Received By Lofton, Katie E.	Were all samples received using proper chemical preservation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Was preservative added to any container at the lab?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Were all containers received in good condition?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Line Item(s) 1 - Waste Characterization	Receive Date(s) 12/17/15	Were all VOC water samples received without head space?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Do all sample labels match the Chain of Custody?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Did the Chain of Custody list the sampling technician?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Was the COC maintained i.e. all signatures, dates and time of receipt included?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COOLERS		DISCREPANCIES	LAB PRESERVATIONS		
Airbill	Thermometer ID:	Temp(°C)	None		
NOTES					

ANALYTICAL RESULTS

PERFORMED BY

GCAL, LLC
7979 Innovation Park Dr.
Baton Rouge, LA 70820

Report Date 12/24/2015

GCAL Report 215121919



Project 07-47 East Whitelake

Deliver To

Dave Angle

Michael Pisani and Associates

13313 Southwest Freeway

Suite 221

Sugar Land, TX 77478

281-242-5700

Additional Recipients

Jonathan Miller, Michael Pisani
& Associates

Lance Cooper, Michael Pisani &
Associates

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
DL	Diluted analysis – when appended to Client Sample ID
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
00:01	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

J or I	Indicates the result is between the MDL and LOQ
J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
U	Indicates the compound was analyzed for but not detected
B or V	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*	Indicates a non-compliant or not applicable QC recovery or RPD – see narrative
E	The result is estimated because it exceeded the instrument calibration range
E	Metals - % difference for the serial dilution is > 10%

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with the NELAC Institute standard and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

Authorized Signature
GCAL Report 215121919

Certifications

10/02/2015

Certification	Certification Number
DOD ELAP	L14-243
Alabama	01955
Arizona	AZ0718
Arkansas	12-060-0
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
USDA Soil Permit	P330-10-00117

Case Narrative

Client: Michael Pisani & Associates **Report:** 215121919

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

SEMI-VOLATILES MASS SPECTROMETRY

In the EPA 8270C analysis for prep batch 575048, the LCS/LCSD exhibited recoveries above the established control limits for Benzidine. However, Benzidine was not detected in the associated samples, therefore the data is reportable. The LCS/LCSD RPD is above the control limit for Benzidine.

SEMI-VOLATILES GAS CHROMATOGRAPHY

In the MADEP EPH Revision 1.1 analysis, the recovery for the surrogate, 2-Fluorobiphenyl is above the upper control limit for 21512191903. No target compounds were detected in the sample; therefore the data is reportable.

METALS

In the EPA 6020A analysis, sample 21512191901 (TBB-1D) was analyzed at a dilution. The reporting limits are at or below the RECAP screening standards at this dilution.

In the EPA 6020A Dissolved analysis, sample 21512191903 (TBB-3S) was analyzed at a dilution. The reporting limits are at or below the RECAP screening standards at this dilution.

In the EPA 6020A analysis, samples 21512191901 (TBB-1D), 21512191903 (TBB-3S) and 21512191902 (TBB-1S) had to be diluted in order to bracket the concentration within the calibration range of the instrument.

In the EPA 6020A Dissolved analysis, samples 21512191901 (TBB-1D), 21512191902 (TBB-1S) and 21512191903 (TBB-3S) had to be diluted in order to bracket the concentration within the calibration range of the instrument.

In the EPA 6020A analysis, a chemical or physical interference necessitated a dilution for sample 21512191902 (TBB-1S). This is reflected in the elevated reporting limits.

In the EPA 6020A Dissolved analysis, a chemical or physical interference necessitated a dilution for sample 21512191902 (TBB-1S). This is reflected in the elevated reporting limits.

In the EPA 6020A analysis, sample 21512191903 (TBB-3S) was analyzed at a dilution. The reporting limits are at or below the RECAP screening standards at this dilution.

In the EPA 6020A Dissolved analysis, sample 21512191901 (TBB-1D) was analyzed at a dilution. The reporting limits are at or below the RECAP screening standards at this dilution.

In the EPA 6020A Dissolved analysis for prep batch 575106, the MS and/or MSD recovery is outside the control limits for Iron. The LCS recovery is within the control limits. This indicates the analysis is in control and the sample is affected by matrix interference. The MS/MSD recoveries and RPD are not applicable for Strontium because the sample concentration is greater than four times the spike concentration.

CONVENTIONALS

In the EPA 9056A analysis, samples 21512191901 (TBB-1D), 21512191903 (TBB-3S) and 21512191902 (TBB-1S) had to be diluted in order to bracket the concentration within the calibration range of the instrument.

MISCELLANEOUS

Sample 21512191901 (TBB-1D) was received outside of the prescribed temperature range. However, the sample was received packaged on ice. It is apparent that the sample temperature had not equilibrated prior to receipt at the laboratory. No further action was taken.

N-nitrosodiphenylamine decomposes in the GC inlet and cannot be separated from Diphenylamine. The laboratory uses N-nitrosodiphenylamine as the calibration and QC standard.

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21512191901	TBB-1D	Water	12/17/2015 13:45	12/18/2015 16:10
21512191902	TBB-1S	Water	12/17/2015 15:45	12/18/2015 16:10
21512191903	TBB-3S	Water	12/18/2015 09:30	12/18/2015 16:10

Sample Results

TBB-1D	Collect Date	12/17/2015 13:45	GCAL ID	21512191901
	Receive Date	12/18/2015 16:10	Matrix	Water

EPA 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	12/24/2015 11:45	MMM	575466

CAS#	Parameter	Result	LOQ	Units
71-43-2	Benzene	ND	0.00500	mg/L
100-41-4	Ethylbenzene	ND	0.00500	mg/L
108-88-3	Toluene	ND	0.00500	mg/L
1330-20-7	Xylene (total)	ND	0.015	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	0.05	.05	ug/L	99	78 - 130
1868-53-7	Dibromofluoromethane	0.05	.052	ug/L	105	77 - 127
2037-26-5	Toluene d8	0.05	.052	ug/L	104	76 - 134
17060-07-0	1,2-Dichloroethane-d4	0.05	.052	ug/L	105	71 - 127

EPA 8015C GRO

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	12/22/2015 13:35	JAR	575141

CAS#	Parameter	Result	LOQ	Units
8006-61-9	Gasoline Range Organics	ND	0.100	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
106-39-8	Bromochlorobenzene	0.03	.023	ug/L	77	49 - 136

MADEP VPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	12/22/2015 18:46	JAR	575224

CAS#	Parameter	Result	LOQ	Units
GCSV-02-10	Aliphatic >C8-C10	ND	0.020	mg/L
GCSV-02-30	Aliphatic C6-C8	ND	0.030	mg/L

Sample Results

TBB-1D	Collect Date	12/17/2015 13:45	GCAL ID	21512191901
	Receive Date	12/18/2015 16:10	Matrix	Water

MADEP VPH Revision 1.1 (Continued)

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch	
NA	NA	NA	1	12/22/2015 18:46	JAR	575224	
CAS#	Parameter			Result	LOQ	Units	
GCSV-02-14	Aromatic >C8-C10			ND	0.030	mg/L	
CAS#	Surrogate		Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
GCV-00-7	2,5-Dibromotoluene (PID)		0.05	.047	ug/L	94	70 - 130
GCV-00-8	2,5-Dibromotoluene (FID)		0.05	.051	ug/L	103	70 - 130

EPA 8015C DRO

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch	
12/20/2015 11:00	575053	EPA 3510C	1	12/21/2015 13:37	ARW	575182	
CAS#	Parameter			Result	LOQ	Units	
GCSV-00-4	Diesel Range Organics			ND	0.125	mg/L	
CAS#	Surrogate		Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl		0.05	.038	ug/L	75	56 - 125

EPA 8015C ORO

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch	
12/20/2015 11:00	575054	EPA 3510C	1	12/21/2015 13:37	ARW	575183	
CAS#	Parameter			Result	LOQ	Units	
GCSV-00-44	Oil Range Organics			0.186	0.125	mg/L	
CAS#	Surrogate		Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl		0.05	.041	ug/L	81	56 - 125

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/20/2015 09:00	575052	MADEP EPH Revision 1.1	1	12/21/2015 23:02	DLB	575270
CAS#	Parameter			Result	LOQ	Units
GCSV-02-11	Aliphatic >C10-C12			ND	0.100	mg/L

Sample Results

TBB-1D	Collect Date	12/17/2015 13:45	GCAL ID	21512191901
	Receive Date	12/18/2015 16:10	Matrix	Water

MADEP EPH Revision 1.1 (Continued)

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/20/2015 09:00	575052	MADEP EPH Revision 1.1 (Continued)	1	12/21/2015 23:02	DLB	575270

CAS#	Parameter	Result	LOQ	Units
GCSV-02-12	Aliphatic >C12-C16	ND	0.100	mg/L
GCSV-02-31	Aliphatic >C16-C35	ND	0.150	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
3386-33-2	1-Chlorooctadecane	0.04	.026	ug/L	66	40 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/20/2015 09:00	575052	MADEP EPH Revision 1.1	1	12/21/2015 14:40	DLB	575269

CAS#	Parameter	Result	LOQ	Units
GCSV-02-15	Aromatic >C10-C12	ND	0.100	mg/L
GCSV-02-16	Aromatic >C12-C16	ND	0.100	mg/L
GCSV-02-17	Aromatic >C16-C21	ND	0.150	mg/L
GCSV-05-18	Aromatic >C21-C35	ND	0.100	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	0.04	.032	ug/L	80	40 - 140
580-13-2	2-Bromonaphthalene	0.04	.051	ug/L	128	40 - 140
321-60-8	2-Fluorobiphenyl	0.04	.052	ug/L	131	40 - 140

EPA 6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/20/2015 09:20	575075	EPA 3010A	5	12/23/2015 13:51	LWZ	575411

CAS#	Parameter	Result	LOQ	Units
7440-38-2	Arsenic	0.020	0.0050	mg/L
7440-39-3	Barium	1.66	0.0050	mg/L
7440-43-9	Cadmium	ND	0.0050	mg/L
7440-70-2	Calcium	136	2.50	mg/L
7440-47-3	Chromium	0.051	0.0050	mg/L
7439-92-1	Lead	0.082	0.0050	mg/L
7439-96-5	Manganese	1.65	0.025	mg/L
7440-09-7	Potassium	11.9	0.50	mg/L
7440-66-6	Zinc	0.19	0.10	mg/L

Sample Results

TBB-1D	Collect Date	12/17/2015 13:45	GCAL ID	21512191901
	Receive Date	12/18/2015 16:10	Matrix	Water

EPA 6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/20/2015 09:20	575075	EPA 3010A	100	12/23/2015 12:53	LWZ	575411

CAS#	Parameter	Result	LOQ	Units
7439-89-6	Iron	60.5	10.0	mg/L
7439-95-4	Magnesium	74.1	10.0	mg/L
7440-23-5	Sodium	765	10.0	mg/L
7440-24-6	Strontium	1.66	0.10	mg/L

EPA 6020A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/20/2015 17:15	575106	EPA 3005A Dissolved	5	12/23/2015 14:52	LWZ	575411

CAS#	Parameter	Result	LOQ	Units
7440-38-2	Arsenic	ND	0.0050	mg/L
7440-39-3	Barium	0.89	0.0050	mg/L
7440-43-9	Cadmium	ND	0.0050	mg/L
7440-47-3	Chromium	ND	0.0050	mg/L
7439-89-6	Iron	3.05	0.50	mg/L
7439-92-1	Lead	0.0095	0.0050	mg/L
7439-96-5	Manganese	0.55	0.025	mg/L
7440-66-6	Zinc	ND	0.10	mg/L

EPA 6020A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/20/2015 17:15	575106	EPA 3005A Dissolved	100	12/23/2015 14:38	LWZ	575411

CAS#	Parameter	Result	LOQ	Units
7440-24-6	Strontium	1.16	0.10	mg/L

EPA 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/20/2015 09:55	575077	EPA 7470A	1	12/21/2015 14:56	LWZ	575159

CAS#	Parameter	Result	LOQ	Units
7439-97-6	Mercury	ND	0.00020	mg/L

Sample Results

TBB-1D	Collect Date	12/17/2015 13:45	GCAL ID	21512191901
	Receive Date	12/18/2015 16:10	Matrix	Water

EPA 7470A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/20/2015 09:55	575077	EPA 7470A Dissolved	1	12/21/2015 14:58	LWZ	575159
CAS#	Parameter			Result	LOQ	Units
7439-97-6	Mercury			ND	0.00020	mg/L

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	5	12/23/2015 12:09	DMT	575384
CAS#	Parameter			Result	LOQ	Units
24959-67-9	Bromide			1.65	1.00	mg/L

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	500	12/23/2015 12:26	DMT	575384
CAS#	Parameter			Result	LOQ	Units
16887-00-6	Chloride			1220	100	mg/L
14808-79-8	Sulfate			102	100	mg/L

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	12/23/2015 10:24	DMT	575395
CAS#	Parameter			Result	LOQ	Units
T-005-B	Bicarbonate Alkalinity			330	1.0	mg/L CaCO3

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	12/23/2015 10:24	DMT	575395
CAS#	Parameter			Result	LOQ	Units
T-005-C	Carbonate Alkalinity			ND	1.0	mg/L CaCO3

Sample Results

TBB-1D	Collect Date	12/17/2015 13:45	GCAL ID	21512191901
	Receive Date	12/18/2015 16:10	Matrix	Water

SM 2540 C-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	12/23/2015 10:58	WRW	575389

CAS#	Parameter	Result	LOQ	Units
WET-035	Total Dissolved Solids(TDS)	2030	10.0	mg/L

TBB-1S	Collect Date	12/17/2015 15:45	GCAL ID	21512191902
	Receive Date	12/18/2015 16:10	Matrix	Water

EPA 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	12/24/2015 12:06	MMM	575466

CAS#	Parameter	Result	LOQ	Units
71-43-2	Benzene	0.00707	0.00500	mg/L
100-41-4	Ethylbenzene	ND	0.00500	mg/L
108-88-3	Toluene	ND	0.00500	mg/L
1330-20-7	Xylene (total)	ND	0.015	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	0.05	.051	ug/L	101	78 - 130
1868-53-7	Dibromofluoromethane	0.05	.052	ug/L	103	77 - 127
2037-26-5	Toluene d8	0.05	.053	ug/L	105	76 - 134
17060-07-0	1,2-Dichloroethane-d4	0.05	.053	ug/L	106	71 - 127

EPA 8015C GRO

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	12/22/2015 13:54	JAR	575141

CAS#	Parameter	Result	LOQ	Units
8006-61-9	Gasoline Range Organics	ND	0.100	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
106-39-8	Bromochlorobenzene	0.03	.024	ug/L	80	49 - 136

Sample Results

TBB-1S	Collect Date	12/17/2015 15:45	GCAL ID	21512191902
	Receive Date	12/18/2015 16:10	Matrix	Water

MADEP VPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	12/22/2015 19:12	JAR	575224

CAS#	Parameter	Result	LOQ	Units
GCSV-02-10	Aliphatic >C8-C10	ND	0.020	mg/L
GCSV-02-30	Aliphatic C6-C8	0.044	0.030	mg/L
GCSV-02-14	Aromatic >C8-C10	ND	0.030	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
GCV-00-7	2,5-Dibromotoluene (PID)	0.05	.047	ug/L	94	70 - 130
GCV-00-8	2,5-Dibromotoluene (FID)	0.05	.055	ug/L	110	70 - 130

EPA 8015C DRO

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/20/2015 11:00	575053	EPA 3510C	1	12/21/2015 13:51	ARW	575182

CAS#	Parameter	Result	LOQ	Units
GCSV-00-4	Diesel Range Organics	0.157	0.125	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	0.05	.043	ug/L	86	56 - 125

EPA 8015C ORO

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/20/2015 11:00	575054	EPA 3510C	1	12/21/2015 13:51	ARW	575183

CAS#	Parameter	Result	LOQ	Units
GCSV-00-44	Oil Range Organics	0.214	0.125	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	0.05	.046	ug/L	92	56 - 125

Sample Results

TBB-1S	Collect Date	12/17/2015 15:45	GCAL ID	21512191902
	Receive Date	12/18/2015 16:10	Matrix	Water

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/20/2015 09:00	575052	MADEP EPH Revision 1.1	1	12/21/2015 23:21	DLB	575270

CAS#	Parameter	Result	LOQ	Units
GCSV-02-11	Aliphatic >C10-C12	ND	0.100	mg/L
GCSV-02-12	Aliphatic >C12-C16	ND	0.100	mg/L
GCSV-02-31	Aliphatic >C16-C35	ND	0.150	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
3386-33-2	1-Chlorooctadecane	0.04	.019	ug/L	49	40 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/20/2015 09:00	575052	MADEP EPH Revision 1.1	1	12/21/2015 14:59	DLB	575269

CAS#	Parameter	Result	LOQ	Units
GCSV-02-15	Aromatic >C10-C12	ND	0.100	mg/L
GCSV-02-16	Aromatic >C12-C16	ND	0.100	mg/L
GCSV-02-17	Aromatic >C16-C21	ND	0.150	mg/L
GCSV-05-18	Aromatic >C21-C35	ND	0.100	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	0.04	.036	ug/L	91	40 - 140
580-13-2	2-Bromonaphthalene	0.04	.049	ug/L	123	40 - 140
321-60-8	2-Fluorobiphenyl	0.04	.05	ug/L	125	40 - 140

EPA 6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/20/2015 09:20	575075	EPA 3010A	50	12/23/2015 14:01	LWZ	575411

CAS#	Parameter	Result	LOQ	Units
7440-38-2	Arsenic	ND	0.050	mg/L
7440-39-3	Barium	17.5	0.050	mg/L
7440-43-9	Cadmium	ND	0.050	mg/L
7440-70-2	Calcium	1780	25.0	mg/L
7440-47-3	Chromium	ND	0.050	mg/L
7439-89-6	Iron	57.9	5.00	mg/L
7439-92-1	Lead	ND	0.050	mg/L
7439-96-5	Manganese	13.1	0.25	mg/L
7440-09-7	Potassium	15.8	5.00	mg/L

Sample Results

TBB-1S	Collect Date	12/17/2015 15:45	GCAL ID	21512191902
	Receive Date	12/18/2015 16:10	Matrix	Water

EPA 6020A (Continued)

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/20/2015 09:20	575075	EPA 3010A	50	12/23/2015 14:01	LWZ	575411

CAS#	Parameter	Result	LOQ	Units
7440-66-6	Zinc	ND	1.00	mg/L

EPA 6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/20/2015 09:20	575075	EPA 3010A	1000	12/23/2015 13:58	LWZ	575411

CAS#	Parameter	Result	LOQ	Units
7439-95-4	Magnesium	1050	100	mg/L
7440-23-5	Sodium	5680	100	mg/L
7440-24-6	Strontium	25.8	1.00	mg/L

EPA 6020A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/20/2015 17:15	575106	EPA 3005A Dissolved	50	12/23/2015 15:33	LWZ	575411

CAS#	Parameter	Result	LOQ	Units
7440-38-2	Arsenic	ND	0.050	mg/L
7440-39-3	Barium	15.7	0.050	mg/L
7440-43-9	Cadmium	ND	0.050	mg/L
7440-47-3	Chromium	ND	0.050	mg/L
7439-89-6	Iron	52.2	5.00	mg/L
7439-92-1	Lead	ND	0.050	mg/L
7439-96-5	Manganese	11.4	0.25	mg/L
7440-66-6	Zinc	ND	1.00	mg/L

EPA 6020A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/20/2015 17:15	575106	EPA 3005A Dissolved	1000	12/23/2015 15:29	LWZ	575411

CAS#	Parameter	Result	LOQ	Units
7440-24-6	Strontium	23.7	1.00	mg/L

Sample Results

TBB-1S	Collect Date	12/17/2015 15:45	GCAL ID	21512191902
	Receive Date	12/18/2015 16:10	Matrix	Water

EPA 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/20/2015 09:55	575077	EPA 7470A	1	12/21/2015 15:00	LWZ	575159
CAS#	Parameter	Result	LOQ	Units		
7439-97-6	Mercury	ND	0.00020	mg/L		

EPA 7470A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/20/2015 09:55	575077	EPA 7470A Dissolved	1	12/21/2015 15:02	LWZ	575159
CAS#	Parameter	Result	LOQ	Units		
7439-97-6	Mercury	ND	0.00020	mg/L		

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	50	12/23/2015 12:44	DMT	575384
CAS#	Parameter	Result	LOQ	Units		
24959-67-9	Bromide	23.9	10.0	mg/L		
14808-79-8	Sulfate	ND	10.0	mg/L		

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	5000	12/23/2015 14:28	DMT	575384
CAS#	Parameter	Result	LOQ	Units		
16887-00-6	Chloride	16900	1000	mg/L		

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	12/23/2015 10:24	DMT	575395
CAS#	Parameter	Result	LOQ	Units		
T-005-B	Bicarbonate Alkalinity	316	1.0	mg/L CaCO3		

Sample Results

TBB-1S	Collect Date	12/17/2015 15:45	GCAL ID	21512191902
	Receive Date	12/18/2015 16:10	Matrix	Water

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	12/23/2015 10:24	DMT	575395

CAS#	Parameter	Result	LOQ	Units
T-005-C	Carbonate Alkalinity	ND	1.0	mg/L CaCO3

SM 2540 C-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	12/23/2015 10:58	WRW	575389

CAS#	Parameter	Result	LOQ	Units
WET-035	Total Dissolved Solids(TDS)	33100	10.0	mg/L

TBB-3S	Collect Date	12/18/2015 09:30	GCAL ID	21512191903
	Receive Date	12/18/2015 16:10	Matrix	Water

EPA 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	12/24/2015 12:28	MMM	575466

CAS#	Parameter	Result	LOQ	Units
71-43-2	Benzene	ND	0.00500	mg/L
100-41-4	Ethylbenzene	ND	0.00500	mg/L
108-88-3	Toluene	ND	0.00500	mg/L
1330-20-7	Xylene (total)	ND	0.015	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	0.05	.051	ug/L	102	78 - 130
1868-53-7	Dibromofluoromethane	0.05	.052	ug/L	105	77 - 127
2037-26-5	Toluene d8	0.05	.052	ug/L	104	76 - 134
17060-07-0	1,2-Dichloroethane-d4	0.05	.052	ug/L	104	71 - 127

EPA 8270C

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/21/2015 13:30	575048	EPA 3510C	1	12/21/2015 23:59	JMC2	575284

CAS#	Parameter	Result	LOQ	Units
120-82-1	1,2,4-Trichlorobenzene	ND	0.010	mg/L

Sample Results

TBB-3S	Collect Date	12/18/2015 09:30	GCAL ID	21512191903
	Receive Date	12/18/2015 16:10	Matrix	Water

EPA 8270C (Continued)

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/21/2015 13:30	575048	EPA 3510C	1	12/21/2015 23:59	JMC2	575284

CAS#	Parameter	Result	LOQ	Units
95-50-1	1,2-Dichlorobenzene	ND	0.010	mg/L
122-66-7	1,2Diphenylhydrazine/Azobenzen	ND	0.010	mg/L
541-73-1	1,3-Dichlorobenzene	ND	0.010	mg/L
106-46-7	1,4-Dichlorobenzene	ND	0.010	mg/L
88-06-2	2,4,6-Trichlorophenol	ND	0.010	mg/L
120-83-2	2,4-Dichlorophenol	ND	0.010	mg/L
105-67-9	2,4-Dimethylphenol	ND	0.010	mg/L
51-28-5	2,4-Dinitrophenol	ND	0.010	mg/L
121-14-2	2,4-Dinitrotoluene	ND	0.010	mg/L
606-20-2	2,6-Dinitrotoluene	ND	0.010	mg/L
91-58-7	2-Chloronaphthalene	ND	0.010	mg/L
95-57-8	2-Chlorophenol	ND	0.010	mg/L
91-57-6	2-Methylnaphthalene	ND	0.010	mg/L
88-75-5	2-Nitrophenol	ND	0.010	mg/L
91-94-1	3,3'-Dichlorobenzidine	ND	0.010	mg/L
534-52-1	4,6-Dinitro-2-methylphenol	ND	0.010	mg/L
101-55-3	4-Bromophenyl phenyl ether	ND	0.010	mg/L
59-50-7	4-Chloro-3-methylphenol	ND	0.010	mg/L
7005-72-3	4-Chlorophenyl phenyl ether	ND	0.010	mg/L
100-02-7	4-Nitrophenol	ND	0.010	mg/L
83-32-9	Acenaphthene	ND	0.010	mg/L
208-96-8	Acenaphthylene	ND	0.010	mg/L
120-12-7	Anthracene	ND	0.010	mg/L
92-87-5	Benzidine	ND	0.050	mg/L
56-55-3	Benzo(a)anthracene	ND	0.010	mg/L
50-32-8	Benzo(a)pyrene	ND	0.010	mg/L
205-99-2	Benzo(b)fluoranthene	ND	0.010	mg/L
191-24-2	Benzo(g,h,i)perylene	ND	0.010	mg/L
207-08-9	Benzo(k)fluoranthene	ND	0.010	mg/L
111-91-1	Bis(2-Chloroethoxy)methane	ND	0.010	mg/L
111-44-4	Bis(2-Chloroethyl)ether	ND	0.010	mg/L
108-60-1	Bis(2-Chloroisopropyl)ether	ND	0.010	mg/L
117-81-7	Bis(2-Ethylhexyl)phthalate	ND	0.010	mg/L
85-68-7	Butyl benzyl phthalate	ND	0.010	mg/L
218-01-9	Chrysene	ND	0.010	mg/L
53-70-3	Dibenz(a,h)anthracene	ND	0.010	mg/L
84-66-2	Diethyl phthalate	ND	0.010	mg/L
131-11-3	Dimethyl phthalate	ND	0.010	mg/L
84-74-2	Di-n-butyl phthalate	ND	0.010	mg/L
117-84-0	Di-n-octyl phthalate	ND	0.010	mg/L
206-44-0	Fluoranthene	ND	0.010	mg/L
86-73-7	Fluorene	ND	0.010	mg/L
118-74-1	Hexachlorobenzene	ND	0.010	mg/L
87-68-3	Hexachlorobutadiene	ND	0.010	mg/L
77-47-4	Hexachlorocyclopentadiene	ND	0.010	mg/L
67-72-1	Hexachloroethane	ND	0.010	mg/L
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.010	mg/L
78-59-1	Isophorone	ND	0.010	mg/L

Sample Results

TBB-3S	Collect Date	12/18/2015 09:30	GCAL ID	21512191903
	Receive Date	12/18/2015 16:10	Matrix	Water

EPA 8270C (Continued)

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/21/2015 13:30	575048	EPA 3510C	1	12/21/2015 23:59	JMC2	575284

CAS#	Parameter	Result	LOQ	Units
91-20-3	Naphthalene	ND	0.010	mg/L
98-95-3	Nitrobenzene	ND	0.010	mg/L
62-75-9	n-Nitrosodimethylamine	ND	0.010	mg/L
621-64-7	n-Nitrosodi-n-propylamine	ND	0.010	mg/L
86-30-6	n-Nitrosodiphenylamine	ND	0.010	mg/L
87-86-5	Pentachlorophenol	ND	0.010	mg/L
85-01-8	Phenanthrene	ND	0.010	mg/L
108-95-2	Phenol	ND	0.010	mg/L
129-00-0	Pyrene	ND	0.010	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	0.05	.036	ug/L	71	44 - 120
321-60-8	2-Fluorobiphenyl	0.05	.032	ug/L	64	44 - 119
1718-51-0	Terphenyl-d14	0.05	.049	ug/L	98	50 - 134
4165-62-2	Phenol-d5	0.10	.033	ug/L	33	10 - 120
367-12-4	2-Fluorophenol	0.10	.045	ug/L	45	19 - 119
118-79-6	2,4,6-Tribromophenol	0.10	.067	ug/L	67	43 - 140

EPA 8015C GRO

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	12/22/2015 14:07	JAR	575141

CAS#	Parameter	Result	LOQ	Units
8006-61-9	Gasoline Range Organics	ND	0.100	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
106-39-8	Bromochlorobenzene	0.03	.022	ug/L	74	49 - 136

Sample Results

TBB-3S	Collect Date	12/18/2015 09:30	GCAL ID	21512191903
	Receive Date	12/18/2015 16:10	Matrix	Water

MADEP VPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	12/22/2015 19:40	JAR	575224

CAS#	Parameter	Result	LOQ	Units
GCSV-02-10	Aliphatic >C8-C10	ND	0.020	mg/L
GCSV-02-30	Aliphatic C6-C8	ND	0.030	mg/L
GCSV-02-14	Aromatic >C8-C10	ND	0.030	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
GCV-00-7	2,5-Dibromotoluene (PID)	0.05	.047	ug/L	94	70 - 130
GCV-00-8	2,5-Dibromotoluene (FID)	0.05	.055	ug/L	109	70 - 130

EPA 8015C DRO

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/20/2015 11:00	575053	EPA 3510C	1	12/21/2015 14:03	ARW	575182

CAS#	Parameter	Result	LOQ	Units
GCSV-00-4	Diesel Range Organics	0.157	0.125	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	0.05	.047	ug/L	93	56 - 125

EPA 8015C ORO

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/20/2015 11:00	575054	EPA 3510C	1	12/21/2015 14:03	ARW	575183

CAS#	Parameter	Result	LOQ	Units
GCSV-00-44	Oil Range Organics	ND	0.125	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	0.05	.05	ug/L	100	56 - 125

Sample Results

TBB-3S	Collect Date	12/18/2015 09:30	GCAL ID	21512191903
	Receive Date	12/18/2015 16:10	Matrix	Water

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/20/2015 09:00	575052	MADEP EPH Revision 1.1	1	12/21/2015 23:41	DLB	575270

CAS#	Parameter	Result	LOQ	Units
GCSV-02-11	Aliphatic >C10-C12	ND	0.100	mg/L
GCSV-02-12	Aliphatic >C12-C16	ND	0.100	mg/L
GCSV-02-31	Aliphatic >C16-C35	ND	0.150	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
3386-33-2	1-Chlorooctadecane	0.04	.025	ug/L	63	40 - 140

MADEP EPH Revision 1.1

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/20/2015 09:00	575052	MADEP EPH Revision 1.1	1	12/21/2015 15:18	DLB	575269

CAS#	Parameter	Result	LOQ	Units
GCSV-02-15	Aromatic >C10-C12	ND	0.100	mg/L
GCSV-02-16	Aromatic >C12-C16	ND	0.100	mg/L
GCSV-02-17	Aromatic >C16-C21	ND	0.150	mg/L
GCSV-05-18	Aromatic >C21-C35	ND	0.100	mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	0.04	.033	ug/L	82	40 - 140
580-13-2	2-Bromonaphthalene	0.04	.056	ug/L	139	40 - 140
321-60-8	2-Fluorobiphenyl	0.04	.057	ug/L	142*	40 - 140

EPA 6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/20/2015 09:20	575075	EPA 3010A	5	12/23/2015 14:08	LWZ	575411

CAS#	Parameter	Result	LOQ	Units
7440-38-2	Arsenic	0.0087	0.0050	mg/L
7440-39-3	Barium	0.67	0.0050	mg/L
7440-43-9	Cadmium	ND	0.0050	mg/L
7440-70-2	Calcium	137	2.50	mg/L
7440-47-3	Chromium	ND	0.0050	mg/L
7439-89-6	Iron	5.61	0.50	mg/L
7439-92-1	Lead	ND	0.0050	mg/L
7439-95-4	Magnesium	45.3	0.50	mg/L
7439-96-5	Manganese	0.37	0.025	mg/L
7440-09-7	Potassium	3.74	0.50	mg/L

Sample Results

TBB-3S	Collect Date	12/18/2015 09:30	GCAL ID	21512191903
	Receive Date	12/18/2015 16:10	Matrix	Water

EPA 6020A (Continued)

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/20/2015 09:20	575075	EPA 3010A	5	12/23/2015 14:08	LWZ	575411

CAS#	Parameter	Result	LOQ	Units
7440-66-6	Zinc	ND	0.10	mg/L

EPA 6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/20/2015 09:20	575075	EPA 3010A	100	12/23/2015 13:00	LWZ	575411

CAS#	Parameter	Result	LOQ	Units
7440-23-5	Sodium	648	10.0	mg/L
7440-24-6	Strontium	1.03	0.10	mg/L

EPA 6020A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/20/2015 17:15	575106	EPA 3005A Dissolved	5	12/23/2015 15:43	LWZ	575411

CAS#	Parameter	Result	LOQ	Units
7440-38-2	Arsenic	0.0074	0.0050	mg/L
7440-39-3	Barium	0.62	0.0050	mg/L
7440-43-9	Cadmium	ND	0.0050	mg/L
7440-47-3	Chromium	ND	0.0050	mg/L
7439-89-6	Iron	3.22	0.50	mg/L
7439-92-1	Lead	ND	0.0050	mg/L
7439-96-5	Manganese	0.32	0.025	mg/L
7440-66-6	Zinc	ND	0.10	mg/L

EPA 6020A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/20/2015 17:15	575106	EPA 3005A Dissolved	100	12/23/2015 15:40	LWZ	575411

CAS#	Parameter	Result	LOQ	Units
7440-24-6	Strontium	0.94	0.10	mg/L

Sample Results

TBB-3S	Collect Date	12/18/2015 09:30	GCAL ID	21512191903
	Receive Date	12/18/2015 16:10	Matrix	Water

EPA 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/20/2015 09:55	575077	EPA 7470A	1	12/21/2015 15:04	LWZ	575159
CAS#	Parameter			Result	LOQ	Units
7439-97-6	Mercury			ND	0.00020	mg/L

EPA 7470A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/20/2015 09:55	575077	EPA 7470A Dissolved	1	12/21/2015 15:10	LWZ	575159
CAS#	Parameter			Result	LOQ	Units
7439-97-6	Mercury			ND	0.00020	mg/L

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	5	12/23/2015 13:18	DMT	575384
CAS#	Parameter			Result	LOQ	Units
24959-67-9	Bromide			3.77	1.00	mg/L
14808-79-8	Sulfate			1.63	1.00	mg/L

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	500	12/23/2015 13:36	DMT	575384
CAS#	Parameter			Result	LOQ	Units
16887-00-6	Chloride			1120	100	mg/L

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	12/23/2015 10:24	DMT	575395
CAS#	Parameter			Result	LOQ	Units
T-005-B	Bicarbonate Alkalinity			393	1.0	mg/L CaCO3

Sample Results

TBB-3S	Collect Date	12/18/2015 09:30	GCAL ID	21512191903
	Receive Date	12/18/2015 16:10	Matrix	Water

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	12/23/2015 10:24	DMT	575395

CAS#	Parameter	Result	LOQ	Units
T-005-C	Carbonate Alkalinity	ND	1.0	mg/L CaCO3

SM 2540 C-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
NA	NA	NA	1	12/23/2015 10:58	WRW	575389

CAS#	Parameter	Result	LOQ	Units
WET-035	Total Dissolved Solids(TDS)	2010	10.0	mg/L

GC/MS Volatiles QC Summary

Analytical Batch 575466		Client ID MB575466	GCAL ID 1523525	Sample Type MB	Prep Date NA	Analysis Date 12/24/2015 11:03	Matrix Water	LCS575466 1523526	LCS NA	12/24/2015 08:55	Water	LCSD575466 1523527	LCSD NA	12/24/2015 09:19	Water
EPA 8260B		Units Result	mg/L LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit			
Benzene	71-43-2	ND	0.00500	0.050	0.048	96	70 - 129	0.050	0.048	96	0	20			
Ethylbenzene	100-41-4	ND	0.00500	0.050	0.049	98	74 - 126	0.050	0.048	96	2	30			
Toluene	108-88-3	ND	0.00500	0.050	0.045	91	72 - 120	0.050	0.046	91	2	20			
Xylene (total)	1330-20-7	ND	0.015	0.150	0.158	105	74 - 127	0.150	0.158	105	0	30			
Surrogate															
1,2-Dichloroethane-d4	17060-07-0	.0522	104	.05	.0493	99	71 - 127	.05	.0492	98		NA			
4-Bromofluorobenzene	460-00-4	.0504	101	.05	.0512	102	78 - 130	.05	.0504	101		NA			
Dibromofluoromethane	1868-53-7	.0515	103	.05	.0492	98	77 - 127	.05	.0496	99		NA			
Toluene d8	2037-26-5	.0518	104	.05	.0493	99	76 - 134	.05	.0499	100		NA			

GC/MS Semi-Volatiles QC Summary

Analytical Batch 575284		Client ID MB575048	LCS575048				LCSD575048					
Prep Batch 575048		GCAL ID 1521751	1521752				1521753					
Prep Method EPA 3510C		Sample Type MB	LCS				LCSD					
		Prep Date 12/21/2015 13:30	12/21/2015 13:30				12/21/2015 13:30					
		Analysis Date 12/21/2015 22:21	12/21/2015 22:38				12/21/2015 22:54					
		Matrix Water	Water				Water					
EPA 8270C		Units	mg/L	Spike	Result	%R	Control	Spike	Result	%R	RPD	RPD
		Result	LOQ	Added			Limits%R	Added				Limit
1,2,4-Trichlorobenzene	120-82-1	ND	0.010	0.050	0.035	70	29 - 116	0.050	0.037	75	6	30
1,2-Dichlorobenzene	95-50-1	ND	0.010	0.050	0.031	62	32 - 111	0.050	0.032	63	3	30
1,2-Diphenylhydrazine/Azobenzen	122-66-7	ND	0.010	0.050	0.054	107	49 - 122	0.050	0.053	106	2	30
1,3-Dichlorobenzene	541-73-1	ND	0.010	0.050	0.028	56	28 - 110	0.050	0.030	60	7	30
1,4-Dichlorobenzene	106-46-7	ND	0.010	0.050	0.028	57	29 - 112	0.050	0.030	60	7	30
2,4,6-Trichlorophenol	88-06-2	ND	0.010	0.050	0.050	99	50 - 125	0.050	0.046	93	8	30
2,4-Dichlorophenol	120-83-2	ND	0.010	0.050	0.048	95	47 - 121	0.050	0.046	92	4	30
2,4-Dimethylphenol	105-67-9	ND	0.010	0.050	0.046	92	31 - 124	0.050	0.045	89	2	30
2,4-Dinitrophenol	51-28-5	ND	0.010	0.050	0.042	84	23 - 143	0.050	0.037	74	13	30
2,4-Dinitrotoluene	121-14-2	ND	0.010	0.050	0.045	89	57 - 128	0.050	0.042	84	7	30
2,6-Dinitrotoluene	606-20-2	ND	0.010	0.050	0.048	95	57 - 124	0.050	0.047	93	2	30
2-Chloronaphthalene	91-58-7	ND	0.010	0.050	0.046	92	40 - 116	0.050	0.044	89	4	30
2-Chlorophenol	95-57-8	ND	0.010	0.050	0.043	85	38 - 117	0.050	0.042	83	2	30
2-Methylnaphthalene	91-57-6	ND	0.010	0.050	0.041	82	40 - 121	0.050	0.043	86	5	30
2-Nitrophenol	88-75-5	ND	0.010	0.050	0.046	92	47 - 123	0.050	0.044	89	4	30
3,3'-Dichlorobenzidine	91-94-1	ND	0.010	0.050	0.052	104	27 - 129	0.050	0.050	100	4	30
4,6-Dinitro-2-methylphenol	534-52-1	ND	0.010	0.050	0.051	101	44 - 137	0.050	0.045	91	13	30
4-Bromophenyl phenyl ether	101-55-3	ND	0.010	0.050	0.050	100	55 - 124	0.050	0.050	99	0	30
4-Chloro-3-methylphenol	59-50-7	ND	0.010	0.050	0.045	89	52 - 119	0.050	0.043	86	5	30
4-Chlorophenyl phenyl ether	7005-72-3	ND	0.010	0.050	0.046	92	53 - 121	0.050	0.045	91	2	30
4-Nitrophenol	100-02-7	ND	0.010	0.050	0.026	51	10 - 120	0.050	0.023	47	12	30
Acenaphthene	83-32-9	ND	0.010	0.050	0.048	96	47 - 122	0.050	0.047	94	2	30
Acenaphthylene	208-96-8	ND	0.010	0.050	0.050	99	41 - 130	0.050	0.048	96	4	30
Anthracene	120-12-7	ND	0.010	0.050	0.052	104	57 - 123	0.050	0.052	104	0	30
Benzydine	92-87-5	ND	0.050	0.050	0.051	101	10 - 120	0.050	0.073	145*	35*	30
Benzo(a)anthracene	56-55-3	ND	0.010	0.050	0.050	100	58 - 125	0.050	0.049	98	2	30
Benzo(a)pyrene	50-32-8	ND	0.010	0.050	0.053	106	54 - 128	0.050	0.052	104	2	30
Benzo(b)fluoranthene	205-99-2	ND	0.010	0.050	0.049	98	53 - 131	0.050	0.047	94	4	30
Benzo(g,h,i)perylene	191-24-2	ND	0.010	0.050	0.053	105	50 - 134	0.050	0.051	102	4	30
Benzo(k)fluoranthene	207-08-9	ND	0.010	0.050	0.051	101	57 - 129	0.050	0.049	98	4	30
Bis(2-Chloroethoxy)methane	111-91-1	ND	0.010	0.050	0.048	97	48 - 120	0.050	0.048	96	0	30
Bis(2-Chloroethyl)ether	111-44-4	ND	0.010	0.050	0.046	92	43 - 118	0.050	0.044	89	4	30
Bis(2-Chloroisopropyl)ether	108-60-1	ND	0.010	0.050	0.044	88	37 - 130	0.050	0.044	88	0	30
Bis(2-Ethylhexyl)phthalate	117-81-7	ND	0.010	0.050	0.051	103	55 - 135	0.050	0.051	102	0	30
Butyl benzyl phthalate	85-68-7	ND	0.010	0.050	0.051	102	53 - 134	0.050	0.050	100	2	30
Chrysene	218-01-9	ND	0.010	0.050	0.049	99	59 - 123	0.050	0.049	98	0	30
Dibenz(a,h)anthracene	53-70-3	ND	0.010	0.050	0.054	107	51 - 134	0.050	0.052	103	4	30
Diethyl phthalate	84-66-2	ND	0.010	0.050	0.047	95	56 - 125	0.050	0.045	89	4	30
Dimethyl phthalate	131-11-3	ND	0.010	0.050	0.049	97	45 - 127	0.050	0.047	93	4	30
Di-n-butyl phthalate	84-74-2	ND	0.010	0.050	0.049	98	59 - 127	0.050	0.048	96	2	30
Di-n-octyl phthalate	117-84-0	ND	0.010	0.050	0.051	103	51 - 140	0.050	0.050	100	2	30
Fluoranthene	206-44-0	ND	0.010	0.050	0.046	92	57 - 128	0.050	0.045	90	2	30
Fluorene	86-73-7	ND	0.010	0.050	0.048	95	52 - 124	0.050	0.047	93	2	30
Hexachlorobenzene	118-74-1	ND	0.010	0.050	0.047	93	53 - 125	0.050	0.047	94	0	30
Hexachlorobutadiene	87-68-3	ND	0.010	0.050	0.030	59	22 - 124	0.050	0.032	65	6	30
Hexachlorocyclopentadiene	77-47-4	ND	0.010	0.050	0.036	72	16 - 120	0.050	0.036	73	0	30
Hexachloroethane	67-72-1	ND	0.010	0.050	0.026	52	21 - 115	0.050	0.029	57	11	30
Indeno(1,2,3-cd)pyrene	193-39-5	ND	0.010	0.050	0.055	111	52 - 134	0.050	0.053	107	4	30
Isophorone	78-59-1	ND	0.010	0.050	0.051	102	42 - 124	0.050	0.050	100	2	30
Naphthalene	91-20-3	ND	0.010	0.050	0.040	80	40 - 121	0.050	0.041	82	2	30
Nitrobenzene	98-95-3	ND	0.010	0.050	0.048	95	45 - 121	0.050	0.048	96	0	30
n-Nitrosodimethylamine	62-75-9	ND	0.010	0.050	0.030	59	12 - 120	0.050	0.030	60	0	30
n-Nitrosodi-n-propylamine	621-64-7	ND	0.010	0.050	0.048	96	49 - 119	0.050	0.047	93	2	30
n-Nitrosodiphenylamine	86-30-6	ND	0.010	0.050	0.050	101	51 - 123	0.050	0.051	101	2	30
Pentachlorophenol	87-86-5	ND	0.010	0.050	0.049	99	35 - 138	0.050	0.045	89	9	30
Phenanthrene	85-01-8	ND	0.010	0.050	0.049	98	59 - 120	0.050	0.049	97	0	30
Phenol	108-95-2	ND	0.010	0.050	0.021	43	16 - 120	0.050	0.020	41	5	30
Pyrene	129-00-0	ND	0.010	0.050	0.051	102	57 - 126	0.050	0.051	102	0	30

GC/MS Semi-Volatiles QC Summary

Analytical Batch 575284 Prep Batch 575048 Prep Method EPA 3510C		Client ID GCAL ID Sample Type Prep Date Analysis Date Matrix	MB575048 1521751 MB 12/21/2015 13:30 12/21/2015 22:21 Water	LCS575048 1521752 LCS 12/21/2015 13:30 12/21/2015 22:38 Water	LCSD575048 1521753 LCSD 12/21/2015 13:30 12/21/2015 22:54 Water							
EPA 8270C		Units Result	mg/L LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Surrogate												
2,4,6-Tribromophenol	118-79-6	.0853	85	.1	.0882	88	43 - 140	.1	.0774	77		NA
2-Fluorobiphenyl	321-60-8	.0403	81	.05	.045	90	44 - 119	.05	.0428	86		NA
2-Fluorophenol	367-12-4	.0562	56	.1	.0542	54	19 - 119	.1	.0511	51		NA
Nitrobenzene-d5	4165-60-0	.0449	90	.05	.0445	89	44 - 120	.05	.0441	88		NA
Phenol-d5	4165-62-2	.0405	41	.1	.0392	39	10 - 120	.1	.0377	38		NA
Terphenyl-d14	1718-51-0	.0585	117	.05	.0523	105	50 - 134	.05	.0518	104		NA

GC Volatiles QC Summary

Analytical Batch 575141		Client ID GCAL ID Sample Type Prep Date Analysis Date Matrix	MB575141 1521966 MB NA 12/22/2015 11:58 Water	LCS575141 1521967 LCS NA 12/22/2015 11:32 Water				LCSD575141 1521968 LCSD NA 12/22/2015 11:41 Water					
EPA 8015C GRO			Units Result	mg/L LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Gasoline Range Organics	8006-61-9	ND	0.100	0.500	0.553	111	70 - 128	0.500	0.540	108	2	25	
Surrogate Bromochlorobenzene	106-39-8	.0233	78	.03	.0291	97	49 - 136	.03	.0278	93		NA	

Analytical Batch 575224		Client ID GCAL ID Sample Type Prep Date Analysis Date Matrix	MB575224 1522505 MB NA 12/22/2015 12:42 Water	LCS575224 1522506 LCS NA 12/22/2015 04:32 Water				LCSD575224 1522507 LCSD NA 12/22/2015 11:49 Water					
MADEP VPH Revision 1.1			Units Result	mg/L LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Aliphatic >C8-C10	GCSV-02-10	ND	0.020	0.100	0.116	116	60 - 140	0.100	0.106	106	9	30	
Aliphatic C6-C8	GCSV-02-30	ND	0.030	0.150	0.170	113	60 - 140	0.150	0.147	98	15	30	
Aromatic >C8-C10	GCSV-02-14	ND	0.030	0.150	0.157	105	60 - 140	0.150	0.146	97	7	30	
Surrogate 2,5-Dibromotoluene (FID)	GCV-00-8	.0574	115	.05	.0557	111	70 - 130	.05	.0511	102		NA	
2,5-Dibromotoluene (PID)	GCV-00-7	.0496	99	.05	.0538	108	70 - 130	.05	.0463	93		NA	

GC Semi-Volatiles QC Summary

Analytical Batch 575182		Client ID	MB575053	LCS575053				LCSD575053					
Prep Batch 575053		GCAL ID	1521766	1521767				1521768					
Prep Method EPA 3510C		Sample Type	MB	LCS				LCSD					
		Prep Date	12/20/2015 11:00	12/20/2015 11:00				12/20/2015 11:00					
		Analysis Date	12/21/2015 12:01	12/21/2015 12:39				12/21/2015 12:53					
		Matrix	Water	Water				Water					
EPA 8015C DRO			Units Result	mg/L LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Diesel Range Organics	GCSV-00-4		ND	0.125	1.00	0.828	83	47 - 120	1.00	0.877	88	6	30
Surrogate o-Terphenyl	84-15-1		.0451	90	.05	.0435	87	56 - 125	.05	.0458	92		NA

Analytical Batch 575183		Client ID	MB575054	LCS575054				LCSD575054					
Prep Batch 575054		GCAL ID	1521769	1521770				1521771					
Prep Method EPA 3510C		Sample Type	MB	LCS				LCSD					
		Prep Date	12/20/2015 11:00	12/20/2015 11:00				12/20/2015 11:00					
		Analysis Date	12/21/2015 12:01	12/21/2015 13:08				12/21/2015 13:22					
		Matrix	Water	Water				Water					
EPA 8015C ORO			Units Result	mg/L LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Oil Range Organics	GCSV-00-44		ND	0.125	2.00	1.65	83	41 - 113	2.00	1.71	86	4	40
Surrogate o-Terphenyl	84-15-1		.0485	97	.05	.05	100	56 - 125	.05	.047	94		NA

Analytical Batch 575270		Client ID	MB575052	LCS575052				LCSD575052					
Prep Batch 575052		GCAL ID	1521763	1521764				1521765					
Prep Method MADEP EPH Revision 1.1		Sample Type	MB	LCS				LCSD					
		Prep Date	12/20/2015 09:00	12/20/2015 09:00				12/20/2015 09:00					
		Analysis Date	12/21/2015 22:05	12/21/2015 22:24				12/21/2015 22:43					
		Matrix	Water	Water				Water					
MADEP EPH Revision 1.1			Units Result	mg/L LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Aliphatic >C10-C12	GCSV-02-11		ND	0.100	0.100	0.075	75	30 - 140	0.100	0.077	77	3	25
Aliphatic >C12-C16	GCSV-02-12		ND	0.100	0.100	0.085	85	40 - 140	0.100	0.073	73	15	25
Aliphatic >C16-C35	GCSV-02-31		ND	0.150	0.450	0.432	96	40 - 140	0.450	0.433	96	0	25
Surrogate 1-Chlorooctadecane	3386-33-2		.0282	71	.04	.0208	52	40 - 140	.04	.0293	73		NA

Analytical Batch 575269		Client ID	MB575052	LCS575052				LCSD575052					
Prep Batch 575052		GCAL ID	1521763	1521764				1521765					
Prep Method MADEP EPH Revision 1.1		Sample Type	MB	LCS				LCSD					
		Prep Date	12/20/2015 09:00	12/20/2015 09:00				12/20/2015 09:00					
		Analysis Date	12/21/2015 13:42	12/21/2015 14:01				12/21/2015 14:21					
		Matrix	Water	Water				Water					
MADEP EPH Revision 1.1			Units Result	mg/L LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Aromatic >C10-C12	GCSV-02-15		ND	0.100	0.050	0.039	78	30 - 140	0.050	0.043	85	10	25
Aromatic >C12-C16	GCSV-02-16		ND	0.100	0.200	0.166	83	40 - 140	0.200	0.177	89	6	25
Aromatic >C16-C21	GCSV-02-17		ND	0.150	0.100	0.091	91	40 - 140	0.100	0.092	92	1	25
Aromatic >C21-C35	GCSV-05-18		ND	0.100	0.500	0.407	81	40 - 140	0.500	0.382	76	6	25
Surrogate 2-Bromonaphthalene	580-13-2		.0432	108	.04	.0398	100	40 - 140	.04	.0432	108		NA
2-Fluorobiphenyl	321-60-8		.0439	110	.04	.0389	97	40 - 140	.04	.0429	107		NA
o-Terphenyl	84-15-1		.0371	93	.04	.0344	86	40 - 140	.04	.036	90		NA

Inorganics QC Summary

Analytical Batch 575159	Client ID GCAL ID	MB575077 1521832	LCS575077 1521833				
Prep Batch 575077	Sample Type Prep Date	MB 12/20/2015 09:55	LCS 12/20/2015 09:55				
Prep Method EPA 7470A	Analysis Date Matrix	12/21/2015 14:21 Water	12/21/2015 14:23 Water				
EPA 7470A		Units Result	mg/L LOQ	Spike Added	Result	%R	Control Limits%R
Mercury	7439-97-6	ND	0.00020	0.0050	0.0043	86	80 - 120

Analytical Batch 575159	Client ID GCAL ID	MGT-SW-UP 21512183488	MGT-SW-UP MS 21512183489				MGT-SW-UP MSD 21512183490					
Prep Batch 575077	Sample Type Prep Date	SAMPLE 12/20/2015 09:55	MS 12/20/2015 09:55				MSD 12/20/2015 09:55					
Prep Method EPA 7470A	Analysis Date Matrix	12/21/2015 14:50 Water	12/21/2015 14:52 Water				12/21/2015 14:54 Water					
EPA 7470A		Units Result	mg/L LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Mercury	7439-97-6	0.0	0.00020	0.0050	0.0045	89	80 - 120	0.0050	0.0042	84	7	20

Analytical Batch 575159	Client ID GCAL ID	MB575077 1521832	LCS575077 1521833				
Prep Batch 575077	Sample Type Prep Date	MB 12/20/2015 09:55	LCS 12/20/2015 09:55				
Prep Method EPA 7470A	Analysis Date Matrix	12/21/2015 14:21 Water	12/21/2015 14:23 Water				
EPA 7470A Dissolved		Units Result	mg/L LOQ	Spike Added	Result	%R	Control Limits%R
Mercury	7439-97-6	ND	0.00020	0.0050	0.0043	86	80 - 120

Analytical Batch 575159	Client ID GCAL ID	MGT-SW-UP 21512183488	MGT-SW-UP MS 21512183489				MGT-SW-UP MSD 21512183490					
Prep Batch 575077	Sample Type Prep Date	SAMPLE 12/20/2015 09:55	MS 12/20/2015 09:55				MSD 12/20/2015 09:55					
Prep Method EPA 7470A	Analysis Date Matrix	12/21/2015 14:50 Water	12/21/2015 14:52 Water				12/21/2015 14:54 Water					
EPA 7470A Dissolved		Units Result	mg/L LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Mercury	7439-97-6	0.0	0.00020	0.0050	0.0045	89	80 - 120	0.0050	0.0042	84	7	20

Analytical Batch 575411	Client ID GCAL ID	MB575075 1521828	LCS575075 1521829				
Prep Batch 575075	Sample Type Prep Date	MB 12/20/2015 09:20	LCS 12/20/2015 09:20				
Prep Method EPA 3010A	Analysis Date Matrix	12/23/2015 12:46 Water	12/23/2015 12:50 Water				
EPA 6020A		Units Result	mg/L LOQ	Spike Added	Result	%R	Control Limits%R
Arsenic	7440-38-2	ND	0.0010	0.050	0.047	94	80 - 120
Barium	7440-39-3	ND	0.0010	0.050	0.050	100	80 - 120
Cadmium	7440-43-9	ND	0.0010	0.050	0.048	97	80 - 120
Calcium	7440-70-2	ND	0.50	25.0	25.0	100	80 - 120
Chromium	7440-47-3	ND	0.0010	0.050	0.050	100	80 - 120
Iron	7439-89-6	ND	0.10	5.00	5.04	101	80 - 120
Lead	7439-92-1	ND	0.0010	0.050	0.050	100	80 - 120
Magnesium	7439-95-4	ND	0.10	5.00	5.13	103	80 - 120
Manganese	7439-96-5	ND	0.0050	0.050	0.049	97	80 - 120
Potassium	7440-09-7	ND	0.10	5.00	5.04	101	80 - 120
Sodium	7440-23-5	ND	0.10	5.00	5.08	102	80 - 120
Strontium	7440-24-6	ND	0.0010	0.050	0.050	101	80 - 120
Zinc	7440-66-6	ND	0.020	1.00	0.93	93	80 - 120

Inorganics QC Summary

Analytical Batch 575411		Client ID GCAL ID	MB575106 1521870	LCS575106 1521871			
Prep Batch 575106		Sample Type Prep Date	MB 12/20/2015 17:15	LCS 12/20/2015 17:15			
Prep Method EPA 3005A Dissolved		Analysis Date Matrix	12/23/2015 14:25 Water	12/23/2015 14:28 Water			
EPA 6020A Dissolved		Units Result	mg/L LOQ	Spike Added	Result	%R	Control Limits%R
Arsenic	7440-38-2	ND	0.0010	0.050	0.048	96	80 - 120
Barium	7440-39-3	ND	0.0010	0.050	0.049	98	80 - 120
Cadmium	7440-43-9	ND	0.0010	0.050	0.049	99	80 - 120
Chromium	7440-47-3	ND	0.0010	0.050	0.047	95	80 - 120
Iron	7439-89-6	ND	0.10	5.00	4.81	96	80 - 120
Lead	7439-92-1	ND	0.0010	0.050	0.049	98	80 - 120
Manganese	7439-96-5	ND	0.0050	0.050	0.047	94	80 - 120
Strontium	7440-24-6	ND	0.0010	0.050	0.048	96	80 - 120
Zinc	7440-66-6	ND	0.020	1.00	0.97	97	80 - 120

Analytical Batch 575411		Client ID GCAL ID	TBB-1D 21512191901	1521729MS 1521872			1521729MSD 1521873					
Prep Batch 575106		Sample Type Prep Date	SAMPLE 12/20/2015 17:15	MS 12/20/2015 17:15			MSD 12/20/2015 17:15					
Prep Method EPA 3005A Dissolved		Analysis Date Matrix	12/23/2015 14:52 Water	12/23/2015 14:59 Water			12/23/2015 15:06 Water					
EPA 6020A Dissolved		Units Result	mg/L LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Arsenic	7440-38-2	0.0040	0.0050	0.050	0.050	92	80 - 120	0.050	0.052	96	4	20
Barium	7440-39-3	0.89	0.0050	0.050	0.93	95	80 - 120	0.050	0.94	101	1	20
Cadmium	7440-43-9	0.0	0.0050	0.050	0.050	100	80 - 120	0.050	0.050	100	0	20
Chromium	7440-47-3	0.0017	0.0050	0.050	0.045	87	80 - 120	0.050	0.044	84	2	20
Iron	7439-89-6	3.05	0.50	5.00	9.17	123*	80 - 120	5.00	8.14	102	12	20
Lead	7439-92-1	0.0095	0.0050	0.050	0.060	100	80 - 120	0.050	0.060	101	0	20
Manganese	7439-96-5	0.55	0.025	0.050	0.60	117	80 - 120	0.050	0.59	95	2	20
Zinc	7440-66-6	0.0	0.10	1.00	0.96	96	80 - 120	1.00	0.97	97	1	20

Analytical Batch 575411		Client ID GCAL ID	TBB-1D 21512191901	1521729MS 1521872			1521729MSD 1521873					
Prep Batch 575106		Sample Type Prep Date	SAMPLE 12/20/2015 17:15	MS 12/20/2015 17:15			MSD 12/20/2015 17:15					
Prep Method EPA 3005A Dissolved		Analysis Date Matrix	12/23/2015 14:38 Water	12/23/2015 14:42 Water			12/23/2015 14:45 Water					
EPA 6020A Dissolved		Units Result	mg/L LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Strontium	7440-24-6	1.16	0.10	0.050	1.19	66*	80 - 120	0.050	1.20	76*	1	20

General Chemistry QC Summary

Analytical Batch 575384		Client ID GCAL ID Sample Type Prep Date Analysis Date Matrix	MB575384 1523116 MB NA 12/23/2015 08:13 Water	LCS575384 1523117 LCS NA 12/22/2015 23:51 Water	LCSD575384 1523341 LCSD NA 12/23/2015 14:45 Water								
EPA 9056A			Units Result	mg/L LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Bromide	24959-67-9	ND	0.200	2.50	2.44	98	80 - 120	2.50	2.37	95	3	15	
Chloride	16887-00-6	ND	0.200	2.50	2.57	103	80 - 120	2.50	2.58	103	0	15	
Sulfate	14808-79-8	ND	0.200	2.50	2.46	98	80 - 120	2.50	2.49	100	1	15	

Analytical Batch 575389		Client ID GCAL ID Sample Type Prep Date Analysis Date Matrix	MB575389 1523137 MB NA 12/23/2015 10:58 Water	LCS575389 1523138 LCS NA 12/23/2015 10:58 Water				
SM 2540 C-2011			Units Result	mg/L LOQ	Spike Added	Result	%R	Control Limits%R
Total Dissolved Solids(TDS)	WET-035	ND	10.0	1000	900	90	80 - 120	

Analytical Batch 575389		Client ID GCAL ID Sample Type Prep Date Analysis Date Matrix	TK-470 21512226001 SAMPLE NA 12/23/2015 10:58 Water	1522801DUP 1523139 DUP NA 12/23/2015 10:58 Water			
SM 2540 C-2011			Units Result	mg/L LOQ	Result	RPD	RPD Limit
Total Dissolved Solids(TDS)	WET-035	232	10.0	231	0	5.4	



CHAIN OF CUSTODY RECORD

7979 Innovation Park Dr., Baton Rouge, LA 70820-7402
 Phone: 225.769.4900 • Fax: 225.767.5717 • www.gcal.com

Client ID: 4271 - Michael Pisani & Associates

SDG: 215121919

PM: RKW



Report to: Client: <u>Michael Pisani & Associates</u> Address: <u>1160 Poydras Suite 1430</u> Contact: <u>Lance Cooper</u> Phone: <u>504.582.2476</u> E-mail: <u>lcooper@mpisani.com</u>		Bill to: Client: _____ Address: _____ Contact: <u>SAME</u> Phone: _____ E-mail: _____		Analytical Requests & Method <u>Total Metals</u> <u>Dissolved metals (Field Filtered)</u> <u>Bromide / TDS / Chloride</u> <u>Sodium / Calcium / Magnesium</u> <u>Sulfate / Alkalinity / Carb</u> <u>TPH fraction (EPA/NAH)</u> <u>mass, method</u> <u>BTEX</u> <u>TPH (D.G.O) 8015</u> <u>Semi-volatiles (8270)</u>			GCAL use only: Custody Seal used <input type="checkbox"/> yes <input type="checkbox"/> no intact <input type="checkbox"/> yes <input type="checkbox"/> no Temperature °C <u>8-6</u> <u>9-9</u> <u>on ice</u> <input checked="" type="checkbox"/> Dissolved Analysis Requested <input checked="" type="checkbox"/> Field filtered <input type="checkbox"/> Lab filtered	
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P.O. Number: 07-47 Project Name/Number: EWL Gw Sampling (Oversight)

Sampled By: Lance Cooper / Jalk

Matrix ¹	Date	Time (2400)	Comp	Grab	Sample Description	No Con-tainers	Total Metals	Dissolved metals (Field Filtered)	Bromide / TDS / Chloride	Sodium / Calcium / Magnesium	Sulfate / Alkalinity / Carb	TPH fraction (EPA/NAH)	BTEX	TPH (D.G.O) 8015	Semi-volatiles (8270)	Preservative
W	12/17/15	1345		✓	TBB-1D	12	X	X	X	X	X	X	X	X		1
W	12/17/15	1545		✓	TBB-1S	12	X	X	X	X	X	X	X	X		2
W	12/18/15	0930		✓	TBB-3S	13	X	X	X	X	X	X	X	X	X	3

Air Bill No: _____

Turn Around Time (Business Days): 24h* 48h* 3 days* 1 week* Standard (Per Contract/Quote)

Relinquished by: (Signature) <u>Jalk</u>	Date: 12/18/15	Time: 1610	Received by: (Signature) <u>Randy Whittington</u>	Date: 12-18-15	Time: 1610	Note: Metals: As, Ba, Cd, Cr, Fe, Mn, Pb, Sr, Zn (Hg) Turnaround: See Randy Whittington
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:	
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:	

Matrix¹: W = water, S = solid, L = liquid, T = tissue *Requires prior approval, rush charges may apply. We cannot accept verbal changes. Please email written changes to your PM.

WHITE: CLIENT FINAL REPORT - CANARY: CLIENT



SAMPLE RECEIVING CHECKLIST



SAMPLE DELIVERY GROUP 215121919			CHECKLIST	YES	NO	NA
Client 4271 - Michael Pisani & Associates	PM RKW	Transport Method CUST	Were all samples received using proper thermal preservation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Profile Number 174115	Received By Lofton, Katie E.		When used, were all custody seals intact?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Line Item(s) 3 - Surface Water	Receive Date(s) 12/18/15		Were all samples received in proper containers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Were all samples received using proper chemical preservation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Was preservative added to any container at the lab?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
			Were all containers received in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Were all VOC water samples received without head space?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Do all sample labels match the Chain of Custody?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Did the Chain of Custody list the sampling technician?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Was the COC maintained i.e. all signatures, dates and time of receipt included?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COOLERS			DISCREPANCIES	LAB PRESERVATIONS		
Airbill	Thermometer ID: E26	Temp(°C)	<u>21512191901</u> - TBB-1D: Sample temp > 6C, on ice	None		
		8.6				
		4.9				
NOTES						