

**2010-2014 MP&A Laboratory Reports**  
**Attachment C**

*Vermilion Parish School Board v.*  
*Louisiana Land, et al*

*2014 Supplemental Data/Expert Report*  
*Michael E. Pisani, P.E.*  
*David G. Angle, P.G.*

# ANALYTICAL RESULTS

PERFORMED BY

**GULF COAST ANALYTICAL LABORATORIES, INC.**

7979 Innovation Park Dr.

Baton Rouge, LA 70820

**Report Date** 04/29/2014

**GCAL Report** 214042254



**Deliver To** Michael Pisani and Associates  
13313 Southwest Freeway  
Suite 221  
Sugar Land, TX 77478  
281-242-5700

**Attn** Dave Angle

**Customer** Michael Pisani & Associates

**Project** 07-47 East Whitelake

## CASE NARRATIVE

**Client:** Michael Pisani & Associates      **Report:** 214042254

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the sample cross-reference 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.

### **METALS**

In the EPA 6020A Total and Dissolved analyses, sample 21404225401 (HEBERT) was analyzed at a dilution. The reporting limits are at or below the RECAP screening standards at this dilution.

In the EPA 6010C analysis for prep batch 531003, the MS/MSD recoveries are not applicable for Calcium, Iron, Magnesium, Manganese, Potassium, and Sodium because the sample concentration is greater than four times the spike concentration.

In the EPA 6010C Dissolved analysis for prep batch 530981, the MS/MSD recoveries are not applicable for Strontium because the sample concentration is greater than four times the spike concentration.

Several dissolved concentrations are greater than the total concentrations for sample 21404225401 (HEBERT). This is attributed to separate aliquots of the sample.

### **CONVENTIONALS**

In the EPA 9056A analysis, sample 21404225401 (HEBERT) had to be diluted in order to bracket the concentration within the calibration range of the instrument.

# 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 Utilized in this Report

<b>ND</b>	Indicates the result was Not Detected at the specified RDL
<b>DO</b>	Indicates the result was Diluted Out
<b>MI</b>	Indicates the result was subject to Matrix Interference
<b>TNTC</b>	Indicates the result was Too Numerous To Count
<b>SUBC</b>	Indicates the analysis was Sub-Contracted
<b>FLD</b>	Indicates the analysis was performed in the Field
<b>PQL</b>	Practical Quantitation Limit
<b>MDL</b>	Method Detection Limit
<b>RDL</b>	Reporting Detection Limit
<b>00:00</b>	Reported as a time equivalent to 12:00 AM

## Reporting Flags Utilized in this Report

<b>J</b>	Indicates the result is between the MDL and RDL
<b>U</b>	Indicates the compound was analyzed for but not detected
<b>B</b>	Indicates the analyte was detected in the associated Method Blank

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 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.

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Authorized Signature

**GCAL REPORT 214042254**

# Report Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404225401	HEBERT	Water	04/21/2014 12:00	04/22/2014 14:25

<b>GCAL ID</b> 21404225401	<b>Client ID</b> HEBERT	<b>Matrix</b> Water	<b>Collect Date/Time</b> 04/21/2014 12:00	<b>Receive Date/Time</b> 04/22/2014 14:25
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### EPA 8260B

<b>Prep Date</b> 04/23/2014 19:35	<b>Prep Batch</b> 1	<b>Prep Method</b> 04/23/2014 19:35	<b>Dilution</b> 1	<b>Analyzed</b> 04/23/2014 19:35	<b>By</b> ALC	<b>Analytical Batch</b> 530770
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CAS#	Parameter	Result	RDL	REG LIMIT	Units
71-43-2	Benzene	ND	0.00100		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	.05	.057	mg/L	114	78 - 130
1868-53-7	Dibromofluoromethane	.05	.052	mg/L	104	77 - 127
2037-26-5	Toluene d8	.05	.051	mg/L	101	76 - 134
17060-07-0	1,2-Dichloroethane-d4	.05	.053	mg/L	106	71 - 127

### Texas 1006

<b>Prep Date</b> 04/24/2014 11:42	<b>Prep Batch</b> 530817	<b>Prep Method</b> Texas 1006	<b>Dilution</b> 1	<b>Analyzed</b> 04/24/2014 20:19	<b>By</b> SMH	<b>Analytical Batch</b> 531068
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CAS#	Parameter	Result	RDL	REG LIMIT	Units
GCSV-02-15	Aromatic >C10-C12	ND	0.150		mg/L
GCSV-02-16	Aromatic >C12-C16	ND	0.150		mg/L
GCSV-02-17	Aromatic >C16-C21	ND	0.150		mg/L
GCSV-05-18	Aromatic >C21-C35	ND	0.150		mg/L
GCSV-02-14	Aromatic >C8-C10	ND	0.150		mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	16.5	17.7	mg/L	107	60 - 140

### Texas 1006

<b>Prep Date</b> 04/24/2014 11:42	<b>Prep Batch</b> 530817	<b>Prep Method</b> Texas 1006	<b>Dilution</b> 1	<b>Analyzed</b> 04/24/2014 20:48	<b>By</b> SMH	<b>Analytical Batch</b> 531065
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CAS#	Parameter	Result	RDL	REG LIMIT	Units
GCSV-02-11	Aliphatic >C10-C12	ND	0.150		mg/L
GCSV-02-12	Aliphatic >C12-C16	ND	0.150		mg/L
GCSV-02-31	Aliphatic >C16-C35	ND	0.150		mg/L
GCSV-02-10	Aliphatic >C8-C10	ND	0.150		mg/L
GCSV-02-30	Aliphatic C6-C8	ND	0.150		mg/L

### EPA 6020A

<b>Prep Date</b> 04/23/2014 11:05	<b>Prep Batch</b> 530751	<b>Prep Method</b> EPA 3010A	<b>Dilution</b> 10	<b>Analyzed</b> 04/24/2014 21:55	<b>By</b> BAM	<b>Analytical Batch</b> 530931
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CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-38-2	Arsenic	ND	0.010		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404225401	HEBERT	Water	04/21/2014 12:00	04/22/2014 14:25

### SW-846 7470A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
04/23/2014 11:05	530753	EPA 7470A Dissolved	1	04/23/2014 17:45	CMB	530807

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	ND	0.00020		mg/L

### EPA 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
04/23/2014 11:05	530753	EPA 7470A	1	04/23/2014 17:35	CMB	530807

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	ND	0.00020		mg/L

### EPA 6020A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
04/24/2014 10:55	530754	EPA 3005A Dissolved	10	04/26/2014 18:06	PJS	531083

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-38-2	Arsenic	ND	0.010		mg/L

### EPA 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
04/25/2014 15:16	531003	EPA 3010A	1	04/28/2014 01:45	PJS	531103

CAS#	Parameter	Result	RDL	REG LIMIT	Units
<b>7440-39-3</b>	<b>Barium</b>	<b>0.22</b>	<b>0.010</b>		<b>mg/L</b>
7440-43-9	Cadmium	ND	0.0050		mg/L
<b>7440-70-2</b>	<b>Calcium</b>	<b>61.5</b>	<b>0.80</b>		<b>mg/L</b>
7440-47-3	Chromium	ND	0.010		mg/L
<b>7439-89-6</b>	<b>Iron</b>	<b>10.5</b>	<b>0.20</b>		<b>mg/L</b>
7439-92-1	Lead	ND	0.015		mg/L
<b>7439-95-4</b>	<b>Magnesium</b>	<b>41.9</b>	<b>0.20</b>		<b>mg/L</b>
<b>7439-96-5</b>	<b>Manganese</b>	<b>1.57</b>	<b>0.015</b>		<b>mg/L</b>
<b>7440-09-7</b>	<b>Potassium</b>	<b>6.09</b>	<b>0.50</b>		<b>mg/L</b>
<b>7440-23-5</b>	<b>Sodium</b>	<b>309</b>	<b>1.00</b>		<b>mg/L</b>
<b>7440-24-6</b>	<b>Strontium</b>	<b>0.47</b>	<b>0.050</b>		<b>mg/L</b>
<b>7440-66-6</b>	<b>Zinc</b>	<b>0.053</b>	<b>0.020</b>		<b>mg/L</b>

### EPA 6010C Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
04/25/2014 15:55	530981	EPA 3005A Dissolved	1	04/28/2014 14:29	CMB	531146

CAS#	Parameter	Result	RDL	REG LIMIT	Units
<b>7440-39-3</b>	<b>Barium</b>	<b>0.24</b>	<b>0.010</b>		<b>mg/L</b>
7440-43-9	Cadmium	ND	0.0050		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404225401	HEBERT	Water	04/21/2014 12:00	04/22/2014 14:25

### EPA 6010C Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
04/25/2014 15:55	530981	EPA 3005A Dissolved	1	04/28/2014 14:29	CMB	531146

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-47-3	Chromium	ND	0.010		mg/L
<b>7439-89-6</b>	<b>Iron</b>	<b>10.9</b>	<b>0.20</b>		<b>mg/L</b>
7439-92-1	Lead	ND	0.015		mg/L
<b>7439-96-5</b>	<b>Manganese</b>	<b>1.69</b>	<b>0.015</b>		<b>mg/L</b>
<b>7440-24-6</b>	<b>Strontium</b>	<b>0.47</b>	<b>0.050</b>		<b>mg/L</b>
<b>7440-66-6</b>	<b>Zinc</b>	<b>0.062</b>	<b>0.020</b>		<b>mg/L</b>

### SM 2540 C-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	04/24/2014 11:52	JRM	530792

CAS#	Parameter	Result	RDL	REG LIMIT	Units
<b>WET-035</b>	<b>Total Dissolved Solids(TDS)</b>	<b>1240</b>	<b>10.0</b>		<b>mg/L</b>

### SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	04/23/2014 13:02	DJH	530783

CAS#	Parameter	Result	RDL	REG LIMIT	Units
T-005-C	Carbonate Alkalinity	ND	1.0		mg/L CaCO3

### SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	04/23/2014 13:02	DJH	530783

CAS#	Parameter	Result	RDL	REG LIMIT	Units
<b>T-005-B</b>	<b>Bicarbonate Alkalinity</b>	<b>177</b>	<b>1.0</b>		<b>mg/L CaCO3</b>

### EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			200	04/28/2014 15:49	AEL	531116

CAS#	Parameter	Result	RDL	REG LIMIT	Units
<b>16887-00-6</b>	<b>Chloride</b>	<b>555</b>	<b>40.0</b>		<b>mg/L</b>
<b>14808-79-8</b>	<b>Sulfate</b>	<b>89.1</b>	<b>40.0</b>		<b>mg/L</b>



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404225401	HEBERT	Water	04/21/2014 12:00	04/22/2014 14:25

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2	04/28/2014 16:42	AEL	531116

CAS#	Parameter	Result	RDL	REG LIMIT	Units
24959-67-9	Bromide	2.71	0.400		mg/L

# GC/MS Volatiles Quality Control Summary

Analytical Batch 530770 Prep Batch N/A		Client ID GCAL ID Sample Type Analytical Date Matrix		MB530770 1308157 Method Blank 04/23/2014 11:53 Water				LCS530770 1308158 LCS 04/23/2014 10:14 Water			LCSD530770 1308159 LCSD 04/23/2014 10:36 Water		
EPA 8260B				Units Result	mg/L RDL	Spike Added	Result	% R	Control Limits % R	Result	% R	RPD	RPD Limit
100-41-4	Ethylbenzene		ND	0.00500	0.050	0.053	106	74 - 126	0.054	108	2	30	
1330-20-7	Xylene (total)		ND	0.015	0.150	0.162	108	74 - 127	0.163	109	1	30	
71-43-2	Benzene		ND	0.00100	0.050	0.051	102	70 - 129	0.055	109	8	20	
108-88-3	Toluene		ND	0.00500	0.050	0.050	100	72 - 120	0.054	107	8	20	
<b>Surrogate</b>													
460-00-4	4-Bromofluorobenzene		54	108	50	51.1	102	78 - 130	46.7	93			
1868-53-7	Dibromofluoromethane		53	106	50	52.5	105	77 - 127	49.9	100			
2037-26-5	Toluene d8		50.5	101	50	47	94	76 - 134	48.3	97			
17060-07-0	1,2-Dichloroethane-d4		52.6	105	50	51.1	102	71 - 127	51.5	103			

Analytical Batch 530770 Prep Batch N/A		Client ID GCAL ID Sample Type Analytical Date Matrix		SH0421SW15 21404222903 SAMPLE 04/23/2014 15:31 Water				SH0421SW15MS 21404222904 MS 04/23/2014 15:52 Water			SH0421SW15MSD 21404222905 MSD 04/23/2014 16:16 Water		
EPA 8260B				Units Result	mg/L RDL	Spike Added	Result	% R	Control Limits % R	Result	% R	RPD	RPD Limit
100-41-4	Ethylbenzene		0.00	0.00500	0.050	0.057	114	74 - 126	0.056	112	2	30	
1330-20-7	Xylene (total)		0.00	0.015	0.150	0.173	115	74 - 127	0.170	113	2	30	
71-43-2	Benzene		0.00	0.00100	0.050	0.055	110	70 - 129	0.053	107	4	20	
108-88-3	Toluene		0.00	0.00500	0.050	0.056	111	72 - 120	0.055	110	2	20	
<b>Surrogate</b>													
460-00-4	4-Bromofluorobenzene				50	55.4	111	78 - 130	56.2	112			
1868-53-7	Dibromofluoromethane				50	53	106	77 - 127	52.6	105			
2037-26-5	Toluene d8				50	49.8	100	76 - 134	49.4	99			
17060-07-0	1,2-Dichloroethane-d4				50	54.3	109	71 - 127	54.7	109			

# GC/MS Volatiles Quality Control Summary

<b>Analytical Batch</b> 530770 <b>Prep Batch</b> N/A		<b>Client ID</b> <b>GCAL ID</b> 21404183501 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 04/23/2014 12:58 <b>Matrix</b> Solid		1306920MS 1308160 MS 04/23/2014 13:20 Solid			1306920MSD 1308161 MSD 04/23/2014 13:41 Solid				
<b>EPA 8260B</b>		<b>Units</b>	<b>mg/L</b>	<b>Spike</b>	<b>Result</b>	<b>% R</b>	<b>Control</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>			<b>Limits % R</b>				<b>Limit</b>
71-43-2	Benzene	0.0278	0.040	2.00	2.18	108	73 - 128	2.08	103	5	20
<b>Surrogate</b>											
460-00-4	4-Bromofluorobenzene			2000	2120	106	62 - 127	2130	107		
1868-53-7	Dibromofluoromethane			2000	2120	106	65 - 130	2090	105		
2037-26-5	Toluene d8			2000	1970	99	71 - 132	1950	98		
17060-07-0	1,2-Dichloroethane-d4			2000	2110	106	62 - 125	2120	106		

# General Chromatography Quality Control Summary

Analytical Batch 531065 Prep Batch 530817 Prep Method Texas 1006		Client ID MB530817 GCAL ID 1308413 Sample Type Method Blank Prep Date 04/24/2014 11:42 Analytical Date 04/24/2014 17:51 Matrix Water		LCS530817 1308414 LCS 04/24/2014 11:42 04/24/2014 18:51 Water			LCSD530817 1308415 LCSD 04/24/2014 11:42 04/24/2014 19:50 Water				
Texas 1006		Units	mg/L	Spike	Result	% R	Control	Result	% R	RPD	RPD
		Result	RDL	Added			Limits % R				Limit
GCSV-02-30	Aliphatic C6-C8	ND	0.150								
GCSV-02-10	Aliphatic >C8-C10	ND	0.150								
GCSV-02-11	Aliphatic >C10-C12	ND	0.150								
GCSV-02-12	Aliphatic >C12-C16	ND	0.150								
GCSV-02-31	Aliphatic >C16-C35	ND	0.150								
GCSV-02-28	Total Aliphatic >C6-C35	ND	0.150	31.0	32.8	106	60 - 140	38.6	125	16	40

Analytical Batch 531068 Prep Batch 530817 Prep Method Texas 1006		Client ID MB530817 GCAL ID 1308413 Sample Type Method Blank Prep Date 04/24/2014 11:42 Analytical Date 04/24/2014 17:20 Matrix Water		LCS530817 1308414 LCS 04/24/2014 11:42 04/24/2014 18:21 Water			LCSD530817 1308415 LCSD 04/24/2014 11:42 04/24/2014 19:21 Water				
Texas 1006		Units	mg/L	Spike	Result	% R	Control	Result	% R	RPD	RPD
		Result	RDL	Added			Limits % R				Limit
GCSV-02-14	Aromatic >C8-C10	ND	0.150		0.00			0.00		0	
GCSV-02-15	Aromatic >C10-C12	ND	0.150		0.00			0.00		0	
GCSV-02-16	Aromatic >C12-C16	ND	0.150		0.00			0.00		0	
GCSV-02-17	Aromatic >C16-C21	ND	0.150		0.00			0.00		0	
GCSV-05-18	Aromatic >C21-C35	ND	0.150		0.00			0.00		0	
GCSV-02-29	Total Aromatic >C6-C35	ND	0.150	31.0	37.4	121	60 - 140	35.9	117	4	40
GCSV-05-04	Total TPH (C6-C35)	ND	0.150	61.9	70.2	113	60 - 140	74.5	121	6	20
<b>Surrogate</b>											
84-15-1	o-Terphenyl	17000	105	15500	16700	108	60 - 140	14300	93		

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 530931 <b>Prep Batch</b> 530751 <b>Prep Method</b> EPA 3010A	<b>Client ID</b> MB530751 <b>GCAL ID</b> 1308100 <b>Sample Type</b> Method Blank <b>Prep Date</b> 04/23/2014 11:05 <b>Analytical Date</b> 04/24/2014 19:15 <b>Matrix</b> Water	LCS530751 1308101 LCS 04/23/2014 11:05 04/24/2014 19:22 Water			
<b>EPA 6020A</b>	<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>
7440-38-2 Arsenic	ND 0.0010	0.050	0.057	114	80 - 120

<b>Analytical Batch</b> 530931 <b>Prep Batch</b> 530751 <b>Prep Method</b> EPA 3010A	<b>Client ID</b> 87685 <b>GCAL ID</b> 21404227001 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 04/23/2014 11:05 <b>Analytical Date</b> 04/24/2014 19:29 <b>Matrix</b> Water	1307992MS 1308102 MS 04/23/2014 11:05 04/24/2014 20:20 Water	1307992MSD 1308103 MSD 04/23/2014 11:05 04/24/2014 20:28 Water						
<b>EPA 6020A</b>	<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD Limit</b>
7440-38-2 Arsenic	0.00063 0.0010	0.050	0.057	112	80 - 120	0.057	112	0	20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 530807 <b>Prep Batch</b> 530753 <b>Prep Method</b> EPA 7470A	<b>Client ID</b> MB530753 <b>GCAL ID</b> 1308108 <b>Sample Type</b> Method Blank <b>Prep Date</b> 04/23/2014 11:05 <b>Analytical Date</b> 04/23/2014 17:28 <b>Matrix</b> Water	LCS530753 1308109 LCS 04/23/2014 11:05 04/23/2014 17:29 Water					
<b>SW-846 7470A Dissolved</b>		<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>	
7439-97-6	Mercury	ND	0.00020	0.0050	0.0049	98	80 - 120

<b>Analytical Batch</b> 530807 <b>Prep Batch</b> 530753 <b>Prep Method</b> EPA 7470A	<b>Client ID</b> HEBERT <b>GCAL ID</b> 21404225401 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 04/23/2014 11:05 <b>Analytical Date</b> 04/23/2014 17:35 <b>Matrix</b> Water	1307916MS 1308110 MS 04/23/2014 11:05 04/23/2014 17:40 Water	1307916MSD 1308111 MSD 04/23/2014 11:05 04/23/2014 17:41 Water								
<b>SW-846 7470A Dissolved</b>		<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD Limit</b>	
7439-97-6	Mercury	0.0	0.00020	0.0050	0.0043	85	80 - 120	0.0045	89	5	20

<b>Analytical Batch</b> 530807 <b>Prep Batch</b> 530753 <b>Prep Method</b> EPA 7470A	<b>Client ID</b> L640B (FILTER CAKE) <b>GCAL ID</b> 21404220401 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 04/23/2014 11:05 <b>Analytical Date</b> 04/23/2014 17:31 <b>Matrix</b> Solid	1307594MS 1308132 MS 04/23/2014 11:05 04/23/2014 17:33 Solid					
<b>SW-846 7470A Dissolved</b>		<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>	
7439-97-6	Mercury	0.0	0.00020	0.0050	0.0048	97	80 - 120

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 530807 <b>Prep Batch</b> 530753 <b>Prep Method</b> EPA 7470A	<b>Client ID</b> MB530753 <b>GCAL ID</b> 1308108 <b>Sample Type</b> Method Blank <b>Prep Date</b> 04/23/2014 11:05 <b>Analytical Date</b> 04/23/2014 17:28 <b>Matrix</b> Water	LCS530753 1308109 LCS 04/23/2014 11:05 04/23/2014 17:29 Water			
<b>EPA 7470A</b>	<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>
7439-97-6 Mercury	ND 0.00020	0.0050	0.0049	98	80 - 120

<b>Analytical Batch</b> 530807 <b>Prep Batch</b> 530753 <b>Prep Method</b> EPA 7470A	<b>Client ID</b> HEBERT <b>GCAL ID</b> 21404225401 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 04/23/2014 11:05 <b>Analytical Date</b> 04/23/2014 17:35 <b>Matrix</b> Water	1307916MS 1308110 MS 04/23/2014 11:05 04/23/2014 17:40 Water	1307916MSD 1308111 MSD 04/23/2014 11:05 04/23/2014 17:41 Water						
<b>EPA 7470A</b>	<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD Limit</b>
7439-97-6 Mercury	0.0 0.00020	0.0050	0.0043	85	80 - 120	0.0045	89	5	20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 531083 <b>Prep Batch</b> 530754 <b>Prep Method</b> EPA 3005A Dissolved	<b>Client ID</b> MB530754 <b>GCAL ID</b> 1308112 <b>Sample Type</b> Method Blank <b>Prep Date</b> 04/24/2014 10:55 <b>Analytical Date</b> 04/26/2014 17:51 <b>Matrix</b> Water	LCS530754 1308113 LCS 04/24/2014 10:55 04/26/2014 17:58 Water			
<b>EPA 6020A Dissolved</b>	<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>
7440-38-2 Arsenic	ND 0.0010	0.050	0.048	95	80 - 120

<b>Analytical Batch</b> 531083 <b>Prep Batch</b> 530754 <b>Prep Method</b> EPA 3005A Dissolved	<b>Client ID</b> HEBERT <b>GCAL ID</b> 21404225401 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 04/24/2014 10:55 <b>Analytical Date</b> 04/26/2014 18:06 <b>Matrix</b> Water	1307916MS 1308114 MS 04/24/2014 10:55 04/26/2014 18:34 Water	1307916MSD 1308115 MSD 04/24/2014 10:55 04/26/2014 18:43 Water						
<b>EPA 6020A Dissolved</b>	<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD Limit</b>
7440-38-2 Arsenic	0.00098 0.010	0.050	0.053	105	80 - 120	0.052	103	2	20



# Inorganics Quality Control Summary

<b>Analytical Batch</b> 531103 <b>Prep Batch</b> 531003 <b>Prep Method</b> EPA 3010A	<b>Client ID</b> MB531003 <b>GCAL ID</b> 1309354 <b>Sample Type</b> Method Blank <b>Prep Date</b> 04/25/2014 15:16 <b>Analytical Date</b> 04/27/2014 18:09 <b>Matrix</b> Water	LCS531003 1309355 LCS 04/25/2014 15:16 04/27/2014 18:16 Water				
<b>EPA 6010C</b>	<b>Units</b> <b>Result</b>	<b>mg/L</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>
7440-39-3 Barium	ND	0.010	0.50	0.53	106	80 - 120
7440-43-9 Cadmium	ND	0.0050	0.50	0.52	104	80 - 120
7440-47-3 Chromium	ND	0.010	0.50	0.53	106	80 - 120
7439-89-6 Iron	ND	0.20	5.00	5.48	110	80 - 120
7439-92-1 Lead	ND	0.015	0.50	0.52	105	80 - 120
7439-95-4 Magnesium	ND	0.20	5.00	5.55	111	80 - 120
7439-96-5 Manganese	ND	0.015	0.50	0.53	106	80 - 120
7440-09-7 Potassium	ND	0.50	10.0	10.5	105	80 - 120
7440-23-5 Sodium	ND	1.00	20.0	22.2	111	80 - 120
7440-24-6 Strontium	ND	0.050	0.50	0.54	108	80 - 120
7440-66-6 Zinc	ND	0.020	0.50	0.52	104	80 - 120

<b>Analytical Batch</b> 531103 <b>Prep Batch</b> 531003 <b>Prep Method</b> EPA 3010A	<b>Client ID</b> SHIFT R600 <b>GCAL ID</b> 21404240501 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 04/25/2014 15:16 <b>Analytical Date</b> 04/27/2014 19:08 <b>Matrix</b> Solid	1308552MS 1309356 MS 04/25/2014 15:16 04/27/2014 19:15 Solid	1308552MSD 1309357 MSD 04/25/2014 15:16 04/27/2014 19:22 Solid							
<b>EPA 6010C</b>	<b>Units</b> <b>Result</b>	<b>mg/L</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
7440-39-3 Barium	0.33	0.050	0.50	0.86	105	80 - 120	0.85	103	1	20
7440-43-9 Cadmium	0.0028	0.025	0.50	0.56	112	80 - 120	0.53	106	6	20
7440-70-2 Calcium	343	4.00	5.00	348	83	80 - 120	354	208*	2	20
7440-47-3 Chromium	0.0	0.050	0.50	0.56	112	80 - 120	0.54	107	4	20
7439-89-6 Iron	33.3	1.00	5.00	39.3	120	80 - 120	39.9	132*	2	20
7439-92-1 Lead	0.0	0.075	0.50	0.55	110	80 - 120	0.52	104	6	20
7439-95-4 Magnesium	34.2	1.00	5.00	39.7	111	80 - 120	40.4	125*	2	20
7439-96-5 Manganese	13.8	0.075	0.50	14.3	97	80 - 120	14.5	147*	1	20
7440-09-7 Potassium	171	2.50	10.0	183	124*	80 - 120	187	159*	2	20
7440-23-5 Sodium	1700	5.00	20.0	1700	15*	80 - 120	1710	60*	1	20
7440-24-6 Strontium	1.68	0.25	0.50	2.22	108	80 - 120	2.23	111	0	20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 531103 <b>Prep Batch</b> 531003 <b>Prep Method</b> EPA 3010A	<b>Client ID</b> SHIFT R600 <b>GCAL ID</b> 21404240501 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 04/25/2014 15:16 <b>Analytical Date</b> 04/27/2014 19:08 <b>Matrix</b> Solid	1308552MS 1309356 MS 04/25/2014 15:16 04/27/2014 19:15 Solid	1308552MSD 1309357 MSD 04/25/2014 15:16 04/27/2014 19:22 Solid								
<b>EPA 6010C</b>		<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD Limit</b>	
7440-66-6	Zinc	0.058	0.10	0.50	0.65	118	80 - 120	0.62	113	5	20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 531146 <b>Prep Batch</b> 530981 <b>Prep Method</b> EPA 3005A Dissolved	<b>Client ID</b> MB530981 <b>GCAL ID</b> 1309198 <b>Sample Type</b> Method Blank <b>Prep Date</b> 04/25/2014 15:55 <b>Analytical Date</b> 04/28/2014 13:46 <b>Matrix</b> Water	LCS530981 1309199 LCS 04/25/2014 15:55 04/28/2014 13:53 Water				
<b>EPA 6010C Dissolved</b>	<b>Units</b> <b>Result</b>	<b>mg/L</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>
7440-39-3 Barium	ND	0.010	0.50	0.53	105	80 - 120
7440-43-9 Cadmium	ND	0.0050	0.50	0.54	107	80 - 120
7440-47-3 Chromium	ND	0.010	0.50	0.52	105	80 - 120
7439-89-6 Iron	ND	0.20	5.00	5.24	105	80 - 120
7439-92-1 Lead	ND	0.015	0.50	0.54	108	80 - 120
7439-96-5 Manganese	ND	0.015	0.50	0.52	105	80 - 120
7440-24-6 Strontium	ND	0.050	0.50	0.52	104	80 - 120
7440-66-6 Zinc	ND	0.020	0.50	0.54	108	80 - 120

<b>Analytical Batch</b> 531146 <b>Prep Batch</b> 530981 <b>Prep Method</b> EPA 3005A Dissolved	<b>Client ID</b> SB-1 MPA <b>GCAL ID</b> 21404225501 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 04/25/2014 15:55 <b>Analytical Date</b> 04/28/2014 14:00 <b>Matrix</b> Water	1307922MS 1309200 MS 04/25/2014 15:55 04/28/2014 14:05 Water	1307922MSD 1309201 MSD 04/25/2014 15:55 04/28/2014 14:11 Water							
<b>EPA 6010C Dissolved</b>	<b>Units</b> <b>Result</b>	<b>mg/L</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
7440-39-3 Barium	3.52	0.010	0.50	4.08	112	80 - 120	4.06	109	1	20
7440-43-9 Cadmium	0.0	0.0050	0.50	0.54	108	80 - 120	0.53	106	2	20
7440-47-3 Chromium	0.0028	0.010	0.50	0.53	106	80 - 120	0.52	103	2	20
7439-89-6 Iron	8.75	0.20	5.00	14.0	106	80 - 120	14.0	105	0	20
7439-92-1 Lead	0.0	0.015	0.50	0.53	105	80 - 120	0.52	103	2	20
7439-96-5 Manganese	2.13	0.015	0.50	2.67	108	80 - 120	2.67	108	0	20
7440-24-6 Strontium	3.59	0.050	0.50	4.02	85	80 - 120	3.94	69*	2	20
7440-66-6 Zinc	0.0	0.020	0.50	0.57	114	80 - 120	0.56	111	2	20

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 530792 <b>Prep Batch</b> N/A	<b>Client ID</b> MB530792 <b>GCAL ID</b> 1308269 <b>Sample Type</b> Method Blank <b>Analytical Date</b> 04/24/2014 11:52 <b>Matrix</b> Water	LCS530792 1308270 LCS 04/24/2014 11:52 Water				
<b>SM 2540 C-2011</b>		<b>Units</b>	mg/L	<b>Spike</b>	<b>Result</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>	<b>% R</b>	<b>Limits % R</b>
WET-035	Total Dissolved Solids(TDS)	ND	10.0	1000	880	88 80 - 120

<b>Analytical Batch</b> 530792 <b>Prep Batch</b> N/A	<b>Client ID</b> 14042001 <b>GCAL ID</b> 21404224901 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 04/24/2014 11:52 <b>Matrix</b> Water	1307883DUP 1308271 DUP 04/24/2014 11:52 Water			
<b>SM 2540 C-2011</b>		<b>Units</b>	mg/L	<b>Result</b>	<b>RPD</b>
		<b>Result</b>	<b>RDL</b>	<b>RPD</b>	<b>Limit</b>
WET-035	Total Dissolved Solids(TDS)	11400	10.0	11600	2 5.4

<b>Analytical Batch</b> 530792 <b>Prep Batch</b> N/A	<b>Client ID</b> FRAC OUTFALL 001 <b>GCAL ID</b> 21404233601 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 04/24/2014 11:52 <b>Matrix</b> Water	1308382DUP 1308534 DUP 04/24/2014 11:52 Water			
<b>SM 2540 C-2011</b>		<b>Units</b>	mg/L	<b>Result</b>	<b>RPD</b>
		<b>Result</b>	<b>RDL</b>	<b>RPD</b>	<b>Limit</b>
WET-035	Total Dissolved Solids(TDS)	775	10.0	761	2 5.4

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 531116 <b>Prep Batch</b> N/A	<b>Client ID</b> MB531116 <b>GCAL ID</b> 1309882 <b>Sample Type</b> Method Blank <b>Analytical Date</b> 04/28/2014 08:46 <b>Matrix</b> Water	<b>LCS531116</b> 1309883 LCS 04/28/2014 09:04 Water					
<b>EPA 9056A</b>		<b>Units</b>	mg/L	<b>Spike</b>	<b>Result</b>	<b>% R</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>			<b>Limits % R</b>
24959-67-9	Bromide	ND	0.200	2.50	2.29	92	80 - 120
16887-00-6	Chloride	ND	0.200	2.50	2.43	97	80 - 120
14808-79-8	Sulfate	ND	0.200	2.50	2.27	91	80 - 120

<b>Analytical Batch</b> 531116 <b>Prep Batch</b> N/A	<b>Client ID</b> MAO1MW002 <b>GCAL ID</b> 21404241601 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 04/28/2014 14:21 <b>Matrix</b> Water	<b>MAO1MW002-MS</b> 21404241602 MS 04/28/2014 14:39 Water				<b>MAO1MW002-MSD</b> 21404241603 MSD 04/28/2014 14:56 Water					
<b>EPA 9056A</b>		<b>Units</b>	mg/L	<b>Spike</b>	<b>Result</b>	<b>% R</b>	<b>Control</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>			<b>Limits % R</b>			<b>Limit</b>	
16887-00-6	Chloride	439	100	1250	1690	100	80 - 120	1690	100	0	15
14808-79-8	Sulfate	527	100	1250	1710	95	80 - 120	1710	95	0	15



# CHAIN OF CUSTODY RECORD

Client ID: 4271 - Michael Pisani & Associates

SDG: 214042254

Due Date: 05/01/14



7979 Innovation Park Dr., Baton Rouge, LA 70820-7402  
Phone: 225.769.4900 • Fax: 225.767.5717 • www.gcal.com

<b>Report to:</b> Client: <u>Michael Pisani + Assoc.</u> Address: <u>1100 Poydras St. Suite 1430</u> <u>New Orleans, LA 70163</u> Contact: <u>Dave Angle</u> Phone: <u>281-242-5700</u> E-mail: <u>dangle@mpisani.com</u>	<b>Bill to:</b> Client: <u>Same</u> Address: _____ Contact: _____ Phone: _____ E-mail: _____
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Analytical Requests & Method

*(Vertical text)* TDS Chlorides  
*(Vertical text)* Na+ Calcium Magnesium Potassium  
*(Vertical text)* Ammonia Nitrate Nitrite Bicarb/Carbonate  
 HCl Fractions, BTEX  
 Total Metals (As, Ba, Cd, Cr, Fe, Mn, Pb, Sr, Zn, Hg)  
 Diss Metals (As, Fe, Mn, Pb, Cd, Cr, Hg, Pb, Sr, Zn)  
 Bromide

GCAL use only:

Custody Seal used  yes  no  
 intact  yes  no

Temperature °C 1.7 E22

P.O. Number: 07-47 Project Name/Number: East White Lake

Sampled By: PMR

Dissolved Analysis Requested  
 Field filtered  
 Lab filtered 4-20-14

Matrix <sup>1</sup>	Date	Time (2400)	Comp	Grab	Sample Description	No Containers	None	None	None	HCl	HNO <sub>3</sub>	HNO <sub>3</sub>	HNO <sub>3</sub>	HNO <sub>3</sub>	None	Preservative
W	4-21-14	1200		X	Hebert	8	X	X	X	X	X	X	X	X	X	

Air Bill No:

Turn Around Time (Business Days):  24h\*  48h\*  3 days\*  1 week\*  Standard (Per Contract/Quote)

Relinquished by: (Signature) <u>[Signature]</u>	Date: <u>4/22/14</u>	Time: <u>1425</u>	Received by: (Signature) <u>[Signature]</u>	Date: <u>4/22/14</u>	Time: <u>1425</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)	Date:	Time:	Received by: (Signature)	Date:	Time:	
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:	



# SAMPLE RECEIVING CHECKLIST



<b>SAMPLE DELIVERY GROUP 214042254</b>	
<b>Client</b> 4271 - Michael Pisani & Associates	<b>Transport Method</b> CUST
<b>Profile Number</b> 250269	<b>Received By</b> Saucier, Charlotte M.
<b>Line Item(s)</b> 1 - Waters	<b>Receive Date(s)</b> 04/22/14

CHECKLIST	YES	NO	NA
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"/>
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 VOA vials received with no 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		
<b>Airbill</b>	<b>Thermometer ID:</b> E22	<b>Temp(°C)</b>
		1.7

DISCREPANCIES
None

LAB PRESERVATIONS
None

<b>NOTES</b>	
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# ANALYTICAL RESULTS

PERFORMED BY

**GCAL, LLC**

7979 Innovation Park Dr.  
Baton Rouge, LA 70820

**Report Date** 05/01/2014

**GCAL Report** 214042255



**Deliver To** Michael Pisani and Associates  
13313 Southwest Freeway  
Suite 221  
Sugar Land, TX 77478  
281-242-5700

**Attn** Dave Angle

**Customer** Michael Pisani & Associates

**Project** 07-47 East Whitelake



## CASE NARRATIVE

**Client:** Michael Pisani & Associates      **Report:** 214042255

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the sample cross-reference 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.

### **METALS**

In the EPA 6010C analysis for prep batch 531003, the MS/MSD recoveries are not applicable for Calcium, Iron, Magnesium, Manganese, Potassium, and Sodium because the sample concentration is greater than four times the spike concentration.

In the EPA 6010C analysis, sample 21404225501 (SB-1 MPA) had to be diluted in order to bracket the concentration of Sodium within the linear dynamic range of the instrument.

In the EPA 6020A Total and Dissolved analyses, sample 21404225501 (SB-1 MPA) was analyzed at a dilution. The reporting limits are at or below the RECAP screening standards at this dilution.

The dissolved concentrations for Barium and Iron are greater than the total concentrations for sample 21404225501 (SB-1 MPA). This is attributed to separate aliquots of the sample.

### **CONVENTIONALS**

In the EPA 9056A analysis, sample 21404225501 (SB-1 MPA) had to be diluted in order to bracket the concentration within the calibration range of the instrument.

# 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 Utilized in this Report

<b>ND</b>	Indicates the result was Not Detected at the specified RDL
<b>DO</b>	Indicates the result was Diluted Out
<b>MI</b>	Indicates the result was subject to Matrix Interference
<b>TNTC</b>	Indicates the result was Too Numerous To Count
<b>SUBC</b>	Indicates the analysis was Sub-Contracted
<b>FLD</b>	Indicates the analysis was performed in the Field
<b>PQL</b>	Practical Quantitation Limit
<b>MDL</b>	Method Detection Limit
<b>RDL</b>	Reporting Detection Limit
<b>00:00</b>	Reported as a time equivalent to 12:00 AM

## Reporting Flags Utilized in this Report

<b>J</b>	Indicates the result is between the MDL and RDL
<b>U</b>	Indicates the compound was analyzed for but not detected
<b>B</b>	Indicates the analyte was detected in the associated Method Blank

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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 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.

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Authorized Signature

**GCAL REPORT 214042255**

# Report Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404225501	SB-1 MPA	Water	04/21/2014 13:45	04/22/2014 14:25
21404225502	EWL DUP	Water	04/21/2014 13:45	04/22/2014 14:25
21404225503	TRIP BLANK	Water	04/21/2014 00:00	04/22/2014 14:25

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404225501	SB-1 MPA	Water	04/21/2014 13:45	04/22/2014 14:25

### EPA 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	04/23/2014 19:57	ALC	530770

CAS#	Parameter	Result	RDL	REG LIMIT	Units
<b>71-43-2</b>	<b>Benzene</b>	<b>0.015</b>	<b>0.00100</b>		<b>mg/L</b>
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	.05	.056	mg/L	112	78 - 130
1868-53-7	Dibromofluoromethane	.05	.053	mg/L	105	77 - 127
2037-26-5	Toluene d8	.05	.051	mg/L	102	76 - 134
17060-07-0	1,2-Dichloroethane-d4	.05	.052	mg/L	103	71 - 127

### Texas 1006

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
04/24/2014 11:42	530817	Texas 1006	1	04/24/2014 21:17	SMH	531068

CAS#	Parameter	Result	RDL	REG LIMIT	Units
GCSV-02-15	Aromatic >C10-C12	ND	0.150		mg/L
GCSV-02-16	Aromatic >C12-C16	ND	0.150		mg/L
GCSV-02-17	Aromatic >C16-C21	ND	0.150		mg/L
GCSV-05-18	Aromatic >C21-C35	ND	0.150		mg/L
GCSV-02-14	Aromatic >C8-C10	ND	0.150		mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	16.9	16.5	mg/L	97	60 - 140

### Texas 1006

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
04/24/2014 11:42	530817	Texas 1006	1	04/24/2014 21:46	SMH	531065

CAS#	Parameter	Result	RDL	REG LIMIT	Units
GCSV-02-11	Aliphatic >C10-C12	ND	0.150		mg/L
GCSV-02-12	Aliphatic >C12-C16	ND	0.150		mg/L
GCSV-02-31	Aliphatic >C16-C35	ND	0.150		mg/L
GCSV-02-10	Aliphatic >C8-C10	ND	0.150		mg/L
GCSV-02-30	Aliphatic C6-C8	ND	0.150		mg/L

### EPA 6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
04/23/2014 11:05	530751	EPA 3010A	10	04/24/2014 22:02	BAM	530931

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-38-2	Arsenic	ND	0.010		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404225501	SB-1 MPA	Water	04/21/2014 13:45	04/22/2014 14:25

### EPA 6020A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
04/24/2014 10:55	530754	EPA 3005A Dissolved	10	04/26/2014 19:19	PJS	531083

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-38-2	Arsenic	ND	0.010		mg/L

### EPA 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
04/25/2014 15:16	531003	EPA 3010A	1	04/28/2014 01:52	PJS	531103

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	3.32	0.010		mg/L
7440-70-2	Calcium	358	0.80		mg/L
7439-89-6	Iron	8.99	0.20		mg/L
7439-95-4	Magnesium	148	0.20		mg/L
7439-96-5	Manganese	2.01	0.015		mg/L
7440-09-7	Potassium	9.00	0.50		mg/L

### EPA 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
04/25/2014 15:16	531003	EPA 3010A	10	04/28/2014 12:48	CMB	531146

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-23-5	Sodium	1260	10.0		mg/L

### EPA 6010C Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
04/25/2014 15:55	530981	EPA 3005A Dissolved	1	04/28/2014 14:00	CMB	531146

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	3.52	0.010		mg/L
7439-89-6	Iron	8.75	0.20		mg/L
7439-96-5	Manganese	2.13	0.015		mg/L

### SM 2540 C-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	04/24/2014 11:52	JRM	530792

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-035	Total Dissolved Solids(TDS)	5400	10.0		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404225501	SB-1 MPA	Water	04/21/2014 13:45	04/22/2014 14:25

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	04/23/2014 13:02	DJH	530783
CAS#	Parameter		Result	RDL	REG LIMIT	Units
T-005-C	Carbonate Alkalinity		ND	1.0		mg/L CaCO3

SM 2320 B-2011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	04/23/2014 13:02	DJH	530783
CAS#	Parameter		Result	RDL	REG LIMIT	Units
T-005-B	Bicarbonate Alkalinity		384	1.0		mg/L CaCO3

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	04/28/2014 16:59	AEL	531116
CAS#	Parameter		Result	RDL	REG LIMIT	Units
24959-67-9	Bromide		13.4	4.00		mg/L
14808-79-8	Sulfate		ND	4.00		mg/L

EPA 9056A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1000	04/28/2014 17:17	AEL	531116
CAS#	Parameter		Result	RDL	REG LIMIT	Units
16887-00-6	Chloride		3120	200		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404225502	EWL DUP	Water	04/21/2014 13:45	04/22/2014 14:25

EPA 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	04/28/2014 22:54	JCK	531195

CAS#	Parameter	Result	RDL	REG LIMIT	Units
<b>71-43-2</b>	<b>Benzene</b>	<b>0.013</b>	<b>0.00100</b>		<b>mg/L</b>
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	.05	.047	mg/L	95	78 - 130
1868-53-7	Dibromofluoromethane	.05	.054	mg/L	108	77 - 127
2037-26-5	Toluene d8	.05	.049	mg/L	97	76 - 134
17060-07-0	1,2-Dichloroethane-d4	.05	.056	mg/L	112	71 - 127

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21404225503	TRIP BLANK	Water	04/21/2014 00:00	04/22/2014 14:25

EPA 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	04/28/2014 23:15	JCK	531195

CAS#	Parameter	Result	RDL	REG LIMIT	Units
71-43-2	Benzene	ND	0.00100		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	.05	.056	mg/L	113	78 - 130
1868-53-7	Dibromofluoromethane	.05	.055	mg/L	110	77 - 127
2037-26-5	Toluene d8	.05	.05	mg/L	100	76 - 134
17060-07-0	1,2-Dichloroethane-d4	.05	.055	mg/L	110	71 - 127



# GC/MS Volatiles Quality Control Summary

Analytical Batch 530770 Prep Batch N/A		Client ID MB530770 GCAL ID 1308157 Sample Type Method Blank Analytical Date 04/23/2014 11:53 Matrix Water		LCS530770 1308158 LCS 04/23/2014 10:14 Water			LCSD530770 1308159 LCSD 04/23/2014 10:36 Water				
EPA 8260B		Units Result	mg/L RDL	Spike Added	Result	% R	Control Limits % R	Result	% R	RPD	RPD Limit
100-41-4	Ethylbenzene	ND	0.00500	0.050	0.053	106	74 - 126	0.054	108	2	30
1330-20-7	Xylene (total)	ND	0.015	0.150	0.162	108	74 - 127	0.163	109	1	30
71-43-2	Benzene	ND	0.00100	0.050	0.051	102	70 - 129	0.055	109	8	20
108-88-3	Toluene	ND	0.00500	0.050	0.050	100	72 - 120	0.054	107	8	20
<b>Surrogate</b>											
460-00-4	4-Bromofluorobenzene	54	108	50	51.1	102	78 - 130	46.7	93		
1868-53-7	Dibromofluoromethane	53	106	50	52.5	105	77 - 127	49.9	100		
2037-26-5	Toluene d8	50.5	101	50	47	94	76 - 134	48.3	97		
17060-07-0	1,2-Dichloroethane-d4	52.6	105	50	51.1	102	71 - 127	51.5	103		

Analytical Batch 530770 Prep Batch N/A		Client ID SH0421SW15 GCAL ID 21404222903 Sample Type SAMPLE Analytical Date 04/23/2014 15:31 Matrix Water		SH0421SW15MS 21404222904 MS 04/23/2014 15:52 Water			SH0421SW15MSD 21404222905 MSD 04/23/2014 16:16 Water				
EPA 8260B		Units Result	mg/L RDL	Spike Added	Result	% R	Control Limits % R	Result	% R	RPD	RPD Limit
100-41-4	Ethylbenzene	0.00	0.00500	0.050	0.057	114	74 - 126	0.056	112	2	30
1330-20-7	Xylene (total)	0.00	0.015	0.150	0.173	115	74 - 127	0.170	113	2	30
71-43-2	Benzene	0.00	0.00100	0.050	0.055	110	70 - 129	0.053	107	4	20
108-88-3	Toluene	0.00	0.00500	0.050	0.056	111	72 - 120	0.055	110	2	20
<b>Surrogate</b>											
460-00-4	4-Bromofluorobenzene			50	55.4	111	78 - 130	56.2	112		
1868-53-7	Dibromofluoromethane			50	53	106	77 - 127	52.6	105		
2037-26-5	Toluene d8			50	49.8	100	76 - 134	49.4	99		
17060-07-0	1,2-Dichloroethane-d4			50	54.3	109	71 - 127	54.7	109		

# GC/MS Volatiles Quality Control Summary

Analytical Batch 530770 Prep Batch N/A		Client ID GCAL ID Sample Type Analytical Date Matrix		PP3385B SUMP SLUDGE (TCLP) 21404183501 SAMPLE 04/23/2014 12:58 Solid				1306920MS 1308160 MS 04/23/2014 13:20 Solid			1306920MSD 1308161 MSD 04/23/2014 13:41 Solid		
EPA 8260B				Units Result	mg/L RDL	Spike Added	Result	% R	Control Limits % R	Result	% R	RPD	RPD Limit
71-43-2	Benzene			0.0278	0.040	2.00	2.18	108	73 - 128	2.08	103	5	20
<b>Surrogate</b>													
460-00-4	4-Bromofluorobenzene					2000	2120	106	62 - 127	2130	107		
1868-53-7	Dibromofluoromethane					2000	2120	106	65 - 130	2090	105		
2037-26-5	Toluene d8					2000	1970	99	71 - 132	1950	98		
17060-07-0	1,2-Dichloroethane-d4					2000	2110	106	62 - 125	2120	106		

Analytical Batch 531195 Prep Batch N/A		Client ID GCAL ID Sample Type Analytical Date Matrix		MB531195 1310378 Method Blank 04/28/2014 22:33 Water				LCS531195 1310379 LCS 04/28/2014 21:01 Water			LCSD531195 1310380 LCSD 04/28/2014 21:22 Water		
EPA 8260B				Units Result	mg/L RDL	Spike Added	Result	% R	Control Limits % R	Result	% R	RPD	RPD Limit
100-41-4	Ethylbenzene			ND	0.00500	0.050	0.045	89	74 - 126	0.043	86	5	30
1330-20-7	Xylene (total)			ND	0.015	0.150	0.137	91	74 - 127	0.126	84	8	30
71-43-2	Benzene			ND	0.00100	0.050	0.048	95	70 - 129	0.046	93	4	20
108-88-3	Toluene			ND	0.00500	0.050	0.044	87	72 - 120	0.036	73	20	20
<b>Surrogate</b>													
460-00-4	4-Bromofluorobenzene			51.4	103	50	49.9	100	78 - 130	45.6	91		
1868-53-7	Dibromofluoromethane			54.2	108	50	53	106	77 - 127	54	108		
2037-26-5	Toluene d8			50	100	50	47.9	96	76 - 134	42.7	85		
17060-07-0	1,2-Dichloroethane-d4			55.5	111	50	53.3	107	71 - 127	52.1	104		

# General Chromatography Quality Control Summary

Analytical Batch 531065 Prep Batch 530817 Prep Method Texas 1006		Client ID MB530817 GCAL ID 1308413 Sample Type Method Blank Prep Date 04/24/2014 11:42 Analytical Date 04/24/2014 17:51 Matrix Water		LCS530817 1308414 LCS 04/24/2014 11:42 04/24/2014 18:51 Water			LCSD530817 1308415 LCSD 04/24/2014 11:42 04/24/2014 19:50 Water				
Texas 1006		Units	mg/L	Spike	Result	% R	Control	Result	% R	RPD	RPD
		Result	RDL	Added			Limits % R				Limit
GCSV-02-30	Aliphatic C6-C8	ND	0.150								
GCSV-02-10	Aliphatic >C8-C10	ND	0.150								
GCSV-02-11	Aliphatic >C10-C12	ND	0.150								
GCSV-02-12	Aliphatic >C12-C16	ND	0.150								
GCSV-02-31	Aliphatic >C16-C35	ND	0.150								
GCSV-02-28	Total Aliphatic >C6-C35	ND	0.150	31.0	32.8	106	60 - 140	38.6	125	16	40

Analytical Batch 531068 Prep Batch 530817 Prep Method Texas 1006		Client ID MB530817 GCAL ID 1308413 Sample Type Method Blank Prep Date 04/24/2014 11:42 Analytical Date 04/24/2014 17:20 Matrix Water		LCS530817 1308414 LCS 04/24/2014 11:42 04/24/2014 18:21 Water			LCSD530817 1308415 LCSD 04/24/2014 11:42 04/24/2014 19:21 Water				
Texas 1006		Units	mg/L	Spike	Result	% R	Control	Result	% R	RPD	RPD
		Result	RDL	Added			Limits % R				Limit
GCSV-02-14	Aromatic >C8-C10	ND	0.150		0.00			0.00		0	
GCSV-02-15	Aromatic >C10-C12	ND	0.150		0.00			0.00		0	
GCSV-02-16	Aromatic >C12-C16	ND	0.150		0.00			0.00		0	
GCSV-02-17	Aromatic >C16-C21	ND	0.150		0.00			0.00		0	
GCSV-05-18	Aromatic >C21-C35	ND	0.150		0.00			0.00		0	
GCSV-02-29	Total Aromatic >C6-C35	ND	0.150	31.0	37.4	121	60 - 140	35.9	117	4	40
GCSV-05-04	Total TPH (C6-C35)	ND	0.150	61.9	70.2	113	60 - 140	74.5	121	6	20
<b>Surrogate</b>											
84-15-1	o-Terphenyl	17000	105	15500	16700	108	60 - 140	14300	93		

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 530931 <b>Prep Batch</b> 530751 <b>Prep Method</b> EPA 3010A	<b>Client ID</b> MB530751 <b>GCAL ID</b> 1308100 <b>Sample Type</b> Method Blank <b>Prep Date</b> 04/23/2014 11:05 <b>Analytical Date</b> 04/24/2014 19:15 <b>Matrix</b> Water	LCS530751 1308101 LCS 04/23/2014 11:05 04/24/2014 19:22 Water			
<b>EPA 6020A</b>	<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>
7440-38-2 Arsenic	ND 0.0010	0.050	0.057	114	80 - 120

<b>Analytical Batch</b> 530931 <b>Prep Batch</b> 530751 <b>Prep Method</b> EPA 3010A	<b>Client ID</b> 87685 <b>GCAL ID</b> 21404227001 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 04/23/2014 11:05 <b>Analytical Date</b> 04/24/2014 19:29 <b>Matrix</b> Water	1307992MS 1308102 MS 04/23/2014 11:05 04/24/2014 20:20 Water	1307992MSD 1308103 MSD 04/23/2014 11:05 04/24/2014 20:28 Water						
<b>EPA 6020A</b>	<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD Limit</b>
7440-38-2 Arsenic	0.00063 0.0010	0.050	0.057	112	80 - 120	0.057	112	0	20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 531083 <b>Prep Batch</b> 530754 <b>Prep Method</b> EPA 3005A Dissolved	<b>Client ID</b> MB530754 <b>GCAL ID</b> 1308112 <b>Sample Type</b> Method Blank <b>Prep Date</b> 04/24/2014 10:55 <b>Analytical Date</b> 04/26/2014 17:51 <b>Matrix</b> Water	LCS530754 1308113 LCS 04/24/2014 10:55 04/26/2014 17:58 Water			
<b>EPA 6020A Dissolved</b>	<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>
7440-38-2 Arsenic	ND 0.0010	0.050	0.048	95	80 - 120

<b>Analytical Batch</b> 531083 <b>Prep Batch</b> 530754 <b>Prep Method</b> EPA 3005A Dissolved	<b>Client ID</b> HEBERT <b>GCAL ID</b> 21404225401 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 04/24/2014 10:55 <b>Analytical Date</b> 04/26/2014 18:06 <b>Matrix</b> Water	1307916MS 1308114 MS 04/24/2014 10:55 04/26/2014 18:34 Water	1307916MSD 1308115 MSD 04/24/2014 10:55 04/26/2014 18:43 Water						
<b>EPA 6020A Dissolved</b>	<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD Limit</b>
7440-38-2 Arsenic	0.00098 0.010	0.050	0.053	105	80 - 120	0.052	103	2	20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 531103 <b>Prep Batch</b> 531003 <b>Prep Method</b> EPA 3010A	<b>Client ID</b> MB531003 <b>GCAL ID</b> 1309354 <b>Sample Type</b> Method Blank <b>Prep Date</b> 04/25/2014 15:16 <b>Analytical Date</b> 04/27/2014 18:09 <b>Matrix</b> Water	LCS531003 1309355 LCS 04/25/2014 15:16 04/27/2014 18:16 Water			
<b>EPA 6010C</b>	<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>
7440-39-3 Barium	ND 0.010	0.50	0.53	106	80 - 120
7439-89-6 Iron	ND 0.20	5.00	5.48	110	80 - 120
7439-95-4 Magnesium	ND 0.20	5.00	5.55	111	80 - 120
7439-96-5 Manganese	ND 0.015	0.50	0.53	106	80 - 120
7440-09-7 Potassium	ND 0.50	10.0	10.5	105	80 - 120
7440-23-5 Sodium	ND 1.00	20.0	22.2	111	80 - 120

<b>Analytical Batch</b> 531103 <b>Prep Batch</b> 531003 <b>Prep Method</b> EPA 3010A	<b>Client ID</b> SHIFT R600 <b>GCAL ID</b> 21404240501 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 04/25/2014 15:16 <b>Analytical Date</b> 04/27/2014 19:08 <b>Matrix</b> Solid	1308552MS 1309356 MS 04/25/2014 15:16 04/27/2014 19:15 Solid	1308552MSD 1309357 MSD 04/25/2014 15:16 04/27/2014 19:22 Solid						
<b>EPA 6010C</b>	<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD Limit</b>
7440-39-3 Barium	0.33 0.050	0.50	0.86	105	80 - 120	0.85	103	1	20
7440-70-2 Calcium	343 4.00	5.00	348	83	80 - 120	354	208*	2	20
7439-89-6 Iron	33.3 1.00	5.00	39.3	120	80 - 120	39.9	132*	2	20
7439-95-4 Magnesium	34.2 1.00	5.00	39.7	111	80 - 120	40.4	125*	2	20
7439-96-5 Manganese	13.8 0.075	0.50	14.3	97	80 - 120	14.5	147*	1	20
7440-09-7 Potassium	171 2.50	10.0	183	124*	80 - 120	187	159*	2	20
7440-23-5 Sodium	1700 5.00	20.0	1700	15*	80 - 120	1710	60*	1	20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 531146 <b>Prep Batch</b> 530981 <b>Prep Method</b> EPA 3005A Dissolved	<b>Client ID</b> MB530981 <b>GCAL ID</b> 1309198 <b>Sample Type</b> Method Blank <b>Prep Date</b> 04/25/2014 15:55 <b>Analytical Date</b> 04/28/2014 13:46 <b>Matrix</b> Water	LCS530981 1309199 LCS 04/25/2014 15:55 04/28/2014 13:53 Water			
<b>EPA 6010C Dissolved</b>	<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>
7440-39-3 Barium	ND 0.010	0.50	0.53	105	80 - 120
7439-89-6 Iron	ND 0.20	5.00	5.24	105	80 - 120
7439-96-5 Manganese	ND 0.015	0.50	0.52	105	80 - 120

<b>Analytical Batch</b> 531146 <b>Prep Batch</b> 530981 <b>Prep Method</b> EPA 3005A Dissolved	<b>Client ID</b> SB-1 MPA <b>GCAL ID</b> 21404225501 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 04/25/2014 15:55 <b>Analytical Date</b> 04/28/2014 14:00 <b>Matrix</b> Water	1307922MS 1309200 MS 04/25/2014 15:55 04/28/2014 14:05 Water	1307922MSD 1309201 MSD 04/25/2014 15:55 04/28/2014 14:11 Water						
<b>EPA 6010C Dissolved</b>	<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD Limit</b>
7440-39-3 Barium	3.52 0.010	0.50	4.08	112	80 - 120	4.06	109	1	20
7439-89-6 Iron	8.75 0.20	5.00	14.0	106	80 - 120	14.0	105	0	20
7439-96-5 Manganese	2.13 0.015	0.50	2.67	108	80 - 120	2.67	108	0	20

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 530792 <b>Prep Batch</b> N/A	<b>Client ID</b> MB530792 <b>GCAL ID</b> 1308269 <b>Sample Type</b> Method Blank <b>Analytical Date</b> 04/24/2014 11:52 <b>Matrix</b> Water	LCS530792 1308270 LCS 04/24/2014 11:52 Water				
<b>SM 2540 C-2011</b>		<b>Units</b>	mg/L	<b>Spike</b>	<b>Result</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>	<b>% R</b>	<b>Limits % R</b>
WET-035	Total Dissolved Solids(TDS)	ND	10.0	1000	880	88 80 - 120

<b>Analytical Batch</b> 530792 <b>Prep Batch</b> N/A	<b>Client ID</b> 14042001 <b>GCAL ID</b> 21404224901 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 04/24/2014 11:52 <b>Matrix</b> Water	1307883DUP 1308271 DUP 04/24/2014 11:52 Water			
<b>SM 2540 C-2011</b>		<b>Units</b>	mg/L	<b>Result</b>	<b>RPD</b>
		<b>Result</b>	<b>RDL</b>	<b>RPD</b>	<b>Limit</b>
WET-035	Total Dissolved Solids(TDS)	11400	10.0	11600	2 5.4

<b>Analytical Batch</b> 530792 <b>Prep Batch</b> N/A	<b>Client ID</b> FRAC OUTFALL 001 <b>GCAL ID</b> 21404233601 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 04/24/2014 11:52 <b>Matrix</b> Water	1308382DUP 1308534 DUP 04/24/2014 11:52 Water			
<b>SM 2540 C-2011</b>		<b>Units</b>	mg/L	<b>Result</b>	<b>RPD</b>
		<b>Result</b>	<b>RDL</b>	<b>RPD</b>	<b>Limit</b>
WET-035	Total Dissolved Solids(TDS)	775	10.0	761	2 5.4



# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 531116 <b>Prep Batch</b> N/A	<b>Client ID</b> MB531116 <b>GCAL ID</b> 1309882 <b>Sample Type</b> Method Blank <b>Analytical Date</b> 04/28/2014 08:46 <b>Matrix</b> Water	<b>LCS531116</b> 1309883 LCS 04/28/2014 09:04 Water					
<b>EPA 9056A</b>		<b>Units</b>	mg/L	<b>Spike</b>	<b>Result</b>	<b>% R</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>			<b>Limits % R</b>
24959-67-9	Bromide	ND	0.200	2.50	2.29	92	80 - 120
16887-00-6	Chloride	ND	0.200	2.50	2.43	97	80 - 120
14808-79-8	Sulfate	ND	0.200	2.50	2.27	91	80 - 120

<b>Analytical Batch</b> 531116 <b>Prep Batch</b> N/A	<b>Client ID</b> MA01MW002 <b>GCAL ID</b> 21404241601 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 04/28/2014 14:21 <b>Matrix</b> Water	<b>MA01MW002-ms</b> 21404241602 MS 04/28/2014 14:39 Water				<b>MA01MW002-sd</b> 21404241603 MSD 04/28/2014 14:56 Water					
<b>EPA 9056A</b>		<b>Units</b>	mg/L	<b>Spike</b>	<b>Result</b>	<b>% R</b>	<b>Control</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>			<b>Limits % R</b>			<b>Limit</b>	
16887-00-6	Chloride	439	100	1250	1690	100	80 - 120	1690	100	0	15
14808-79-8	Sulfate	527	100	1250	1710	95	80 - 120	1710	95	0	15



# CHAIN OF CUSTODY RECORD

Client ID: 4271 - Michael Pisani & Associates

SDG: 214042255



Due Date: 05/01/14

7979 Innovation Park Dr., Baton Rouge, LA 70820-7402  
 Phone: 225.769.4900 • Fax: 225.767.5717 • www.gcal.com

<b>Report to:</b> Client: <u>Michael Pisani &amp; Assoc</u> Address: <u>100 Poydras St. Suite 430</u> <u>New Orleans, LA 70163</u> Contact: <u>Pave Angle</u> Phone: <u>281-243-5700</u> E-mail: <u>dangle@mpisani.com</u>				<b>Bill to:</b> Client: <u>Same</u> Address: _____ Contact: _____ Phone: _____ E-mail: _____				<b>Analytical Requests &amp; Method</b> <u>BTEX</u> <u>TPH Fractions</u> <u>Carbonate/Bicarbonate Alkalinity</u> <u>Sulfate, Chloride, Bromide</u> <u>TDS</u> <u>Total Metals - As, Ba, Ca</u> <u>Fe, Mg, Mn, K, Na</u> <u>Dissolved Metals - As, Ba</u> <u>Fe, Mn</u>				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>17.7 E22</u>				
P.O. Number <u>07-47</u>		Project Name/Number <u>East White Lake</u>						<input checked="" type="checkbox"/> Dissolved Analysis Requested <input checked="" type="checkbox"/> Field filtered <input type="checkbox"/> Field Filtered <input checked="" type="checkbox"/> Lab filtered <u>4-22-14</u>								
Sampled By: <u>PMR</u>																
Matrix <sup>1</sup>	Date	Time (2400)	Comp	Grab	Sample Description	No Containers	HCl	HCl	None	None	None	HCl	HCl	HCl	HCl	Preservative
W	4-21-14	1345		X	SB-1 MPA	89	X	X	X	X	X	X	X	X	X	
W	4-21-14	1348		X	EWL DUP	3	X									
W	4-21-14				Trip Blank	3	X									

Air Bill No:

Turn Around Time (Business Days):  24h\*  48h\*  3 days\*  1 week\*  Standard (Per Contract/Quote)

Relinquished by: (Signature) <u>[Signature]</u>	Date: <u>4/22/14</u>	Time: <u>1425</u>	Received by: (Signature) <u>[Signature]</u>	Date: <u>4/22/14</u>	Time: <u>1425</u>
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

Note:

By submitting these samples, you agree to GCAL's terms and conditions contained in our most recent schedule of services.

Matrix<sup>1</sup>: 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 214042255		CHECKLIST	YES	NO	NA
<b>Client</b> 4271 - Michael Pisani & Associates	<b>Transport Method</b> 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 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"/>
<b>Profile Number</b> 250269	<b>Received By</b> Saucier, Charlotte M.	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"/>
<b>Line Item(s)</b> 1 - Waters	<b>Receive Date(s)</b> 04/22/14	Were all VOA vials received with no 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: E22	Temp(°C)	None	None
		1.7		

<b>NOTES</b>	
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**MICHAEL PISANI & ASSOCIATES**

**07-47 East White Lake**

**STANDARD LEVEL IV  
REPORT OF ANALYSIS**

**WORK ORDER #14-04166-OR**

**May 6, 2014**

**EBERLINE ANALYTICAL/OAK RIDGE LABORATORY  
OAK RIDGE, TN**

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**Eberline Services – Oak Ridge Laboratory  
LABORATORY DATA SUPPORT CHECKLIST**

MP-001-3

**14-04166**

Eberline Services Work Order # \_\_\_\_\_

The checklist items listed below are to be initialed by appropriate staff upon completion/verification.

Date for Partial	Initials	Date	Initials	Checklist Items
		4/24/14	KC	Sample Log-In
		5/5/14	KBS	Data Compilation
		5/6/14	MSJ	First Technical Data Review
		5/6/14	MSJ	Second Technical Data Review
		5/6/14	[Signature]	Data Entry/Electronic Deliverable
		5/6/14	[Signature]	Case Narrative
		5/6/14	KBS	Electronic Deliverable Proof
		5/6/14	MSJ	Samples Analyzed within Holding Time Yes? <input checked="" type="checkbox"/> No? <input type="checkbox"/>
		5/6/14	MSJ	QA/QC Review
		05/05/14	EJ	Client in Possession of Data Electronic or Hard Copy
				Invoiced by Laboratory

Technical/Clerical Corrections, Signatures Needed, Problems, Etc	Date/Initials

Date package approved by:

Laboratory Manager

5/6/14

Date

Copy No. \_\_\_\_\_

**SECTION I**

**CHAIN OF CUSTODY & pH CHECK SHEET**



Richmond Laboratory

# Chain of Custody

14-04166

CLIENT: MICHAEL PISANI & ASSOC  
 ADDRESS: 1100 POUDRAS ST SUITE 1430  
NEW ORLEANS, LA 70193  
 PROJECT: EAST WHITE LAKE, 07-47  
 SAMPLERS SIGNATURE: [Signature], TMR & TTK

SAMPLE NO.	DATE	TIME	LOCATION	PARAMETERS												# CONTAINERS	OBSERVATIONS, COMMENTS, VOLUMES, SPECIAL OR ADDITIONAL TEST	
				1	2	3	4	5	6	7	8	9	10	11	12			
Hebert	4/21/14	1200	WATER-WELL	X	X													
MPA SB1	4/21/14	1345	WATER-WELL	X	X													

PURCHASE ORDER NO. \_\_\_\_\_

DATE 4/22 PAGE 1 OF 1  
 TAT (IN DAYS) \_\_\_\_\_  
 TOTAL NO. OF CONTAINERS: 0  
 METHOD OF SHIPMENT: 2 DAY  
 SPECIAL SHIPMENT-HANDLING, STORAGE REQUIREMENTS, OR POSSIBLE HAZARDS

REC'D APR 24 2014

1) RELINQUISHED BY / DATE: [Signature] 4/21/14  
 COMPANY: MPA  
 2) RECEIVED BY / DATE: FedEx  
 COMPANY: \_\_\_\_\_  
 3) RELINQUISHED BY / DATE: FedEx  
 COMPANY: \_\_\_\_\_  
 4) RECEIVED BY / DATE: [Signature] 4/24/14  
 COMPANY: Eberline  
 5) RELINQUISHED BY / DATE: \_\_\_\_\_  
 COMPANY: \_\_\_\_\_  
 6) RECEIVED BY / DATE: \_\_\_\_\_  
 COMPANY: \_\_\_\_\_  
 7) RELINQUISHED BY / DATE: \_\_\_\_\_  
 COMPANY: \_\_\_\_\_  
 8) RECEIVED BY / DATE: \_\_\_\_\_  
 COMPANY: \_\_\_\_\_





**EBERLINE**  
SERVICES  
Oak Ridge Laboratory

# Internal Chain of Custody

Work Order #	<b>14-04166</b>
Lab Deadline	<b>5/9/2014</b>
Analysis	<b>Ra226 - Level 4</b>
Sample Matrix	<b>Water</b>

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
	04	42	T1.3
	05	41	T1.3

	Location (circle one)						Initials	Date
Received by	<u>Sample Storage</u>	Rough Prep	Prep	Separations	Count Room			
Relinquished by	Sample Storage	Rough Prep	<u>Prep</u>	Separations	Count Room	<i>JLD</i>	<i>4/25/14 1900</i>	
Received by	Sample Storage	Rough Prep	Prep	<u>Separations</u>	Count Room	<i>2002PM</i>	<i>4/28/14</i>	
Relinquished by	Sample Storage	Rough Prep	Prep	<u>Separations</u>	Count Room	<i>1045PM</i>	<i>4/30/14</i>	
Received by	Sample Storage	Rough Prep	Prep	Separations	<u>Count Room</u>	<i>1045</i>	<i>4/17</i>	
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	<u>Count Room</u>	<i>1045</i>	<i>4/30/14 1729</i>	
Received by	<u>Sample Storage</u>	Rough Prep	Prep	Separations	Count Room			
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room			
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room			
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room			
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room			
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room			



# Internal Chain of Custody

Work Order #	<b>14-04166</b>
Lab Deadline	<b>5/9/2014</b>
Analysis	<b>Ra228 - Level 4</b>
Sample Matrix	<b>Water</b>

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
	<b>04</b>	42	T1.3
	<b>05</b>	41	T1.3

	Location (circle one)					Initials	Date
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	JLD/Re	4/25/14 0760
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	JLD	4/25/14 1900
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	0900 RM	4/29/14
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	1045 RM	4/30/14
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	1045 RM	4/29/14
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	KB	4/30/14 1729
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	0745 RM	5/1/14
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	0900 RM	5/5/14
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	0900	5/1/14
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	5/1/14	5/1/14
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		




# Internal Chain of Custody

Work Order #	<b>14-04166</b>
Lab Deadline	<b>5/9/2014</b>
Analysis	<b>TDS - Level 4</b>
Sample Matrix	<b>Water</b>

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
	04	42	T1.3
	05	41	T1.3

	Location (circle one)					Initials	Date
Received by	<u>Sample Storage</u>	Rough Prep	Prep	Separations	Count Room	<i>M</i>	May 14
Relinquished by	Sample Storage	Rough Prep	<u>Prep</u>	Separations	Count Room	<i>M</i>	May 14 1045
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		

	<b>Sample Receiving Report</b> (Volumes, pH, & CPM)	Internal Work Order
		<b>14-04166</b>
		Received By
		<b>KCOULSTON</b>

FR	ClientID	# Btls	Comments	Matrix	Storage	Rec Vol Ttl	CPM Max	
01	LCS	0		WA	T1.3			
02	BLANK	0		WA	T1.3			
03	DUP	0		WA	T1.3			
04	HERBERT	3		WA	T1.3	3.00	42	
				Container Number	pH Orig	pH Final	Volume (L)	CPM
				1	7	7	1.0000	40
				2	7	7	1.0000	39
				3	7	7	1.0000	42
05	MPA SB1	3		WA	T1.3	3.00	41	
				Container Number	pH Orig	pH Final	Volume (L)	CPM
				1	7	7	1.0000	36
				2	7	7	1.0000	35
				3	7	7	1.0000	41

*Ej*  
 04/24/14

Received by: Kristen Coulston Date: 4/24/14

**SECTION II**  
**SAMPLE ACKNOWLEDGEMENT**





**Eberline Services – Oak Ridge Laboratory**

**SAMPLE RECEIPT CHECKLIST**

MP-001-2

WORK ORDER # 14-04106

SAMPLE MATRIX/MATRICES:

(CIRCLE ONE OR BOTH)

AQUEOUS NON-AQUEOUS

(CIRCLE EITHER YES, NO, OR N/A)

WERE SAMPLES:

Received in good condition?	<input checked="" type="radio"/> Y	N	
If aqueous, properly preserved	<input checked="" type="radio"/> Y	N	N/A

WERE CHAIN OF CUSTODY SEALS:

Present on outside of package?	<input checked="" type="radio"/> Y	N
Unbroken on outside of package?	<input checked="" type="radio"/> Y	N
Present on samples?	<input checked="" type="radio"/> Y	N
Unbroken on samples?	<input checked="" type="radio"/> Y	N
Was chain of custody present upon sample receipt?	<input checked="" type="radio"/> Y	N

IF THE RESPONSE TO ANY OF THE ABOVE IS NO, A DISCREPANT SAMPLE RECEIPT REPORT (DSR) HAS BEEN ISSUED.

REMARKS: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

SIGNATURE: Kristen Coulsten DATE: 4/24/14

**SECTION III**  
**CASE NARRATIVE**





EBERLINE ANALYTICAL CORPORATION  
601 SCARBORO ROAD  
OAK RIDGE, TENNESSEE 37830  
PHONE (865) 481-0683  
FAX (865) 483-4621

EBS-OR-37228

May 6, 2014

Jonathan Miller  
Michael Pisani & Associates  
1100 Poydras Street, 1430 Energy Center  
New Orleans, LA 70163

CASE NARRATIVE  
Work Order # 14-04166-OR

SAMPLE RECEIPT

This work order contains two water samples received 04/24/2014. Both samples were analyzed for Radium-226/228 and Total Dissolved Solids.

<u>CLIENT ID</u>	<u>LAB ID</u>
HEBERT	14-04166-04
MPA SB1	14-04166-05

ANALYTICAL METHODS

Radium-226 was analyzed using EPA Method 903.0 Modified. Radium-228 was analyzed using EPA Method 904.0 Modified. Total Dissolved Solids were performed using Standard Method 2540C.

ANALYTICAL RESULTS

Combined Standard Uncertainty is reported at 2-sigma value.

RADIUM-226

Samples were prepared by removing representative aliquots followed by mixed acid digestions as appropriate. This was followed by selective sulfate precipitations of the Radium. Samples were then mounted by semi-micro-precipitations onto micro-porous filters. Samples were counted by alpha spectroscopy using an energy specific region of interest for Radium-226. Chemical recovery was calculated by the use of a Barium-133 tracer, which was determined by HPGe gamma spectroscopy.

Samples demonstrated acceptable results for all Radium-226 analyses. Chemical recovery was acceptable for all samples. The Radium-226 method blank demonstrated acceptable results. Results for the Radium-226 duplicate demonstrated an acceptable relative percent difference and normalized difference. Results for the Radium-226 laboratory control sample demonstrated an acceptable percent recovery.

## ANALYTICAL RESULTS CONTINUED

### RADIUM-228

Following alpha spectroscopy analysis of Radium-226, Barium/Radium Sulfate precipitates were redissolved and allowed for sufficient ingrowth of the Actinium-228 daughter. After ingrowth, Actinium-228 was selectively precipitated. Precipitates were filtered and beta emissions for Actinium-228 were then counted on a gas proportional counter. Chemical recovery was determined by the use of a Barium-133 tracer, the activity of which was determined by HPGe gamma spectroscopy and an elemental Yttrium carrier by gravimetric measurements. The product of these two recoveries was used to calculate chemical yield.

Samples demonstrated acceptable results for all Radium-228 analyses. Chemical recovery was acceptable for all samples. The Radium-228 method blank demonstrated acceptable results. Results for the Radium-228 duplicate demonstrated a high relative percent difference; however, normalized difference is within acceptable limits for the analytical technique. Results for the Radium-228 laboratory control sample demonstrated a low percent recovery.

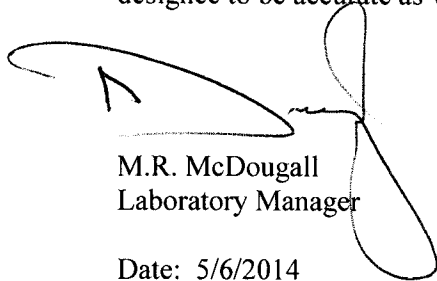
### TOTAL DISSOLVED SOLIDS (TDS)

A volumetric aliquot of each sample was taken and filtered through a tared 0.45 $\mu$ m filter media into a tared 250ml beaker. Samples were then dried on a hot plate and were allowed to cool. The TDS content was determined by reweighing tared beakers.

Samples demonstrated 1262.0 to 5462.0 mg/L of Total Dissolved Solids.

### CERTIFICATION OF ACCURACY

I certify that this data report is in compliance with the terms and conditions of the Purchase Order, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the cognizant project manager or his/her designee to be accurate as verified by the following signature.



M.R. McDougall  
Laboratory Manager

Date: 5/6/2014

Eberline Analytical wants and encourages your feedback regarding our performance providing radioanalytical services. Please visit <http://www.eberlineservices.com/client.htm> to provide us with feedback on our services.

**SECTION IV**  
**ANALYTICAL RESULTS SUMMARY**

# Eberline Analytical

## Final Report of Analysis

**Jonathan Miller**  
**Michael Pisani & Associates**  
**1100 Poydras St Suite 1430**  
**New Orleans, LA 70163**

Work Order Details:

**SDG: 14-04166**  
**Project: 07-47 E White Lake**  
**Analysis Category: ENVIRONMENTAL**  
**Sample Matrix: WA**

Report To:

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
14-04166-01	LCS	KNOWN	04/24/14 00:00	4/24/2014	4/30/2014	14-04166	RA-226	EPA 903.0 Modified	1.02E+01	4.68E-01			pCi/l
14-04166-01	LCS	SPIKE	04/24/14 00:00	4/24/2014	4/30/2014	14-04166	RA-226	EPA 903.0 Modified	1.07E+01	1.39E+00	2.66E+00	2.29E-01	pCi/l
14-04166-02	MBL	BLANK	04/24/14 00:00	4/24/2014	4/30/2014	14-04166	RA-226	EPA 903.0 Modified	2.43E-01	2.04E-01	2.10E-01	2.58E-01	pCi/l
14-04166-03	DUP	HEBERT	04/21/14 12:00	4/24/2014	4/30/2014	14-04166	RA-226	EPA 903.0 Modified	3.27E-01	2.57E-01	2.66E-01	3.25E-01	pCi/l
14-04166-04	DO	HEBERT	04/21/14 12:00	4/24/2014	4/30/2014	14-04166	RA-226	EPA 903.0 Modified	4.12E-01	2.41E-01	2.57E-01	2.24E-01	pCi/l
14-04166-05	TRG	MPA SB1	04/21/14 13:45	4/24/2014	4/30/2014	14-04166	RA-226	EPA 903.0 Modified	4.12E+00	8.98E-01	1.25E+00	3.54E-01	pCi/l
14-04166-01	LCS	KNOWN	04/24/14 00:00	4/24/2014	5/5/2014	14-04166	RA-228	EPA 904.0 Modified	7.97E+00	4.07E-01			pCi/l
14-04166-01	LCS	SPIKE	04/24/14 00:00	4/24/2014	5/5/2014	14-04166	RA-228	EPA 904.0 Modified	5.80E+00	1.49E+00	1.98E+00	1.58E+00	pCi/l
14-04166-02	MBL	BLANK	04/24/14 00:00	4/24/2014	5/5/2014	14-04166	RA-228	EPA 904.0 Modified	4.43E-01	6.10E-01	6.18E-01	1.26E+00	pCi/l
14-04166-03	DUP	HEBERT	04/21/14 12:00	4/24/2014	5/5/2014	14-04166	RA-228	EPA 904.0 Modified	4.08E-01	7.82E-01	7.87E-01	1.63E+00	pCi/l
14-04166-04	DO	HEBERT	04/21/14 12:00	4/24/2014	5/5/2014	14-04166	RA-228	EPA 904.0 Modified	2.61E-01	5.92E-01	5.95E-01	1.24E+00	pCi/l
14-04166-05	TRG	MPA SB1	04/21/14 13:45	4/24/2014	5/5/2014	14-04166	RA-228	EPA 904.0 Modified	9.28E+00	1.14E+00	2.39E+00	1.63E+00	pCi/l
14-04166-04	TRG	HEBERT	04/21/14 12:00	4/24/2014	5/1/2014	14-04166	TDS	SM 2540C	1.26E+03				mg/l
14-04166-05	TRG	MPA SB1	04/21/14 13:45	4/24/2014	5/1/2014	14-04166	TDS	SM 2540C	5.46E+03				mg/l

CU=Counting Uncertainty; CSU=Combined Standard Uncertainty (2-sigma); MDA=Minimal Detected Activity; LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original



**EBERLINE**  
SERVICES

**EBERLINE ANALYTICAL CORPORATION**

601 SCARBORO ROAD OAK RIDGE, TN 37830 865/481-0683 FAX 865/483-4621

**SECTION V**  
**ANALYTICAL STANDARD**



Ba-6  
(#6a)

# National Institute of Standards & Technology

## Certificate

Standard Reference Material 4251C  
Barium-133 Radioactivity Standard

ORIGINAL

This Standard Reference Material (SRM) consists of radioactive barium-133 chloride, non-radioactive barium chloride, and hydrochloric acid dissolved in 5 mL of distilled water. The solution is contained in a flame-sealed NIST borosilicate-glass ampoule. The SRM is intended for the calibration of ionization chambers and solid-state gamma-ray spectrometry systems.

#### Radiological Hazard

The SRM ampoule contains barium-133 with a total activity of approximately 2.5 MBq. Barium-133 decays by electron capture and during the decay process X-rays and gamma rays with energies from 4 to 400 keV are emitted. Most of these photons escape from the SRM ampoule and can represent a radiation hazard. Approximate unshielded dose rates at several distances (as of the reference time) are given in note [a]\*. Appropriate shielding and/or distance should be used to minimize personnel exposure. The SRM should be used only by persons qualified to handle radioactive material.

#### Chemical Hazard

The SRM ampoule contains hydrochloric acid (HCl) with a concentration of 1 mole per liter of water. The solution is corrosive and represents a health hazard if it comes in contact with eyes or skin. If the ampoule is to be opened to transfer the solution, the recommended procedure is given on page 2. The ampoule should be opened only by persons qualified to handle both radioactive material and strong acid solution.

#### Storage and Handling

The SRM should be stored and used at a temperature between 5 and 65 °C. The solution in an unopened ampoule should remain stable and homogeneous until at least June 2004.

The ampoule (or any subsequent container) should always be clearly marked as containing radioactive material. If the ampoule is transported it should be packed, marked, labeled, and shipped in accordance with the applicable national, international, and carrier regulations. The solution in the ampoule is a dangerous good (hazardous material) both because of the radioactivity and because of the strong acid.

#### Preparation

This Standard Reference Material was prepared in the Physics Laboratory, Ionizing Radiation Division, Radioactivity Group, J.M.R. Hutchinson, Group Leader. The overall technical direction and physical measurements leading to certification were provided by L.L. Lucas of the Radioactivity Group and D.B. Golas, Nuclear Energy Institute Research Associate.

The support aspects involved in the preparation, certification, and issuance of this SRM were coordinated through the Standard Reference Materials Program by N.M. Trahey.

Gaithersburg, Maryland 20899  
October 1994

Thomas E. Gills, Chief  
Standard Reference Materials Program



**QUALITY CONTROL PROGRAM**  
QCP-009

Rev.8; 11/10/03  
Title: Radioactive Reference Standards Solutions & Records

**EBERLINE SERVICES - OAK RIDGE LABORATORY**  
**RADIOACTIVE REFERENCE SOLUTIONS**  
**PRIMARY DILUTION RECERTIFICATION**  
QCP 009-1

SOLUTION REFERENCE # NIST SRM4251C CURRENT DATE 6/16/2013 0:00  
SOLUTION # Ba-6

Principal Radionuclide <sup>133</sup>Barium Half Life, Years 1.048E+01 Half Life, Days 3.828E+03

Radionuclide <sup>133</sup>Barium Reference Date 9/1/1993 0:00  
Certified Activity                       $\mu\text{Ci}$   
Certified Concentration 1.318E+01  $\mu\text{Ci per gram}$

Ampoule /Solution Gross	<u>9.3081</u>	Weight, Grams
Empty Ampoule	<u>4.2582</u>	Weight, Grams
Solution Net	<u>5.0499</u>	Weight, Grams
Total Activity in Ampoule	<u>66.5577</u>	$\mu\text{Ci}$

**Chemical Composition of Standard Solution**

<sup>133</sup>BaCl<sub>2</sub> in 1M HCl

Dilution Instructions: Dilution Solvent Used 1M HCl

Dilute to a volume of 1000.00 milliliters

Certified Total Activity of 66.5577  $\mu\text{Ci}$  Which Equals 1.478E+08 dpm at the date listed above

And after dilution the activity of this solution is 1.478E+05 dpm/ml

This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: June 16, 2014

Verified & Approved By 

Date: 7/1/13

QC Approval 

Date: 7/2/13



QUALITY CONTROL PROGRAM  
QCP-009

Rev.8; 11/10/03  
Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY  
RADIOACTIVE REFERENCE STANDARD SOLUTIONS  
SECONDARY DILUTION RECERTIFICATION

Solution Reference # QCP-009-1-A      Date 6/18/13  
NIST SRM4251C      Solution # Ba-6a

Principal Radionuclide	Half Life, Years	Half Life, Days
<sup>133</sup> Ba	1.048E+01	3.828E+03

Radionuclide of Interest: <sup>133</sup>Ba      Reference Date 9/1/1993 0:00  
Parent Solution Conc. 1.48E+05 dpm/ml

Chemical Composition of Standard Solution  
<sup>133</sup>BaCl<sub>2</sub> in 1M HCl

Dilution Instructions:      Dilution Solvent Used 1M HCl

SECONDARY VOLUMETRIC DILUTION

Vol. Parent Solution: 25.0000 ml  
Total Activity: 3.6950E+06 dpm      Final Activity Concentration: 3.6950E+03 dpm/ml  
Final Volume: 1000.00 ml

NOTES:

This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: June 18, 2014

Verified & Approved By [Signature]  
QC Approval [Signature]

Date: 7/1/13  
Date: 7/2/13



# CERTIFICATE OF CALIBRATION ALPHA STANDARD SOLUTION

*Ra-5*  
QA/QC REVIEWED  
Date *2/8/94* Initials *WT*

Radionuclide: Ra-226  
Half Life: 1600 ± 7 years  
Catalog No.: 7226  
Source No.: 453-26  
Customer: TMA EBERLINE  
P.O.No.: VH1888  
Reference Date: February 1 1994 12:00 PST.  
Contained Radioactivity: (Ra-226) 1.001 μCi.  
Contained Radioactivity: (Ra-226) 37.0 kBq.

Description of Solution  
a. Mass of solution: 5.1864 g (in a 5 ml Flame Sealed Ampoule)  
b. Chemical form: Ra(NO<sub>3</sub>)<sub>2</sub> in 1 N HNO<sub>3</sub>  
c. Carrier content: None added  
d. Density: 1.0318 g/ml @ 20°C.

Radioimpurities: None detected (other than daughters)

Radioactive Daughters  
Rn-222, Po-218, At-218, Pb-214, Bi-214, Po-214, Tl-210, Pb-210, Bi-210, Po-210 and Tl-206.

Radionuclide Concentration  
(Ra-226) 0.1929 μCi/g.

### Method of Calibration

Weighed aliquots of the solution were assayed using gamma spectrometry:

Energy peak(s) integrated under: 186 keV.

Branching ratio(s) used: 0.0351 gamma rays per decay.

### Uncertainty of Measurement

- a. Systematic uncertainty in instrument calibration: ±3.4%
- b. Random uncertainty in assay: ±3.1%
- c. Random uncertainty in weighing(s): ±0.2%
- d. Total uncertainty at the 99% confidence level: ±4.6%

### NIST Traceability

This calibration is implicitly traceable to the National Institute of Standards and Technology.

### Leak Test(s)

See reverse side for Leak Test(s) applied to this source.

### Notes

1. Nuclear data were taken from "Table of Radioactive Isotopes", edited by Virginia S. Shirley, 1986.
2. IPL participates in an NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay (and later NIST certification) of Standard Reference Materials (As in NRC Regulatory Guide 4.15).



ISOTOPE PRODUCTS LABORATORIES  
1800 North Keystone Street  
Burbank, California 91504  
(818) 843 - 7000

*Ana H. Kuen*  
QUALITY CONTROL

*Feb. 3, 1994*  
Date Signed



# QUALITY CONTROL PROGRAM

MP 009

Rev.8; 11/01/03

Title: Radioactive Reference Standards Solutions & Records

## EBERLINE SERVICES - OAK RIDGE LABORATORY RADIOACTIVE REFERENCE SOLUTIONS PRIMARY DILUTION RECERTIFICATION MP 009

SOLUTION REFERENCE # IPL 453-26 CURRENT DATE 12/5/2013 0:00  
SOLUTION # Ra-5

Principal Radionuclide <sup>226</sup>Radium Half Life, Years 1.600E+03 Half Life, Days 5.844E+05

Radionuclide <sup>226</sup>Radium Reference Date 2/1/1994 0:00  
Certified Activity 1.001E+00  $\mu\text{Ci}$   
Certified Concentration                       $\mu\text{Ci per gram}$

Ampoule /Solution Gross                      Weight, Grams  
Empty Ampoule                      Weight, Grams  
Solution Net                      Weight, Grams  
Total Activity in Ampoule 1.0010  $\mu\text{Ci}$

Chemical Composition of Standard Solution  
<sup>226</sup>Ra(NO<sub>3</sub>)<sub>2</sub> in 1M HNO<sub>3</sub>

Dilution Instructions: Dilution Solvent Used 1M HNO<sub>3</sub>

Dilute to a volume of 1000.00 milliliters

Certified Total Activity of 1.0010  $\mu\text{Ci}$  Which Equals 2.222E+06 dpm at the date listed above

And after dilution the activity of this solution is 2.222E+03 dpm/ml  
This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: October 28, 2014

Verified & Approved By 

Date: 12/5/2013

QC Approval 

Date: 12/5/13



# QUALITY CONTROL PROGRAM

MP 009

Rev.8; 11/01/03

Title: Radioactive Reference Standards Solutions & Records

## EBERLINE SERVICES - OAK RIDGE LABORATORY RADIOACTIVE REFERENCE STANDARD SOLUTIONS SECONDARY DILUTION RECERTIFICATION

Solution Reference #		MP 009	Date	12/5/2013 0:00
IPL-453-26			Solution #	Ra-5b
Principal Radionuclide	Half Life, Years	Half Life, Days		
<sup>226</sup> Radium	1.600E+03	5.844E+05		
Radionuclide of Interest	<sup>226</sup> Radium	Reference Date		
Parent Solution Conc.	2.22E+03 dpm/ml	2/1/1994 0:00		
Chemical Composition of Standard Solution				
<sup>226</sup> Ra(NO <sub>3</sub> ) <sub>2</sub> in 1M HNO <sub>3</sub>				

Dilution Instructions:

Dilution Solvent Used

1M HNO<sub>3</sub>

### SECONDARY VOLUMETRIC DILUTION

Vol. Parent Solution: 20.0000 ml  
Total Activity: 4.4440E+04 dpm  
Final Volume: 1000.00 ml

Final Activity Concentration: 4.4440E+01 dpm/ml

This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

NOTES:

Expiration Date: October 28, 2014

Verified & Approved By

Date: 12/5/2013 0:00

QC Approval

Date: 12/5/13

ANALYTICS

RA-11

1380 Seaboard Industrial Blvd.  
Atlanta, Georgia 30318 · U.S.A.

Phone (404) 352-8677  
Fax (404) 352-2837



# CERTIFICATE OF CALIBRATION

## Standard Radionuclide Source

62680-416

Ra-228 5 mL Liquid in Flame Sealed Vial

This standard radionuclide source was prepared gravimetrically from a calibrated master solution. The master solution was calibrated using a germanium gamma spectrometer system.

Radionuclide purity and calibration were checked using a germanium gamma spectrometer system. The nuclear decay rate and assay date for this source are given below.

ANALYTICS maintains traceability to the National Institute of Standards and Technology through Measurements Assurance Programs as described in USNRC Reg. Guide 4.15, Revision 1.

ISOTOPE:	Ra-228
ACTIVITY (dps):	2.585 E3
HALF-LIFE:	5.75 years
CALIBRATION DATE:	November 7, 2001 12:00 EST
TOTAL UNCERTAINTY*:	4.0%
SYSTEMATIC:	3.0%
RANDOM:	1.0%

\*99% Confidence Level

Impurities:  $\gamma$ -impurities (other than decay products) <0.1%

5.07198 grams 0.1M HCl solution with 50  $\mu$ g/g Ba carrier.

P O NUMBER 9508, Item 1 (Part #4339A)

SOURCE PREPARED BY: M. D. Currie  
M. D. Currie, Radiochemist

Q A APPROVED: PCW 11/7/01

*New vial from the 6/11/01 shipment.  
P.S. Different activity level  
8/19/11*



QUALITY CONTROL PROGRAM  
MP-009

Rev.8: 1/10/03  
Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY  
RADIOACTIVE REFERENCE SOLUTIONS  
RECERTIFICATION  
MP 009

SOLUTION REFERENCE # Analytics 62680-416 CURRENT DATE 3/30/2014 0:00  
SOLUTION # Ra-11

Principal Radionuclide <sup>228</sup>Ra Half Life, Years 5.750E+00 Half Life, Days 2.100E+03

Radionuclide <sup>228</sup>Ra Reference Date 11/7/2001 0:00  
Certified Activity 6.986E-02  $\mu\text{Ci}$   
Certified Concentration           $\mu\text{Ci per gram}$

Ampoule /Solution Gross 9.4982 Weight, Grams  
Empty Ampoule 4.4895 Weight, Grams  
Solution Net 5.0087 Weight, Grams  
Total Activity in Ampoule 0.0699  $\mu\text{Ci}$

Chemical Composition of Standard Solution  
<sup>228</sup>Ra(NO<sub>3</sub>)<sub>2</sub> in 0.5 M HCl

Dilution Instructions: Dilution Solvent Used 0.5 M HCl

Dilute to a volume of 1000.00 milliliters

Certified Total Activity of 0.0699  $\mu\text{Ci}$  Which Equals 1.551E+05 dpm at the date listed above

And after dilution the activity of this solution is 1.551E+02 dpm/ml This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: March 11, 2015

Recertified By [Signature]

Date: 3/30/14

QC Approval [Signature]

Date: 3/31/14

**SECTION VI**  
**QUALITY CONTROL SAMPLE RESULTS SUMMARY**

WO **14-04166** Analysis **Ra226** Run **1** Activity Units **pCi** Aliquot Units **I** Client Name **Michael Pisani & Associates, Inc.**

**Laboratory Control Sample**

Analyte	Normalized Difference	LCS Measured	CSU Measured	LCS Expected	Uncert. Expected	Known Error	Result	CSU	Standard ID	Standard ACT (dpm)	Standard Error	Standard Added (g)
RA-226	0.40	105.38%	24.81%	100.00%	4.60%	1.02E+01	1.07E+01	2.66E+00	Ra-5b	4.41E+01	4.60E+00	5.12E-01

**Matrix Spike**

Analyte	Normalized Difference	MS Actual % Rec	Expected MS Result	Expected MS Uncert	Actual MS Result	Actual MS CSU	Sample Result	Sample CSU	Sample Aliquot	Standard ID	Standard ACT (dpm)	Standard Error %	Standard Added (g)

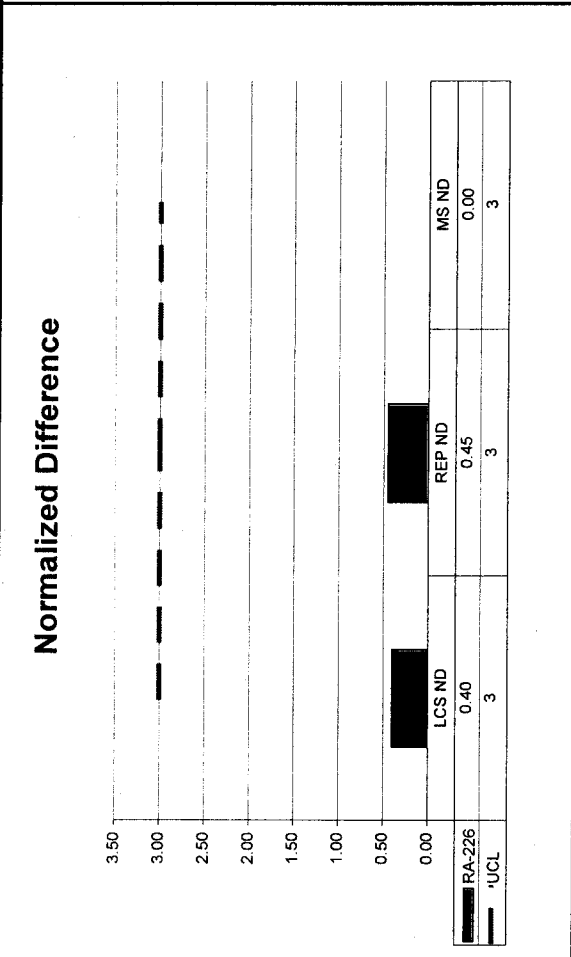
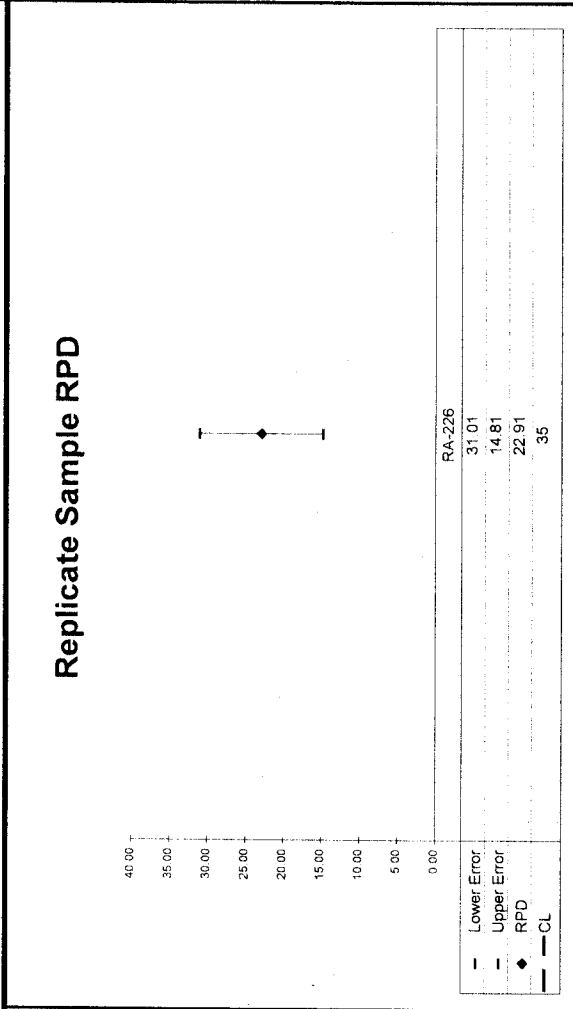
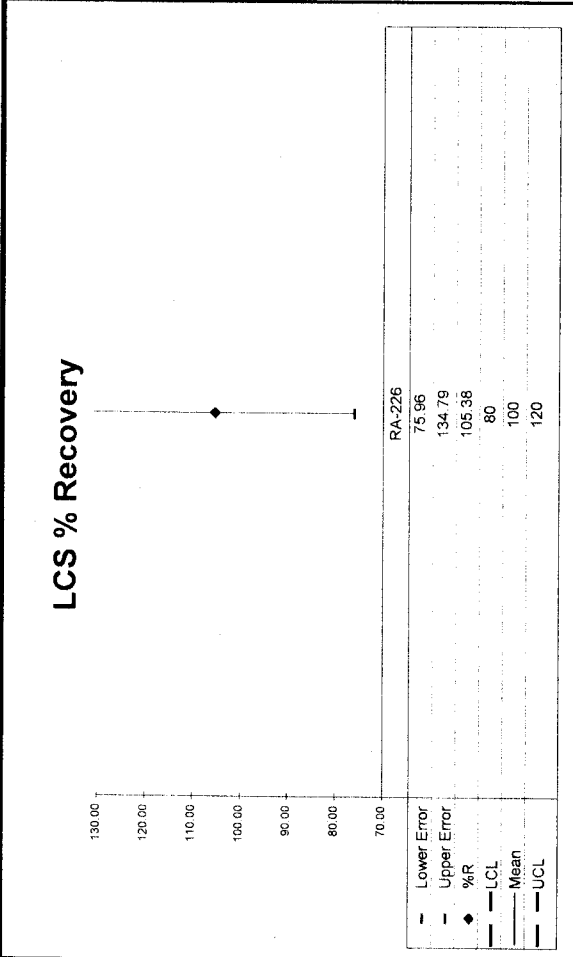
**Replicate Sample**

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	LCS ND	MS % R	MS ND	Rep RPD	Rep ND
RA-226	0.45	22.91	4.12E-01	2.57E-01	3.27E-01	2.66E-01	1.05	OK	OK	OK	OK	OK	OK

**QC Summary**

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	LCS ND	MS % R	MS ND	Rep RPD	Rep ND
RA-226	0.45	22.91	4.12E-01	2.57E-01	3.27E-01	2.66E-01	1.05	OK	OK	OK	OK	OK	OK

W/O Analysis Run Activity Units Aliquot Units Client Name  
**14-04166** **Ra226** **1** **pCi** **1** **Michael Pisani & Associates, Inc.**



**No Matrix Spike**



WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
14-04166	Ra228	1	pCi	I	Michael Pisani & Associates, Inc.

**Laboratory Control Sample**

Analyte	Normalized Difference	LCS Measured	CSU Measured	LCS Expected	Uncert. Expected	Known	Known Error	Result	CSU	Standard ID	Standard ACT (dpm)	Standard Error	Standard Added (g)
RA-228	2.13	72.72%	34.20%	100.00%	5.10%	7.97E+00	4.07E-01	5.80E+00	1.98E+00	Ra-11	3.45E+01	5.10E+00	5.13E-01

**Matrix Spike**

Analyte	Normalized Difference	MS Actual % Rec	Expected MS Result	Expected MS Uncert	Actual MS Result	Actual MS CSU	Sample Result	Sample CSU	Sample Aliquot	Standard ID	Standard ACT (dpm)	Standard Error %	Standard Added (g)

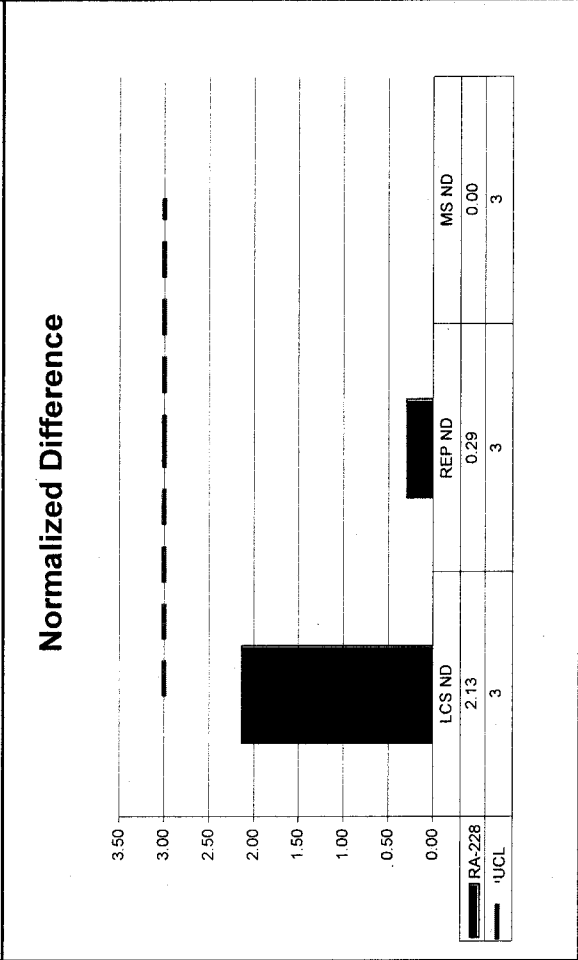
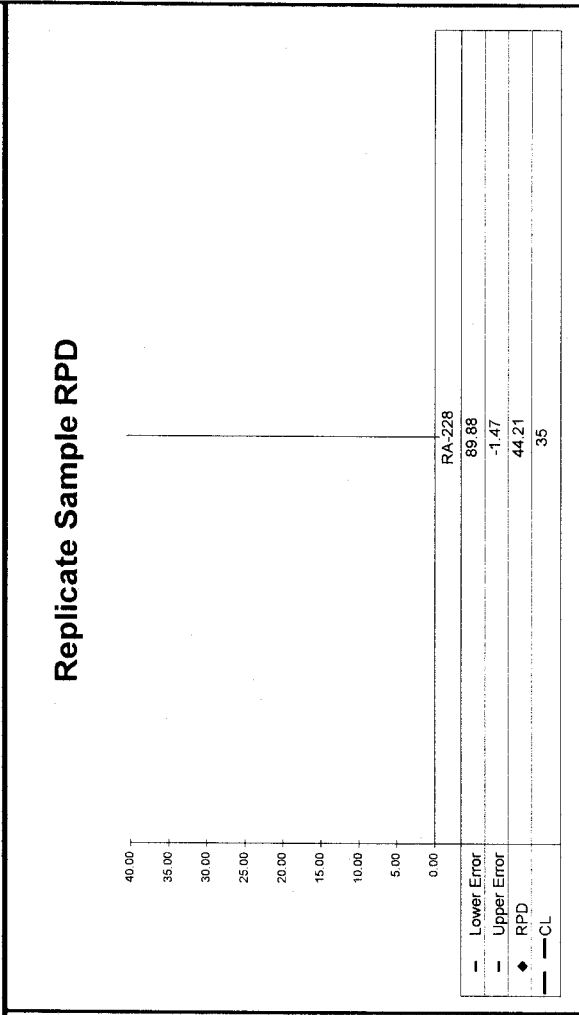
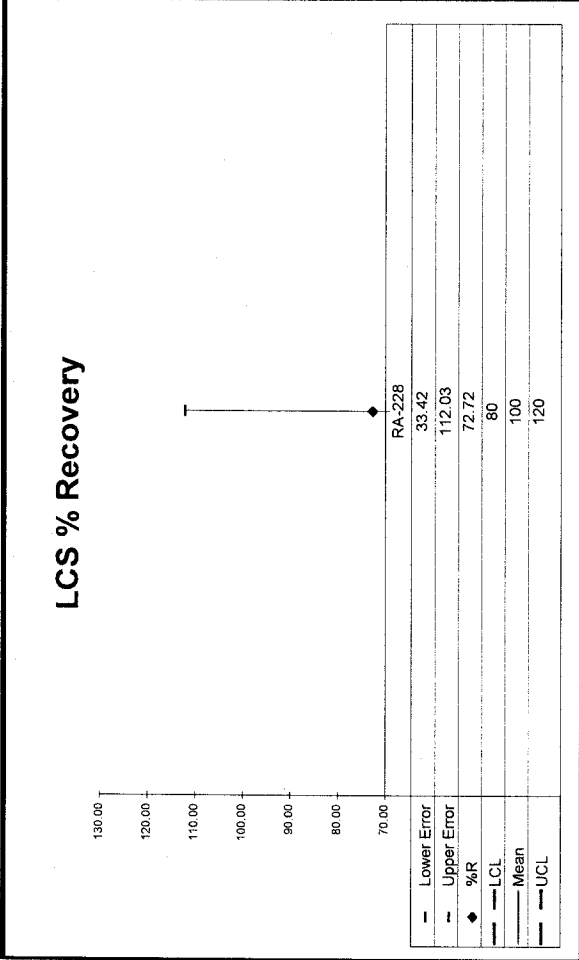
**Replicate Sample**

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	LCS ND	MS % R	MS ND	Rep RPD	Rep ND
RA-228	0.29	44.21	2.61E-01	5.95E-01	4.08E-01	7.87E-01	0.73	INV	OK	INV	MS ND	INV	OK

**QC Summary**

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	LCS ND	MS % R	MS ND	Rep RPD	Rep ND
RA-228	0.29	44.21	2.61E-01	5.95E-01	4.08E-01	7.87E-01	0.73	INV	OK	INV	MS ND	INV	OK


WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
14-04166	Ra228	1	pCi	I	Michael Pisani & Associates, Inc.



**No Matrix Spike**


**SECTION VII**  
**LABORATORY TECHNICIAN'S NOTES**

**RA-226 NOTES**

 <b>EBERLINE</b> <small>SERVICES</small> <b>Work Order Analysis Notes</b>	<b>Oak Ridge Laboratory</b> 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	14-04166
		Analysis Code	Ra226
		Run Number	1


#	Date	Dept	User	Notes
1	04/25/14 08:22	PREP	JWOLFE	ALIUQUOTED AND ADDED SPIKES AND TRACERS- PH'D SAMPLES- PRECIPITATED WITH BA AND PB CARRIERS AND AMMONIUM SULFATE- DECANTED SAMPLES AND CENTRIFUGED- SUBMITTED RADIUM PRECIP TO SEPARATIONS

*JWOLFE*  
*4/25/14*

 <b>EBERLINE</b> <small>SERVICES</small> <b>Work Order Analysis Notes</b>	<b>Oak Ridge Laboratory</b> 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com		Internal Work Order	14-04166
			Analysis Code	Ra226
			Run Number	1

#	Date	Dept	User	Notes
1	04/25/14 08:22	PREP	JWOLFE	ALIQJOTED AND ADDED SPIKES AND TRACERS- PH'D SAMPLES- PRECIPITATED WITH BA AND PB CARRIERS AND AMMONIUM SULFATE- DECANTED SAMPLES AND CENTRIFUGED- SUBMITTED RADIUM PRECIP TO SEPARATIONS
2	04/30/14 08:31	CHEM	RMARTZ	ADDED EDTA TO SAMPLES AND LET SIT OVERNIGHT. SYRINGE FILTERED SAMPLES, ADDED AMMONIUM SILFIDE AND ACETIC ACID TO SAMPLES. FILTERED ONTO TARRD FILTER PAPERS, LET DRY UNDER HEAT LAMP, REWEIGHED, AND SUBMITTED TO COUNT.

*RA*  
*4/30/14*


 <b>Reagents Used in an Analysis</b>		Internal Work Order		
		14-04166		
		Analysis Code		Run
		Ra226		1
Reagent ID	Reagent Name	Reagent Concentration	Analyst ID	Date Recorded
014145P	Ammonium Hydroxide	Reagent Grade	JWOLFE	4/25/2014
014485D02	Ammonium Sulfate	200 mg/ml	JWOLFE	4/25/2014
014007D13	Barium Carrier	1 mg/ml	JWOLFE	4/25/2014
013965D09	Lead Carrier	166 mg/ml	JWOLFE	4/25/2014
014866P	Nitric Acid	Reagent Grade	JWOLFE	4/25/2014
013818P	Acetic Acid	Reagent Grade	RMARTZ	4/30/2014
014409D01	Ammonium Sulfate	200 mg/ml	RMARTZ	4/30/2014
014683S	EDTA	0.25M	RMARTZ	4/30/2014

Alpha # 1

Date	Sample #	Client	Function	CT Time	Analysis?	Spec
4/24/14	1404122A(1-4)	Unitest	1028	2hr	ANAL	C
4/24/14	1404121A(1-4)	Unitest	1028	2hr	ANAL	C
4/24/14	1404143A(1-4)	UCOR	1726	2hr 50-	UNNT	KB
4/24/14	1404143A(1-4)	UCOR	1727	2hr 50-	TH	KB
4/24/14	1404143A(1-4)	UCOR	1727	2hr 50-	TRNT	KB
4/24/14	1404140A(1-2)	USA	1728	2hr 50-	UN	KB
4/24/14	1404136A(1-7)	Accutest	1627	2hr 50-	Rate	KB
4/24/14	1404140A(1-4)	USA	1627	2hr 50-	UN	KB
4/25/14	Daily Pull	LAB	0122	1hr	NA	-
4/25/14	1404117A(1-6)	WESTON	0840	2hr	ANAL	C
4/25/14	1404150A(1-4)	UCOR	0879	2hr	ANAL	C
4/25/14	1404117A(1-4)	WESTON	0879	2hr	ANAL	C
4/25/14	Sec Cal	Lab	1175	2 1/2 hr	NA	KB
4/25/14	1404124A(1-6)	UCOR	1410	2hr 50-	TH	KB
4/25/14	System Bldg	Lab	1707	16.40 hr	-	KB
4/28/14	Daily Pull	LAB	0824	1hr	NA	-
4/28/14	Daily Pull	LAB	0522	1hr	NA	-
4/28/14	1404148A(1-5)	Navarro	0845	2hr	ANAL	C
4/28/14	1404124A(1-7)	UCOR	0845	2hr	ANAL	C
4/29/14	1404160A(1-4)	NAVARRO	1141	2hr 50-	UN	KB
4/29/14	1404160A(1-4)	NAVARRO	1142	2hr 50-	TH	KB
4/29/14	Daily Pull	LAB	0120	1hr	NA	-
4/29/14	1404107A(1-5)	ETA	0714	2hr	Rate	C
4/29/14	1404148A(1-5)	Navarro	1008	2hr	ANAL	C
4/29/14	1404160A(1-4)	Navarro	1208	2hr	ANAL	C
4/29/14	1404167A(1-7)	UCOR	1008	2hr	ANAL	C
4/29/14	Daily Pull	LAB	0119	1hr	NA	-
4/29/14	1404167A(1-4)	UCOR	0877	2hr	ANAL	C
4/29/14	1404167A(1-4)	UCOR	0877	2hr	ANAL	C
4/30/14	1404150A(1-4)	UCOR	1134	2hr 50-	MP	KB
4/30/14	1404163A(1-4)	UCOR	1135	2hr 50-	MP	KB
4/30/14	1404166A(1-5)	MPA	1429	2hr 50-	Rate	KB
4/30/14	1404171A(1-3)	Access	1430	2hr 50-	Rate	KB



**RA-228 NOTES**

 <b>EBERLINE</b> <small>SERVICES</small> <b>Work Order Analysis Notes</b>	<b>Oak Ridge Laboratory</b> 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com		Internal Work Order	14-04166
			Analysis Code	Ra228
			Run Number	1

#	Date	Dept	User	Notes
1	04/25/14 08:22	PREP	JWOLFE	ALIUQUOTED AND ADDED SPIKES AND TRACERS- PH'D SAMPLES- PRECIPITATED WITH BA AND PB CARRIERS AND AMMONIUM SULFATE- DECANTED SAMPLES AND CENTRIFUGED- SUBMITTED RADIUM PRECIP TO SEPARATIONS

*JWolfe*  
*4/25/14*



**EBERLINE**  
SERVICES

**Work Order Analysis Notes**

**Oak Ridge Laboratory**

601 Scarboro Rd.  
Oak Ridge, TN 37830  
Voice: 865.481.0683  
www.eberlineservices.com

Internal Work Order

14-04166

Analysis Code

Ra228

Run Number

1

#	Date	Dept	User	Notes
1	04/25/14 08:22	PREP	JWOLFE	ALIQUOTED AND ADDED SPIKES AND TRACERS- PH'D SAMPLES- PRECIPITATED WITH BA AND PB CARRIERS AND AMMONIUM SULFATE- DECANTED SAMPLES AND CENTRIFUGED- SUBMITTED RADIUM PRECIP TO SEPARATIONS
2	05/05/14 06:45	CHEM	RMARTZ	ADDED FILTER PAPERS FROM COUNT ROOM TO LABELED C-TUBES, FILLED WITH EDTA SOLUTION AND LET SIT OVERNIGHT. REMOVED FILTER FROM EDTA-ADDED 13 DROPS CONC HNO3, 2MLS YTTRIUM 9MG/ML CARRIER, 2MLS 1.5MG/ML PB CARRIER, 0.3 MLS AMMONIUM SULFITE, 25 DROPS OF 10M SODIUM HYDROXIDE, SHAKE SAMPLES, CENTRIFUGE, POUR SUPERNATE INTO CLEAN C-TUBE AND ADD 0.3MLS AMMONIUM SULFITE AND 2MLS 1.5MG/ML PB CARRIER, SHAKE SAMPLES, CENTRIFUGE, RINSE OTHER C-TUBES WITH DI-H2O THEN SYRINGE FILTER SUPERNATE BACK INTO RINSED C-TUBES. ADDED 18N NAOH TO SAMPLES AND RECORDED T1. HOT BATHED FOR 15 MIN, CENTRIFUGED AND DISCARDED SUPERNANT. ADDED 6N HNO3, DI WATER, AND 10N NAOH. HOT BATHED FOR 15 MIN, CENTRIFUGED AND DISCARDED SUPERNANT. ADDED 1N HNO3, DI WATER, AND AMMONIUM OXALATE. FILTERED ONTO TARRED FILTER PAPERS. LET DRY UNDER HEAT LAMP. REWEIGHED AND SUBMITTED TO COUNT.

*[Handwritten signature]*  
5/5/14



Reagents Used in an Analysis

Internal Work Order

14-04166

Analysis Code

Run

Ra228

1

Reagent ID	Reagent Name	Reagent Concentration	Analyst ID	Date Recorded
014145P	Ammonium Hydroxide	Reagent Grade	JWOLFE	4/25/2014
014485D02	Ammonium Sulfate	200 mg/ml	JWOLFE	4/25/2014
014007D13	Barium Carrier	1 mg/ml	JWOLFE	4/25/2014
013965D09	Lead Carrier	166 mg/ml	JWOLFE	4/25/2014
014866P	Nitric Acid	Reagent Grade	JWOLFE	4/25/2014
013818P	Acetic Acid	Reagent Grade	RMARTZ	5/5/2014
014530S	Ammonium Oxalate	5%	RMARTZ	5/5/2014
014409D01	Ammonium Sulfate	200 mg/ml	RMARTZ	5/5/2014
014373D11	Ammonium Sulfide	2%	RMARTZ	5/5/2014
014594S	Nitric Acid	1N	RMARTZ	5/5/2014
014595S	Nitric Acid	6N	RMARTZ	5/5/2014
014370P	Nitric Acid	Reagent Grade	RMARTZ	5/5/2014
014591S	Sodium Hydroxide	10M	RMARTZ	5/5/2014
014456S	Sodium Hydroxide	18M	RMARTZ	5/5/2014
014466S	Yttrium Carrier	9 mg/ml	RMARTZ	5/5/2014

Date	Sample #	Client	Location	C/T	Analysis	Notes
5/5	14041710AC1	4) Ascum	0910	2h	NA8	✓
5/5	14040568111	ERT	1018	3h	SR07	✓
5/5	14041461AC1	MFA	1072	2h	NA8	✓
5/5	14041661AC25	MFA	1121	2h	NA8	✓
5/5	14050071AC1	Thermochem	1051	2h	L10	✓

**SECTION VIII**  
**ANALYTICAL DATA (RADIUM-226)**

Work Order	<b>14-04166</b>
Analysis Code	<b>Ra226</b>
Run	<b>1</b>
Date Received	<b>4/24/2014</b>
Lab Deadline	<b>5/9/2014</b>
Client	Michael Pisani & Associates, Inc.
Project	07-47 E White Lake
Report Level	4
Activity Units	pCi
Aliquot Units	I
Matrix	WA
Method	EPA 903.0 Modified
Instrument Type	Alpha Spectroscopy
Radiometric Tracer	Ba-133
Radiometric Sol#	Ba-6a
Tracer Act (dpm/g)	944.513
Carrier	
Carrier Conc (mg/ml)	

Internal Fraction	Sample Desc	Client ID	Login CPM	Sample Date	Sample Aliquot
01	LCS	LCS		04/24/14 00:00	1.0000E+00
02	MBL	BLANK		04/24/14 00:00	1.0000E+00
03	DUP	HEBERT	42	04/21/14 12:00	1.0000E+00
04	DO	HEBERT	42	04/21/14 12:00	1.0000E+00
05	TRG	MPA SB1	41	04/21/14 13:45	1.0000E+00

\* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. ^ Indicates estimated SAF value.  
\*\* Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

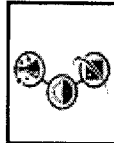
Internal Fraction	Sample Desc	Tracer Aliquot (g)	Tracer Total ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	Grav Carrier Added (ml)	Grav Filter Tare (g)	Grav Filter Final (g)	Grav Filter Net (g)	Grav % Rec	Mean % Rec	SAF 1*	SAF 2*
01	LCS	0.9120	861.4	346.0	89.17		0.0247	0.0319	0.0072		89.17	2.55	1.00
02	MBL	0.9087	858.3	370.0	95.70		0.0246	0.0309	0.0063		95.70	2.27	1.00
03	DUP	0.9067	856.4	329.0	85.29		0.0248	0.0315	0.0067		85.29	2.40	1.00
04	DO	0.9084	858.0	417.0	107.90		0.0249	0.0318	0.0069		107.90	2.47	1.00
05	TRG	0.9043	854.1	329.0	85.51		0.0248	0.0394	0.0146		85.51	3.00 <sup>^</sup>	1.00

\* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. ^ Indicates estimated SAF value.  
 \*\* Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.



Internal Fraction	Sample Desc	Rough Prep Date	Rough Prep By	Prep Date	Prep By	Sep t0 Date/Time	Sep t0 By	Sep t1 Date/Time	Sep t1 By
01	LCS			04/25/14 08:15	JWOLFE	04/30/14 08:53	RMARTZ		
02	MBL			04/25/14 08:15	JWOLFE	04/30/14 08:53	RMARTZ		
03	DUP			04/25/14 08:15	JWOLFE	04/30/14 08:53	RMARTZ		
04	DO			04/25/14 08:15	JWOLFE	04/30/14 08:53	RMARTZ		
05	TRG			04/25/14 08:15	JWOLFE	04/30/14 08:53	RMARTZ		

\* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. ^ Indicates estimated SAF value.  
\*\* Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.



Run

1

Analysis Code

**Ra226**

Eberline Services Work Order

**14-04166**

Client

**Michael Pisani & Associates, Inc.**

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	RA-226	LCS	LCS	pCi/l	1.07E+01	1.39E+00	2.29E-01	1.02E+01	105.38	OK		OK	
02	RA-226	MBL	BLANK	pCi/l	2.43E-01	2.04E-01	2.58E-01					OK	OK
03	RA-226	DUP	HEBERT	pCi/l	3.27E-01	2.57E-01	3.25E-01				OK	OK	
04	RA-226	DO	HEBERT	pCi/l	4.12E-01	2.41E-01	2.24E-01					OK	
05	RA-226	TRG	MPA SB1	pCi/l	4.12E+00	8.95E-01	3.54E-01					OK	



Run

Analysis Code

Eberline Services Work Order

Client

1

Ra226

14-04166

Michael Pisani & Associates, Inc.

Lab Fraction	Nuclide	Sample Desc	Sample Date	Sample Aliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep 10 Date/Time	Sep 11 Date/Time
01	RA-226	LCS	04/24/14 00:00	1.00E+00	89.17	0.00	89.17		4/30/2014 8:53	
02	RA-226	MBL	04/24/14 00:00	1.00E+00	95.70	0.00	95.70		4/30/2014 8:53	
03	RA-226	DUP	04/21/14 12:00	1.00E+00	85.29	0.00	85.29		4/30/2014 8:53	
04	RA-226	DO	04/21/14 12:00	1.00E+00	100.00	0.00	107.90		4/30/2014 8:53	
05	RA-226	TRG	04/21/14 13:45	1.00E+00	85.51	0.00	85.51		4/30/2014 8:53	

Preliminary Data Report & Analytical Calculations  
**Work Order: 14-04166-Ra226-1**

	<b>1</b> Run	<b>Ra226</b> Analysis Code	<b>14-04166</b> Eberline Services Work Order	<b>Michael Pisani &amp; Associates, Inc.</b> Client
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Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	RA-226	LCS	04/30/14 14:29		A_Spec	Alpha_003	170	2.45 E+02	3.00 E-03	17.4
02	RA-226	MBL	04/30/14 14:29		A_Spec	Alpha_004	170	7.13 E+00	1.10 E-02	18.5
03	RA-226	DUP	04/30/14 14:29		A_Spec	Alpha_010	170.02	8.45 E+00	1.50 E-02	19.2
04	RA-226	DO	04/30/14 14:29		A_Spec	Alpha_011	170.02	1.26 E+01	8.00 E-03	20.1
05	RA-226	TRG	04/30/14 14:29		A_Spec	Alpha_012	170	8.53 E+01	1.00 E-02	19.3

Internal Fraction	Sample Desc	Client ID	Sample Date	Sample Aliquot	Tracer Aliquot (g)	Tracer ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	SAF 1*	SAF 2*
01	LCS	LCS	04/24/14 00:00	1.0000	0.9120	861.3959	346.0000	89.17	2.55	1.00
02	MBL	BLANK	04/24/14 00:00	1.0000	0.9087	858.2790	370.0000	95.70	2.27	1.00
03	DUP	HEBERT	04/21/14 12:00	1.0000	0.9067	856.3899	329.0000	85.29	2.40	1.00
04	DO	HEBERT	04/21/14 12:00	1.0000	0.9084	857.9956	417.0000	107.90	2.47	1.00
05	TRG	MPA SB1	04/21/14 13:45	1.0000	0.9043	854.1231	329.0000	85.51	3.00^	1.00

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# Aliquot Worksheet

Work Order	<b>14-04166</b>	Run	<b>1</b>	Analysis Code	<b>Ra226</b>	Rpt Units	<b>liters</b>	Lab Deadline	<b>5/9/2014</b>	Technician	<b>JWOLFE</b>
------------	-----------------	-----	----------	---------------	--------------	-----------	---------------	--------------	-----------------	------------	---------------

Lab Fraction	Michael Pisani & Associates, Inc. Client ID	Sample Type	Muffle Data		Dilution Data			Aliquot Data		MS Aliquot Data		H-3 Solids Only	
			Ratio Post/Pre	No of Dils	Dil Factor	Ratio	Aliquot	Net Equiv	Aliquot	Net Equiv	Water Added (ml)	H3 Dist Aliq	
01	LCS	LCS						1.0000E+00	1.0000E+00				
02	BLANK	MBL						1.0000E+00	1.0000E+00				
03	HEBERT	DUP						1.0000E+00	1.0000E+00				
04	HEBERT	DO						1.0000E+00	1.0000E+00				
05	MPA SB1	TRG						1.0000E+00	1.0000E+00				

Comments	
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Technician: \_\_\_\_\_ Date: **4/25/14**

# Gravimetric Worksheet

Work Order	Run	Analysis Code	Gravimetric Carrier	Carrier Conc (mg/ml)	Technician
<b>14-04166</b>	<b>1</b>	<b>Ra226</b>			<b>RMARTZ</b>

TRetek Fraction	Michael Pisani & Associates, Inc Client ID	Sample Type	Carrier Data			Filter Data			Gravimetric % Recovery
			Carrier Added (ml)	Filter Tare (g)	Filter Final (g)	Filter Net (g)			
01	LCS	LCS		0.0247	0.0319	0.0072			
02	BLANK	MBL		0.0246	0.0309	0.0063			
03	DUP	DUP		0.0248	0.0315	0.0067			
04	HEBERT	DO		0.0249	0.0318	0.0069			
05	MPA SB1	TRG		0.0248	0.0394	0.0146			

Technician: RA Date: 4/30/14





105  
4/30/14

# Apex-Alpha™

Sample Description: SPIKE  
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00000871  
 Batch Identification: 1404166A-RA  
 Sample Identification: 01  
 Sample Geometry: Shelf 2  
 Procedure Description: Ra

Detector Name: Alpha\_003  
 Chamber Serial Number:  
 Detector Serial Number: 3  
 Env. Background: System Bkgd 85801  
 Reagent Blank: <not performed>

Sample Size: 1.000E+000 +/- 0.000E+000 liter  
 Generic Mult. Factor: 2.550E+000 Generic Div. Factor: 1.000E+000  
 Sample Date/Time: 4/30/2014 12:25:21 PM  
 Acquisition Date/Time: 4/30/2014 2:29:11 PM  
 Acquisition Live Time: 170.0 minutes  
 Acquisition Real Time: 170.0 minutes

Chem. Recovery Factor: 0.8917 +/- 0.0000  
 Counting Efficiency: 0.1737 +/- 0.0031 on 1/11/2014 12:12:56 PM  
 Effective Efficiency: 0.1548 +/- 0.0027

Control Certificate Name: Ra226\_Ra-5b  
 Chem. Recov. of Control: RA-226 0.413220 +/- 0.030063  
 Peak Match Tolerance: 0.350 MeV

-----  
 PEAK AREA REPORT  
 -----

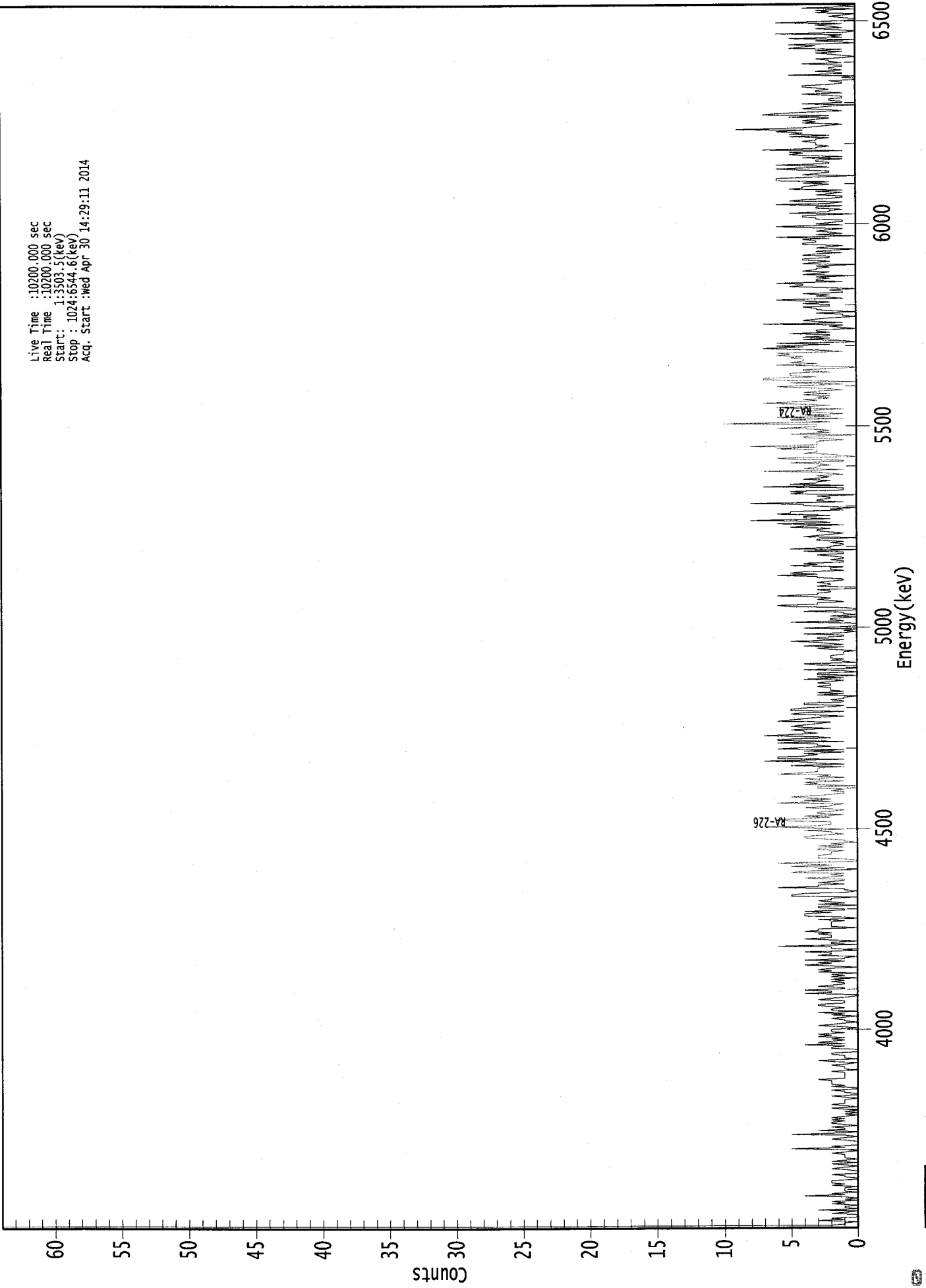
Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
RA-224	5.539	365.47	10.28	1.53	0.00E+000	4.0
RA-226	4.519	245.49	12.52	0.51	0.00E+000	5.2

-----  
 NUCLIDE ANALYSIS RESULTS  
 -----

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/liter)	MDA (pCi/liter)
RA-224	0.972	5685.50*	1.68E+001 +/- 1.82E+000	3.26E-001 +/- 1.12E-002
RA-226	0.912	4785.00*	1.07E+001 +/- 1.39E+000	2.29E-001 +/- 7.90E-003

0000087139.CNF

Live Time :10200.000 sec  
Real Time :10200.000 sec  
Start : 1:3503.5(keV)  
Stop : 1024:6544.6(keV)  
Acq. Start :Wed Apr 30 14:29:11 2014



\*\*\*\*\*  
 \*\*\*\*\* S P E C T R A L D A T A R E P O R T \*\*\*\*\*  
 \*\*\*\*\*

Sample Title: 01

Elapsed Live time: 10200

Elapsed Real Time: 10200

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	10200	10200	2	1	1	0	3	1
9:	2	0	0	0	2	1	0	3
17:	0	1	1	0	2	1	2	0
25:	1	0	1	4	1	2	0	1
33:	1	1	1	0	2	1	2	2
41:	2	0	0	1	1	2	0	0
49:	0	1	2	1	0	1	2	0
57:	2	1	0	1	1	1	1	2
65:	1	0	1	5	1	2	0	0
73:	0	0	1	2	1	0	1	5
81:	1	0	3	1	1	2	0	1
89:	2	2	1	2	1	2	1	0
97:	1	0	1	0	1	2	0	1
105:	2	1	1	1	1	0	1	2
113:	0	0	1	1	2	0	0	2
121:	1	2	2	2	2	3	1	1
129:	1	1	1	1	2	0	1	1
137:	1	2	1	0	2	3	0	1
145:	1	1	2	2	0	0	0	2
153:	2	1	4	1	3	2	1	2
161:	1	3	2	3	1	2	2	2
169:	0	1	3	2	1	0	1	1
177:	2	1	0	2	1	3	0	2
185:	2	1	2	3	3	1	1	1
193:	3	2	1	0	0	4	2	2
201:	4	1	1	3	2	1	1	2
209:	1	2	0	2	1	2	0	3
217:	2	3	2	0	2	4	2	3
225:	1	4	1	1	0	3	2	2
233:	4	0	1	2	2	6	0	2
241:	2	0	2	4	2	2	2	3
249:	2	4	3	3	0	2	2	2
257:	2	2	1	3	0	1	4	4
265:	4	2	4	1	1	3	3	0
273:	3	1	2	3	2	2	0	5
281:	5	4	1	0	1	1	6	3
289:	3	1	3	2	1	1	4	2
297:	1	2	1	5	4	0	3	1
305:	5	2	4	6	0	0	1	3
313:	3	3	2	2	2	1	3	3
321:	1	3	1	2	0	1	1	3
329:	4	4	3	1	2	2	4	1
337:	3	7	3	2	2	2	5	6
345:	4	2	4	1	3	3	2	1
353:	2	4	2	2	1	6	2	4
361:	2	4	5	3	2	1	1	2

369: 1 3 3 0 4 3 4 1

Sample Title: 01

Channel	1	2	3	4	5	6	7	8
377:	3	4	1	3	2	6	4	3
385:	3	3	3	1	5	1	3	4
393:	7	1	6	6	4	3	4	1
401:	4	1	6	4	2	3	3	6
409:	1	6	6	2	3	7	5	3
417:	4	4	5	2	4	5	4	3
425:	2	6	5	4	3	1	3	5
433:	4	1	5	5	4	2	1	4
441:	4	1	1	2	1	1	0	3
449:	1	3	1	2	2	2	3	2
457:	2	3	2	1	4	1	3	0
465:	3	3	0	1	4	0	0	0
473:	3	4	0	1	2	1	2	2
481:	2	1	1	1	0	2	3	1
489:	4	1	2	3	5	1	3	3
497:	1	1	4	1	0	1	0	4
505:	1	0	0	0	5	1	2	2
513:	0	2	0	1	1	4	0	0
521:	1	5	6	3	3	1	2	3
529:	2	3	6	3	3	2	2	3
537:	0	0	3	2	2	3	2	1
545:	1	3	3	6	3	5	4	1
553:	2	2	1	5	3	4	1	1
561:	2	1	1	2	3	1	1	4
569:	0	5	2	2	1	1	2	1
577:	3	3	0	4	3	2	1	2
585:	3	3	2	5	4	1	6	2
593:	3	8	2	4	4	2	6	5
601:	5	1	2	0	2	4	4	8
609:	1	3	3	2	2	3	0	5
617:	4	5	1	1	1	7	1	5
625:	3	3	2	4	3	2	3	1
633:	2	3	7	1	4	3	3	2
641:	3	5	1	1	5	6	0	1
649:	2	4	3	3	3	6	3	8
657:	3	3	3	3	1	2	4	4
665:	0	5	2	3	2	3	6	3
673:	3	3	10	2	4	5	1	6
681:	2	4	1	3	4	3	1	6
689:	4	2	4	7	5	3	4	2
697:	3	2	4	2	4	3	1	2
705:	4	6	3	1	5	0	5	7
713:	7	3	5	5	5	2	4	4
721:	1	0	3	6	3	5	4	4
729:	4	5	4	6	5	6	1	2
737:	5	7	4	6	2	6	0	1
745:	4	2	4	2	2	5	2	3
753:	3	0	1	2	1	7	1	3
761:	4	3	2	0	1	1	3	0
769:	2	3	3	4	2	2	4	2
777:	4	6	1	2	3	2	4	1
785:	1	2	0	2	5	4	4	6
793:	1	3	3	2	3	0	4	3

801: 2 4 3 3 2 3 0 4

Sample Title: 01

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	3	2	4	4	2	2	4	3
817:	1	3	2	0	3	2	1	4
825:	4	3	3	4	2	6	0	3
833:	1	2	3	2	1	4	6	1
841:	3	2	1	1	3	3	4	4
849:	0	5	2	2	1	3	3	1
857:	6	2	1	5	4	2	1	1
865:	3	2	1	3	1	5	4	4
873:	3	2	4	2	6	6	6	3
881:	0	4	3	2	2	5	6	2
889:	3	6	2	2	3	3	1	4
897:	1	4	5	4	5	1	7	3
905:	3	2	3	3	3	4	3	3
913:	2	5	2	5	4	6	4	9
921:	4	3	2	1	4	3	4	3
929:	2	5	2	7	6	4	1	2
937:	4	3	2	0	4	1	1	2
945:	2	1	1	2	4	1	3	3
953:	2	3	4	4	2	1	1	2
961:	0	0	1	0	5	1	1	3
969:	1	2	2	1	1	4	1	2
977:	2	3	1	0	1	2	3	1
985:	3	1	5	4	3	5	0	1
993:	3	0	5	1	2	1	6	1
1001:	0	1	3	1	2	3	1	6
1009:	2	0	0	1	2	1	0	3
1017:	2	3	0	4	0	1	2	2

105  
4/30/14

Sample Description: BLANK  
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00000871  
 Batch Identification: 1404166A-RA  
 Sample Identification: 02  
 Sample Geometry: Shelf 2  
 Procedure Description: Ra

Detector Name: Alpha\_004  
 Chamber Serial Number:  
 Detector Serial Number: 4  
 Env. Background: System Bkgd 85802  
 Reagent Blank: <not performed>

Sample Size: 1.000E+000 +/- 0.000E+000 liter  
 Generic Mult. Factor: 2.270E+000 Generic Div. Factor: 1.000E+000  
 Sample Date/Time: 4/30/2014 12:25:21 PM  
 Acquisition Date/Time: 4/30/2014 2:29:12 PM  
 Acquisition Live Time: 170.0 minutes  
 Acquisition Real Time: 170.0 minutes

Chem. Recovery Factor: 0.9570 +/- 0.0000  
 Counting Efficiency: 0.1846 +/- 0.0032 on 1/11/2014 12:12:56 PM  
 Effective Efficiency: 0.1766 +/- 0.0031

Peak Match Tolerance: 0.350 MeV

-----  
 PEAK AREA REPORT  
 -----

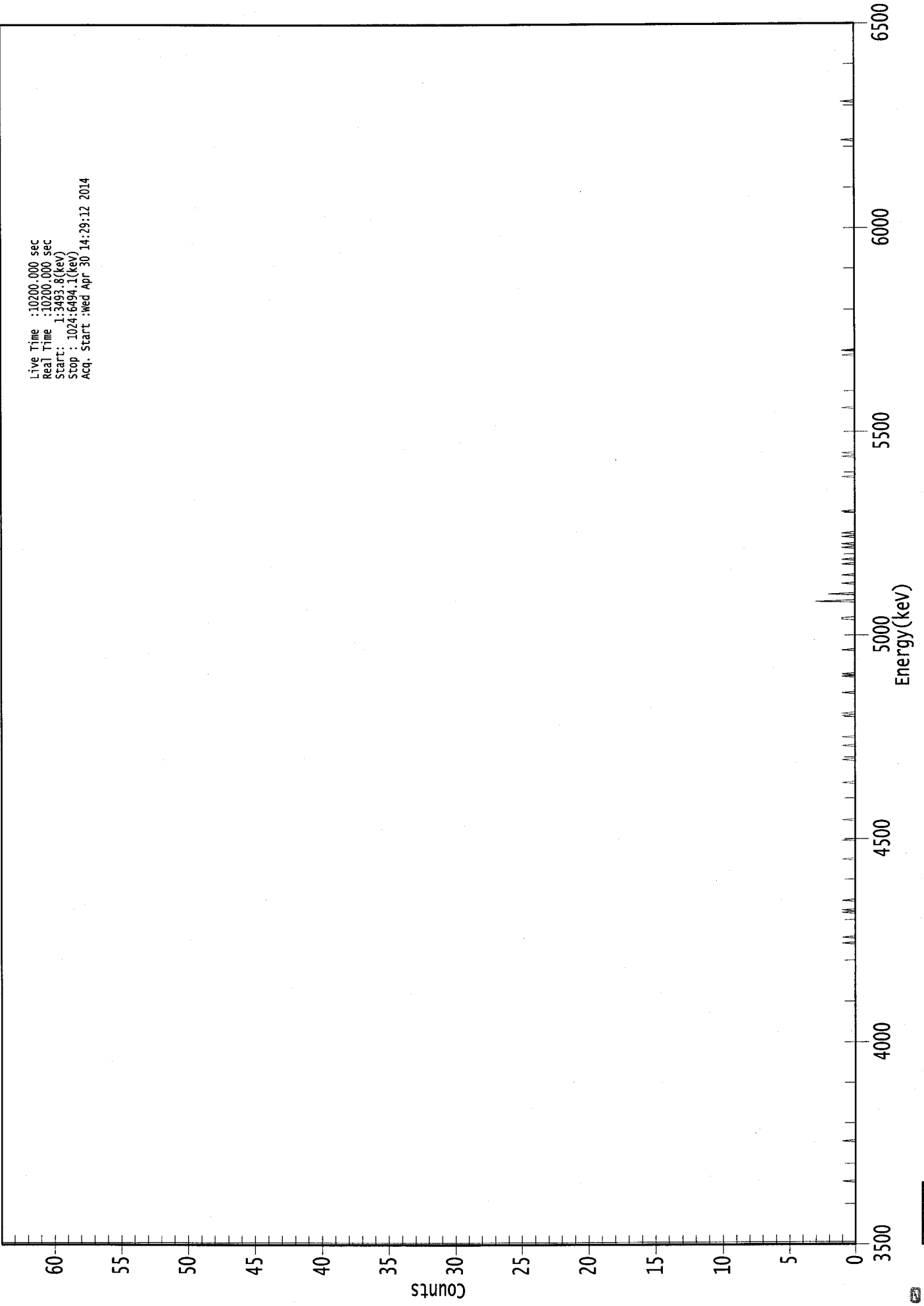
Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
RA-224	5.498	2.11	217.67	2.89	0.00E+000	2.9
RA-226	4.651	7.13	83.91	1.87	0.00E+000	2.9

-----  
 NUCLIDE ANALYSIS RESULTS  
 -----

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/liter )	MDA (pCi/liter )
RA-224	0.955	5685.50*	7.56E-002 +/- 1.64E-001	3.14E-001 +/- 1.07E-002
RA-226	0.977	4785.00*	2.43E-001 +/- 2.04E-001	2.58E-001 +/- 8.82E-003

0000087126.CNF

Live Time : 10200.000 sec  
Real Time : 10200.000 sec  
Start : 1:3493.8(kev)  
Stop : 1024:6494.1(kev)  
Acq. Start : Wed Apr 30 14:29:12 2014



ROI Type: 1

\*\*\*\*\*  
 \*\*\*\*\* S P E C T R A L   D A T A   R E P O R T   \*\*\*\*\*  
 \*\*\*\*\*

Sample Title: 02

Elapsed Live time: 10200

Elapsed Real Time: 10200

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	10200	10200	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	1	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	1
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0
177:	0	0	0	0	0	0	0	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	1	0	0
257:	0	0	1	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	1
281:	0	1	0	0	0	0	0	0
289:	0	1	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	0	1	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	1	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	1	0	0
361:	0	0	0	0	0	0	0	0



369: 0 0 0 0 0 0 0 0 0

Sample Title: 02

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	0	0	0	0	0	0	0	0
385:	0	0	0	0	1	0	0	0
393:	0	0	0	0	0	0	0	0
401:	0	0	0	0	0	0	0	1
409:	0	0	0	0	0	0	0	0
417:	0	0	0	1	0	0	0	0
425:	0	0	1	0	0	0	0	0
433:	0	0	0	0	0	0	0	0
441:	0	0	0	0	1	0	1	0
449:	0	0	0	0	0	0	0	0
457:	0	0	0	0	0	0	0	1
465:	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	1	0	1
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	1	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	1	1	0
529:	0	0	0	0	0	0	0	0
537:	0	0	0	0	3	0	0	0
545:	0	0	2	0	0	0	0	0
553:	0	0	0	1	0	0	0	0
561:	0	0	1	0	0	0	0	0
569:	0	0	0	1	0	0	0	1
577:	0	0	0	0	0	0	0	0
585:	0	1	0	0	1	0	0	0
593:	0	0	1	0	0	1	0	0
601:	0	0	0	0	0	0	0	0
609:	0	0	0	0	0	0	0	1
617:	0	0	0	0	0	0	0	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	0
641:	0	0	0	0	1	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	1	0	0
665:	1	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	1	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	1	0	0	0	1	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0

Sample Title: 02

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	1	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	1	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

108  
4/30/14

# Apex-Alpha™

Sample Description: HEBERT DUP  
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00000871  
 Batch Identification: 1404166A-RA  
 Sample Identification: 03  
 Sample Geometry: Shelf 2  
 Procedure Description: Ra

Detector Name: Alpha\_010  
 Chamber Serial Number:  
 Detector Serial Number: 10  
 Env. Background: System Bkgd 85803  
 Reagent Blank: <not performed>

Sample Size: 1.000E+000 +/- 0.000E+000 liter  
 Generic Mult. Factor: 2.400E+000 Generic Div. Factor: 1.000E+000  
 Sample Date/Time: 4/21/2014 12:25:21 PM  
 Acquisition Date/Time: 4/30/2014 2:29:08 PM  
 Acquisition Live Time: 170.0 minutes  
 Acquisition Real Time: 170.0 minutes

Chem. Recovery Factor: 0.8529 +/- 0.0000  
 Counting Efficiency: 0.1924 +/- 0.0033 on 1/12/2014 12:54:47 PM  
 Effective Efficiency: 0.1641 +/- 0.0028

Peak Match Tolerance: 0.350 MeV

-----  
 PEAK AREA REPORT  
 -----

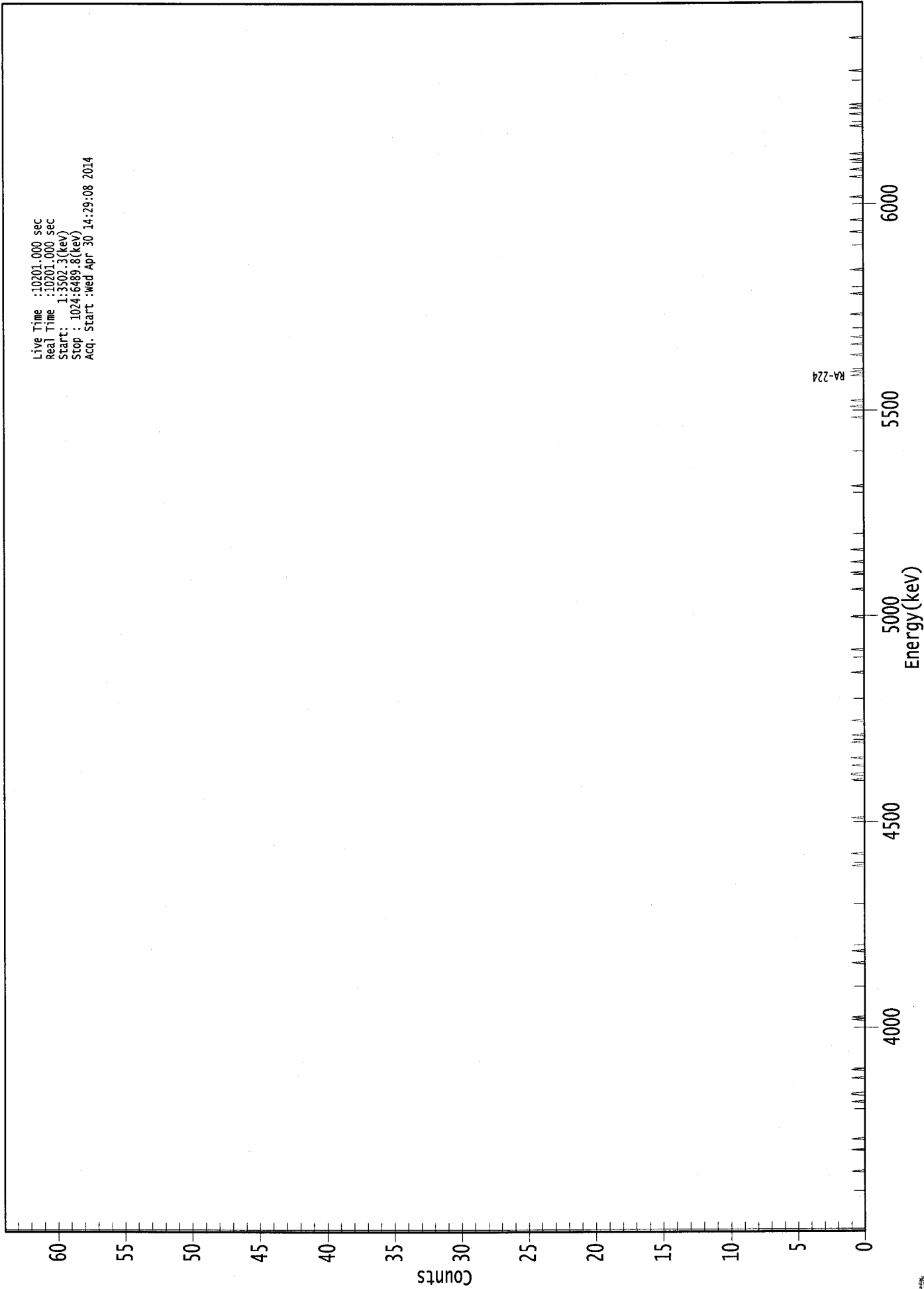
Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
RA-224	5.583	3.92	147.44	4.08	0.00E+000	2.9
RA-226	4.601	8.45	78.43	2.55	0.00E+000	2.9

-----  
 NUCLIDE ANALYSIS RESULTS  
 -----

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/liter )	MDA (pCi/liter )
RA-224	0.986	5685.50*	1.60E-001 +/- 2.36E-001	4.04E-001 +/- 1.37E-002
RA-226	0.957	4785.00*	3.27E-001 +/- 2.57E-001	3.25E-001 +/- 1.10E-002

0000087124.CNF

Live Time :10201.000 sec  
Real Time :10201.000 sec  
Start : 1:3302.3(kev)  
Stop : 1024:6489.8(kev)  
Acq. Start :Wed Apr 30 14:29:08 2014



0000

ROI Type: 1

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 \*\*\*\*\* S P E C T R A L D A T A R E P O R T \*\*\*\*\*  
 \*\*\*\*\*

Sample Title: 03

Elapsed Live time: 10201

Elapsed Real Time: 10201

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	10201	10201	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	1	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	1	0	0	0
73:	0	0	0	0	0	1	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	1	0	0	0
113:	0	0	1	1	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	1	0	0	0	0	0	0	1
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0
177:	0	1	0	1	0	0	0	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	1	0	0	0	0	0	0	0
233:	0	0	1	0	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	1	0	0	0	0	0	0
313:	0	0	0	1	0	0	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	1	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	0

369: 0 0 0 0 0 0 0 0 0

Sample Title: 03

Channel	1	2	3	4	5	6	7	8
377:	0	1	0	0	0	1	1	0
385:	0	0	0	0	0	1	0	0
393:	0	0	0	1	0	0	0	0
401:	0	0	0	0	0	0	0	0
409:	1	0	0	0	0	0	1	0
417:	0	0	0	0	0	0	0	0
425:	0	0	1	0	0	0	0	0
433:	0	0	0	0	0	0	0	0
441:	0	0	0	0	0	0	0	0
449:	0	0	0	0	0	0	0	0
457:	0	0	0	0	0	0	0	0
465:	0	0	1	0	0	0	0	0
473:	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	1	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	1	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0
529:	0	0	0	0	0	0	0	1
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	1	0	0
553:	0	0	0	0	0	0	1	0
561:	0	0	0	0	0	0	0	0
569:	1	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	0	0	0	0	0
601:	0	0	0	0	0	0	0	0
609:	0	0	0	0	0	0	0	0
617:	0	0	0	0	0	1	0	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	1	0
681:	0	0	0	0	0	0	0	1
689:	0	0	0	0	1	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	1	0	0	1	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	1	0	0	0	0	0
737:	0	0	0	1	0	0	0	0
745:	0	1	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	1	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	1	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

801: 0 1 0 0 0 0 0 0

Sample Title: 03

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	1	0	0	0	0	0	0	0
841:	0	0	1	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	1	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	1	0
881:	0	0	0	0	1	0	0	0
889:	0	0	0	0	1	0	0	0
897:	0	1	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	1	0	0	0	0	0	0	0
929:	0	0	1	0	0	0	0	1
937:	0	0	1	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	1	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	1	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0



WBS  
4/30/14

Sample Description: HEBERT  
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00000871  
 Batch Identification: 1404166A-RA  
 Sample Identification: 04  
 Sample Geometry: Shelf 2  
 Procedure Description: Ra

Detector Name: Alpha\_011  
 Chamber Serial Number:  
 Detector Serial Number: 11  
 Env. Background: System Bkgd 85804  
 Reagent Blank: <not performed>

Sample Size: 1.000E+000 +/- 0.000E+000 liter  
 Generic Mult. Factor: 2.470E+000 Generic Div. Factor: 1.000E+000  
 Sample Date/Time: 4/21/2014 12:25:21 PM  
 Acquisition Date/Time: 4/30/2014 2:29:09 PM  
 Acquisition Live Time: 170.0 minutes  
 Acquisition Real Time: 170.0 minutes

Chem. Recovery Factor: 1.0000 +/- 0.0000  
 Counting Efficiency: 0.2007 +/- 0.0035 on 1/11/2014 12:12:57 PM  
 Effective Efficiency: 0.2007 +/- 0.0035

Peak Match Tolerance: 0.350 MeV

-----  
 PEAK AREA REPORT  
 -----

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
RA-224	5.540	7.30	81.83	1.70	0.00E+000	3.9
RA-226	4.617	12.64	58.50	1.36	0.00E+000	2.6

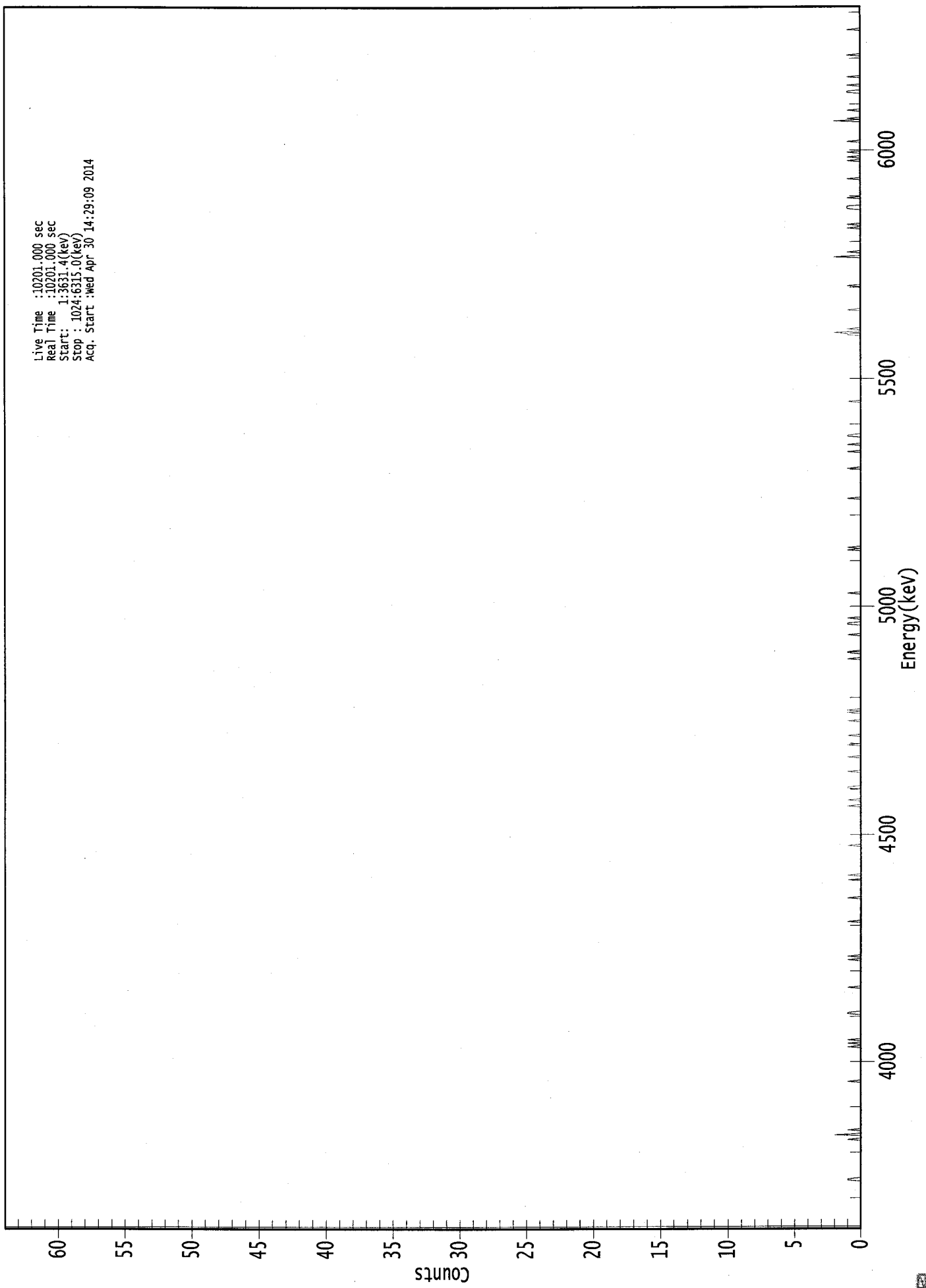
-----  
 NUCLIDE ANALYSIS RESULTS  
 -----

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/liter )	MDA (pCi/liter )
RA-224	0.973	5685.50*	2.51E-001 +/- 2.06E-001	2.53E-001 +/- 8.56E-003
RA-226	0.964	4785.00*	4.12E-001 +/- 2.41E-001	2.24E-001 +/- 7.58E-003



0000087127.CNF

Live Time :10201.000 sec  
Real Time :10201.000 sec  
Start : 1:3631.4(kev)  
Stop : 1024:6315.0(kev)  
Acq. Start :Wed Apr 30 14:29:09 2014



0070

ROI Type: 1

\*\*\*\*\*  
 \*\*\*\*\* S P E C T R A L   D A T A   R E P O R T   \*\*\*\*\*  
 \*\*\*\*\*

Sample Title: 04

Elapsed Live time: 10201

Elapsed Real Time: 10201

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	10201	10201	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	1	1	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	1	0	0	0	2
81:	0	0	0	1	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	1	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	1	0	0	1	0	0	1
161:	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0
177:	0	0	0	0	0	1	1	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	1	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	1	0	0	1	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	1	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	1	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	1	0	0
297:	0	1	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	1	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	1	0	0	0	0
361:	1	0	0	0	0	0	0	0

369: 0 0 1 1 0 0 0 0

Sample Title: 04

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	0	0	0	0	0	0	0	0
385:	1	0	0	0	0	0	0	0
393:	0	0	0	0	1	0	0	0
401:	0	0	0	0	0	0	1	0
409:	0	0	0	0	0	0	1	0
417:	0	0	0	0	0	0	0	0
425:	0	0	1	0	0	0	0	0
433:	0	1	0	1	0	0	0	0
441:	0	0	0	0	0	0	0	0
449:	0	0	0	0	0	0	0	0
457:	0	0	0	0	0	0	0	0
465:	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	0	1	0
481:	0	0	0	1	1	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	1	0	0	0	0	0
505:	0	0	0	1	1	0	0	0
513:	1	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0
529:	0	0	0	0	0	1	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	1	0	1	0	0	0	0
577:	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	0	0	0	0	0
601:	0	0	0	0	0	0	0	0
609:	0	0	0	0	1	0	0	0
617:	0	0	0	0	0	0	0	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	1	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	1	0	0	0	0
657:	0	1	0	0	0	0	0	0
665:	1	1	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	1	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	1	1	2
753:	0	0	1	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	1	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	1	0
793:	0	0	0	0	0	0	0	0

801: 0 0 0 0 0 0 0 0

Sample Title: 04

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	2	0
817:	0	0	1	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	1	0
841:	0	1	0	0	0	0	0	0
849:	0	0	0	0	0	0	1	1
857:	1	0	0	0	0	0	0	1
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	1
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	1	0
897:	0	1	0	0	0	1	0	0
905:	0	0	0	0	0	0	1	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	2
929:	0	1	0	0	0	0	0	0
937:	1	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	1
953:	1	0	0	0	0	1	0	0
961:	0	0	0	0	1	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	1	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	1	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

K13  
4/30/14

# Apex-Alpha™

Sample Description: MPA SB1  
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00000871  
 Batch Identification: 1404166A-RA  
 Sample Identification: 05  
 Sample Geometry: Shelf 2  
 Procedure Description: Ra

Detector Name: Alpha\_012  
 Chamber Serial Number:  
 Detector Serial Number: 12  
 Env. Background: System Bkgd 85805  
 Reagent Blank: <not performed>

Sample Size: 1.000E+000 +/- 0.000E+000 liter  
 Generic Mult. Factor: 3.000E+000 Generic Div. Factor: 1.000E+000  
 Sample Date/Time: 4/21/2014 12:25:21 PM  
 Acquisition Date/Time: 4/30/2014 2:29:10 PM  
 Acquisition Live Time: 170.0 minutes  
 Acquisition Real Time: 170.0 minutes

Chem. Recovery Factor: 0.8551 +/- 0.0000  
 Counting Efficiency: 0.1926 +/- 0.0034 on 1/11/2014 12:12:57 PM  
 Effective Efficiency: 0.1647 +/- 0.0029

Peak Match Tolerance: 0.350 MeV

-----  
 PEAK AREA REPORT  
 -----

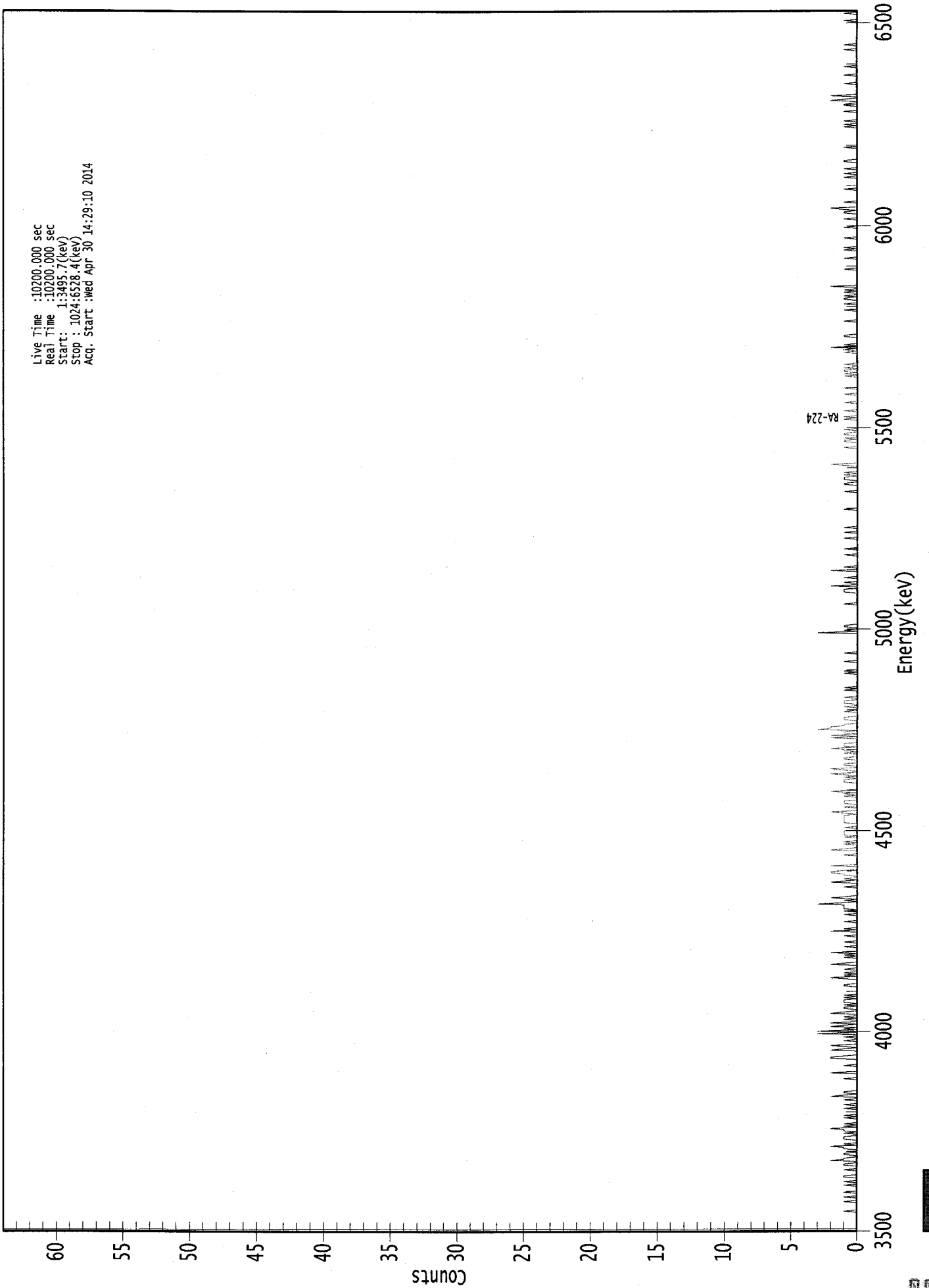
Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
RA-224	5.524	25.98	39.33	1.02	0.00E+000	4.4
RA-226	4.609	85.30	21.47	1.70	0.00E+000	8.9

-----  
 NUCLIDE ANALYSIS RESULTS  
 -----

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/liter )	MDA (pCi/liter )
RA-224	0.967	5685.50*	1.32E+000 +/- 5.22E-001	3.21E-001 +/- 1.09E-002
RA-226	0.961	4785.00*	4.12E+000 +/- 8.95E-001	3.54E-001 +/- 1.21E-002

0000087128.CNF

Live Time :10200.000 sec  
Real Time :10200.000 sec  
Start : 1:3495.7(kev)  
Stop : 1024:5528.4(kev)  
Acq. Start :Wed Apr 30 14:29:10 2014



\*\*\*\*\*  
 \*\*\*\*\* S P E C T R A L D A T A R E P O R T \*\*\*\*\*  
 \*\*\*\*\*

Sample Title: 05

Elapsed Live time: 10200

Elapsed Real Time: 10200

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	10200	10200	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	1	0	0	0	0	0	0
25:	0	1	0	0	0	1	0	0
33:	0	1	0	0	0	0	0	1
41:	0	0	1	0	0	0	1	1
49:	0	0	0	0	1	0	0	0
57:	1	1	0	0	2	1	1	0
65:	0	1	1	0	0	0	1	1
73:	2	0	1	0	0	0	1	1
81:	1	0	0	1	0	1	1	2
89:	0	1	0	1	0	0	0	0
97:	1	0	1	0	0	0	0	0
105:	1	0	0	1	0	0	0	1
113:	0	0	2	1	0	1	1	0
121:	0	0	0	0	0	0	0	0
129:	0	1	0	0	0	0	2	0
137:	0	0	0	0	1	0	0	0
145:	0	0	2	2	1	0	0	0
153:	0	2	1	0	1	2	0	0
161:	0	1	0	0	1	0	0	3
169:	0	3	0	1	0	2	1	0
177:	2	0	0	1	0	1	0	0
185:	2	1	0	0	1	1	0	1
193:	0	1	1	1	0	1	0	1
201:	0	0	0	0	0	0	0	1
209:	1	0	0	0	0	1	2	0
217:	1	0	1	0	0	1	0	0
225:	0	2	1	0	0	0	0	1
233:	0	1	0	2	0	0	0	0
241:	1	0	0	0	1	0	0	0
249:	0	1	0	0	0	2	0	1
257:	0	0	0	0	0	1	0	0
265:	0	0	0	1	0	0	1	0
273:	1	1	1	1	3	1	0	1
281:	0	2	1	0	0	0	0	0
289:	0	0	1	0	0	0	2	1
297:	0	1	0	0	1	1	2	2
305:	1	0	0	0	2	0	0	0
313:	0	0	0	0	0	1	0	0
321:	0	2	1	0	0	0	1	0
329:	1	0	0	0	1	0	1	1
337:	1	1	0	0	1	0	0	0
345:	1	1	1	1	1	1	1	0
353:	1	2	0	0	0	1	0	0
361:	1	1	1	0	0	0	1	0

369: 1 0 2 1 0 0 0 0

Sample Title: 05

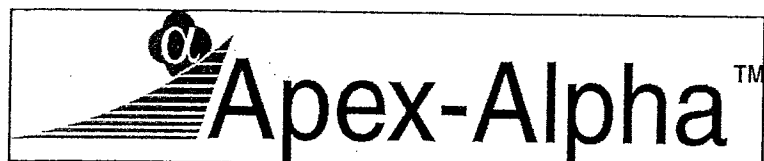
Channel	1	2	3	4	5	6	7	8
377:	0	0	1	1	1	0	1	0
385:	1	2	0	0	1	2	0	0
393:	1	1	0	0	0	1	1	0
401:	0	0	1	0	1	1	2	0
409:	1	1	1	0	0	0	0	2
417:	0	2	0	1	1	0	3	2
425:	2	1	1	0	0	0	1	1
433:	1	0	0	0	0	1	0	0
441:	0	1	0	0	1	1	1	0
449:	0	1	0	0	0	0	0	1
457:	0	1	0	0	0	0	0	0
465:	0	0	0	0	0	1	0	1
473:	0	0	0	0	0	0	0	1
481:	0	0	0	0	0	0	1	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	3
505:	0	1	0	0	1	1	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	1
529:	0	0	0	0	0	0	0	0
537:	0	1	1	1	0	0	2	0
545:	0	1	0	0	0	1	0	0
553:	0	0	0	2	0	0	1	0
561:	0	0	0	0	0	0	0	0
569:	1	0	0	0	0	1	0	0
577:	0	0	0	0	0	0	1	0
585:	0	0	0	1	0	0	0	1
593:	0	0	0	0	0	0	0	0
601:	0	0	0	0	0	0	1	0
609:	0	0	0	0	0	0	0	0
617:	0	0	0	0	0	1	0	0
625:	0	0	0	1	1	0	0	1
633:	1	1	0	1	0	1	0	0
641:	0	0	0	1	2	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	1	0	0	0	0	1
665:	1	0	1	0	0	1	1	0
673:	0	1	0	0	0	0	0	0
681:	0	0	1	0	1	0	0	0
689:	0	1	0	0	0	0	0	0
697:	1	0	0	0	0	0	0	1
705:	0	0	0	0	1	0	0	0
713:	0	0	0	0	0	0	1	0
721:	1	0	1	1	0	1	0	0
729:	1	0	0	0	0	0	0	0
737:	0	0	1	0	1	0	2	0
745:	1	0	0	0	0	0	0	1
753:	1	0	0	0	0	0	0	0
761:	0	0	0	0	1	0	0	0
769:	0	0	0	0	0	1	0	0
777:	0	0	1	0	0	0	1	1
785:	0	1	0	0	1	0	1	0
793:	0	2	0	0	0	0	0	0



801: 0 0 0 0 0 0 0 0 1

Sample Title: 05

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	1	0	0	0	0	0	0	1
825:	0	1	0	0	0	0	0	0
833:	0	1	0	0	0	0	0	0
841:	0	0	1	0	0	0	0	0
849:	0	1	0	0	0	0	1	1
857:	0	1	2	0	0	0	0	1
865:	0	0	0	0	0	0	0	0
873:	0	0	1	0	0	0	0	0
881:	0	0	0	0	1	0	0	1
889:	0	0	0	1	0	0	0	0
897:	0	1	1	0	0	0	0	0
905:	0	0	0	0	0	1	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	1	0
929:	1	0	0	1	0	0	0	0
937:	0	0	0	1	0	0	0	0
945:	1	1	0	0	2	1	0	0
953:	2	0	0	0	0	0	0	0
961:	0	0	1	0	0	0	0	0
969:	0	1	0	0	0	0	0	0
977:	1	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	1	0
993:	0	0	1	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	1	0
1017:	0	0	0	0	1	0	0	0



## QA SUMMARY REPORT

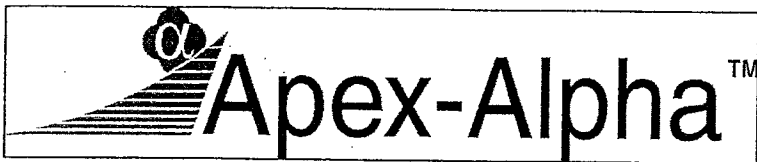
### Review Of QA Results - Pulser Check

Date : 4/30/2014  
Time : 5:34:28 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha 001	21f	ALL	Not Done	
Alpha 002	21f	ALL	Not Done	
Alpha 003	21f	ALL	Passed	4/30/2014 5:19:55 AM
Alpha 004	21f	ALL	Passed	4/30/2014 5:19:56 AM
Alpha 005	21f	ALL	Not Done	
Alpha 006	21f	ALL	Not Done	
Alpha 007	21f	ALL	Not Done	
Alpha 008	21f	ALL	Not Done	
Alpha 009	21f	ALL	Not Done	
Alpha 010	21f	ALL	Passed	4/30/2014 5:19:57 AM
Alpha 011	21f	ALL	Passed	4/30/2014 5:19:57 AM
Alpha 012	21f	ALL	Passed	4/30/2014 5:19:58 AM
Alpha 013	21f	ALL	Passed	4/30/2014 5:19:59 AM
Alpha 014	21f	ALL	Passed	4/30/2014 5:20:00 AM
Alpha 015	21f	Peak FWHM	Action	4/30/2014 5:20:01 AM
Alpha 016	21f	ALL	Not Done	
Alpha 017	AIM730	ALL	Not Done	
Alpha 018	AIM730	ALL	Not Done	
Alpha 019	AIM730	ALL	Not Done	
Alpha 020	AIM730	ALL	Not Done	
Alpha 021	AIM730	ALL	Not Done	
Alpha 022	AIM730	ALL	Not Done	
Alpha 023	AIM730	ALL	Not Done	
Alpha 024	AIM730	ALL	Passed	4/30/2014 5:20:01 AM
Alpha 025	AIM730	ALL	Passed	4/30/2014 5:20:02 AM
Alpha 026	AIM730	ALL	Not Done	
Alpha 027	AIM730	ALL	Not Done	
Alpha 028	AIM730	ALL	Not Done	
Alpha 029	AIM730	ALL	Passed	4/30/2014 5:20:03 AM
Alpha 030	AIM730	ALL	Not Done	
Alpha 031	AIM730	ALL	Passed	4/30/2014 5:20:04 AM
Alpha 032	AIM730	ALL	Not Done	
Alpha 033	Alpha Analyst100DC	ALL	Passed	4/30/2014 5:20:05 AM
Alpha 034	Alpha Analyst100DC	ALL	Passed	4/30/2014 5:20:07 AM
Alpha 035	Alpha Analyst100DC	ALL	Passed	4/25/2014 5:22:57 AM
Alpha 036	Alpha Analyst100DC	ALL	Passed	4/30/2014 5:20:09 AM
Alpha 037	Alpha Analyst100DC	ALL	Passed	4/30/2014 5:20:11 AM
Alpha 038	Alpha Analyst100DC	ALL	Passed	4/30/2014 5:20:13 AM
Alpha 039	Alpha Analyst100DC	ALL	Passed	4/30/2014 5:20:15 AM
Alpha 040	Alpha Analyst100DC	ALL	Passed	4/30/2014 5:20:17 AM
Alpha 041	Alpha Analyst100DC	ALL	Passed	4/30/2014 5:20:20 AM
Alpha 042	Alpha Analyst100DC	ALL	Passed	4/30/2014 5:20:24 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha 043	Alpha Analyst100DC	Peak FWHM	Action	4/30/2014 5:20:26 AM
Alpha 044	Alpha Analyst100DC	Peak Energy	Action	4/25/2014 5:23:19 AM
Alpha 045	Alpha Analyst100DC	ALL	Passed	4/30/2014 5:20:29 AM
Alpha 046	Alpha Analyst100DC	ALL	Passed	4/30/2014 5:20:32 AM
Alpha 047	Alpha Analyst100DC	ALL	Passed	4/30/2014 5:20:35 AM
Alpha 048	Alpha Analyst100DC	ALL	Passed	4/30/2014 5:20:37 AM

APPROVED BY:     C    APPROVAL DATE:     4/20



## QA SUMMARY REPORT

### Review Of QA Results - Pulser Check

Date : 4/30/2014  
Time : 5:34:28 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha 001	21f	ALL	Not Done	
Alpha 002	21f	ALL	Not Done	
Alpha 003	21f	ALL	Passed	4/30/2014 5:19:55 AM
Alpha 004	21f	ALL	Passed	4/30/2014 5:19:56 AM
Alpha 005	21f	ALL	Not Done	
Alpha 006	21f	ALL	Not Done	
Alpha 007	21f	ALL	Not Done	
Alpha 008	21f	ALL	Not Done	
Alpha 009	21f	ALL	Not Done	
Alpha 010	21f	ALL	Passed	4/30/2014 5:19:57 AM
Alpha 011	21f	ALL	Passed	4/30/2014 5:19:57 AM
Alpha 012	21f	ALL	Passed	4/30/2014 5:19:58 AM
Alpha 013	21f	ALL	Passed	4/30/2014 5:19:59 AM
Alpha 014	21f	ALL	Passed	4/30/2014 5:20:00 AM
Alpha 015	21f	Peak FWHM	Action	4/30/2014 5:20:01 AM
Alpha 016	21f	ALL	Not Done	
Alpha 017	AIM730	ALL	Not Done	
Alpha 018	AIM730	ALL	Not Done	
Alpha 019	AIM730	ALL	Not Done	
Alpha 020	AIM730	ALL	Not Done	
Alpha 021	AIM730	ALL	Not Done	
Alpha 022	AIM730	ALL	Not Done	
Alpha 023	AIM730	ALL	Not Done	
Alpha 024	AIM730	ALL	Passed	4/30/2014 5:20:01 AM
Alpha 025	AIM730	ALL	Passed	4/30/2014 5:20:02 AM
Alpha 026	AIM730	ALL	Not Done	
Alpha 027	AIM730	ALL	Not Done	
Alpha 028	AIM730	ALL	Not Done	
Alpha 029	AIM730	ALL	Passed	4/30/2014 5:20:03 AM
Alpha 030	AIM730	ALL	Not Done	
Alpha 031	AIM730	ALL	Passed	4/30/2014 5:20:04 AM
Alpha 032	AIM730	ALL	Not Done	
Alpha 033	Alpha Analyst100DC	ALL	Passed	4/30/2014 5:20:05 AM
Alpha 034	Alpha Analyst100DC	ALL	Passed	4/30/2014 5:20:07 AM
Alpha 035	Alpha Analyst100DC	ALL	Passed	4/25/2014 5:22:57 AM
Alpha 036	Alpha Analyst100DC	ALL	Passed	4/30/2014 5:20:09 AM
Alpha 037	Alpha Analyst100DC	ALL	Passed	4/30/2014 5:20:11 AM
Alpha 038	Alpha Analyst100DC	ALL	Passed	4/30/2014 5:20:13 AM
Alpha 039	Alpha Analyst100DC	ALL	Passed	4/30/2014 5:20:15 AM
Alpha 040	Alpha Analyst100DC	ALL	Passed	4/30/2014 5:20:17 AM
Alpha 041	Alpha Analyst100DC	ALL	Passed	4/30/2014 5:20:20 AM
Alpha 042	Alpha Analyst100DC	ALL	Passed	4/30/2014 5:20:24 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha 043	Alpha Analyst100DC	Peak FWHM	Action	4/30/2014 5:20:26 AM
Alpha 044	Alpha Analyst100DC	Peak Energy	Action	4/25/2014 5:23:19 AM
Alpha 045	Alpha Analyst100DC	ALL	Passed	4/30/2014 5:20:29 AM
Alpha 046	Alpha Analyst100DC	ALL	Passed	4/30/2014 5:20:32 AM
Alpha 047	Alpha Analyst100DC	ALL	Passed	4/30/2014 5:20:35 AM
Alpha 048	Alpha Analyst100DC	ALL	Passed	4/30/2014 5:20:37 AM

APPROVED BY:     C    APPROVAL DATE:     4/20

\*\*\*\*\*  
\*\*\*\*\* LIBRARY LISTING REPORT \*\*\*\*\*  
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Nuclide Library Title: Radium

Nuclide Library Description: Ra-226, Po-218, Rn-222

Nuclide Name	Half-Life (Seconds)	Energy (keV )	Energy Uncert. (keV )	Yield (%)	Yield Uncert. (Abs.+)
PO-218	5.049E+010	6003.000*	0.000	99.9800	0.0000
RN-222	5.049E+010	5490.000*	0.000	99.9200	0.0000
RA-226	5.049E+010	4785.000*	0.000	100.0000	0.0000

\* = key line

TOTALS:           3   Nuclides           3   Energy Lines

**SECTION IX**  
**ANALYTICAL DATA (RADIUM-228)**







Internal Fraction	Sample Desc	Rough Prep Date	Rough Prep By	Prep Date	Prep By	Sep t0 Date/Time	Sep t0 By	Sep t1 Date/Time	Sep t1 By
01	LCS			04/25/14 08:16	JWOLFE	04/30/14 08:53	RMARTZ	05/05/14 06:40	RMARTZ
02	MBL			04/25/14 08:16	JWOLFE	04/30/14 08:53	RMARTZ	05/05/14 06:40	RMARTZ
03	DUP			04/25/14 08:16	JWOLFE	04/30/14 08:53	RMARTZ	05/05/14 06:40	RMARTZ
04	DO			04/25/14 08:16	JWOLFE	04/30/14 08:53	RMARTZ	05/05/14 06:40	RMARTZ
05	TRG			04/25/14 08:16	JWOLFE	04/30/14 08:53	RMARTZ	05/05/14 06:40	RMARTZ

\* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. \*\* Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

Preliminary Data Report & Analytical Calculations  
**Work Order: 14-04166-Ra228-1**

	Run	1	Ra228 Analysis Code	14-04166 Eberline Services Work Order	Michael Pisani & Associates, Inc. Client
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Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	RA-228	LCS	LCS	pCi/l	5.80E+00	1.49E+00	1.58E+00	7.97E+00	72.72	INV		OK	
02	RA-228	MBL	BLANK	pCi/l	4.43E-01	6.10E-01	1.26E+00					OK	OK
03	RA-228	DUP	HEBERT	pCi/l	4.08E-01	7.82E-01	1.63E+00				INV	OK	
04	RA-228	DO	HEBERT	pCi/l	2.61E-01	5.92E-01	1.24E+00					OK	
05	RA-228	TRG	MPA SB1	pCi/l	9.28E+00	1.14E+00	1.63E+00					OK	

Client	Michael Pisani & Associates, Inc.
Eberline Services Work Order	14-04166
Analysis Code	Ra228
Run	1

Lab Fraction	Nuclide	Sample Desc	Sample Date	Sample Aliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep 10 Date/Time	Sep 11 Date/Time
01	RA-228	LCS	04/24/14 00:00	1.00E+00	89.17	99.13	88.39	1.00	4/30/2014 8:53	5/5/2014 6:40
02	RA-228	MBL	04/24/14 00:00	1.00E+00	95.70	86.13	82.42	1.00	4/30/2014 8:53	5/5/2014 6:40
03	RA-228	DUP	04/21/14 12:00	1.00E+00	85.29	92.38	78.78	1.00	4/30/2014 8:53	5/5/2014 6:40
04	RA-228	DO	04/21/14 12:00	1.00E+00	107.90	88.38	95.35	1.00	4/30/2014 8:53	5/5/2014 6:40
05	RA-228	TRG	04/21/14 13:45	1.00E+00	85.51	87.75	75.04	1.00	4/30/2014 8:53	5/5/2014 6:40



Internal Fraction	Sample Desc	Client ID	Sample Date	Sample Aliquot	Tracer Aliquot (g)	Tracer ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	SAF 1*	SAF 2*
01	LCS	LCS	04/24/14 00:00	1.0000	0.9120	861.3959	346.0000	89.17	1.00	1.00
02	MBL	BLANK	04/24/14 00:00	1.0000	0.9087	858.2790	370.0000	95.70	1.00	1.00
03	DUP	HEBERT	04/21/14 12:00	1.0000	0.9067	856.3899	329.0000	85.29	1.00	1.00
04	DO	HEBERT	04/21/14 12:00	1.0000	0.9084	857.9956	417.0000	107.90	1.00	1.00
05	TRG	MPA SB1	04/21/14 13:45	1.0000	0.9043	854.1231	329.0000	85.51	1.00	1.00








# Gravimetric Worksheet

Work Order	Run	Analysis Code	Gravimetric Carrier	Carrier Conc (mg/ml)	Technician
<b>14-04166</b>	<b>1</b>	Ra228	Yttrium	40.0000	RMARTZ

TRetec Fraction	Michael Pisani & Associates, Inc Client ID	Sample Type	Carrier Data		Filter Data			Gravimetric % Recovery
			Carrier Added (ml)	Filter Tare (g)	Filter Final (g)	Filter Net (g)		
01	LCS	LCS	2.0000	0.0951	0.1744	0.0793	99.13	
02	BLANK	MBL	2.0000	0.0948	0.1637	0.0689	86.13	
03	DUP	DUP	2.0000	0.0950	0.1689	0.0739	92.38	
04	HEBERT	DO	2.0000	0.0949	0.1656	0.0707	88.38	
05	MPA SB1	TRG	2.0000	0.0949	0.1651	0.0702	87.75	


  
 Technician: \_\_\_\_\_ Date: 5/5/14 \_\_\_\_\_

5/15  
R

Sheet1

Detector ID	Sample ID	Alpha	Beta	Count Time	Voltage	TOD
A1	1404166-01	3	140	30	1400	5/5/14 11:03

5/5/14  
R

Detector ID	Sample ID	Alpha	Beta	Count	Time	Voltage	TOD
C1	1404166-02	5	154	120		1400	5/5/14 13:22
C2	1404166-03	10	221	120		1400	5/5/14 13:22
C3	1404166-04	6	180	120		1400	5/5/14 13:22
C4	1404166-05	4	642	120		1400	5/5/14 13:22

GPC Detector Report  
(ALL Backgrounds)

5116

Detector	Alpha/Beta	Calibration Date	Count Date	Bkg CPM	PFW	LCL	Mean	UCL
LB4110A - A1	Alpha	11/18/2007	5/5/2014	0.00E+00	P	-2.01E+01	2.56E-01	2.07E+01
LB4110A - A2	Alpha	11/18/2007	5/5/2014	6.67E-02	P	-1.71E+01	2.31E-01	1.76E+01
LB4110A - A3	Alpha	11/18/2007	5/5/2014	1.67E-02	P	-1.66E+01	2.00E-01	1.70E+01
LB4110A - A4	Alpha	11/18/2007	5/5/2014	1.00E-01	P	-1.77E+01	2.15E-01	1.81E+01
LB4110A - B1	Alpha	11/18/2007	5/5/2014	6.67E-02	P	-9.38E-02	7.31E-02	2.40E-01
LB4110A - B2	Alpha	11/18/2007	5/5/2014	8.33E-02	P	-7.45E-02	7.23E-02	2.19E-01
LB4110A - B3	Alpha	11/18/2007	5/5/2014	1.67E-02	P	-6.21E-02	5.38E-02	1.70E-01
LB4110A - B4	Alpha	11/18/2007	5/5/2014	5.00E-02	P	-1.33E-01	7.77E-02	2.88E-01
LB4110A - C1	Alpha	11/18/2007	5/5/2014	1.17E-01	P	-1.41E-01	8.72E-02	3.16E-01
LB4110A - C2	Alpha	11/18/2007	5/5/2014	1.67E-02	P	-1.71E-01	8.20E-02	3.35E-01
LB4110A - C3	Alpha	11/18/2007	5/5/2014	5.00E-02	P	-1.65E-01	9.66E-02	3.58E-01
LB4110A - C4	Alpha	11/18/2007	5/5/2014	0.00E+00	P	-6.24E-02	6.80E-02	1.98E-01
LB4110A - D1	Alpha	11/18/2007	10/30/2013	0.00E+00	P	-5.46E-02	8.21E-02	2.19E-01
LB4110A - D2	Alpha	11/18/2007	10/30/2013	0.00E+00	P	-7.13E-02	6.11E-02	1.93E-01
LB4110A - D3	Alpha	11/18/2007	10/30/2013	0.00E+00	P	-4.93E-02	6.97E-02	1.89E-01
LB4110A - D4	Alpha	11/18/2007	10/30/2013	0.00E+00	P	-6.76E-02	7.09E-02	2.09E-01
LB4110R - A1	Alpha	11/24/2006	5/5/2014	5.00E-02	P	-9.49E-02	9.92E-02	2.93E-01
LB4110R - A2	Alpha	11/24/2006	5/5/2014	8.33E-02	P	-8.74E-02	7.34E-02	2.34E-01
LB4110R - A3	Alpha	11/24/2006	5/5/2014	1.00E-01	P	-7.28E-02	8.02E-02	2.33E-01
LB4110R - A4	Alpha	11/24/2006	5/5/2014	5.00E-02	P	-5.21E-02	6.94E-02	1.91E-01
LB4110R - B1	Alpha	11/24/2006	5/5/2014	1.67E-02	P	-9.18E-02	6.16E-02	2.15E-01
LB4110R - B2	Alpha	11/24/2006	5/5/2014	0.00E+00	P	-6.92E-02	6.11E-02	1.91E-01
LB4110R - B3	Alpha	11/24/2006	5/5/2014	5.00E-02	P	-6.54E-02	7.18E-02	2.09E-01
LB4110R - B4	Alpha	11/24/2006	5/5/2014	0.00E+00	P	-6.25E-02	6.86E-02	2.00E-01
LB4110R - C1	Alpha	11/24/2006	5/5/2014	1.67E-02	P	-7.66E-02	7.32E-02	2.23E-01
LB4110R - C2	Alpha	11/24/2006	5/5/2014	3.33E-02	P	-7.60E-02	6.91E-02	2.14E-01
LB4110R - C3	Alpha	11/24/2006	5/5/2014	3.33E-02	P	-8.48E-02	8.40E-02	2.53E-01
LB4110R - C4	Alpha	11/24/2006	5/5/2014	3.33E-02	P	-6.04E-02	7.93E-02	2.19E-01
LB4110R - D1	Alpha	11/24/2006	12/12/2013	0.00E+00	P	-1.06E-01	6.71E-02	2.40E-01
LB4110R - D2	Alpha	11/24/2006	12/12/2013	0.00E+00	P	-8.22E-02	6.66E-02	2.15E-01
LB4110R - D3	Alpha	11/24/2006	12/12/2013	0.00E+00	P	-8.70E-02	6.63E-02	2.20E-01
LB4110R - D4	Alpha	11/24/2006	12/12/2013	0.00E+00	P	-8.03E-02	7.09E-02	2.22E-01
LB5100 - 1	Alpha	7/10/2006	10/26/2007	5.00E-02	P	-1.56E-02	9.58E-02	2.07E-01

GPC Detector Report  
(ALL Backgrounds)

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Detector	Alpha/Beta	Calibration Date	Count Date	Bkg CPM	PFW	LCL	Mean	UCL
LB4110A - A1	Beta	11/18/2007	5/5/2014	3.73E+00	P	-2.73E+02	7.56E+00	2.88E+02
LB4110A - A2	Beta	11/18/2007	5/5/2014	3.58E+00	P	-2.84E+01	2.69E+00	3.38E+01
LB4110A - A3	Beta	11/18/2007	5/5/2014	1.50E+00	P	-4.73E+01	2.54E+00	5.24E+01
LB4110A - A4	Beta	11/18/2007	5/5/2014	7.23E+00	P	-3.02E+01	3.67E+00	3.75E+01
LB4110A - B1	Beta	11/18/2007	5/5/2014	1.95E+00	P	-9.76E+00	3.17E+00	1.61E+01
LB4110A - B2	Beta	11/18/2007	5/5/2014	1.77E+00	P	-7.16E+00	1.94E+00	1.10E+01
LB4110A - B3	Beta	11/18/2007	5/5/2014	1.68E+00	P	-4.55E-01	1.39E+00	3.24E+00
LB4110A - B4	Beta	11/18/2007	5/5/2014	1.55E+00	P	-7.78E+00	1.99E+00	1.17E+01
LB4110A - C1	Beta	11/18/2007	5/5/2014	1.52E+00	P	-5.06E+00	2.05E+00	9.16E+00
LB4110A - C2	Beta	11/18/2007	5/5/2014	1.23E+00	P	2.85E-01	1.28E+00	2.28E+00
LB4110A - C3	Beta	11/18/2007	5/5/2014	1.85E+00	P	2.69E-01	1.50E+00	2.73E+00
LB4110A - C4	Beta	11/18/2007	5/5/2014	1.25E+00	P	-1.66E+00	2.03E+00	5.72E+00
LB4110A - D1	Beta	11/18/2007	10/30/2013	0.00E+00	P	-2.35E+00	2.55E+00	7.44E+00
LB4110A - D2	Beta	11/18/2007	10/30/2013	0.00E+00	P	-3.10E+00	1.60E+00	6.31E+00
LB4110A - D3	Beta	11/18/2007	10/30/2013	0.00E+00	F	1.02E+00	4.46E+00	7.90E+00
LB4110A - D4	Beta	11/18/2007	10/30/2013	0.00E+00	P	-7.35E+00	1.48E+00	1.03E+01
LB4110R - A1	Beta	11/24/2006	5/5/2014	1.27E+00	P	-5.80E+01	3.44E+00	6.48E+01
LB4110R - A2	Beta	11/24/2006	5/5/2014	1.95E+00	P	-4.60E+01	1.93E+00	4.98E+01
LB4110R - A3	Beta	11/24/2006	5/5/2014	1.52E+00	P	-4.26E+01	2.60E+00	4.78E+01
LB4110R - A4	Beta	11/24/2006	5/5/2014	2.55E+00	P	-4.24E+01	1.94E+00	4.63E+01
LB4110R - B1	Beta	11/24/2006	5/5/2014	1.48E+00	P	-4.46E+01	1.96E+00	4.85E+01
LB4110R - B2	Beta	11/24/2006	5/5/2014	3.02E+00	P	-4.46E+01	1.97E+00	4.86E+01
LB4110R - B3	Beta	11/24/2006	5/5/2014	4.32E+00	P	-4.44E+01	2.53E+00	4.95E+01
LB4110R - B4	Beta	11/24/2006	5/5/2014	3.35E+00	P	-4.47E+01	1.86E+00	4.84E+01
LB4110R - C1	Beta	11/24/2006	5/5/2014	1.08E+00	P	-4.46E+01	2.81E+00	5.02E+01
LB4110R - C2	Beta	11/24/2006	5/5/2014	1.67E+00	P	-4.45E+01	2.61E+00	4.97E+01
LB4110R - C3	Beta	11/24/2006	5/5/2014	1.37E+00	P	-4.50E+01	2.42E+00	4.98E+01
LB4110R - C4	Beta	11/24/2006	5/5/2014	1.53E+00	P	-5.08E+01	2.81E+00	5.64E+01
LB4110R - D1	Beta	11/24/2006	12/12/2013	0.00E+00	P	-4.37E+01	5.31E+00	5.43E+01
LB4110R - D2	Beta	11/24/2006	12/12/2013	0.00E+00	P	-4.67E+01	1.79E+00	5.03E+01
LB4110R - D3	Beta	11/24/2006	12/12/2013	0.00E+00	P	-5.02E+01	5.29E+00	6.08E+01
LB4110R - D4	Beta	11/24/2006	12/12/2013	0.00E+00	P	-4.65E+01	2.13E+00	5.07E+01
LB5100 - 1	Beta	7/10/2006	10/26/2007	4.52E+00	F	-3.19E-01	1.58E+00	3.48E+00

GPC Detector Report  
(ALL Efficiencies)

Detector	Alpha/Beta	Calibration Date	Count Date	Eff	PFW	LCL	Mean	UCL
LB4110A - A1	Alpha	11/18/2007	5/5/2014	0.2292	P	0.0012	0.2178	0.4343
LB4110A - A2	Alpha	11/18/2007	5/5/2014	0.1943	P	-0.0362	0.1769	0.3899
LB4110A - A3	Alpha	11/18/2007	5/5/2014	0.1965	P	-0.0585	0.1673	0.3932
LB4110A - A4	Alpha	11/18/2007	5/5/2014	0.2306	P	-0.0373	0.1870	0.4114
LB4110A - B1	Alpha	11/18/2007	5/5/2014	0.2129	P	0.1949	0.2238	0.2528
LB4110A - B2	Alpha	11/18/2007	5/5/2014	0.2076	P	0.1905	0.2199	0.2494
LB4110A - B3	Alpha	11/18/2007	5/5/2014	0.2272	P	0.1338	0.2325	0.3312
LB4110A - B4	Alpha	11/18/2007	5/5/2014	0.2236	P	0.2071	0.2351	0.2632
LB4110A - C1	Alpha	11/18/2007	5/5/2014	0.2178	P	0.1979	0.2204	0.2430
LB4110A - C2	Alpha	11/18/2007	5/5/2014	0.2269	P	0.1981	0.2251	0.2520
LB4110A - C3	Alpha	11/18/2007	5/5/2014	0.2496	P	0.2239	0.2492	0.2745
LB4110A - C4	Alpha	11/18/2007	5/5/2014	0.2229	P	0.1977	0.2252	0.2528
LB4110A - D1	Alpha	11/18/2007	10/30/2013	0.0000	F	0.1796	0.2314	0.2831
LB4110A - D2	Alpha	11/18/2007	10/30/2013	0.0000	F	0.2010	0.2566	0.3122
LB4110A - D3	Alpha	11/18/2007	10/30/2013	0.0000	F	0.2042	0.2618	0.3195
LB4110A - D4	Alpha	11/18/2007	10/30/2013	0.0000	F	0.1476	0.1979	0.2481
LB4110R - A1	Alpha	11/24/2006	5/5/2014	0.2266	P	0.1995	0.2380	0.2766
LB4110R - A2	Alpha	11/24/2006	5/5/2014	0.2024	P	0.1846	0.2191	0.2536
LB4110R - A3	Alpha	11/24/2006	5/5/2014	0.2178	P	0.1922	0.2235	0.2548
LB4110R - A4	Alpha	11/24/2006	5/5/2014	0.2348	P	0.2125	0.2448	0.2772
LB4110R - B1	Alpha	11/24/2006	5/5/2014	0.1309	F	0.1801	0.2243	0.2685
LB4110R - B2	Alpha	11/24/2006	5/5/2014	0.1779	W	0.1752	0.2160	0.2567
LB4110R - B3	Alpha	11/24/2006	5/5/2014	0.2392	P	0.2035	0.2439	0.2842
LB4110R - B4	Alpha	11/24/2006	5/5/2014	0.2179	P	0.1878	0.2300	0.2722
LB4110R - C1	Alpha	11/24/2006	5/5/2014	0.2066	P	0.1792	0.2143	0.2494
LB4110R - C2	Alpha	11/24/2006	5/5/2014	0.2122	P	0.1904	0.2236	0.2569
LB4110R - C3	Alpha	11/24/2006	5/5/2014	0.2302	P	0.2033	0.2386	0.2740
LB4110R - C4	Alpha	11/24/2006	5/5/2014	0.2081	P	0.1789	0.2206	0.2623
LB4110R - D1	Alpha	11/24/2006	12/12/2013	0.0000	W	-0.0274	0.1906	0.4086
LB4110R - D2	Alpha	11/24/2006	12/12/2013	0.0000	W	-0.0306	0.2168	0.4641
LB4110R - D3	Alpha	11/24/2006	12/12/2013	0.0000	W	-0.0300	0.2129	0.4559
LB4110R - D4	Alpha	11/24/2006	12/12/2013	0.0000	W	-0.0254	0.1716	0.3686
LB5100 - 1	Alpha	7/10/2006	10/26/2007	0.3368	P	0.3332	0.3455	0.3578

GPC Detector Report  
(ALL Efficiencies)

5/5-

Detector	Alpha/Beta	Calibration Date	Count Date	Eff	PFW	LCL	Mean	UCL
LB4110A - A1	Beta	11/18/2007	5/5/2014	0.5565	P	0.2309	0.5629	0.8950
LB4110A - A2	Beta	11/18/2007	5/5/2014	0.4825	P	0.1808	0.4676	0.7543
LB4110A - A3	Beta	11/18/2007	5/5/2014	0.4978	P	0.1128	0.4610	0.8091
LB4110A - A4	Beta	11/18/2007	5/5/2014	0.5846	P	0.1635	0.4976	0.8316
LB4110A - B1	Beta	11/18/2007	5/5/2014	0.5387	P	0.4642	0.5320	0.5999
LB4110A - B2	Beta	11/18/2007	5/5/2014	0.5344	P	0.4658	0.5272	0.5885
LB4110A - B3	Beta	11/18/2007	5/5/2014	0.5774	P	0.3287	0.5373	0.7459
LB4110A - B4	Beta	11/18/2007	5/5/2014	0.5695	P	0.4936	0.5553	0.6171
LB4110A - C1	Beta	11/18/2007	5/5/2014	0.5662	W	0.4370	0.5082	0.5795
LB4110A - C2	Beta	11/18/2007	5/5/2014	0.6007	W	0.3981	0.5115	0.6249
LB4110A - C3	Beta	11/18/2007	5/5/2014	0.6430	P	0.5242	0.5954	0.6666
LB4110A - C4	Beta	11/18/2007	5/5/2014	0.5785	P	0.4529	0.5295	0.6060
LB4110A - D1	Beta	11/18/2007	10/30/2013	0.0000	F	0.4246	0.5498	0.6749
LB4110A - D2	Beta	11/18/2007	10/30/2013	0.0000	F	0.4389	0.5834	0.7279
LB4110A - D3	Beta	11/18/2007	10/30/2013	0.0000	F	0.4761	0.6116	0.7470
LB4110A - D4	Beta	11/18/2007	10/30/2013	0.0000	F	0.3466	0.4687	0.5908
LB4110R - A1	Beta	11/24/2006	5/5/2014	0.5906	P	0.4783	0.5692	0.6601
LB4110R - A2	Beta	11/24/2006	5/5/2014	0.5238	P	0.4202	0.5100	0.5999
LB4110R - A3	Beta	11/24/2006	5/5/2014	0.5383	P	0.4539	0.5385	0.6231
LB4110R - A4	Beta	11/24/2006	5/5/2014	0.6205	P	0.5069	0.5936	0.6803
LB4110R - B1	Beta	11/24/2006	5/5/2014	0.4490	W	0.4482	0.5421	0.6360
LB4110R - B2	Beta	11/24/2006	5/5/2014	0.4780	P	0.4281	0.5199	0.6116
LB4110R - B3	Beta	11/24/2006	5/5/2014	0.6198	P	0.4968	0.5953	0.6939
LB4110R - B4	Beta	11/24/2006	5/5/2014	0.5510	P	0.4576	0.5496	0.6415
LB4110R - C1	Beta	11/24/2006	5/5/2014	0.5053	P	0.4111	0.5018	0.5924
LB4110R - C2	Beta	11/24/2006	5/5/2014	0.5850	P	0.4300	0.5346	0.6392
LB4110R - C3	Beta	11/24/2006	5/5/2014	0.6008	P	0.4785	0.5730	0.6676
LB4110R - C4	Beta	11/24/2006	5/5/2014	0.5405	P	0.4280	0.5255	0.6229
LB4110R - D1	Beta	11/24/2006	12/12/2013	0.0000	W	-0.0662	0.4558	0.9778
LB4110R - D2	Beta	11/24/2006	12/12/2013	0.0000	W	-0.0738	0.5122	1.0982
LB4110R - D3	Beta	11/24/2006	12/12/2013	0.0000	W	-0.0718	0.4974	1.0667
LB4110R - D4	Beta	11/24/2006	12/12/2013	0.0000	W	-0.0615	0.4095	0.8805
LB5100 - 1	Beta	7/10/2006	10/26/2007	0.4428	F	0.4555	0.4731	0.4906

**SECTION X**

**BARIUM-133 ANALYTICAL TRACER DATA**



KB  
4/30/14



Analysis Report for 1404166-01  
SPIKE

### GAMMA SPECTRUM ANALYSIS

Sample Identification : 1404166-01  
 Sample Description : SPIKE  
 Sample Type : RA RECOVERY

Sample Size : 1.000E+00 units  
 Facility : Countroom

Sample Taken On : 4/30/2014 11:00:25AM  
 Acquisition Started : 4/30/2014 11:47:04AM

Procedure : BAFIL  
 Operator : Administrator  
 Detector Name : GE2  
 Geometry : BAFIL  
 Live Time : 900.0 seconds  
 Real Time : 900.3 seconds

Dead Time : 0.03 %

Peak Locate Threshold : 2.50  
 Peak Locate Range (in channels) : 1 - 4096  
 Peak Area Range (in channels) : 5 - 4096  
 Identification Energy Tolerance : 1.000 keV

Energy Calibration Used Done On : 3/23/2014  
 Efficiency Calibration Used Done On : 12/7/2005  
 Efficiency Calibration Description :

Sample Number : 7025

### PEAK ANALYSIS REPORT

Peak Analysis Performed on : 4/30/2014 12:02:08PM  
 Peak Analysis From Channel : 1  
 Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
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Analysis Report for 1404166-01

SPIKE

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	21.05	18 - 24	21.12	6.30E+01	57.34	5.50E+02	1.77
M	2	31.00	26 - 40	31.06	1.81E+03	93.06	2.24E+02	1.33
m	3	35.06	26 - 40	35.12	4.11E+02	52.61	1.05E+02	1.34
	4	52.60	49 - 57	52.64	5.30E+01	39.85	2.12E+02	2.47
M	5	61.90	58 - 68	61.94	2.08E+02	36.61	9.75E+01	1.41
m	6	65.91	58 - 68	65.94	9.96E+01	28.98	9.93E+01	1.42
	7	81.16	76 - 88	81.19	7.66E+02	74.44	2.89E+02	1.57
M	8	111.93	108 - 120	111.92	1.76E+02	34.02	8.71E+01	1.65
m	9	116.09	108 - 120	116.09	3.92E+01	26.11	1.08E+02	1.66
	10	141.80	138 - 144	141.77	2.64E+01	27.21	1.15E+02	1.93
	11	160.27	150 - 170	160.23	5.87E+01	63.57	3.05E+02	18.39
	12	276.98	273 - 281	276.85	6.07E+01	26.61	7.06E+01	1.78
M	13	303.13	298 - 315	302.98	1.46E+02	26.40	2.64E+01	1.65
m	14	308.25	298 - 315	308.10	2.12E+01	15.39	3.16E+01	1.75
M	15	334.01	330 - 343	333.84	5.72E+01	19.63	3.54E+01	1.77
m	16	338.33	330 - 343	338.16	2.41E+01	15.79	2.90E+01	1.78
m	17	356.41	351 - 361	356.23	4.95E+02	45.54	1.87E+01	1.56
	18	374.94	372 - 378	374.75	1.81E+01	13.77	2.18E+01	3.82
M	19	384.23	382 - 389	384.03	8.47E+01	27.56	6.21E+01	1.67
m	20	387.14	382 - 389	386.94	1.52E+02	30.40	6.69E+01	1.50
	21	391.78	390 - 394	391.57	4.01E+01	18.74	2.99E+01	1.94
M	22	415.39	410 - 427	415.17	2.92E+01	16.88	3.26E+01	1.85
m	23	419.22	410 - 427	419.00	1.14E+01	13.72	1.84E+01	1.68
	24	437.34	433 - 441	437.10	6.95E+01	21.95	3.10E+01	2.01
M	25	508.28	506 - 515	508.00	6.77E+00	5.74	9.14E-01	1.75
m	26	513.28	506 - 515	513.00	7.63E+00	11.36	1.46E+01	1.75
	27	641.87	638 - 644	641.51	5.29E+00	6.34	3.43E+00	2.87
	28	722.40	718 - 726	722.00	1.10E+01	6.63	0.00E+00	4.92

M = First peak in a multiplet region  
 m = Other peak in a multiplet region  
 F = Fitted singlet  
 Errors quoted at 2.000sigma

## BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 4/30/2014 12:02:08PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000006627.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	21.05	6.30E+01	57.34			6.30E+01	5.73E+01

Analysis Report for 1404166-01

## SPIKE

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M	2	31.00	1.81E+03	93.06			1.81E+03	9.31E+01
m	3	35.06	4.11E+02	52.61			4.11E+02	5.26E+01
	4	52.60	5.30E+01	39.85			5.30E+01	3.98E+01
M	5	61.90	2.08E+02	36.61			2.08E+02	3.66E+01
m	6	65.91	9.96E+01	28.98			9.96E+01	2.90E+01
	7	81.16	7.66E+02	74.44			7.66E+02	7.44E+01
M	8	111.93	1.76E+02	34.02			1.76E+02	3.40E+01
m	9	116.09	3.92E+01	26.11			3.92E+01	2.61E+01
	10	141.80	2.64E+01	27.21			2.64E+01	2.72E+01
	11	160.27	5.87E+01	63.57			5.87E+01	6.36E+01
	12	276.98	6.07E+01	26.61			6.07E+01	2.66E+01
M	13	303.13	1.46E+02	26.40			1.46E+02	2.64E+01
m	14	308.25	2.12E+01	15.39			2.12E+01	1.54E+01
M	15	334.01	5.72E+01	19.63			5.72E+01	1.96E+01
m	16	338.33	2.41E+01	15.79			2.41E+01	1.58E+01
m	17	356.41	4.95E+02	45.54			4.95E+02	4.55E+01
	18	374.94	1.81E+01	13.77			1.81E+01	1.38E+01
M	19	384.23	8.47E+01	27.56			8.47E+01	2.76E+01
m	20	387.14	1.52E+02	30.40			1.52E+02	3.04E+01
	21	391.78	4.01E+01	18.74			4.01E+01	1.87E+01
M	22	415.39	2.92E+01	16.88			2.92E+01	1.69E+01
m	23	419.22	1.14E+01	13.72			1.14E+01	1.37E+01
	24	437.34	6.95E+01	21.95			6.95E+01	2.19E+01
M	25	508.28	6.77E+00	5.74			6.77E+00	5.74E+00
m	26	513.28	7.63E+00	11.36			7.63E+00	1.14E+01
	27	641.87	5.29E+00	6.34			5.29E+00	6.34E+00
	28	722.40	1.10E+01	6.63			1.10E+01	6.63E+00

M = First peak in a multiplet region  
m = Other peak in a multiplet region  
F = Fitted singlet  
Errors quoted at 2.00sigma

## NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\WSRC.NLB

### IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/units)	Activity Uncertainty
SN-113	0.94	255.12	1.93		
		391.69 *	61.90	2.78E+01	1.34E+01

Analysis Report for 1404166-01

SPIKE

<b>Nuclide Name</b>	<b>Id Confidence</b>	<b>Energy (keV)</b>	<b>Yield(%)</b>	<b>Activity (pCi/units)</b>	<b>Activity Uncertainty</b>
I-125	0.97	35.49 *	6.49	4.08E+02	5.49E+01
BA-133	0.98	30.80 *	97.60	1.01E+02	8.84E+00
		81.00 *	33.00	3.88E+02	7.62E+01
		302.84 *	17.80	3.27E+02	1.13E+02
		356.01 *	60.00	3.46E+02	5.97E+01
		383.85 *	8.70	4.17E+02	3.21E+02

\* = Energy line found in the spectrum.  
 - = Manually added nuclide.  
 ? = Manually edited nuclide.  
 @ = Energy line not used for Weighted Mean Activity  
 Energy Tolerance : 1.000 keV  
 Nuclide confidence index threshold = 0.30  
 Errors quoted at 2.000sigma

## INTERFERENCE CORRECTED REPORT

<b>Nuclide Name</b>	<b>Nuclide Id Confidence</b>	<b>Wt mean Activity (pCi/units)</b>	<b>Wt mean Activity Uncertainty</b>	<b>Comments</b>
SN-113	0.947	2.78E+01	1.34E+01	
I-125	0.971	4.08E+02	5.49E+01	
BA-133	0.987	1.12E+02	8.66E+00	

? = nuclide is part of an undetermined solution  
 X = nuclide rejected by the interference analysis  
 @ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1404166-01

SPIKE

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**UNIDENTIFIED PEAKS**


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Peak Locate Performed on : 4/30/2014 12:02:08PM  
 Peak Locate From Channel : 1  
 Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	21.05	7.00099E-02	45.50	Tol.	PA-234
4	52.60	5.88435E-02	37.62		
M 5	61.90	2.30881E-01	8.81	Sum	
m 6	65.91	1.10716E-01	14.54	Sum	
M 8	111.93	1.95677E-01	9.66	Sum	
m 9	116.09	4.35421E-02	33.31	Sum	
10	141.80	2.92989E-02	51.59		
11	160.27	6.51896E-02	54.18		
12	276.98	6.74190E-02	21.93		
m 14	308.25	2.36057E-02	36.21		
M 15	334.01	6.35597E-02	17.16	Sum	
m 16	338.33	2.67738E-02	32.76	Sum	
18	374.94	2.01149E-02	38.02		
m 20	387.14	1.68489E-01	10.02	Sum	
M 22	415.39	3.23972E-02	28.95	Sum	
m 23	419.22	1.26751E-02	60.14	Sum	
24	437.34	7.71961E-02	15.80	Sum	
M 25	508.28	7.52434E-03	42.41		
m 26	513.28	8.48196E-03	74.39		
27	641.87	5.87302E-03	60.01		
28	722.40	1.22222E-02	30.15		

M = First peak in a multiplet region  
 m = Other peak in a multiplet region  
 F = Fitted singlet  
 Errors quoted at 2.000sigma

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**NUCLIDE MDA REPORT**


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Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\WSRC.NLB

Analysis Report for 1404166-01

## SPIKE

	<b>Nuclide Name</b>	<b>Energy (keV)</b>	<b>Yield(%)</b>	<b>Activity (pCi/units)</b>	<b>Nuclide MDA (pCi/units)</b>	<b>Line MDA (pCi/units)</b>
+	FE-55	5.89	24.50	-2.61E+00	1.31E+00	1.31E+00
+	CO-57	122.06	85.51	-1.02E+00	9.42E+00	9.42E+00
		136.48	10.60	9.14E+00		8.67E+01
+	NI-59	6.92	29.80	-6.76E-01	1.89E+00	1.89E+00
+	MO-93	16.59	52.90	-2.62E+00	2.63E+00	2.63E+00
		18.60	10.00	7.37E+00		1.95E+01
+	NB-93M	16.57	9.43	-1.47E+01	1.47E+01	1.47E+01
+	CD-109	88.03	3.72	3.18E+01	1.81E+02	1.81E+02
+	SN-113	255.12	1.93	3.46E+02	1.77E+01	5.66E+02
		391.69	* 61.90	2.78E+01		1.77E+01
+	SN-119M	23.87	16.10	-1.72E+01	1.24E+01	1.64E+01
		25.10	22.70	-1.36E+01		1.24E+01
+	I-125	35.49	* 6.49	4.08E+02	1.28E+02	1.28E+02
+	I-129	29.78	57.00	1.72E+02	1.97E+01	1.97E+01
		33.60	13.20	-8.17E+02		6.80E+01
		39.58	7.52	-2.64E-01		3.40E+01
+	BA-133	30.80	* 97.60	1.01E+02	7.35E+00	7.35E+00
		81.00	* 33.00	3.88E+02		4.29E+01
		302.84	* 17.80	3.27E+02		1.19E+02
		356.01	* 60.00	3.46E+02		2.11E+01
		383.85	* 8.70	4.17E+02		2.12E+02
+	CE-139	165.85	80.35	-7.12E+00	1.30E+01	1.30E+01
+	CE-144	133.54	10.80	2.14E+01	8.60E+01	8.60E+01
+	HG-203	279.19	77.30	1.55E+01	1.90E+01	1.90E+01
+	PB-210	10.80	9.57	7.76E+01	1.87E+01	1.87E+01
		46.50	4.25	-1.29E+01		8.52E+01
+	PA-231	9.28	42.00	9.90E+00	2.88E+00	2.88E+00
		10.11	20.20	-6.58E+00		7.33E+00
		283.67	1.60	-1.79E+02		5.44E+02
		302.67	2.30	2.17E+03		1.05E+03
+	TH-231	25.64	14.70	-1.55E+01	2.10E+01	2.10E+01
		84.21	6.40	8.04E+01		2.21E+02
+	PA-234	9.89	89.00	-1.43E+00	1.60E+00	1.60E+00
		21.72	64.90	4.46E+00		3.90E+00
		37.93	23.75	2.23E+01		2.28E+01
		131.42	20.40	-1.63E+01		4.50E+01
+	TH-234	63.29	3.80	-9.88E+01	2.84E+02	2.84E+02
+	NP-237	29.37	14.00	3.93E+02	5.29E+01	7.23E+01
		86.50	12.60	-3.29E+01		5.29E+01
+	U-237	97.08	16.30	1.21E+00	2.85E+01	4.73E+01
		101.07	26.30	-5.14E-01		2.85E+01
		114.00	12.30	1.37E+02		1.35E+02
		208.01	22.00	3.16E+00		5.30E+01
+	AM-241	59.54	35.90	4.33E+01	2.62E+01	2.62E+01
+	AM-243	74.67	66.00	-5.58E-01	9.40E+00	9.40E+00

Analysis Report for 1404166-01

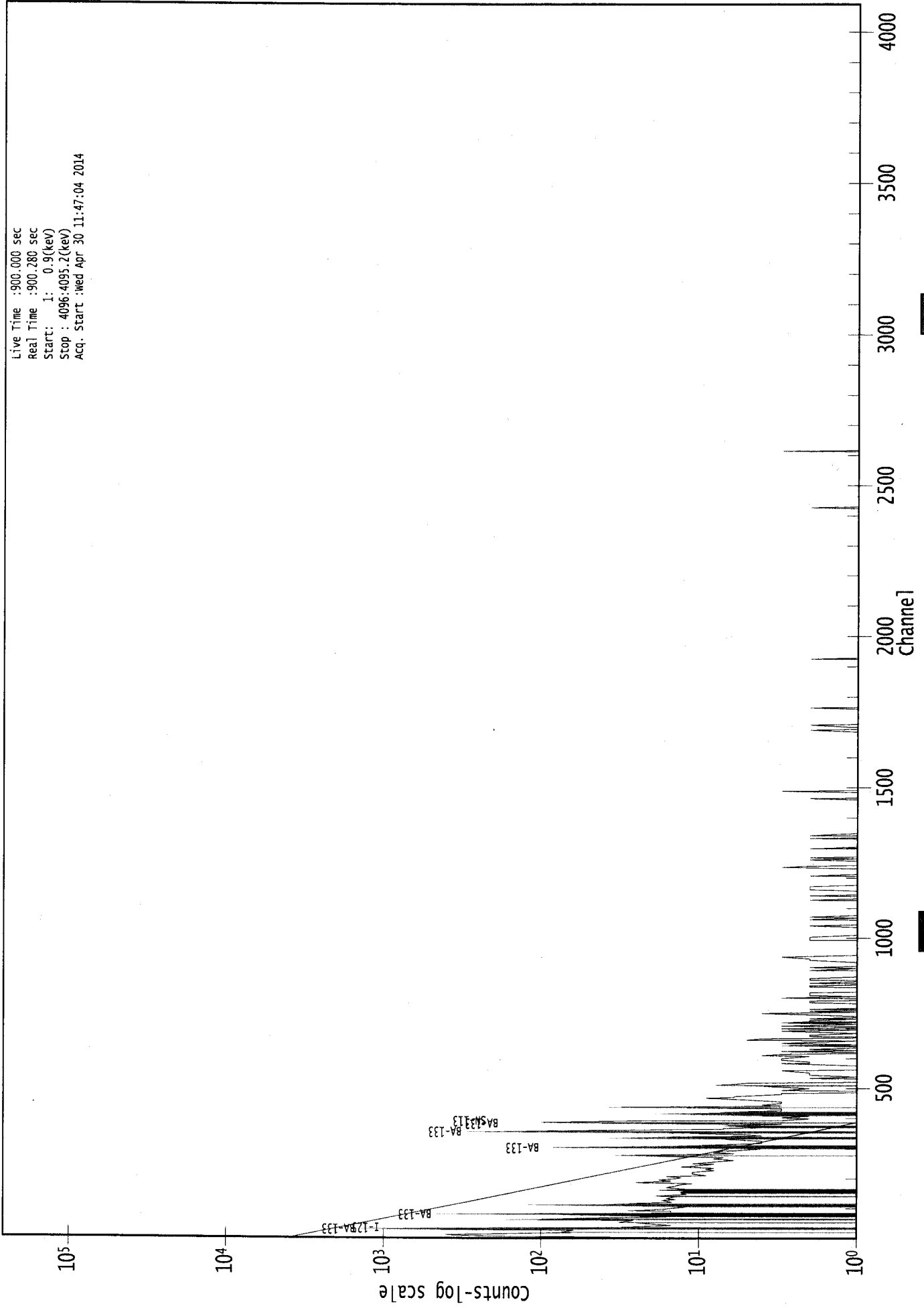
SPIKE

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- + = Nuclide identified during the nuclide identification
  - \* = Energy line found in the spectrum
  - > = MDA value not calculated
  - @ = Half-life too short to be able to perform the decay correction
  - ? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level
- 
-

0000007025.CNF

Live Time : 900.000 sec  
Real Time : 900.280 sec  
Start : 1: 0.9(keV)  
Stop : 4096: 4095.2(keV)  
Acq. Start : Wed Apr 30 11:47:04 2014





RD  
4/30/14



Analysis Report for 1404166-02  
BLANK

## GAMMA SPECTRUM ANALYSIS

Sample Identification : 1404166-02  
 Sample Description : BLANK  
 Sample Type : RA RECOVERY  
  
 Sample Size : 1.000E+00 units  
 Facility : Countroom  
  
 Sample Taken On : 4/30/2014 11:00:34AM  
 Acquisition Started : 4/30/2014 11:57:03AM  
  
 Procedure : BAFIL  
 Operator : Administrator  
 Detector Name : GE1  
 Geometry : BAFIL  
 Live Time : 900.0 seconds  
 Real Time : 900.3 seconds  
  
 Dead Time : 0.03 %  
  
 Peak Locate Threshold : 2.50  
 Peak Locate Range (in channels) : 1 - 4096  
 Peak Area Range (in channels) : 19 - 4096  
 Identification Energy Tolerance : 1.000 keV  
  
 Energy Calibration Used Done On : 1/9/2014  
 Efficiency Calibration Used Done On : 9/14/2004  
 Efficiency Calibration Description :  
  
 Sample Number : 7027

## PEAK ANALYSIS REPORT

Peak Analysis Performed on : 4/30/2014 12:12:06PM  
 Peak Analysis From Channel : 1  
 Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
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Analysis Report for 1404166-02

BLANK

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
M	1	30.97	26 -	41	31.07	1.77E+03	89.04	1.33E+02	1.60
m	2	35.26	26 -	41	35.37	4.16E+02	50.01	8.34E+01	1.61
	3	50.77	43 -	56	50.87	8.82E+01	53.48	2.74E+02	7.49
M	4	62.04	57 -	72	62.15	2.42E+02	42.28	1.56E+02	2.05
m	5	66.09	57 -	72	66.20	1.09E+02	38.63	1.56E+02	2.06
	6	81.21	76 -	86	81.32	6.99E+02	71.19	3.04E+02	1.94
	7	101.74	99 -	104	101.85	2.70E+01	26.68	1.22E+02	2.14
M	8	112.14	108 -	119	112.25	1.68E+02	34.65	1.26E+02	1.60
m	9	116.01	108 -	119	116.13	2.81E+01	26.62	1.21E+02	1.65
	10	267.61	264 -	272	267.74	2.60E+01	18.28	3.40E+01	3.54
	11	276.81	273 -	281	276.93	7.70E+01	22.67	3.20E+01	1.46
	12	303.15	300 -	306	303.27	1.35E+02	30.74	7.46E+01	1.67
	13	308.03	307 -	311	308.16	2.14E+01	17.64	4.72E+01	1.28
	14	334.24	331 -	338	334.37	5.46E+01	31.11	1.27E+02	1.31
	15	356.39	351 -	361	356.52	5.17E+02	48.10	3.30E+01	1.97
M	16	384.31	382 -	390	384.44	1.18E+02	22.54	1.25E+01	2.13
m	17	387.41	382 -	390	387.54	1.79E+02	33.11	5.28E+01	1.75
	18	391.80	391 -	396	391.93	2.38E+01	18.52	3.83E+01	1.57
M	19	415.17	411 -	429	415.30	4.04E+01	16.50	5.18E+00	2.44
m	20	418.64	411 -	429	418.77	2.95E+01	17.78	3.29E+00	2.44
m	21	422.09	411 -	429	422.22	1.95E+01	13.87	1.41E+00	2.45
	22	437.57	434 -	442	437.70	9.58E+01	22.20	1.44E+01	1.95
	23	467.64	464 -	472	467.78	2.55E+01	13.88	1.51E+01	2.43
	24	487.33	485 -	490	487.47	5.29E+00	6.08	3.43E+00	2.83
	25	570.42	567 -	573	570.56	9.00E+00	6.00	0.00E+00	2.92
	26	611.43	609 -	613	611.57	5.50E+00	6.67	5.00E+00	0.92
	27	624.76	622 -	628	624.90	1.00E+01	6.32	0.00E+00	3.16

M = First peak in a multiplet region  
 m = Other peak in a multiplet region  
 F = Fitted singlet  
 Errors quoted at 2.000sigma

## BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 4/30/2014 12:12:06PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000006626.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M	1	30.97	1.77E+03	89.04			1.77E+03	8.90E+01
m	2	35.26	4.16E+02	50.01			4.16E+02	5.00E+01

Analysis Report for 1404166-02

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Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	3	50.77	8.82E+01	53.48		8.82E+01	5.35E+01
M	4	62.04	2.42E+02	42.28		2.42E+02	4.23E+01
m	5	66.09	1.09E+02	38.63	1.86E+00	7.46E-01	1.07E+02
	6	81.21	6.99E+02	71.19		6.99E+02	7.12E+01
	7	101.74	2.70E+01	26.68		2.70E+01	2.67E+01
M	8	112.14	1.68E+02	34.65	2.11E+00	1.87E+00	1.66E+02
m	9	116.01	2.81E+01	26.62		2.81E+01	2.66E+01
	10	267.61	2.60E+01	18.28		2.60E+01	1.83E+01
	11	276.81	7.70E+01	22.67		7.70E+01	2.27E+01
	12	303.15	1.35E+02	30.74		1.35E+02	3.07E+01
	13	308.03	2.14E+01	17.64		2.14E+01	1.76E+01
	14	334.24	5.46E+01	31.11		5.46E+01	3.11E+01
	15	356.39	5.17E+02	48.10		5.17E+02	4.81E+01
M	16	384.31	1.18E+02	22.54		1.18E+02	2.25E+01
m	17	387.41	1.79E+02	33.11		1.79E+02	3.31E+01
	18	391.80	2.38E+01	18.52		2.38E+01	1.85E+01
M	19	415.17	4.04E+01	16.50		4.04E+01	1.65E+01
m	20	418.64	2.95E+01	17.78		2.95E+01	1.78E+01
m	21	422.09	1.95E+01	13.87		1.95E+01	1.39E+01
	22	437.57	9.58E+01	22.20		9.58E+01	2.22E+01
	23	467.64	2.55E+01	13.88		2.55E+01	1.39E+01
	24	487.33	5.29E+00	6.08		5.29E+00	6.08E+00
	25	570.42	9.00E+00	6.00	1.21E+00	9.22E-01	7.79E+00
	26	611.43	5.50E+00	6.67		5.50E+00	6.67E+00
	27	624.76	1.00E+01	6.32		1.00E+01	6.32E+00

M = First peak in a multiplet region  
m = Other peak in a multiplet region  
F = Fitted singlet  
Errors quoted at 2.000sigma

## NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\WSRC.NLB

### IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/units)	Activity Uncertainty
SN-113	0.96	255.12	1.93		
		391.69	*	61.90	1.28E+01
I-125	0.99	35.49	*	6.49	8.54E+00
BA-133	0.98	30.80	*	97.60	8.79E-01
					6.99E-02

Analysis Report for 1404166-02

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Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/units)	Activity Uncertainty
BA-133	0.98	81.00 *	33.00	3.27E+02	6.34E+01
		302.84 *	17.80	4.61E+02	1.70E+02
		356.01 *	60.00	3.70E+02	6.41E+01
		383.85 *	8.70	4.77E+02	3.44E+02
PA-231	0.99	9.28	42.00		
		10.11	20.20		
		283.67	1.60		
		302.67 *	2.30	3.57E+03	1.26E+03

\* = Energy line found in the spectrum.  
 - = Manually added nuclide.  
 ? = Manually edited nuclide.  
 @ = Energy line not used for Weighted Mean Activity  
 Energy Tolerance : 1.000 keV  
 Nuclide confidence index threshold = 0.30  
 Errors quoted at 2.000sigma

## INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/units)	Wt mean Activity Uncertainty	Comments
SN-113	0.966	1.28E+01	1.00E+01	
I-125	0.991	8.54E+00	1.03E+00	
BA-133	0.988	8.80E-01	4.43E-02	
PA-231	0.999	3.56E+03	1.26E+03	

? = nuclide is part of an undetermined solution  
 X = nuclide rejected by the interference analysis  
 @ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1404166-02

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**UNIDENTIFIED PEAKS**


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Peak Locate Performed on : 4/30/2014 12:12:06PM  
 Peak Locate From Channel : 1  
 Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	3	50.77	9.80296E-02		
M	4	62.04	2.68948E-01	Sum	
m	5	66.09	1.19167E-01	Sum	
	7	101.74	2.99747E-02	Tol.	U-237
M	8	112.14	1.84278E-01	Sum	
m	9	116.01	3.12497E-02	Sum	
	10	267.61	2.88760E-02		
	11	276.81	8.55675E-02		
	13	308.03	2.37654E-02		
	14	334.24	6.06544E-02	Sum	
m	17	387.41	1.98885E-01	Sum	
M	19	415.17	4.48476E-02	Sum	
m	20	418.64	3.27416E-02	Sum	
m	21	422.09	2.16627E-02	Sum	
	22	437.57	1.06440E-01	Sum	
	23	467.64	2.82828E-02		
	24	487.33	5.87302E-03		
	25	570.42	8.65118E-03		
	26	611.43	6.11111E-03		
	27	624.76	1.11111E-02		

M = First peak in a multiplet region  
 m = Other peak in a multiplet region  
 F = Fitted singlet  
 Errors quoted at 2.000sigma

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**NUCLIDE MDA REPORT**


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Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\WSRC.NLB

Analysis Report for 1404166-02

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Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/units)	Nuclide MDA (pCi/units)	Line MDA (pCi/units)
+	FE-55	5.89	24.50	0.00E+00	2.12E-11
+	CO-57	122.06	85.51	3.69E+00	2.37E+01
		136.48	10.60	-4.30E+01	2.34E+02
+	NI-59	6.92	29.80	0.00E+00	1.94E-10
+	MO-93	16.59	52.90	-6.68E-05	5.01E-05
		18.60	10.00	3.80E-03	2.62E-03
+	NB-93M	16.57	9.43	-3.70E-04	2.77E-04
+	CD-109	88.03	3.72	-4.86E+01	2.29E+02
+	SN-113	255.12	1.93	7.39E+01	1.54E+01
		391.69	* 61.90	1.28E+01	1.54E+01
+	SN-119M	23.87	16.10	-1.76E-02	1.63E-02
		25.10	22.70	-5.83E-03	1.65E-02
+	I-125	35.49	* 6.49	8.54E+00	2.05E+00
+	I-129	29.78	57.00	1.08E+00	1.27E-01
		33.60	13.20	-8.06E+00	1.01E+00
		39.58	7.52	-1.29E+00	1.39E+00
+	BA-133	30.80	* 97.60	8.79E-01	5.04E-02
		81.00	* 33.00	3.27E+02	3.80E+01
		302.84	* 17.80	4.61E+02	1.23E+02
		356.01	* 60.00	3.70E+02	2.05E+01
		383.85	* 8.70	4.77E+02	1.35E+02
+	CE-139	165.85	80.35	6.93E+00	3.76E+01
+	CE-144	133.54	10.80	8.13E+01	2.23E+02
+	HG-203	279.19	77.30	4.58E+01	3.73E+01
+	PB-210	10.80	9.57	0.00E+00	2.54E-07
		46.50	4.25	3.75E+00	8.94E+00
+	PA-231	9.28	42.00	0.00E+00	8.10E-09
		10.11	20.20	0.00E+00	5.17E-08
		283.67	1.60	-3.29E+01	1.04E+03
		302.67	* 2.30	3.57E+03	9.51E+02
+	TH-231	25.64	14.70	4.11E-04	3.48E-02
		84.21	6.40	4.21E+02	2.58E+02
+	PA-234	9.89	89.00	0.00E+00	8.83E-09
		21.72	64.90	3.15E-03	2.22E-03
		37.93	23.75	1.18E+00	7.44E-01
		131.42	20.40	-1.85E+00	1.11E+02
+	TH-234	63.29	3.80	6.56E+01	1.14E+02
+	NP-237	29.37	14.00	1.99E+00	4.12E-01
		86.50	12.60	-2.02E+01	6.30E+01
+	U-237	97.08	16.30	1.31E+01	5.50E+01
		101.07	26.30	4.54E+01	5.50E+01
		114.00	12.30	3.82E+02	2.72E+02
		208.01	22.00	8.97E+01	1.54E+02
+	AM-241	59.54	35.90	6.57E+00	7.87E+00
+	AM-243	74.67	66.00	2.34E+00	6.59E+00

Analysis Report for 1404166-02

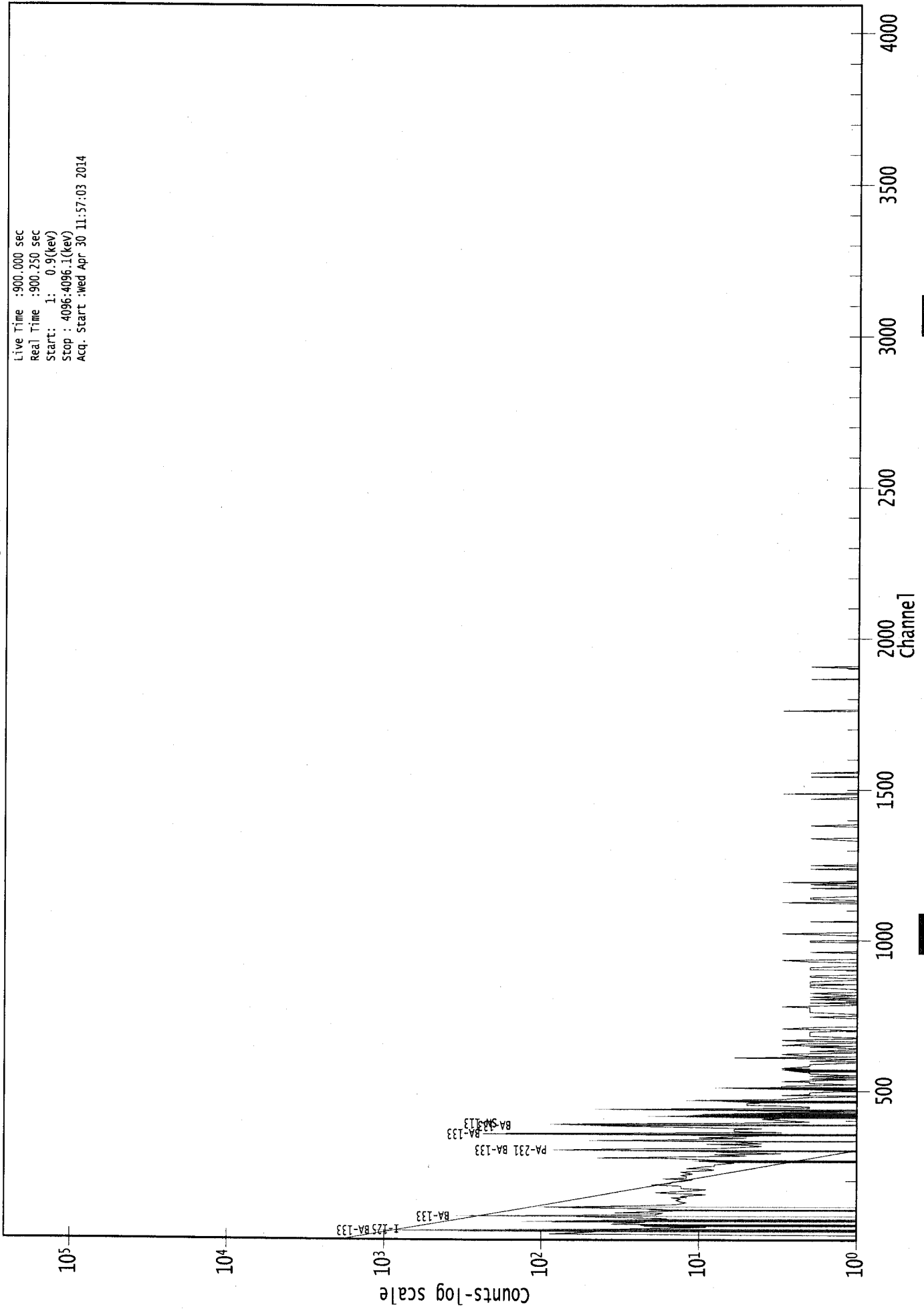
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- + = Nuclide identified during the nuclide identification
  - \* = Energy line found in the spectrum
  - > = MDA value not calculated
  - @ = Half-life too short to be able to perform the decay correction
  - ? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level
- 
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0000007027.CNF

Live Time : 900.000 sec  
Real Time : 900.250 sec  
Start : 1: 0.9(keV)  
Stop : 4096:4096.1(keV)  
Acq. Start : Wed Apr 30 11:57:03 2014





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4/30/14

Analysis Report for 1404166-03  
HEBERT

## GAMMA SPECTRUM ANALYSIS

Sample Identification : 1404166-03  
 Sample Description : HEBERT  
 Sample Type : RA RECOVERY  
  
 Sample Size : 1.000E+00 units  
 Facility : Countroom  
  
 Sample Taken On : 4/30/2014 11:00:48AM  
 Acquisition Started : 4/30/2014 11:47:18AM  
  
 Procedure : BAFIL  
 Operator : Administrator  
 Detector Name : GE4  
 Geometry : BAFIL  
 Live Time : 900.0 seconds  
 Real Time : 910.1 seconds  
  
 Dead Time : 1.11 %  
  
 Peak Locate Threshold : 2.50  
 Peak Locate Range (in channels) : 1 - 4096  
 Peak Area Range (in channels) : 15 - 4096  
 Identification Energy Tolerance : 1.000 keV  
  
 Energy Calibration Used Done On : 1/13/2014  
 Efficiency Calibration Used Done On : 2/6/2008  
 Efficiency Calibration Description :  
  
 Sample Number : 7026

## PEAK ANALYSIS REPORT

Peak Analysis Performed on : 4/30/2014 12:02:31PM  
 Peak Analysis From Channel : 1  
 Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
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Analysis Report for 1404166-03

HEBERT

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
M	1	31.01	24 -	41	29.79	1.27E+03	79.21	1.64E+02	2.44
m	2	35.22	24 -	41	34.00	2.39E+02	70.51	1.14E+02	2.45
	3	52.83	48 -	55	51.62	3.42E+01	29.66	1.24E+02	2.59
M	4	62.15	56 -	68	60.95	6.14E+01	36.11	1.51E+02	2.74
m	5	65.68	56 -	68	64.48	3.69E+01	37.20	1.73E+02	2.74
	6	81.20	74 -	86	80.01	4.69E+02	62.14	2.33E+02	2.26
M	7	112.18	106 -	118	111.01	6.32E+01	25.53	6.52E+01	2.54
m	8	116.40	106 -	118	115.23	2.27E+01	24.90	5.91E+01	2.54
M	9	271.19	268 -	285	270.12	1.10E+01	10.76	1.56E+01	3.53
m	10	276.57	268 -	285	275.51	2.58E+01	18.59	3.11E+01	2.92
m	11	282.06	268 -	285	281.00	1.30E+01	14.34	2.66E+01	2.42
M	12	303.68	295 -	316	302.64	7.12E+01	22.89	2.05E+01	3.24
m	13	311.04	295 -	316	310.00	1.40E+01	13.00	8.76E+00	2.43
	14	335.10	329 -	339	334.08	3.61E+01	16.33	1.59E+01	3.51
	15	356.18	350 -	359	355.16	2.27E+02	33.44	3.02E+01	1.77
M	16	384.83	378 -	396	383.83	5.99E+01	22.18	2.42E+01	3.49
m	17	387.75	378 -	396	386.75	3.78E+01	20.59	1.04E+01	2.72
	18	437.15	432 -	439	436.18	2.20E+01	11.66	7.92E+00	2.32
	19	480.00	477 -	481	479.06	5.00E+00	5.50	2.00E+00	2.71

M = First peak in a multiplet region  
 m = Other peak in a multiplet region  
 F = Fitted singlet  
 Errors quoted at 2.000sigma

## BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 4/30/2014 12:02:31PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000006629.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M	1	31.01	1.27E+03	79.21			1.27E+03	7.92E+01
m	2	35.22	2.39E+02	70.51			2.39E+02	7.05E+01
	3	52.83	3.42E+01	29.66	7.41E-01	6.74E-01	3.35E+01	2.97E+01
M	4	62.15	6.14E+01	36.11			6.14E+01	3.61E+01
m	5	65.68	3.69E+01	37.20			3.69E+01	3.72E+01
	6	81.20	4.69E+02	62.14			4.69E+02	6.21E+01
M	7	112.18	6.32E+01	25.53			6.32E+01	2.55E+01
m	8	116.40	2.27E+01	24.90			2.27E+01	2.49E+01
M	9	271.19	1.10E+01	10.76			1.10E+01	1.08E+01
m	10	276.57	2.58E+01	18.59			2.58E+01	1.86E+01

Analysis Report for 1404166-03

HEBERT

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
m	11	282.06	1.30E+01	14.34			1.30E+01	1.43E+01
M	12	303.68	7.12E+01	22.89			7.12E+01	2.29E+01
m	13	311.04	1.40E+01	13.00			1.40E+01	1.30E+01
	14	335.10	3.61E+01	16.33			3.61E+01	1.63E+01
	15	356.18	2.27E+02	33.44			2.27E+02	3.34E+01
M	16	384.83	5.99E+01	22.18			5.99E+01	2.22E+01
m	17	387.75	3.78E+01	20.59			3.78E+01	2.06E+01
	18	437.15	2.20E+01	11.66			2.20E+01	1.17E+01
	19	480.00	5.00E+00	5.50			5.00E+00	5.50E+00

M = First peak in a multiplet region  
m = Other peak in a multiplet region  
F = Fitted singlet  
Errors quoted at 2.000sigma

## NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\WSRC.NLB

### IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/units)	Activity Uncertainty
I-125	0.98	35.49 *	6.49	5.83E+02	1.75E+02
BA-133	0.97	30.80 *	97.60	1.98E+02	2.05E+01
		81.00 *	33.00	3.31E+02	6.81E+01
		302.84 *	17.80	2.90E+02	1.10E+02
		356.01 *	60.00	3.29E+02	6.68E+01
		383.85 *	8.70	6.57E+02	5.19E+02

\* = Energy line found in the spectrum.  
- = Manually added nuclide.  
? = Manually edited nuclide.  
@ = Energy line not used for Weighted Mean Activity  
Energy Tolerance : 1.000 keV  
Nuclide confidence index threshold = 0.30  
Errors quoted at 2.000sigma

Analysis Report for 1404166-03

HEBERT

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**INTERFERENCE CORRECTED REPORT**

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<b>Nuclide Name</b>	<b>Nuclide Id Confidence</b>	<b>Wt mean Activity (pCi/units)</b>	<b>Wt mean Activity Uncertainty</b>	<b>Comments</b>
I-125	0.988	5.83E+02	1.75E+02	
BA-133	0.979	2.21E+02	1.86E+01	

- ? = nuclide is part of an undetermined solution  
X = nuclide rejected by the interference analysis  
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

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Analysis Report for 1404166-03

HEBERT

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**UNIDENTIFIED PEAKS**


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Peak Locate Performed on : 4/30/2014 12:02:31PM  
 Peak Locate From Channel : 1  
 Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	3	52.83	3.72261E-02		
M	4	62.15	6.82170E-02	Sum	
m	5	65.68	4.10548E-02	Sum	
M	7	112.18	7.01670E-02	Sum	
m	8	116.40	2.52523E-02	Sum	
M	9	271.19	1.21909E-02		
m	10	276.57	2.86484E-02		
m	11	282.06	1.44495E-02		
m	13	311.04	1.55326E-02		
	14	335.10	4.00758E-02	Sum	
m	17	387.75	4.20401E-02	Sum	
	18	437.15	2.44872E-02	Sum	
	19	480.00	5.55556E-03		

M = First peak in a multiplet region  
 m = Other peak in a multiplet region  
 F = Fitted singlet  
 Errors quoted at 2.000sigma

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**NUCLIDE MDA REPORT**


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Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\WSRC.NLB

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/units)	Nuclide MDA (pCi/units)	Line MDA (pCi/units)
+	FE-55	5.89	24.50	0.00E+00	1.82E+00	1.82E+00
+	CO-57	122.06	85.51	-1.60E+00	1.08E+01	1.08E+01
		136.48	10.60	2.53E+01		1.02E+02
+	NI-59	6.92	29.80	0.00E+00	1.42E+00	1.42E+00

Analysis Report for 1404166-03

HEBERT

	<b>Nuclide Name</b>	<b>Energy (keV)</b>	<b>Yield(%)</b>	<b>Activity (pCi/units)</b>	<b>Nuclide MDA (pCi/units)</b>	<b>Line MDA (pCi/units)</b>
+	MO-93	16.59	52.90	-6.58E+00	9.12E+00	9.12E+00
		18.60	10.00	8.88E+01		7.34E+01
+	NB-93M	16.57	9.43	-3.69E+01	5.11E+01	5.11E+01
+	CD-109	88.03	3.72	-1.10E+02	2.28E+02	2.28E+02
+	SN-113	255.12	1.93	-5.49E+01	5.00E+01	8.66E+02
		391.69	61.90	5.25E-01		5.00E+01
+	SN-119M	23.87	16.10	9.65E+00	3.98E+01	5.37E+01
		25.10	22.70	-6.20E+00		3.98E+01
+	I-125	35.49	*	6.49	5.83E+02	2.54E+02
+	I-129	29.78	57.00	2.87E+02	4.74E+01	4.74E+01
		33.60	13.20	1.44E+03		2.14E+02
		39.58	7.52	-5.67E+00		1.27E+02
+	BA-133	30.80	*	97.60	1.98E+02	1.65E+01
		81.00	*	33.00	3.31E+02	5.37E+01
		302.84	*	17.80	2.90E+02	1.65E+02
		356.01	*	60.00	3.29E+02	3.85E+01
		383.85	*	8.70	6.57E+02	3.95E+02
+	CE-139	165.85	80.35	-2.05E+01	1.78E+01	1.78E+01
+	CE-144	133.54	10.80	1.19E+01	9.86E+01	9.86E+01
+	HG-203	279.19	77.30	1.90E+01	3.11E+01	3.11E+01
+	PB-210	10.80	9.57	0.00E+00	4.03E+00	4.03E+00
		46.50	4.25	6.56E+01		1.67E+02
+	PA-231	9.28	42.00	0.00E+00	9.40E-01	9.40E-01
		10.11	20.20	0.00E+00		1.93E+00
		283.67	1.60	1.14E+02		1.19E+03
		302.67	2.30	2.04E+03		1.56E+03
+	TH-231	25.64	14.70	-9.61E+00	6.18E+01	6.18E+01
		84.21	6.40	1.09E+03		3.56E+02
+	PA-234	9.89	89.00	0.00E+00	4.39E-01	4.39E-01
		21.72	64.90	1.14E+01		1.30E+01
		37.93	23.75	7.62E+01		4.99E+01
		131.42	20.40	-1.27E+01		5.10E+01
+	TH-234	63.29	3.80	3.44E+02	3.34E+02	3.34E+02
+	NP-237	29.37	14.00	1.25E+03	8.52E+01	1.90E+02
		86.50	12.60	6.92E+00		8.52E+01
+	U-237	97.08	16.30	5.24E+00	3.66E+01	6.09E+01
		101.07	26.30	1.90E+01		3.66E+01
		114.00	12.30	1.24E+02		1.17E+02
		208.01	22.00	-2.88E+01		7.44E+01
+	AM-241	59.54	35.90	6.10E+00	2.87E+01	2.87E+01
+	AM-243	74.67	66.00	1.19E+00	1.47E+01	1.47E+01

+ = Nuclide identified during the nuclide identification

\* = Energy line found in the spectrum

&gt; = MDA value not calculated

@ = Half-life too short to be able to perform the decay correction

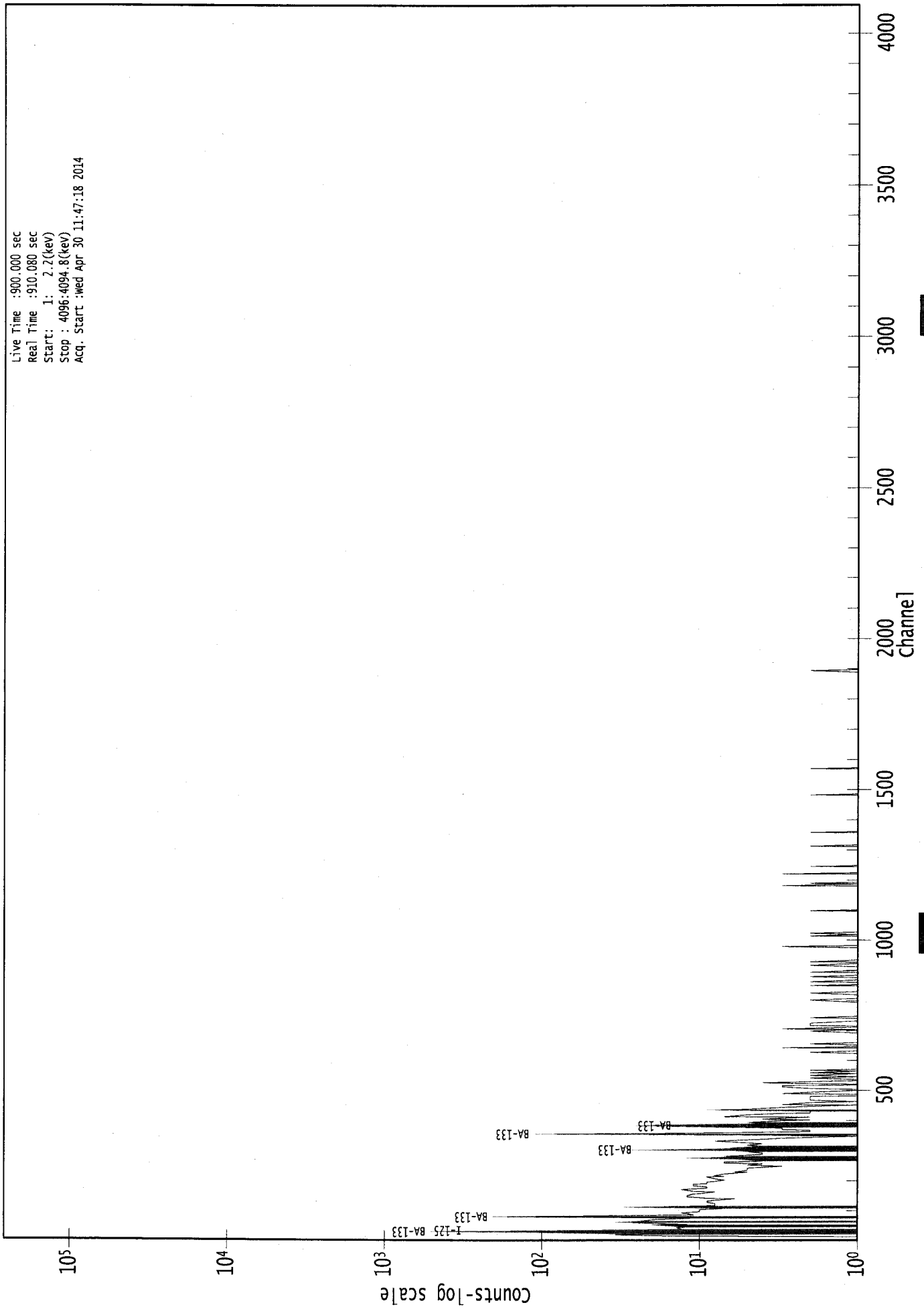
? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

Analysis Report for 1404166-03  
HEBERT

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# 0000007026.CNF

Live Time : 900.000 sec  
Real Time : 910.080 sec  
Start: 1: 2.2(keV)  
Stop : 4096:4094.8(keV)  
Acq. Start :Wed Apr 30 11:47:18 2014





*NB  
4/30/14*

Analysis Report for 1404166-04  
HEBERT

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## GAMMA SPECTRUM ANALYSIS

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Sample Identification : 1404166-04  
 Sample Description : HEBERT  
 Sample Type : RA RECOVERY  
  
 Sample Size : 1.000E+00 units  
 Facility : Countroom  
  
 Sample Taken On : 4/30/2014 11:00:59AM  
 Acquisition Started : 4/30/2014 12:02:57PM  
  
 Procedure : BAFIL  
 Operator : Administrator  
 Detector Name : GE4  
 Geometry : BAFIL  
 Live Time : 900.0 seconds  
 Real Time : 909.5 seconds  
  
 Dead Time : 1.04 %  
  
 Peak Locate Threshold : 2.50  
 Peak Locate Range (in channels) : 1 - 4096  
 Peak Area Range (in channels) : 15 - 4096  
 Identification Energy Tolerance : 1.000 keV  
  
 Energy Calibration Used Done On : 1/13/2014  
 Efficiency Calibration Used Done On : 2/6/2008  
 Efficiency Calibration Description :  
  
 Sample Number : 7029

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## PEAK ANALYSIS REPORT

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Peak Analysis Performed on : 4/30/2014 12:18:09PM  
 Peak Analysis From Channel : 1  
 Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
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Analysis Report for 1404166-04

HEBERT

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
M	1	31.11	25 -	38	29.89	1.36E+03	83.29	1.98E+02	2.44
m	2	35.44	25 -	38	34.22	3.01E+02	59.30	1.01E+02	2.30
	3	52.81	47 -	55	51.60	4.22E+01	33.71	1.50E+02	1.42
M	4	61.95	56 -	68	60.75	1.13E+02	40.72	1.74E+02	3.01
m	5	66.50	56 -	68	65.30	4.03E+01	37.04	1.58E+02	2.73
	6	81.14	74 -	84	79.95	5.63E+02	58.40	1.57E+02	2.53
M	7	108.94	104 -	114	107.77	1.94E+01	29.93	1.08E+02	2.54
m	8	111.94	104 -	114	110.77	4.55E+01	30.53	1.37E+02	2.54
	9	204.53	200 -	208	203.42	2.23E+01	26.02	9.14E+01	2.94
	10	277.68	271 -	284	276.62	4.03E+01	27.07	6.53E+01	2.85
	11	302.53	294 -	306	301.48	7.25E+01	32.61	9.10E+01	2.41
m	12	334.40	326 -	338	333.37	2.21E+01	15.65	2.09E+01	2.96
	13	356.17	352 -	360	355.16	2.87E+02	34.82	1.16E+01	2.71
	14	383.97	376 -	390	382.98	6.70E+01	32.42	8.19E+01	4.99
	15	415.99	412 -	418	415.01	1.08E+01	10.82	1.24E+01	1.79
	16	436.24	428 -	439	435.27	1.77E+01	18.97	3.66E+01	1.83
	17	500.73	498 -	502	499.80	5.00E+00	4.47	0.00E+00	2.40

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.000sigma

## BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 4/30/2014 12:18:09PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000006629.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M	1	31.11	1.36E+03	83.29			1.36E+03	8.33E+01
m	2	35.44	3.01E+02	59.30			3.01E+02	5.93E+01
	3	52.81	4.22E+01	33.71	7.41E-01	6.74E-01	4.14E+01	3.37E+01
M	4	61.95	1.13E+02	40.72			1.13E+02	4.07E+01
m	5	66.50	4.03E+01	37.04			4.03E+01	3.70E+01
	6	81.14	5.63E+02	58.40			5.63E+02	5.84E+01
M	7	108.94	1.94E+01	29.93			1.94E+01	2.99E+01
m	8	111.94	4.55E+01	30.53			4.55E+01	3.05E+01
	9	204.53	2.23E+01	26.02			2.23E+01	2.60E+01
	10	277.68	4.03E+01	27.07			4.03E+01	2.71E+01
	11	302.53	7.25E+01	32.61			7.25E+01	3.26E+01
m	12	334.40	2.21E+01	15.65			2.21E+01	1.57E+01

Analysis Report for 1404166-04

HEBERT

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
13	356.17	2.87E+02	34.82			2.87E+02	3.48E+01
14	383.97	6.70E+01	32.42			6.70E+01	3.24E+01
15	415.99	1.08E+01	10.82			1.08E+01	1.08E+01
16	436.24	1.77E+01	18.97			1.77E+01	1.90E+01
17	500.73	5.00E+00	4.47			5.00E+00	4.47E+00

M = First peak in a multiplet region  
 m = Other peak in a multiplet region  
 F = Fitted singlet  
 Errors quoted at 2.000sigma

## NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\WSRC.NLB

### IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/units)	Activity Uncertainty
I-125	1.00	35.49 *	6.49	7.36E+02	1.51E+02
BA-133	0.99	30.80 *	97.60	2.13E+02	2.19E+01
		81.00 *	33.00	3.97E+02	7.49E+01
		302.84 *	17.80	2.95E+02	1.45E+02
		356.01 *	60.00	4.17E+02	7.70E+01
		383.85 *	8.70	7.33E+02	6.22E+02

\* = Energy line found in the spectrum.  
 - = Manually added nuclide.  
 ? = Manually edited nuclide.  
 @ = Energy line not used for Weighted Mean Activity  
 Energy Tolerance : 1.000 keV  
 Nuclide confidence index threshold = 0.30  
 Errors quoted at 2.000sigma

## INTERFERENCE CORRECTED REPORT

Analysis Report for 1404166-04

HEBERT

<i>Nuclide Name</i>	<i>Nuclide Id Confidence</i>	<i>Wt mean Activity (pCi/units)</i>	<i>Wt mean Activity Uncertainty</i>	<i>Comments</i>
I-125	1.000	7.36E+02	1.51E+02	
BA-133	0.990	2.42E+02	2.01E+01	
X PA-231	0.981			

? = nuclide is part of an undetermined solution

X = nuclide rejected by the interference analysis

@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1404166-04

HEBERT

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**UNIDENTIFIED PEAKS**


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Peak Locate Performed on : 4/30/2014 12:18:09PM  
 Peak Locate From Channel : 1  
 Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	3	52.81	4.60471E-02		
M	4	61.95	1.25174E-01	Sum	
m	5	66.50	4.47604E-02	Sum	
M	7	108.94	2.15058E-02		
m	8	111.94	5.05359E-02	Sum	
	9	204.53	2.47712E-02		
	10	277.68	4.48174E-02		
m	12	334.40	2.45224E-02	Sum	
	15	415.99	1.19935E-02	Sum	
	16	436.24	1.96914E-02		
	17	500.73	5.55556E-03		

M = First peak in a multiplet region  
 m = Other peak in a multiplet region  
 F = Fitted singlet  
 Errors quoted at 2.000sigma

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**NUCLIDE MDA REPORT**


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Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\WSRC.NLB

	Nuclide Name	Energy (keV)	Yield(%)	Activity (pCi/units)	Nuclide MDA (pCi/units)	Line MDA (pCi/units)
+	FE-55	5.89	24.50	0.00E+00	1.82E+00	1.82E+00
+	CO-57	122.06	85.51	-6.96E+00	1.16E+01	1.16E+01
		136.48	10.60	1.78E+01		1.12E+02
+	NI-59	6.92	29.80	0.00E+00	1.42E+00	1.42E+00
+	MO-93	16.59	52.90	-5.27E-01	1.04E+01	1.04E+01
		18.60	10.00	9.84E+01		7.70E+01

Analysis Report for 1404166-04

HEBERT

	<b>Nuclide Name</b>	<b>Energy (keV)</b>	<b>Yield(%)</b>	<b>Activity (pCi/units)</b>	<b>Nuclide MDA (pCi/units)</b>	<b>Line MDA (pCi/units)</b>
+	NB-93M	16.57	9.43	-2.96E+00	5.82E+01	5.82E+01
+	CD-109	88.03	3.72	-8.31E+00	2.28E+02	2.28E+02
+	SN-113	255.12	1.93	-6.10E+01	4.16E+01	9.06E+02
		391.69	61.90	6.44E-01		4.16E+01
+	SN-119M	23.87	16.10	1.96E+01	4.18E+01	5.62E+01
		25.10	22.70	-8.02E+00		4.18E+01
+	I-125	35.49	*	6.49	7.36E+02	2.16E+02
+	I-129	29.78	57.00	3.11E+02	4.97E+01	4.97E+01
		33.60	13.20	1.61E+03		2.26E+02
		39.58	7.52	-9.21E-01		1.33E+02
+	BA-133	30.80	*	97.60	2.13E+02	1.43E+01
		81.00	*	33.00	3.97E+02	4.14E+01
		302.84	*	17.80	2.95E+02	1.97E+02
		356.01	*	60.00	4.17E+02	2.30E+01
		383.85	*	8.70	7.33E+02	5.33E+02
+	CE-139	165.85	80.35	6.20E+00	2.10E+01	2.10E+01
+	CE-144	133.54	10.80	7.67E+00	1.05E+02	1.05E+02
+	HG-203	279.19	77.30	1.12E+01	3.19E+01	3.19E+01
+	PB-210	10.80	9.57	0.00E+00	4.03E+00	4.03E+00
		46.50	4.25	2.11E+01		1.49E+02
+	PA-231	9.28	42.00	0.00E+00	9.40E-01	9.40E-01
		10.11	20.20	0.00E+00		1.93E+00
		283.67	1.60	-8.42E+01		1.17E+03
		302.67	*	2.30	2.28E+03	1.52E+03
+	TH-231	25.64	14.70	-1.24E+01	6.48E+01	6.48E+01
		84.21	6.40	-9.62E+00		3.66E+02
+	PA-234	9.89	89.00	0.00E+00	4.39E-01	4.39E-01
		21.72	64.90	1.33E+01		1.38E+01
		37.93	23.75	2.10E-01		5.51E+01
		131.42	20.40	9.20E+00		5.66E+01
+	TH-234	63.29	3.80	5.55E+02	3.71E+02	3.71E+02
+	NP-237	29.37	14.00	1.39E+03	8.11E+01	1.99E+02
		86.50	12.60	-1.26E+01		8.11E+01
+	U-237	97.08	16.30	-3.97E-02	3.79E+01	6.30E+01
		101.07	26.30	4.57E+00		3.79E+01
		114.00	12.30	3.16E+01		1.20E+02
		208.01	22.00	5.66E+00		9.08E+01
+	AM-241	59.54	35.90	8.81E+00	3.24E+01	3.24E+01
+	AM-243	74.67	66.00	3.11E+00	1.46E+01	1.46E+01

+ = Nuclide identified during the nuclide identification

\* = Energy line found in the spectrum

&gt; = MDA value not calculated

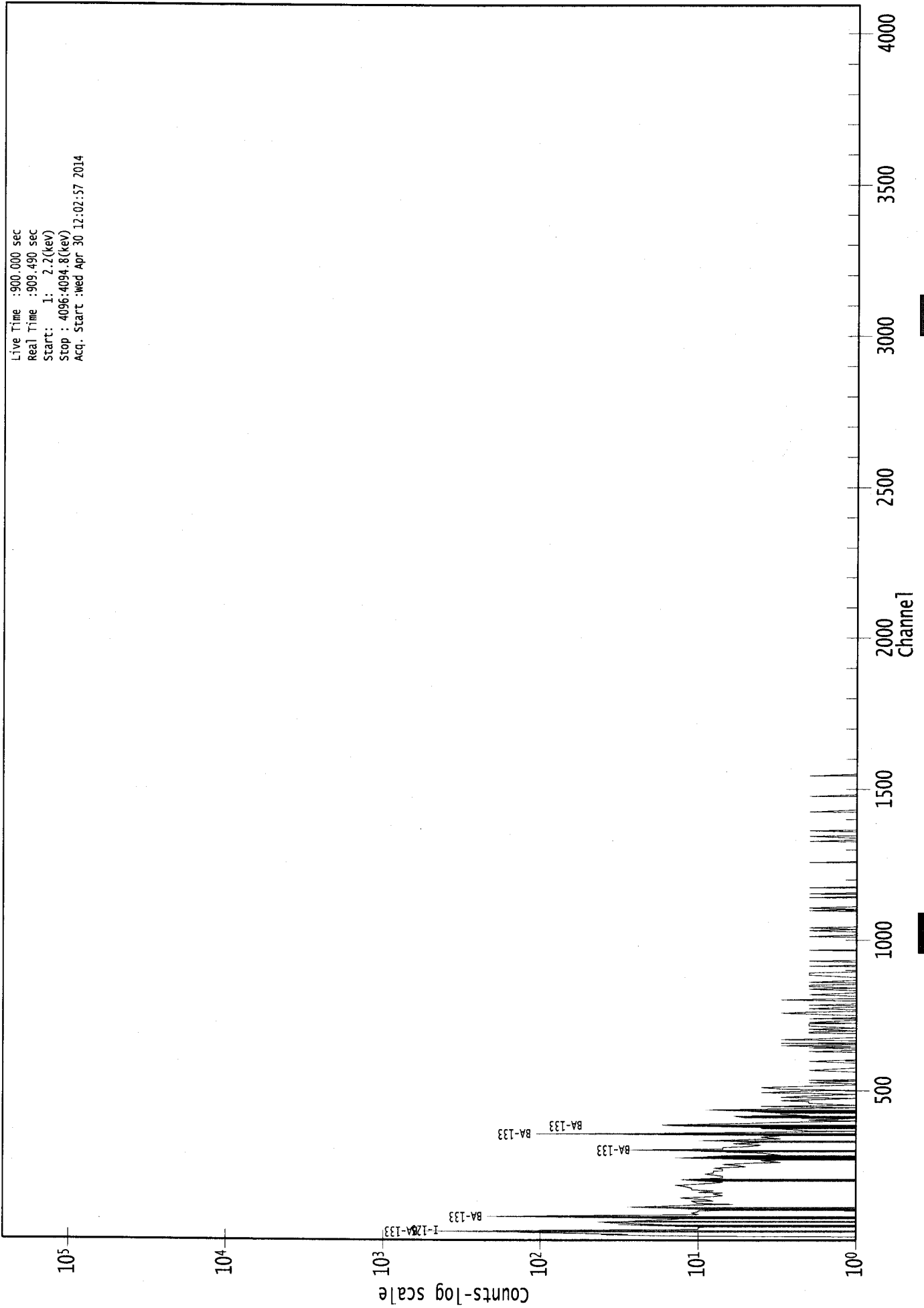
@ = Half-life too short to be able to perform the decay correction

? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level

Analysis Report for 1404166-04  
HEBERT

0000007029.CNF

Live Time : 900.000 sec  
Real Time : 909.490 sec  
Start : 1: 2.2(keV)  
Stop : 4096: 4094.8(keV)  
Acq. Start : Wed Apr 30 12:02:57 2014





*KB  
4/30/14*

Analysis Report for 1404166-05  
MPA SB1

## GAMMA SPECTRUM ANALYSIS

Sample Identification : 1404166-05  
 Sample Description : MPA SB1  
 Sample Type : RA RECOVERY

Sample Size : 1.000E+00 units  
 Facility : Countroom

Sample Taken On : 4/30/2014 11:01:13AM  
 Acquisition Started : 4/30/2014 11:58:10AM

Procedure : BAFIL  
 Operator : Administrator  
 Detector Name : GE3  
 Geometry : BAFIL  
 Live Time : 900.0 seconds  
 Real Time : 905.2 seconds

Dead Time : 0.58 %

Peak Locate Threshold : 2.50  
 Peak Locate Range (in channels) : 1 - 4096  
 Peak Area Range (in channels) : 9 - 4096  
 Identification Energy Tolerance : 1.000 keV

Energy Calibration Used Done On : 2/15/2014  
 Efficiency Calibration Used Done On : 9/14/2010  
 Efficiency Calibration Description :

Sample Number : 7028

## PEAK ANALYSIS REPORT

Peak Analysis Performed on : 4/30/2014 12:13:18PM  
 Peak Analysis From Channel : 1  
 Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
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Analysis Report for 1404166-05

MPA SB1

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	20.78	17 -	24	20.77	5.83E+01	47.16	3.31E+02	1.18
M	2	31.02	25 -	39	31.00	1.82E+03	89.60	1.78E+02	1.52
m	3	35.27	25 -	39	35.25	4.71E+02	51.22	1.56E+02	1.72
M	4	62.01	50 -	72	61.99	2.71E+02	41.94	1.46E+02	1.70
m	5	66.07	50 -	72	66.06	1.15E+02	40.20	1.97E+02	1.88
	6	81.14	77 -	83	81.12	7.71E+02	64.98	2.03E+02	1.44
	7	92.57	89 -	95	92.55	4.56E+01	30.43	1.33E+02	1.97
M	8	111.91	106 -	121	111.89	2.32E+02	36.87	9.68E+01	1.83
m	9	116.00	106 -	121	115.97	6.44E+01	29.18	8.28E+01	1.83
m	10	119.03	106 -	121	119.00	1.84E+01	26.29	7.76E+01	1.67
	11	143.31	137 -	150	143.27	5.73E+01	47.07	2.09E+02	7.20
	12	161.95	155 -	171	161.92	6.85E+01	54.33	2.55E+02	4.14
	13	276.85	273 -	281	276.79	5.16E+01	25.37	6.68E+01	1.60
M	14	303.07	298 -	317	303.02	1.22E+02	25.46	4.93E+01	1.69
m	15	307.08	298 -	317	307.02	2.42E+01	20.10	3.26E+01	2.04
M	16	334.05	330 -	340	333.99	7.95E+01	20.52	3.31E+01	1.82
	17	356.16	351 -	360	356.10	3.96E+02	45.13	6.44E+01	1.59
	18	364.71	362 -	367	364.64	1.13E+01	13.30	2.55E+01	1.63
	19	377.56	375 -	380	377.49	1.37E+01	12.29	1.67E+01	1.20
M	20	383.81	381 -	389	383.74	8.49E+01	25.96	1.65E+01	1.99
m	21	387.01	381 -	389	386.94	1.68E+02	29.03	3.51E+01	1.52
	22	391.42	390 -	395	391.35	5.27E+01	19.29	2.65E+01	1.53
	23	415.80	412 -	419	415.72	3.98E+01	23.83	6.84E+01	1.19
	24	437.20	431 -	440	437.12	9.02E+01	21.70	1.76E+01	1.90
	25	451.70	448 -	454	451.62	5.50E+00	7.78	7.00E+00	2.38
	26	470.80	464 -	477	470.71	2.64E+01	18.65	2.32E+01	6.61

M = First peak in a multiplet region  
 m = Other peak in a multiplet region  
 F = Fitted singlet  
 Errors quoted at 2.000sigma

## BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 4/30/2014 12:13:18PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000006628.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	20.78	5.83E+01	47.16			5.83E+01	4.72E+01
M	2	31.02	1.82E+03	89.60			1.82E+03	8.96E+01
m	3	35.27	4.71E+02	51.22			4.71E+02	5.12E+01

Analysis Report for 1404166-05

MPA SB1

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M 4	62.01	2.71E+02	41.94			2.71E+02	4.19E+01
m 5	66.07	1.15E+02	40.20			1.15E+02	4.02E+01
6	81.14	7.71E+02	64.98			7.71E+02	6.50E+01
7	92.57	4.56E+01	30.43	2.15E+01	2.63E+00	2.41E+01	3.05E+01
M 8	111.91	2.32E+02	36.87			2.32E+02	3.69E+01
m 9	116.00	6.44E+01	29.18			6.44E+01	2.92E+01
m 10	119.03	1.84E+01	26.29			1.84E+01	2.63E+01
11	143.31	5.73E+01	47.07			5.73E+01	4.71E+01
12	161.95	6.85E+01	54.33			6.85E+01	5.43E+01
13	276.85	5.16E+01	25.37			5.16E+01	2.54E+01
M 14	303.07	1.22E+02	25.46			1.22E+02	2.55E+01
m 15	307.08	2.42E+01	20.10			2.42E+01	2.01E+01
M 16	334.05	7.95E+01	20.52			7.95E+01	2.05E+01
17	356.16	3.96E+02	45.13			3.96E+02	4.51E+01
18	364.71	1.13E+01	13.30			1.13E+01	1.33E+01
19	377.56	1.37E+01	12.29			1.37E+01	1.23E+01
M 20	383.81	8.49E+01	25.96			8.49E+01	2.60E+01
m 21	387.01	1.68E+02	29.03			1.68E+02	2.90E+01
22	391.42	5.27E+01	19.29			5.27E+01	1.93E+01
23	415.80	3.98E+01	23.83			3.98E+01	2.38E+01
24	437.20	9.02E+01	21.70			9.02E+01	2.17E+01
25	451.70	5.50E+00	7.78			5.50E+00	7.78E+00
26	470.80	2.64E+01	18.65			2.64E+01	1.87E+01

M = First peak in a multiplet region  
m = Other peak in a multiplet region  
F = Fitted singlet  
Errors quoted at 2.000sigma

## NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\WSRC.NLB

### IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/units)	Activity Uncertainty
SN-113	0.94	255.12	1.93		
		391.69	*	61.90	4.02E+01
I-125	0.99	35.49	*	6.49	1.25E+02
BA-133	0.99	30.80	*	97.60	2.03E+01
		81.00	*	33.00	3.83E+02
		302.84	*	17.80	3.64E+02
					1.51E+01
					1.36E+01
					1.60E+00
					6.47E+01
					1.01E+02

Analysis Report for 1404166-05

MPA SB1

<b>Nuclide Name</b>	<b>Id Confidence</b>	<b>Energy (keV)</b>	<b>Yield(%)</b>	<b>Activity (pCi/units)</b>	<b>Activity Uncertainty</b>
BA-133	0.99	356.01 *	60.00	3.29E+02	5.73E+01
		383.85 *	8.70	4.66E+02	3.54E+02

\* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

@ = Energy line not used for Weighted Mean Activity

Energy Tolerance : 1.000 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

## INTERFERENCE CORRECTED REPORT

<b>Nuclide Name</b>	<b>Nuclide Id Confidence</b>	<b>Wt mean Activity (pCi/units)</b>	<b>Wt mean Activity Uncertainty</b>	<b>Comments</b>
SN-113	0.943	4.02E+01	1.51E+01	
I-125	0.992	1.25E+02	1.36E+01	
BA-133	0.994	2.09E+01	1.60E+00	

? = nuclide is part of an undetermined solution

X = nuclide rejected by the interference analysis

@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 1404166-05

MPA SB1

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**UNIDENTIFIED PEAKS**


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Peak Locate Performed on : 4/30/2014 12:13:18PM  
 Peak Locate From Channel : 1  
 Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide	
	1	20.78	6.47495E-02	40.46	Tol.	PA-234
M	4	62.01	3.01103E-01	7.74	Sum	
m	5	66.07	1.27546E-01	17.51	Sum	
	7	92.57	2.67740E-02	63.37		
M	8	111.91	2.57534E-01	7.95	Sum	
m	9	116.00	7.15775E-02	22.65	Sum	
m	10	119.03	2.03921E-02	71.63		
	11	143.31	6.37037E-02	41.05		
	12	161.95	7.61111E-02	39.66	Sum	
	13	276.85	5.73333E-02	24.59		
m	15	307.08	2.68979E-02	41.51		
M	16	334.05	8.83270E-02	12.91	Sum	
	18	364.71	1.25000E-02	59.13		
	19	377.56	1.51768E-02	44.98		
m	21	387.01	1.86889E-01	8.63	Sum	
	23	415.80	4.42417E-02	29.93	Sum	
	24	437.20	1.00236E-01	12.03	Sum	
	25	451.70	6.11111E-03	70.71		
	26	470.80	2.93567E-02	35.30		

M = First peak in a multiplet region  
 m = Other peak in a multiplet region  
 F = Fitted singlet  
 Errors quoted at 2.000sigma

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**NUCLIDE MDA REPORT**


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Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\WSRC.NLB

Analysis Report for 1404166-05

MPA SB1

	<b>Nuclide Name</b>	<b>Energy (keV)</b>	<b>Yield(%)</b>	<b>Activity (pCi/units)</b>	<b>Nuclide MDA (pCi/units)</b>	<b>Line MDA (pCi/units)</b>
+	FE-55	5.89	24.50	0.00E+00	2.78E-05	2.78E-05
+	CO-57	122.06	85.51	1.32E-01	1.55E+01	1.55E+01
		136.48	10.60	-2.27E+01		1.53E+02
+	NI-59	6.92	29.80	-7.74E-04	2.82E-04	2.82E-04
+	MO-93	16.59	52.90	-1.40E-02	7.68E-02	7.68E-02
		18.60	10.00	6.58E-01		8.52E-01
+	NB-93M	16.57	9.43	-7.79E-02	4.29E-01	4.29E-01
+	CD-109	88.03	3.72	-9.75E+00	2.14E+02	2.14E+02
+	SN-113	255.12	1.93	4.50E+01	1.80E+01	9.13E+02
		391.69	* 61.90	4.02E+01		1.80E+01
+	SN-119M	23.87	16.10	-2.28E+00	1.05E+00	1.25E+00
		25.10	22.70	-2.90E+00		1.05E+00
+	I-125	35.49	* 6.49	1.25E+02	2.93E+01	2.93E+01
+	I-129	29.78	57.00	2.88E+01	3.39E+00	3.39E+00
		33.60	13.20	-7.09E+01		1.51E+01
		39.58	7.52	4.27E+00		1.47E+01
+	BA-133	30.80	* 97.60	2.03E+01	1.24E+00	1.24E+00
		81.00	* 33.00	3.83E+02		2.90E+01
		302.84	* 17.80	3.64E+02		2.09E+02
		356.01	* 60.00	3.29E+02		3.14E+01
		383.85	* 8.70	4.66E+02		1.53E+02
+	CE-139	165.85	80.35	-8.11E+00	2.33E+01	2.33E+01
+	CE-144	133.54	10.80	5.57E+00	1.48E+02	1.48E+02
+	HG-203	279.19	77.30	2.92E+01	3.00E+01	3.00E+01
+	PB-210	10.80	9.57	5.42E-02	5.48E-02	5.48E-02
		46.50	4.25	2.77E+01		4.61E+01
+	PA-231	9.28	42.00	4.82E-03	4.42E-03	4.42E-03
		10.11	20.20	2.31E-02		1.68E-02
		283.67	1.60	2.93E+02		9.56E+02
		302.67	2.30	1.93E+03		1.37E+03
+	TH-231	25.64	14.70	-1.29E+01	1.95E+00	1.95E+00
		84.21	6.40	-2.01E+02		2.30E+02
+	PA-234	9.89	89.00	4.64E-03	3.37E-03	3.37E-03
		21.72	64.90	1.72E-01		2.53E-01
		37.93	23.75	4.87E+00		6.83E+00
		131.42	20.40	2.97E+01		7.74E+01
+	TH-234	63.29	3.80	2.97E+02	2.29E+02	2.29E+02
+	NP-237	29.37	14.00	8.12E+01	1.20E+01	1.20E+01
		86.50	12.60	-2.32E+02		6.80E+01
+	U-237	97.08	16.30	-3.53E+00	4.09E+01	5.29E+01
		101.07	26.30	1.68E+01		4.09E+01
		114.00	12.30	3.42E+02		1.88E+02
		208.01	22.00	-4.63E+01		9.39E+01
+	AM-241	59.54	35.90	3.63E+01	1.88E+01	1.88E+01
+	AM-243	74.67	66.00	-9.52E-03	9.11E+00	9.11E+00

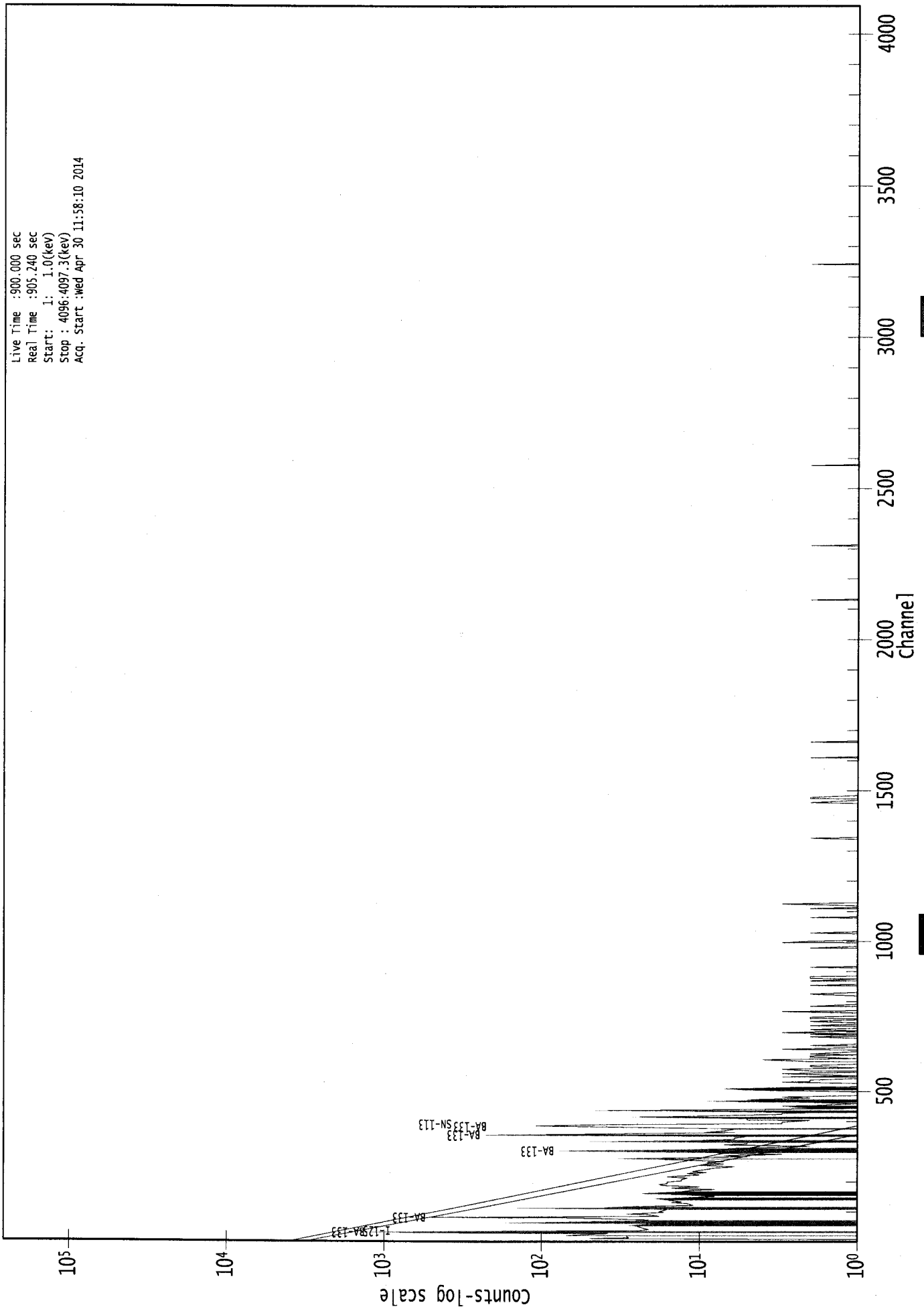
Analysis Report for 1404166-05

MPA SB1

- 
- + = Nuclide identified during the nuclide identification
  - \* = Energy line found in the spectrum
  - > = MDA value not calculated
  - @ = Half-life too short to be able to perform the decay correction
  - ? = CAUTION: MDA value is inconsistent with Currie MDA at 95% confidence level
- 
-

0000007028.CNF

Live Time : 900.000 sec  
Real Time : 905.240 sec  
Start : 1: 1.0(keV)  
Stop : 4096: 4097.3(keV)  
Acq. Start : Wed Apr 30 11:58:10 2014





**SECTION XI**  
**ANALYTICAL DATA (TOTAL DISSOLVED SOLIDS)**



# ANALYTICAL RESULTS

PERFORMED BY

**GULF COAST ANALYTICAL LABORATORIES, INC.**

7979 GSRI Avenue  
Baton Rouge, LA 70820

**Report Date** 10/13/2010

**GCAL Report** 210100408



**Deliver To** Michael Pisani & Associates  
1100 Poydras St  
Suite 1430  
New Orleans, LA 70163  
504-582-2468

**Attn** Jonathan Miller

**Project** East White Lake 07-47

## CASE NARRATIVE

**Client:** Michael Pisani & Associates      **Report:** 210100408

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the sample cross-reference 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 TNRCC 1006/LA 1006 analysis, the recovery for the surrogate, o-Terphenyl is above the upper control limit. No target compounds were detected in the sample; therefore the data is reportable.

### METALS

In the SW-846 6010B Dissolved analysis, a chemical or physical interference necessitated a dilution for samples 21010040802 (HP-MPA-02-T), 21010040810 (HP-MPA-08-T) and 21010040811 (HP-MPA-09-T). This is reflected in the elevated reporting limits.

In the SW-846 6010B analysis, a chemical or physical interference necessitated a dilution for samples 21010040802 (HP-MPA-02-T), 21010040810 (HP-MPA-08-T) and 21010040811 (HP-MPA-09-T). This is reflected in the elevated reporting limits.

In the SW-846 6010B analysis for prep batch 442963, the MS and/or MSD recoveries are outside the control limits for Calcium, Iron and Magnesium. The LCS recovery is within control limits. This indicates the analysis is in control and the sample is affected by matrix interference. A post-digestion spike was performed on the QC sample for this batch with recoveries of 11% for Calcium, 92% for Iron and 76% for Magnesium. The MS recovery is not applicable for Calcium, Iron and Magnesium because the sample concentration is greater than four times the spike concentration. The Sample/Duplicate RPD for Selenium is not applicable because the sample and/or duplicate concentration is less than five times the reporting limit.

In the SW-846 7010 Dissolved analysis for prep batch 442970, the Sample/Duplicate RPD for Arsenic is not applicable because the sample and/or duplicate concentration is less than five times the reporting limit.

In the SW-846 6010B Dissolved analysis for prep batch 442882, the Sample/Duplicate RPD for Lead and Selenium is not applicable because the sample and/or duplicate concentration is less than five times the reporting limit.

### CONVENTIONALS

In the EPA 375.4 analysis, samples 21010040802 (HP-MPA-02-T) and 21010040811 (HP-MPA-09-T) had to be diluted in order to bracket the concentration within the calibration range of the instrument.

In the SM 4500 CL E Chloride analysis, samples 21010040801 (HP-MPA-01-T), 21010040802 (HP-MPA-02-T), 21010040803 (HP-MPA-02-I), 21010040804 (HP-MPA-03-T), 21010040805 (HP-MPA-04-T), 21010040806 (HP-MPA-05-T), 21010040807 (HP-MPA-06-T), 21010040808 (HP-MPA-07-T), 21010040809 (HP-MPA-07-T DUP), 21010040810 (HP-MPA-08-T), 21010040811 (HP-MPA-09-T) and 21010040812 (HP-MPA-10-T) had to be diluted in order to bracket the concentration within the calibration range of the instrument.

# 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 Utilized in this Report

<b>ND</b>	Indicates the result was Not Detected at the specified RDL
<b>DO</b>	Indicates the result was Diluted Out
<b>MI</b>	Indicates the result was subject to Matrix Interference
<b>TNTC</b>	Indicates the result was Too Numerous To Count
<b>SUBC</b>	Indicates the analysis was Sub-Contracted
<b>FLD</b>	Indicates the analysis was performed in the Field
<b>PQL</b>	Practical Quantitation Limit
<b>MDL</b>	Method Detection Limit
<b>RDL</b>	Reporting Detection Limit
<b>00:00</b>	Reported as a time equivalent to 12:00 AM

## Reporting Flags Utilized in this Report

<b>J</b>	Indicates an estimated value
<b>U</b>	Indicates the compound was analyzed for but not detected
<b>B</b>	(ORGANICS) Indicates the analyte was detected in the associated Method Blank
<b>B</b>	(INORGANICS) Indicates the result is between the RDL and MDL

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 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.

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Robyn Miguez  
Technical Director  
**GCAL REPORT 210100408**

# Report Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040801	HP-MPA-01-T	Water	09/29/2010 10:20	10/04/2010 08:56
21010040802	HP-MPA-02-T	Water	09/29/2010 15:50	10/04/2010 08:56
21010040803	HP-MPA-02-I	Water	09/29/2010 16:40	10/04/2010 08:56
21010040804	HP-MPA-03-T	Water	09/30/2010 09:50	10/04/2010 08:56
21010040805	HP-MPA-04-T	Water	09/30/2010 12:30	10/04/2010 08:56
21010040806	HP-MPA-05-T	Water	09/30/2010 14:40	10/04/2010 08:56
21010040807	HP-MPA-06-T	Water	09/30/2010 17:00	10/04/2010 08:56
21010040808	HP-MPA-07-T	Water	10/01/2010 08:30	10/04/2010 08:56
21010040809	HP-MPA-07-T DUP	Water	10/01/2010 08:30	10/04/2010 08:56
21010040810	HP-MPA-08-T	Water	10/01/2010 13:45	10/04/2010 08:56
21010040811	HP-MPA-09-T	Water	10/01/2010 15:45	10/04/2010 08:56
21010040812	HP-MPA-10-T	Water	10/01/2010 18:00	10/04/2010 08:56
21010040813	TRIP BLANK	Water		10/04/2010 08:56

# Summary of Compounds Detected

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040801	HP-MPA-01-T	Water	09/29/2010 10:20	10/04/2010 08:56

## SW-846 8260B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
108-88-3	Toluene	0.00609	0.005		mg/L

## SM 2320B Bicarbonate

CAS#	Parameter	Result	RDL	REG LIMIT	Units
T-005-B	Bicarbonate Alkalinity	690	1.0		mg/L CaCO3

## SW-846 6010B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	2.04	0.010		mg/L
7440-70-2	Calcium	228	0.10		mg/L
7440-47-3	Chromium	0.071	0.010		mg/L
7439-89-6	Iron	29.1	0.10		mg/L
7439-92-1	Lead	0.016	0.015		mg/L
7439-95-4	Magnesium	80.1	0.10		mg/L
7439-96-5	Manganese	0.78	0.015		mg/L
7440-09-7	Potassium	7.17	0.50		mg/L
7440-23-5	Sodium	495	1.00		mg/L
7440-24-6	Strontium	1.87	0.050		mg/L
7440-66-6	Zinc	0.087	0.020		mg/L

## SM 2540C TDS

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-035	Total Dissolved Solids(TDS)	2110	10.0		mg/L

## SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	REG LIMIT	Units
16887-00-6	Chloride	928	50.0		mg/L

## SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	1.45	0.010		mg/L
7440-70-2	Calcium	233	0.10		mg/L
7439-89-6	Iron	9.69	0.10		mg/L
7439-95-4	Magnesium	79.4	0.10		mg/L
7439-96-5	Manganese	0.53	0.015		mg/L
7440-09-7	Potassium	5.43	0.50		mg/L
7440-23-5	Sodium	477	1.00		mg/L
7440-24-6	Strontium	1.87	0.050		mg/L

# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040802	HP-MPA-02-T	Water	09/29/2010 15:50	10/04/2010 08:56

## SM 2540C TDS

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-035	Total Dissolved Solids(TDS)	4060	10.0		mg/L

## SW-846 6010B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	0.43	0.010		mg/L
7440-70-2	Calcium	70.1	0.10		mg/L
7439-89-6	Iron	7.75	0.10		mg/L
7439-95-4	Magnesium	158	0.10		mg/L
7439-96-5	Manganese	0.85	0.015		mg/L
7440-09-7	Potassium	46.4	0.50		mg/L
7440-24-6	Strontium	1.06	0.050		mg/L

## SW-846 6010B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-23-5	Sodium	1360	5.00		mg/L

## SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	0.31	0.010		mg/L
7440-70-2	Calcium	65.8	0.10		mg/L
7439-89-6	Iron	0.57	0.10		mg/L
7439-95-4	Magnesium	152	0.10		mg/L
7439-96-5	Manganese	0.67	0.015		mg/L
7440-09-7	Potassium	44.4	0.50		mg/L
7440-24-6	Strontium	1.0	0.050		mg/L
7440-66-6	Zinc	0.039	0.020		mg/L

## SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-23-5	Sodium	1330	5.00		mg/L

## SW-846 8260B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
108-88-3	Toluene	0.00764	0.005		mg/L

## SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	REG LIMIT	Units
16887-00-6	Chloride	2130	50.0		mg/L



## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040802	HP-MPA-02-T	Water	09/29/2010 15:50	10/04/2010 08:56

### EPA 375.4 Sulfate

CAS#	Parameter	Result	RDL	REG LIMIT	Units
14808-79-8	Sulfate	53.9	10.0		mg/L

### SM 2320B Bicarbonate

CAS#	Parameter	Result	RDL	REG LIMIT	Units
T-005-B	Bicarbonate Alkalinity	224	1.0		mg/L CaCO3

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040803	HP-MPA-02-I	Water	09/29/2010 16:40	10/04/2010 08:56

### SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	REG LIMIT	Units
16887-00-6	Chloride	641	20.0		mg/L

### SM 2540C TDS

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-035	Total Dissolved Solids(TDS)	1260	10.0		mg/L

### SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	0.99	0.010		mg/L
7440-70-2	Calcium	123	0.10		mg/L
7439-89-6	Iron	4.67	0.10		mg/L
7439-95-4	Magnesium	45.9	0.10		mg/L
7439-96-5	Manganese	0.28	0.015		mg/L
7440-09-7	Potassium	4.76	0.50		mg/L
7440-23-5	Sodium	352	1.00		mg/L
7440-24-6	Strontium	0.91	0.050		mg/L

### SM 2320B Bicarbonate

CAS#	Parameter	Result	RDL	REG LIMIT	Units
T-005-B	Bicarbonate Alkalinity	352	1.0		mg/L CaCO3

### SW-846 6010B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	1.50	0.010		mg/L
7440-70-2	Calcium	124	0.10		mg/L
7440-47-3	Chromium	0.045	0.010		mg/L
7439-89-6	Iron	16.3	0.10		mg/L
7439-95-4	Magnesium	47.4	0.10		mg/L

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040803	HP-MPA-02-I	Water	09/29/2010 16:40	10/04/2010 08:56

### SW-846 6010B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-96-5	Manganese	0.49	0.015		mg/L
7440-09-7	Potassium	5.99	0.50		mg/L
7440-23-5	Sodium	379	1.00		mg/L
7440-24-6	Strontium	0.97	0.050		mg/L
7440-66-6	Zinc	0.037	0.020		mg/L

### SW-846 8260B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
108-88-3	Toluene	0.00574	0.005		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040804	HP-MPA-03-T	Water	09/30/2010 09:50	10/04/2010 08:56

### SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	0.69	0.010		mg/L
7440-70-2	Calcium	131	0.10		mg/L
7439-89-6	Iron	3.27	0.10		mg/L
7439-95-4	Magnesium	54.7	0.10		mg/L
7439-96-5	Manganese	0.37	0.015		mg/L
7440-09-7	Potassium	5.54	0.50		mg/L
7440-23-5	Sodium	472	1.00		mg/L
7440-24-6	Strontium	0.92	0.050		mg/L

### SM 2540C TDS

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-035	Total Dissolved Solids(TDS)	1820	10.0		mg/L

### SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	REG LIMIT	Units
16887-00-6	Chloride	801	20.0		mg/L

### SW-846 6010B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	1.13	0.010		mg/L
7440-70-2	Calcium	145	0.10		mg/L
7440-47-3	Chromium	0.059	0.010		mg/L
7439-89-6	Iron	16.7	0.10		mg/L
7439-95-4	Magnesium	59.0	0.10		mg/L
7439-96-5	Manganese	0.53	0.015		mg/L

# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040804	HP-MPA-03-T	Water	09/30/2010 09:50	10/04/2010 08:56

## SW-846 6010B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-09-7	Potassium	6.48	0.50		mg/L
7440-23-5	Sodium	525	1.00		mg/L
7440-24-6	Strontium	1.02	0.050		mg/L
7440-66-6	Zinc	0.14	0.020		mg/L

## SM 2320B Bicarbonate

CAS#	Parameter	Result	RDL	REG LIMIT	Units
T-005-B	Bicarbonate Alkalinity	384	1.0		mg/L CaCO3

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040805	HP-MPA-04-T	Water	09/30/2010 12:30	10/04/2010 08:56

## SW-846 6010B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	1.30	0.010		mg/L
7440-70-2	Calcium	198	0.10		mg/L
7440-47-3	Chromium	0.074	0.010		mg/L
7439-89-6	Iron	27.4	0.10		mg/L
7439-92-1	Lead	0.027	0.015		mg/L
7439-95-4	Magnesium	65.1	0.10		mg/L
7439-96-5	Manganese	0.86	0.015		mg/L
7440-09-7	Potassium	7.57	0.50		mg/L
7440-23-5	Sodium	482	1.00		mg/L
7440-24-6	Strontium	1.35	0.050		mg/L
7440-66-6	Zinc	0.091	0.020		mg/L

## SM 2320B Bicarbonate

CAS#	Parameter	Result	RDL	REG LIMIT	Units
T-005-B	Bicarbonate Alkalinity	447	1.0		mg/L CaCO3

## SW-846 7010 Arsenic

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-38-2	Arsenic	0.010	0.010		mg/L

## SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	REG LIMIT	Units
16887-00-6	Chloride	817	20.0		mg/L

# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040805	HP-MPA-04-T	Water	09/30/2010 12:30	10/04/2010 08:56

## SM 2540C TDS

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-035	Total Dissolved Solids(TDS)	1660	10.0		mg/L

## SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	0.84	0.010		mg/L
7440-70-2	Calcium	170	0.10		mg/L
7439-89-6	Iron	4.50	0.10		mg/L
7439-95-4	Magnesium	62.6	0.10		mg/L
7439-96-5	Manganese	0.50	0.015		mg/L
7440-09-7	Potassium	6.01	0.50		mg/L
7440-23-5	Sodium	451	1.00		mg/L
7440-24-6	Strontium	1.24	0.050		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040806	HP-MPA-05-T	Water	09/30/2010 14:40	10/04/2010 08:56

## SM 2540C TDS

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-035	Total Dissolved Solids(TDS)	1680	10.0		mg/L

## EPA 375.4 Sulfate

CAS#	Parameter	Result	RDL	REG LIMIT	Units
14808-79-8	Sulfate	21.7	5.0		mg/L

## SW-846 6010B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	0.51	0.010		mg/L
7440-70-2	Calcium	113	0.10		mg/L
7439-89-6	Iron	2.60	0.10		mg/L
7439-95-4	Magnesium	56.8	0.10		mg/L
7439-96-5	Manganese	0.49	0.015		mg/L
7440-09-7	Potassium	7.53	0.50		mg/L
7440-23-5	Sodium	508	1.00		mg/L
7440-24-6	Strontium	0.90	0.050		mg/L

## SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	REG LIMIT	Units
16887-00-6	Chloride	831	20.0		mg/L

# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040806	HP-MPA-05-T	Water	09/30/2010 14:40	10/04/2010 08:56

## SM 2320B Bicarbonate

CAS#	Parameter	Result	RDL	REG LIMIT	Units
T-005-B	Bicarbonate Alkalinity	345	1.0		mg/L CaCO3

## SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	0.52	0.010		mg/L
7440-70-2	Calcium	119	0.10		mg/L
7439-89-6	Iron	1.98	0.10		mg/L
7439-95-4	Magnesium	59.8	0.10		mg/L
7439-96-5	Manganese	0.50	0.015		mg/L
7440-09-7	Potassium	7.55	0.50		mg/L
7440-23-5	Sodium	479	1.00		mg/L
7440-24-6	Strontium	0.90	0.050		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040807	HP-MPA-06-T	Water	09/30/2010 17:00	10/04/2010 08:56

## SM 2320B Bicarbonate

CAS#	Parameter	Result	RDL	REG LIMIT	Units
T-005-B	Bicarbonate Alkalinity	330	1.0		mg/L CaCO3

## EPA 375.4 Sulfate

CAS#	Parameter	Result	RDL	REG LIMIT	Units
14808-79-8	Sulfate	16.4	5.0		mg/L

## SW-846 6010B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	1.21	0.010		mg/L
7440-70-2	Calcium	202	0.10		mg/L
7440-47-3	Chromium	0.014	0.010		mg/L
7439-89-6	Iron	6.88	0.10		mg/L
7439-95-4	Magnesium	74.1	0.10		mg/L
7439-96-5	Manganese	0.60	0.015		mg/L
7440-09-7	Potassium	5.84	0.50		mg/L
7440-23-5	Sodium	457	1.00		mg/L
7440-24-6	Strontium	1.37	0.050		mg/L

## SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	REG LIMIT	Units
16887-00-6	Chloride	957	20.0		mg/L

# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040807	HP-MPA-06-T	Water	09/30/2010 17:00	10/04/2010 08:56

## SM 2540C TDS

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-035	Total Dissolved Solids(TDS)	1920	10.0		mg/L

## SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	0.86	0.010		mg/L
7440-70-2	Calcium	206	0.10		mg/L
7439-89-6	Iron	1.93	0.10		mg/L
7439-95-4	Magnesium	77.8	0.10		mg/L
7439-96-5	Manganese	0.52	0.015		mg/L
7440-09-7	Potassium	5.53	0.50		mg/L
7440-23-5	Sodium	463	1.00		mg/L
7440-24-6	Strontium	1.37	0.050		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040808	HP-MPA-07-T	Water	10/01/2010 08:30	10/04/2010 08:56

## SM 2320B Bicarbonate

CAS#	Parameter	Result	RDL	REG LIMIT	Units
T-005-B	Bicarbonate Alkalinity	410	1.0		mg/L CaCO3

## SW-846 6010B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	0.61	0.010		mg/L
7440-70-2	Calcium	107	0.10		mg/L
7440-47-3	Chromium	0.029	0.010		mg/L
7439-89-6	Iron	11.1	0.10		mg/L
7439-95-4	Magnesium	51.8	0.10		mg/L
7439-96-5	Manganese	0.50	0.015		mg/L
7440-09-7	Potassium	5.19	0.50		mg/L
7440-23-5	Sodium	495	1.00		mg/L
7440-24-6	Strontium	0.82	0.050		mg/L
7440-66-6	Zinc	0.053	0.020		mg/L

## SM 2540C TDS

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-035	Total Dissolved Solids(TDS)	1570	10.0		mg/L

## SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	REG LIMIT	Units
16887-00-6	Chloride	808	20.0		mg/L

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040808	HP-MPA-07-T	Water	10/01/2010 08:30	10/04/2010 08:56

### SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	0.49	0.010		mg/L
7440-70-2	Calcium	104	0.10		mg/L
7439-89-6	Iron	2.60	0.10		mg/L
7439-95-4	Magnesium	50.4	0.10		mg/L
7439-96-5	Manganese	0.40	0.015		mg/L
7440-09-7	Potassium	4.11	0.50		mg/L
7440-23-5	Sodium	491	1.00		mg/L
7440-24-6	Strontium	0.78	0.050		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040809	HP-MPA-07-T DUP	Water	10/01/2010 08:30	10/04/2010 08:56

### SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	REG LIMIT	Units
16887-00-6	Chloride	817	20.0		mg/L

### SM 2540C TDS

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-035	Total Dissolved Solids(TDS)	1810	10.0		mg/L

### SW-846 6010B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	0.63	0.010		mg/L
7440-70-2	Calcium	107	0.10		mg/L
7440-47-3	Chromium	0.033	0.010		mg/L
7439-89-6	Iron	13.0	0.10		mg/L
7439-95-4	Magnesium	52.1	0.10		mg/L
7439-96-5	Manganese	0.51	0.015		mg/L
7440-09-7	Potassium	5.70	0.50		mg/L
7440-23-5	Sodium	490	1.00		mg/L
7440-24-6	Strontium	0.82	0.050		mg/L
7440-66-6	Zinc	0.053	0.020		mg/L

### SM 2320B Bicarbonate

CAS#	Parameter	Result	RDL	REG LIMIT	Units
T-005-B	Bicarbonate Alkalinity	476	1.0		mg/L CaCO3

### SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	0.50	0.010		mg/L
7440-70-2	Calcium	105	0.10		mg/L

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040809	HP-MPA-07-T DUP	Water	10/01/2010 08:30	10/04/2010 08:56

### SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-89-6	Iron	2.51	0.10		mg/L
7439-95-4	Magnesium	50.4	0.10		mg/L
7439-96-5	Manganese	0.40	0.015		mg/L
7440-09-7	Potassium	4.07	0.50		mg/L
7440-23-5	Sodium	472	1.00		mg/L
7440-24-6	Strontium	0.79	0.050		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040810	HP-MPA-08-T	Water	10/01/2010 13:45	10/04/2010 08:56

### SW-846 8260B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
108-88-3	Toluene	0.00577	0.005		mg/L

### SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	REG LIMIT	Units
16887-00-6	Chloride	1520	50.0		mg/L

### SM 2320B Bicarbonate

CAS#	Parameter	Result	RDL	REG LIMIT	Units
T-005-B	Bicarbonate Alkalinity	603	1.0		mg/L CaCO3

### EPA 375.4 Sulfate

CAS#	Parameter	Result	RDL	REG LIMIT	Units
14808-79-8	Sulfate	10.1	5.0		mg/L

### SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	2.17	0.010		mg/L
7440-70-2	Calcium	238	0.10		mg/L
7439-89-6	Iron	5.25	0.10		mg/L
7439-95-4	Magnesium	104	0.10		mg/L
7439-96-5	Manganese	0.49	0.015		mg/L
7440-09-7	Potassium	12.9	0.50		mg/L
7440-24-6	Strontium	2.21	0.050		mg/L

### SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-23-5	Sodium	1730	5.00		mg/L



## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040810	HP-MPA-08-T	Water	10/01/2010 13:45	10/04/2010 08:56

### SM 2540C TDS

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-035	Total Dissolved Solids(TDS)	3090	10.0		mg/L

### SW-846 6010B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	2.04	0.010		mg/L
7440-70-2	Calcium	223	0.10		mg/L
7439-89-6	Iron	7.19	0.10		mg/L
7439-95-4	Magnesium	97.7	0.10		mg/L
7439-96-5	Manganese	0.47	0.015		mg/L
7440-09-7	Potassium	12.0	0.50		mg/L
7440-24-6	Strontium	2.07	0.050		mg/L

### SW-846 6010B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-23-5	Sodium	1700	5.00		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040811	HP-MPA-09-T	Water	10/01/2010 15:45	10/04/2010 08:56

### SW-846 8260B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
71-43-2	Benzene	0.00508	0.005		mg/L
108-88-3	Toluene	0.00646	0.005		mg/L

### SM 2540C TDS

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-035	Total Dissolved Solids(TDS)	4520	10.0		mg/L

### SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	1.62	0.010		mg/L
7440-70-2	Calcium	178	0.10		mg/L
7439-89-6	Iron	3.57	0.10		mg/L
7439-95-4	Magnesium	112	0.10		mg/L
7439-96-5	Manganese	0.76	0.015		mg/L
7440-09-7	Potassium	18.6	0.50		mg/L
7440-24-6	Strontium	2.68	0.050		mg/L

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040811	HP-MPA-09-T	Water	10/01/2010 15:45	10/04/2010 08:56

### SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-23-5	Sodium	1140	5.00		mg/L

### SW-846 6010B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	1.59	0.010		mg/L
7440-70-2	Calcium	170	0.10		mg/L
7439-89-6	Iron	5.92	0.10		mg/L
7439-95-4	Magnesium	106	0.10		mg/L
7439-96-5	Manganese	0.76	0.015		mg/L
7440-09-7	Potassium	18.2	0.50		mg/L
7440-24-6	Strontium	2.57	0.050		mg/L

### SW-846 6010B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-23-5	Sodium	1410	5.00		mg/L

### EPA 375.4 Sulfate

CAS#	Parameter	Result	RDL	REG LIMIT	Units
14808-79-8	Sulfate	69.1	10.0		mg/L

### SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	REG LIMIT	Units
16887-00-6	Chloride	2350	50.0		mg/L

### SM 2320B Bicarbonate

CAS#	Parameter	Result	RDL	REG LIMIT	Units
T-005-B	Bicarbonate Alkalinity	270	1.0		mg/L CaCO3

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040812	HP-MPA-10-T	Water	10/01/2010 18:00	10/04/2010 08:56

### SM 2320B Bicarbonate

CAS#	Parameter	Result	RDL	REG LIMIT	Units
T-005-B	Bicarbonate Alkalinity	426	1.0		mg/L CaCO3

### SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	1.02	0.010		mg/L
7440-70-2	Calcium	146	0.10		mg/L
7439-89-6	Iron	2.11	0.10		mg/L
7439-95-4	Magnesium	52.7	0.10		mg/L
7439-96-5	Manganese	0.31	0.015		mg/L
7440-09-7	Potassium	5.35	0.50		mg/L
7440-23-5	Sodium	485	1.00		mg/L
7440-24-6	Strontium	1.24	0.050		mg/L

### SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	REG LIMIT	Units
16887-00-6	Chloride	850	20.0		mg/L

### SW-846 6010B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	1.42	0.010		mg/L
7440-70-2	Calcium	185	0.10		mg/L
7440-47-3	Chromium	0.081	0.010		mg/L
7439-89-6	Iron	34.7	0.10		mg/L
7439-92-1	Lead	0.032	0.015		mg/L
7439-95-4	Magnesium	59.7	0.10		mg/L
7439-96-5	Manganese	0.92	0.015		mg/L
7440-09-7	Potassium	8.17	0.50		mg/L
7440-23-5	Sodium	472	1.00		mg/L
7440-24-6	Strontium	1.35	0.050		mg/L
7440-66-6	Zinc	0.12	0.020		mg/L

### SM 2540C TDS

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-035	Total Dissolved Solids(TDS)	1680	10.0		mg/L

### SW-846 7010 Arsenic

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-38-2	Arsenic	0.032	0.010		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040801	HP-MPA-01-T	Water	09/29/2010 10:20	10/04/2010 08:56

### SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/04/2010 15:00	RJU	442960

CAS#	Parameter	Result	RDL	REG LIMIT	Units
71-43-2	Benzene	ND	0.005		mg/L
100-41-4	Ethylbenzene	ND	0.005		mg/L
<b>108-88-3</b>	<b>Toluene</b>	<b>0.00609</b>	<b>0.005</b>		<b>mg/L</b>
1330-20-7	Xylene (total)	ND	0.01		mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	.05	.047	mg/L	93	78 - 130
1868-53-7	Dibromofluoromethane	.05	.054	mg/L	107	77 - 127
2037-26-5	Toluene d8	.05	.053	mg/L	106	76 - 134
17060-07-0	1,2-Dichloroethane-d4	.05	.052	mg/L	104	71 - 127

### LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/07/2010 09:00	443181	TNRCC 1006/LA 1006	1	10/11/2010 12:57	SMH	443397

CAS#	Parameter	Result	RDL	REG LIMIT	Units
GCSV-02-11	Aliphatic >C10-C12	ND	0.150		mg/L
GCSV-02-12	Aliphatic >C12-C16	ND	0.150		mg/L
GCSV-02-31	Aliphatic >C16-C35	ND	0.150		mg/L
GCSV-02-10	Aliphatic >C8-C10	ND	0.150		mg/L
GCSV-02-30	Aliphatic C6-C8	ND	0.150		mg/L
GCSV-02-15	Aromatic >C10-C12	ND	0.150		mg/L
GCSV-02-16	Aromatic >C12-C16	ND	0.150		mg/L
GCSV-02-17	Aromatic >C16-C21	ND	0.150		mg/L
GCSV-05-18	Aromatic >C21-C35	ND	0.150		mg/L
GCSV-02-14	Aromatic >C8-C10	ND	0.150		mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	16.8	17.8	mg/L	106	60 - 140

### SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 16:50	442970	SW-846 3020A Dissolved	1	10/05/2010 16:06	CNB	443044

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-38-2	Arsenic	ND	0.010		mg/L

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 15:50	442963	SW-846 3010A	1	10/05/2010 16:02	CNB	443036

CAS#	Parameter	Result	RDL	REG LIMIT	Units
<b>7440-39-3</b>	<b>Barium</b>	<b>2.04</b>	<b>0.010</b>		<b>mg/L</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040801	HP-MPA-01-T	Water	09/29/2010 10:20	10/04/2010 08:56

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 15:50	442963	SW-846 3010A	1	10/05/2010 16:02	CNB	443036

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-43-9	Cadmium	ND	0.0050		mg/L
<b>7440-70-2</b>	<b>Calcium</b>	<b>228</b>	<b>0.10</b>		<b>mg/L</b>
<b>7440-47-3</b>	<b>Chromium</b>	<b>0.071</b>	<b>0.010</b>		<b>mg/L</b>
<b>7439-89-6</b>	<b>Iron</b>	<b>29.1</b>	<b>0.10</b>		<b>mg/L</b>
<b>7439-92-1</b>	<b>Lead</b>	<b>0.016</b>	<b>0.015</b>		<b>mg/L</b>
<b>7439-95-4</b>	<b>Magnesium</b>	<b>80.1</b>	<b>0.10</b>		<b>mg/L</b>
<b>7439-96-5</b>	<b>Manganese</b>	<b>0.78</b>	<b>0.015</b>		<b>mg/L</b>
<b>7440-09-7</b>	<b>Potassium</b>	<b>7.17</b>	<b>0.50</b>		<b>mg/L</b>
7782-49-2	Selenium	ND	0.040		mg/L
<b>7440-23-5</b>	<b>Sodium</b>	<b>495</b>	<b>1.00</b>		<b>mg/L</b>
<b>7440-24-6</b>	<b>Strontium</b>	<b>1.87</b>	<b>0.050</b>		<b>mg/L</b>
<b>7440-66-6</b>	<b>Zinc</b>	<b>0.087</b>	<b>0.020</b>		<b>mg/L</b>

### SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 16:15	442882	SW-846 3005 Dissolved	1	10/05/2010 13:52	CNB	443036

CAS#	Parameter	Result	RDL	REG LIMIT	Units
<b>7440-39-3</b>	<b>Barium</b>	<b>1.45</b>	<b>0.010</b>		<b>mg/L</b>
7440-43-9	Cadmium	ND	0.0050		mg/L
<b>7440-70-2</b>	<b>Calcium</b>	<b>233</b>	<b>0.10</b>		<b>mg/L</b>
7440-47-3	Chromium	ND	0.010		mg/L
<b>7439-89-6</b>	<b>Iron</b>	<b>9.69</b>	<b>0.10</b>		<b>mg/L</b>
7439-92-1	Lead	ND	0.015		mg/L
<b>7439-95-4</b>	<b>Magnesium</b>	<b>79.4</b>	<b>0.10</b>		<b>mg/L</b>
<b>7439-96-5</b>	<b>Manganese</b>	<b>0.53</b>	<b>0.015</b>		<b>mg/L</b>
<b>7440-09-7</b>	<b>Potassium</b>	<b>5.43</b>	<b>0.50</b>		<b>mg/L</b>
7782-49-2	Selenium	ND	0.040		mg/L
<b>7440-23-5</b>	<b>Sodium</b>	<b>477</b>	<b>1.00</b>		<b>mg/L</b>
<b>7440-24-6</b>	<b>Strontium</b>	<b>1.87</b>	<b>0.050</b>		<b>mg/L</b>
7440-66-6	Zinc	ND	0.020		mg/L

### SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 15:50	442968	SW-846 3020A	1	10/05/2010 18:22	CNB	443044

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-38-2	Arsenic	ND	0.010		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040801	HP-MPA-01-T	Water	09/29/2010 10:20	10/04/2010 08:56

### SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/05/2010 13:00	DJH	442992
CAS#	Parameter		Result	RDL	REG LIMIT	Units
WET-035	Total Dissolved Solids(TDS)		2110	10.0		mg/L

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			50	10/05/2010 14:00	AEL	443045
CAS#	Parameter		Result	RDL	REG LIMIT	Units
16887-00-6	Chloride		928	50.0		mg/L

### SM 2320B Carbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/06/2010 10:41	JEM	443058
CAS#	Parameter		Result	RDL	REG LIMIT	Units
T-005-C	Carbonate Alkalinity		ND	1.0		mg/L CaCO3

### SM 2320B Bicarbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/06/2010 10:41	JEM	443058
CAS#	Parameter		Result	RDL	REG LIMIT	Units
T-005-B	Bicarbonate Alkalinity		690	1.0		mg/L CaCO3

### EPA 375.4 Sulfate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/06/2010 09:03	JEM	443056
CAS#	Parameter		Result	RDL	REG LIMIT	Units
14808-79-8	Sulfate		ND	5.0		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040802	HP-MPA-02-T	Water	09/29/2010 15:50	10/04/2010 08:56

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/04/2010 15:24	RJU	442960

CAS#	Parameter	Result	RDL	REG LIMIT	Units
71-43-2	Benzene	ND	0.005		mg/L
100-41-4	Ethylbenzene	ND	0.005		mg/L
<b>108-88-3</b>	<b>Toluene</b>	<b>0.00764</b>	<b>0.005</b>		<b>mg/L</b>
1330-20-7	Xylene (total)	ND	0.01		mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	.05	.046	mg/L	91	78 - 130
1868-53-7	Dibromofluoromethane	.05	.053	mg/L	106	77 - 127
2037-26-5	Toluene d8	.05	.052	mg/L	103	76 - 134
17060-07-0	1,2-Dichloroethane-d4	.05	.054	mg/L	108	71 - 127

LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/07/2010 09:00	443181	TNRCC 1006/LA 1006	1	10/09/2010 21:03	SMH	443374

CAS#	Parameter	Result	RDL	REG LIMIT	Units
GCSV-02-11	Aliphatic >C10-C12	ND	0.150		mg/L
GCSV-02-12	Aliphatic >C12-C16	ND	0.150		mg/L
GCSV-02-31	Aliphatic >C16-C35	ND	0.150		mg/L
GCSV-02-10	Aliphatic >C8-C10	ND	0.150		mg/L
GCSV-02-30	Aliphatic C6-C8	ND	0.150		mg/L
GCSV-02-15	Aromatic >C10-C12	ND	0.150		mg/L
GCSV-02-16	Aromatic >C12-C16	ND	0.150		mg/L
GCSV-02-17	Aromatic >C16-C21	ND	0.150		mg/L
GCSV-05-18	Aromatic >C21-C35	ND	0.150		mg/L
GCSV-02-14	Aromatic >C8-C10	ND	0.150		mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	16	15	mg/L	94	60 - 140

SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 16:50	442970	SW-846 3020A Dissolved	1	10/05/2010 16:12	CNB	443044

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-38-2	Arsenic	ND	0.010		mg/L

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 15:50	442963	SW-846 3010A	1	10/05/2010 17:14	CNB	443036

CAS#	Parameter	Result	RDL	REG LIMIT	Units
<b>7440-39-3</b>	<b>Barium</b>	<b>0.43</b>	<b>0.010</b>		<b>mg/L</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040802	HP-MPA-02-T	Water	09/29/2010 15:50	10/04/2010 08:56

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 15:50	442963	SW-846 3010A	1	10/05/2010 17:14	CNB	443036

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-43-9	Cadmium	ND	0.0050		mg/L
<b>7440-70-2</b>	<b>Calcium</b>	<b>70.1</b>	<b>0.10</b>		<b>mg/L</b>
7440-47-3	Chromium	ND	0.010		mg/L
<b>7439-89-6</b>	<b>Iron</b>	<b>7.75</b>	<b>0.10</b>		<b>mg/L</b>
7439-92-1	Lead	ND	0.015		mg/L
<b>7439-95-4</b>	<b>Magnesium</b>	<b>158</b>	<b>0.10</b>		<b>mg/L</b>
<b>7439-96-5</b>	<b>Manganese</b>	<b>0.85</b>	<b>0.015</b>		<b>mg/L</b>
<b>7440-09-7</b>	<b>Potassium</b>	<b>46.4</b>	<b>0.50</b>		<b>mg/L</b>
7782-49-2	Selenium	ND	0.040		mg/L
<b>7440-24-6</b>	<b>Strontium</b>	<b>1.06</b>	<b>0.050</b>		<b>mg/L</b>
7440-66-6	Zinc	ND	0.020		mg/L

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 15:50	442963	SW-846 3010A	5	10/05/2010 18:55	CNB	443036

CAS#	Parameter	Result	RDL	REG LIMIT	Units
<b>7440-23-5</b>	<b>Sodium</b>	<b>1360</b>	<b>5.00</b>		<b>mg/L</b>

SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 16:15	442882	SW-846 3005 Dissolved	1	10/05/2010 14:00	CNB	443036

CAS#	Parameter	Result	RDL	REG LIMIT	Units
<b>7440-39-3</b>	<b>Barium</b>	<b>0.31</b>	<b>0.010</b>		<b>mg/L</b>
7440-43-9	Cadmium	ND	0.0050		mg/L
<b>7440-70-2</b>	<b>Calcium</b>	<b>65.8</b>	<b>0.10</b>		<b>mg/L</b>
7440-47-3	Chromium	ND	0.010		mg/L
<b>7439-89-6</b>	<b>Iron</b>	<b>0.57</b>	<b>0.10</b>		<b>mg/L</b>
7439-92-1	Lead	ND	0.015		mg/L
<b>7439-95-4</b>	<b>Magnesium</b>	<b>152</b>	<b>0.10</b>		<b>mg/L</b>
<b>7439-96-5</b>	<b>Manganese</b>	<b>0.67</b>	<b>0.015</b>		<b>mg/L</b>
<b>7440-09-7</b>	<b>Potassium</b>	<b>44.4</b>	<b>0.50</b>		<b>mg/L</b>
7782-49-2	Selenium	ND	0.040		mg/L
<b>7440-24-6</b>	<b>Strontium</b>	<b>1.0</b>	<b>0.050</b>		<b>mg/L</b>
<b>7440-66-6</b>	<b>Zinc</b>	<b>0.039</b>	<b>0.020</b>		<b>mg/L</b>



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040802	HP-MPA-02-T	Water	09/29/2010 15:50	10/04/2010 08:56

### SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 16:15	442882	SW-846 3005 Dissolved	5	10/05/2010 18:47	CNB	443036

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-23-5	Sodium	1330	5.00		mg/L

### SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 15:50	442968	SW-846 3020A	1	10/05/2010 18:28	CNB	443044

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-38-2	Arsenic	ND	0.010		mg/L

### SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/05/2010 13:00	DJH	442992

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-035	Total Dissolved Solids(TDS)	4060	10.0		mg/L

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			50	10/05/2010 14:03	AEL	443045

CAS#	Parameter	Result	RDL	REG LIMIT	Units
16887-00-6	Chloride	2130	50.0		mg/L

### SM 2320B Carbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/06/2010 10:41	JEM	443058

CAS#	Parameter	Result	RDL	REG LIMIT	Units
T-005-C	Carbonate Alkalinity	ND	1.0		mg/L CaCO3

### SM 2320B Bicarbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/06/2010 10:41	JEM	443058

CAS#	Parameter	Result	RDL	REG LIMIT	Units
T-005-B	Bicarbonate Alkalinity	224	1.0		mg/L CaCO3

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040802	HP-MPA-02-T	Water	09/29/2010 15:50	10/04/2010 08:56

EPA 375.4 Sulfate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2	10/06/2010 09:04	JEM	443056

CAS#	Parameter	Result	RDL	REG LIMIT	Units
14808-79-8	Sulfate	53.9	10.0		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040803	HP-MPA-02-I	Water	09/29/2010 16:40	10/04/2010 08:56

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/04/2010 15:48	RJU	442960

CAS#	Parameter	Result	RDL	REG LIMIT	Units
71-43-2	Benzene	ND	0.005		mg/L
100-41-4	Ethylbenzene	ND	0.005		mg/L
<b>108-88-3</b>	<b>Toluene</b>	<b>0.00574</b>	<b>0.005</b>		<b>mg/L</b>
1330-20-7	Xylene (total)	ND	0.01		mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	.05	.045	mg/L	91	78 - 130
1868-53-7	Dibromofluoromethane	.05	.056	mg/L	112	77 - 127
2037-26-5	Toluene d8	.05	.051	mg/L	103	76 - 134
17060-07-0	1,2-Dichloroethane-d4	.05	.055	mg/L	109	71 - 127

LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/07/2010 09:00	443181	TNRCC 1006/LA 1006	1	10/09/2010 22:00	SMH	443374

CAS#	Parameter	Result	RDL	REG LIMIT	Units
GCSV-02-11	Aliphatic >C10-C12	ND	0.150		mg/L
GCSV-02-12	Aliphatic >C12-C16	ND	0.150		mg/L
GCSV-02-31	Aliphatic >C16-C35	ND	0.150		mg/L
GCSV-02-10	Aliphatic >C8-C10	ND	0.150		mg/L
GCSV-02-30	Aliphatic C6-C8	ND	0.150		mg/L
GCSV-02-15	Aromatic >C10-C12	ND	0.150		mg/L
GCSV-02-16	Aromatic >C12-C16	ND	0.150		mg/L
GCSV-02-17	Aromatic >C16-C21	ND	0.150		mg/L
GCSV-05-18	Aromatic >C21-C35	ND	0.150		mg/L
GCSV-02-14	Aromatic >C8-C10	ND	0.150		mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	16.1	12.3	mg/L	77	60 - 140

SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 16:50	442970	SW-846 3020A Dissolved	1	10/05/2010 16:18	CNB	443044

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-38-2	Arsenic	ND	0.010		mg/L

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 15:50	442963	SW-846 3010A	1	10/05/2010 17:20	CNB	443036

CAS#	Parameter	Result	RDL	REG LIMIT	Units
<b>7440-39-3</b>	<b>Barium</b>	<b>1.50</b>	<b>0.010</b>		<b>mg/L</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040803	HP-MPA-02-I	Water	09/29/2010 16:40	10/04/2010 08:56

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 15:50	442963	SW-846 3010A	1	10/05/2010 17:20	CNB	443036

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-43-9	Cadmium	ND	0.0050		mg/L
<b>7440-70-2</b>	<b>Calcium</b>	<b>124</b>	<b>0.10</b>		<b>mg/L</b>
<b>7440-47-3</b>	<b>Chromium</b>	<b>0.045</b>	<b>0.010</b>		<b>mg/L</b>
<b>7439-89-6</b>	<b>Iron</b>	<b>16.3</b>	<b>0.10</b>		<b>mg/L</b>
7439-92-1	Lead	ND	0.015		mg/L
<b>7439-95-4</b>	<b>Magnesium</b>	<b>47.4</b>	<b>0.10</b>		<b>mg/L</b>
<b>7439-96-5</b>	<b>Manganese</b>	<b>0.49</b>	<b>0.015</b>		<b>mg/L</b>
<b>7440-09-7</b>	<b>Potassium</b>	<b>5.99</b>	<b>0.50</b>		<b>mg/L</b>
7782-49-2	Selenium	ND	0.040		mg/L
<b>7440-23-5</b>	<b>Sodium</b>	<b>379</b>	<b>1.00</b>		<b>mg/L</b>
<b>7440-24-6</b>	<b>Strontium</b>	<b>0.97</b>	<b>0.050</b>		<b>mg/L</b>
<b>7440-66-6</b>	<b>Zinc</b>	<b>0.037</b>	<b>0.020</b>		<b>mg/L</b>

SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 16:15	442882	SW-846 3005 Dissolved	1	10/05/2010 14:07	CNB	443036

CAS#	Parameter	Result	RDL	REG LIMIT	Units
<b>7440-39-3</b>	<b>Barium</b>	<b>0.99</b>	<b>0.010</b>		<b>mg/L</b>
7440-43-9	Cadmium	ND	0.0050		mg/L
<b>7440-70-2</b>	<b>Calcium</b>	<b>123</b>	<b>0.10</b>		<b>mg/L</b>
7440-47-3	Chromium	ND	0.010		mg/L
<b>7439-89-6</b>	<b>Iron</b>	<b>4.67</b>	<b>0.10</b>		<b>mg/L</b>
7439-92-1	Lead	ND	0.015		mg/L
<b>7439-95-4</b>	<b>Magnesium</b>	<b>45.9</b>	<b>0.10</b>		<b>mg/L</b>
<b>7439-96-5</b>	<b>Manganese</b>	<b>0.28</b>	<b>0.015</b>		<b>mg/L</b>
<b>7440-09-7</b>	<b>Potassium</b>	<b>4.76</b>	<b>0.50</b>		<b>mg/L</b>
7782-49-2	Selenium	ND	0.040		mg/L
<b>7440-23-5</b>	<b>Sodium</b>	<b>352</b>	<b>1.00</b>		<b>mg/L</b>
<b>7440-24-6</b>	<b>Strontium</b>	<b>0.91</b>	<b>0.050</b>		<b>mg/L</b>
7440-66-6	Zinc	ND	0.020		mg/L

SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 15:50	442968	SW-846 3020A	1	10/05/2010 18:34	CNB	443044

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-38-2	Arsenic	ND	0.010		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040803	HP-MPA-02-I	Water	09/29/2010 16:40	10/04/2010 08:56

### SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/05/2010 13:00	DJH	442992
CAS#	Parameter		Result	RDL	REG LIMIT	Units
WET-035	Total Dissolved Solids(TDS)		1260	10.0		mg/L

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	10/05/2010 14:03	AEL	443045
CAS#	Parameter		Result	RDL	REG LIMIT	Units
16887-00-6	Chloride		641	20.0		mg/L

### SM 2320B Carbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/06/2010 10:41	JEM	443058
CAS#	Parameter		Result	RDL	REG LIMIT	Units
T-005-C	Carbonate Alkalinity		ND	1.0		mg/L CaCO3

### SM 2320B Bicarbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/06/2010 10:41	JEM	443058
CAS#	Parameter		Result	RDL	REG LIMIT	Units
T-005-B	Bicarbonate Alkalinity		352	1.0		mg/L CaCO3

### EPA 375.4 Sulfate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/06/2010 09:05	JEM	443056
CAS#	Parameter		Result	RDL	REG LIMIT	Units
14808-79-8	Sulfate		ND	5.0		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040804	HP-MPA-03-T	Water	09/30/2010 09:50	10/04/2010 08:56

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/04/2010 16:11	RJU	442960

CAS#	Parameter	Result	RDL	REG LIMIT	Units
71-43-2	Benzene	ND	0.005		mg/L
100-41-4	Ethylbenzene	ND	0.005		mg/L
108-88-3	Toluene	ND	0.005		mg/L
1330-20-7	Xylene (total)	ND	0.01		mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	.05	.045	mg/L	90	78 - 130
1868-53-7	Dibromofluoromethane	.05	.056	mg/L	111	77 - 127
2037-26-5	Toluene d8	.05	.052	mg/L	103	76 - 134
17060-07-0	1,2-Dichloroethane-d4	.05	.054	mg/L	107	71 - 127

LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/07/2010 09:00	443181	TNRCC 1006/LA 1006	1	10/09/2010 23:56	SMH	443374

CAS#	Parameter	Result	RDL	REG LIMIT	Units
GCSV-02-11	Aliphatic >C10-C12	ND	0.150		mg/L
GCSV-02-12	Aliphatic >C12-C16	ND	0.150		mg/L
GCSV-02-31	Aliphatic >C16-C35	ND	0.150		mg/L
GCSV-02-10	Aliphatic >C8-C10	ND	0.150		mg/L
GCSV-02-30	Aliphatic C6-C8	ND	0.150		mg/L
GCSV-02-15	Aromatic >C10-C12	ND	0.150		mg/L
GCSV-02-16	Aromatic >C12-C16	ND	0.150		mg/L
GCSV-02-17	Aromatic >C16-C21	ND	0.150		mg/L
GCSV-05-18	Aromatic >C21-C35	ND	0.150		mg/L
GCSV-02-14	Aromatic >C8-C10	ND	0.150		mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	16.7	13.1	mg/L	78	60 - 140

SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 16:50	442970	SW-846 3020A Dissolved	1	10/05/2010 16:37	CNB	443044

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-38-2	Arsenic	ND	0.010		mg/L

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 15:50	442963	SW-846 3010A	1	10/05/2010 17:27	CNB	443036

CAS#	Parameter	Result	RDL	REG LIMIT	Units
<b>7440-39-3</b>	<b>Barium</b>	<b>1.13</b>	<b>0.010</b>		<b>mg/L</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040804	HP-MPA-03-T	Water	09/30/2010 09:50	10/04/2010 08:56

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 15:50	442963	SW-846 3010A	1	10/05/2010 17:27	CNB	443036

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-43-9	Cadmium	ND	0.0050		mg/L
<b>7440-70-2</b>	<b>Calcium</b>	<b>145</b>	<b>0.10</b>		<b>mg/L</b>
<b>7440-47-3</b>	<b>Chromium</b>	<b>0.059</b>	<b>0.010</b>		<b>mg/L</b>
<b>7439-89-6</b>	<b>Iron</b>	<b>16.7</b>	<b>0.10</b>		<b>mg/L</b>
7439-92-1	Lead	ND	0.015		mg/L
<b>7439-95-4</b>	<b>Magnesium</b>	<b>59.0</b>	<b>0.10</b>		<b>mg/L</b>
<b>7439-96-5</b>	<b>Manganese</b>	<b>0.53</b>	<b>0.015</b>		<b>mg/L</b>
<b>7440-09-7</b>	<b>Potassium</b>	<b>6.48</b>	<b>0.50</b>		<b>mg/L</b>
7782-49-2	Selenium	ND	0.040		mg/L
<b>7440-23-5</b>	<b>Sodium</b>	<b>525</b>	<b>1.00</b>		<b>mg/L</b>
<b>7440-24-6</b>	<b>Strontium</b>	<b>1.02</b>	<b>0.050</b>		<b>mg/L</b>
<b>7440-66-6</b>	<b>Zinc</b>	<b>0.14</b>	<b>0.020</b>		<b>mg/L</b>

### SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 16:15	442882	SW-846 3005 Dissolved	1	10/05/2010 14:15	CNB	443036

CAS#	Parameter	Result	RDL	REG LIMIT	Units
<b>7440-39-3</b>	<b>Barium</b>	<b>0.69</b>	<b>0.010</b>		<b>mg/L</b>
7440-43-9	Cadmium	ND	0.0050		mg/L
<b>7440-70-2</b>	<b>Calcium</b>	<b>131</b>	<b>0.10</b>		<b>mg/L</b>
7440-47-3	Chromium	ND	0.010		mg/L
<b>7439-89-6</b>	<b>Iron</b>	<b>3.27</b>	<b>0.10</b>		<b>mg/L</b>
7439-92-1	Lead	ND	0.015		mg/L
<b>7439-95-4</b>	<b>Magnesium</b>	<b>54.7</b>	<b>0.10</b>		<b>mg/L</b>
<b>7439-96-5</b>	<b>Manganese</b>	<b>0.37</b>	<b>0.015</b>		<b>mg/L</b>
<b>7440-09-7</b>	<b>Potassium</b>	<b>5.54</b>	<b>0.50</b>		<b>mg/L</b>
7782-49-2	Selenium	ND	0.040		mg/L
<b>7440-23-5</b>	<b>Sodium</b>	<b>472</b>	<b>1.00</b>		<b>mg/L</b>
<b>7440-24-6</b>	<b>Strontium</b>	<b>0.92</b>	<b>0.050</b>		<b>mg/L</b>
7440-66-6	Zinc	ND	0.020		mg/L

### SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 15:50	442968	SW-846 3020A	1	10/06/2010 15:34	TEA	443127

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-38-2	Arsenic	ND	0.010		mg/L

<b>GCAL ID</b> 21010040804	<b>Client ID</b> HP-MPA-03-T	<b>Matrix</b> Water	<b>Collect Date/Time</b> 09/30/2010 09:50	<b>Receive Date/Time</b> 10/04/2010 08:56
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### SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/05/2010 13:00	DJH	442992
CAS#	Parameter		Result	RDL	REG LIMIT	Units
WET-035	Total Dissolved Solids(TDS)		1820	10.0		mg/L

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	10/05/2010 14:04	AEL	443045
CAS#	Parameter		Result	RDL	REG LIMIT	Units
16887-00-6	Chloride		801	20.0		mg/L

### SM 2320B Carbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/06/2010 10:41	JEM	443058
CAS#	Parameter		Result	RDL	REG LIMIT	Units
T-005-C	Carbonate Alkalinity		ND	1.0		mg/L CaCO3

### SM 2320B Bicarbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/06/2010 10:41	JEM	443058
CAS#	Parameter		Result	RDL	REG LIMIT	Units
T-005-B	Bicarbonate Alkalinity		384	1.0		mg/L CaCO3

### EPA 375.4 Sulfate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/06/2010 09:06	JEM	443056
CAS#	Parameter		Result	RDL	REG LIMIT	Units
14808-79-8	Sulfate		ND	5.0		mg/L



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040805	HP-MPA-04-T	Water	09/30/2010 12:30	10/04/2010 08:56

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/04/2010 16:35	RJU	442960

CAS#	Parameter	Result	RDL	REG LIMIT	Units
71-43-2	Benzene	ND	0.005		mg/L
100-41-4	Ethylbenzene	ND	0.005		mg/L
108-88-3	Toluene	ND	0.005		mg/L
1330-20-7	Xylene (total)	ND	0.01		mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	.05	.047	mg/L	93	78 - 130
1868-53-7	Dibromofluoromethane	.05	.055	mg/L	111	77 - 127
2037-26-5	Toluene d8	.05	.054	mg/L	108	76 - 134
17060-07-0	1,2-Dichloroethane-d4	.05	.055	mg/L	109	71 - 127

LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/07/2010 09:00	443181	TNRCC 1006/LA 1006	1	10/10/2010 00:54	SMH	443374

CAS#	Parameter	Result	RDL	REG LIMIT	Units
GCSV-02-11	Aliphatic >C10-C12	ND	0.150		mg/L
GCSV-02-12	Aliphatic >C12-C16	ND	0.150		mg/L
GCSV-02-31	Aliphatic >C16-C35	ND	0.150		mg/L
GCSV-02-10	Aliphatic >C8-C10	ND	0.150		mg/L
GCSV-02-30	Aliphatic C6-C8	ND	0.150		mg/L
GCSV-02-15	Aromatic >C10-C12	ND	0.150		mg/L
GCSV-02-16	Aromatic >C12-C16	ND	0.150		mg/L
GCSV-02-17	Aromatic >C16-C21	ND	0.150		mg/L
GCSV-05-18	Aromatic >C21-C35	ND	0.150		mg/L
GCSV-02-14	Aromatic >C8-C10	ND	0.150		mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	16	13.5	mg/L	85	60 - 140

SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 16:50	442970	SW-846 3020A Dissolved	1	10/05/2010 16:43	CNB	443044

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-38-2	Arsenic	ND	0.010		mg/L

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 15:50	442963	SW-846 3010A	1	10/05/2010 17:34	CNB	443036

CAS#	Parameter	Result	RDL	REG LIMIT	Units
<b>7440-39-3</b>	<b>Barium</b>	<b>1.30</b>	<b>0.010</b>		<b>mg/L</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040805	HP-MPA-04-T	Water	09/30/2010 12:30	10/04/2010 08:56

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 15:50	442963	SW-846 3010A	1	10/05/2010 17:34	CNB	443036

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-43-9	Cadmium	ND	0.0050		mg/L
<b>7440-70-2</b>	<b>Calcium</b>	<b>198</b>	<b>0.10</b>		<b>mg/L</b>
<b>7440-47-3</b>	<b>Chromium</b>	<b>0.074</b>	<b>0.010</b>		<b>mg/L</b>
<b>7439-89-6</b>	<b>Iron</b>	<b>27.4</b>	<b>0.10</b>		<b>mg/L</b>
<b>7439-92-1</b>	<b>Lead</b>	<b>0.027</b>	<b>0.015</b>		<b>mg/L</b>
<b>7439-95-4</b>	<b>Magnesium</b>	<b>65.1</b>	<b>0.10</b>		<b>mg/L</b>
<b>7439-96-5</b>	<b>Manganese</b>	<b>0.86</b>	<b>0.015</b>		<b>mg/L</b>
<b>7440-09-7</b>	<b>Potassium</b>	<b>7.57</b>	<b>0.50</b>		<b>mg/L</b>
7782-49-2	Selenium	ND	0.040		mg/L
<b>7440-23-5</b>	<b>Sodium</b>	<b>482</b>	<b>1.00</b>		<b>mg/L</b>
<b>7440-24-6</b>	<b>Strontium</b>	<b>1.35</b>	<b>0.050</b>		<b>mg/L</b>
<b>7440-66-6</b>	<b>Zinc</b>	<b>0.091</b>	<b>0.020</b>		<b>mg/L</b>

SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 16:15	442882	SW-846 3005 Dissolved	1	10/05/2010 14:23	CNB	443036

CAS#	Parameter	Result	RDL	REG LIMIT	Units
<b>7440-39-3</b>	<b>Barium</b>	<b>0.84</b>	<b>0.010</b>		<b>mg/L</b>
7440-43-9	Cadmium	ND	0.0050		mg/L
<b>7440-70-2</b>	<b>Calcium</b>	<b>170</b>	<b>0.10</b>		<b>mg/L</b>
7440-47-3	Chromium	ND	0.010		mg/L
<b>7439-89-6</b>	<b>Iron</b>	<b>4.50</b>	<b>0.10</b>		<b>mg/L</b>
7439-92-1	Lead	ND	0.015		mg/L
<b>7439-95-4</b>	<b>Magnesium</b>	<b>62.6</b>	<b>0.10</b>		<b>mg/L</b>
<b>7439-96-5</b>	<b>Manganese</b>	<b>0.50</b>	<b>0.015</b>		<b>mg/L</b>
<b>7440-09-7</b>	<b>Potassium</b>	<b>6.01</b>	<b>0.50</b>		<b>mg/L</b>
7782-49-2	Selenium	ND	0.040		mg/L
<b>7440-23-5</b>	<b>Sodium</b>	<b>451</b>	<b>1.00</b>		<b>mg/L</b>
<b>7440-24-6</b>	<b>Strontium</b>	<b>1.24</b>	<b>0.050</b>		<b>mg/L</b>
7440-66-6	Zinc	ND	0.020		mg/L

SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 15:50	442968	SW-846 3020A	1	10/06/2010 16:25	TEA	443127

CAS#	Parameter	Result	RDL	REG LIMIT	Units
<b>7440-38-2</b>	<b>Arsenic</b>	<b>0.010</b>	<b>0.010</b>		<b>mg/L</b>

<b>GCAL ID</b> 21010040805	<b>Client ID</b> HP-MPA-04-T	<b>Matrix</b> Water	<b>Collect Date/Time</b> 09/30/2010 12:30	<b>Receive Date/Time</b> 10/04/2010 08:56
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**SM 2540C TDS**

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b> 1	<b>Analyzed</b> 10/05/2010 13:00	<b>By</b> DJH	<b>Analytical Batch</b> 442992
<b>CAS#</b> WET-035	<b>Parameter</b> Total Dissolved Solids(TDS)		<b>Result</b> 1660	<b>RDL</b> 10.0	<b>REG LIMIT</b>	<b>Units</b> mg/L

**SM 4500 CL E Chloride**

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b> 20	<b>Analyzed</b> 10/05/2010 14:05	<b>By</b> AEL	<b>Analytical Batch</b> 443045
<b>CAS#</b> 16887-00-6	<b>Parameter</b> Chloride		<b>Result</b> 817	<b>RDL</b> 20.0	<b>REG LIMIT</b>	<b>Units</b> mg/L

**SM 2320B Carbonate**

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b> 1	<b>Analyzed</b> 10/06/2010 10:41	<b>By</b> JEM	<b>Analytical Batch</b> 443058
<b>CAS#</b> T-005-C	<b>Parameter</b> Carbonate Alkalinity		<b>Result</b> ND	<b>RDL</b> 1.0	<b>REG LIMIT</b>	<b>Units</b> mg/L CaCO3

**SM 2320B Bicarbonate**

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b> 1	<b>Analyzed</b> 10/06/2010 10:41	<b>By</b> JEM	<b>Analytical Batch</b> 443058
<b>CAS#</b> T-005-B	<b>Parameter</b> Bicarbonate Alkalinity		<b>Result</b> 447	<b>RDL</b> 1.0	<b>REG LIMIT</b>	<b>Units</b> mg/L CaCO3

**EPA 375.4 Sulfate**

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b> 1	<b>Analyzed</b> 10/06/2010 09:07	<b>By</b> JEM	<b>Analytical Batch</b> 443056
<b>CAS#</b> 14808-79-8	<b>Parameter</b> Sulfate		<b>Result</b> ND	<b>RDL</b> 5.0	<b>REG LIMIT</b>	<b>Units</b> mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040806	HP-MPA-05-T	Water	09/30/2010 14:40	10/04/2010 08:56

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/04/2010 16:58	RJU	442960

CAS#	Parameter	Result	RDL	REG LIMIT	Units
71-43-2	Benzene	ND	0.005		mg/L
100-41-4	Ethylbenzene	ND	0.005		mg/L
108-88-3	Toluene	ND	0.005		mg/L
1330-20-7	Xylene (total)	ND	0.01		mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	.05	.045	mg/L	91	78 - 130
1868-53-7	Dibromofluoromethane	.05	.055	mg/L	111	77 - 127
2037-26-5	Toluene d8	.05	.053	mg/L	107	76 - 134
17060-07-0	1,2-Dichloroethane-d4	.05	.056	mg/L	112	71 - 127

LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/07/2010 09:00	443181	TNRCC 1006/LA 1006	1	10/10/2010 01:53	SMH	443374

CAS#	Parameter	Result	RDL	REG LIMIT	Units
GCSV-02-11	Aliphatic >C10-C12	ND	0.150		mg/L
GCSV-02-12	Aliphatic >C12-C16	ND	0.150		mg/L
GCSV-02-31	Aliphatic >C16-C35	ND	0.150		mg/L
GCSV-02-10	Aliphatic >C8-C10	ND	0.150		mg/L
GCSV-02-30	Aliphatic C6-C8	ND	0.150		mg/L
GCSV-02-15	Aromatic >C10-C12	ND	0.150		mg/L
GCSV-02-16	Aromatic >C12-C16	ND	0.150		mg/L
GCSV-02-17	Aromatic >C16-C21	ND	0.150		mg/L
GCSV-05-18	Aromatic >C21-C35	ND	0.150		mg/L
GCSV-02-14	Aromatic >C8-C10	ND	0.150		mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	16.8	12.4	mg/L	74	60 - 140

SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 16:50	442970	SW-846 3020A Dissolved	1	10/05/2010 15:36	CNB	443044

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-38-2	Arsenic	ND	0.010		mg/L

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 15:50	442963	SW-846 3010A	1	10/05/2010 17:41	CNB	443036

CAS#	Parameter	Result	RDL	REG LIMIT	Units
<b>7440-39-3</b>	<b>Barium</b>	<b>0.51</b>	<b>0.010</b>		<b>mg/L</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040806	HP-MPA-05-T	Water	09/30/2010 14:40	10/04/2010 08:56

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 15:50	442963	SW-846 3010A	1	10/05/2010 17:41	CNB	443036

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-43-9	Cadmium	ND	0.0050		mg/L
<b>7440-70-2</b>	<b>Calcium</b>	<b>113</b>	<b>0.10</b>		<b>mg/L</b>
7440-47-3	Chromium	ND	0.010		mg/L
<b>7439-89-6</b>	<b>Iron</b>	<b>2.60</b>	<b>0.10</b>		<b>mg/L</b>
7439-92-1	Lead	ND	0.015		mg/L
<b>7439-95-4</b>	<b>Magnesium</b>	<b>56.8</b>	<b>0.10</b>		<b>mg/L</b>
<b>7439-96-5</b>	<b>Manganese</b>	<b>0.49</b>	<b>0.015</b>		<b>mg/L</b>
<b>7440-09-7</b>	<b>Potassium</b>	<b>7.53</b>	<b>0.50</b>		<b>mg/L</b>
7782-49-2	Selenium	ND	0.040		mg/L
<b>7440-23-5</b>	<b>Sodium</b>	<b>508</b>	<b>1.00</b>		<b>mg/L</b>
<b>7440-24-6</b>	<b>Strontium</b>	<b>0.90</b>	<b>0.050</b>		<b>mg/L</b>
7440-66-6	Zinc	ND	0.020		mg/L

SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 16:15	442882	SW-846 3005 Dissolved	1	10/05/2010 14:31	CNB	443036

CAS#	Parameter	Result	RDL	REG LIMIT	Units
<b>7440-39-3</b>	<b>Barium</b>	<b>0.52</b>	<b>0.010</b>		<b>mg/L</b>
7440-43-9	Cadmium	ND	0.0050		mg/L
<b>7440-70-2</b>	<b>Calcium</b>	<b>119</b>	<b>0.10</b>		<b>mg/L</b>
7440-47-3	Chromium	ND	0.010		mg/L
<b>7439-89-6</b>	<b>Iron</b>	<b>1.98</b>	<b>0.10</b>		<b>mg/L</b>
7439-92-1	Lead	ND	0.015		mg/L
<b>7439-95-4</b>	<b>Magnesium</b>	<b>59.8</b>	<b>0.10</b>		<b>mg/L</b>
<b>7439-96-5</b>	<b>Manganese</b>	<b>0.50</b>	<b>0.015</b>		<b>mg/L</b>
<b>7440-09-7</b>	<b>Potassium</b>	<b>7.55</b>	<b>0.50</b>		<b>mg/L</b>
7782-49-2	Selenium	ND	0.040		mg/L
<b>7440-23-5</b>	<b>Sodium</b>	<b>479</b>	<b>1.00</b>		<b>mg/L</b>
<b>7440-24-6</b>	<b>Strontium</b>	<b>0.90</b>	<b>0.050</b>		<b>mg/L</b>
7440-66-6	Zinc	ND	0.020		mg/L

SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 15:50	442968	SW-846 3020A	1	10/05/2010 17:51	CNB	443044

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-38-2	Arsenic	ND	0.010		mg/L

<b>GCAL ID</b> 21010040806	<b>Client ID</b> HP-MPA-05-T	<b>Matrix</b> Water	<b>Collect Date/Time</b> 09/30/2010 14:40	<b>Receive Date/Time</b> 10/04/2010 08:56
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### SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/05/2010 13:00	DJH	442992
CAS#	Parameter		Result	RDL	REG LIMIT	Units
WET-035	Total Dissolved Solids(TDS)		1680	10.0		mg/L

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	10/05/2010 14:06	AEL	443045
CAS#	Parameter		Result	RDL	REG LIMIT	Units
16887-00-6	Chloride		831	20.0		mg/L

### SM 2320B Carbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/06/2010 10:41	JEM	443058
CAS#	Parameter		Result	RDL	REG LIMIT	Units
T-005-C	Carbonate Alkalinity		ND	1.0		mg/L CaCO3

### SM 2320B Bicarbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/06/2010 10:41	JEM	443058
CAS#	Parameter		Result	RDL	REG LIMIT	Units
T-005-B	Bicarbonate Alkalinity		345	1.0		mg/L CaCO3

### EPA 375.4 Sulfate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/06/2010 09:08	JEM	443056
CAS#	Parameter		Result	RDL	REG LIMIT	Units
14808-79-8	Sulfate		21.7	5.0		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040807	HP-MPA-06-T	Water	09/30/2010 17:00	10/04/2010 08:56

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/04/2010 17:22	RJU	442960

CAS#	Parameter	Result	RDL	REG LIMIT	Units
71-43-2	Benzene	ND	0.005		mg/L
100-41-4	Ethylbenzene	ND	0.005		mg/L
108-88-3	Toluene	ND	0.005		mg/L
1330-20-7	Xylene (total)	ND	0.01		mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	.05	.045	mg/L	90	78 - 130
1868-53-7	Dibromofluoromethane	.05	.056	mg/L	111	77 - 127
2037-26-5	Toluene d8	.05	.051	mg/L	102	76 - 134
17060-07-0	1,2-Dichloroethane-d4	.05	.054	mg/L	108	71 - 127

LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/07/2010 09:00	443181	TNRCC 1006/LA 1006	1	10/10/2010 02:51	SMH	443374

CAS#	Parameter	Result	RDL	REG LIMIT	Units
GCSV-02-11	Aliphatic >C10-C12	ND	0.150		mg/L
GCSV-02-12	Aliphatic >C12-C16	ND	0.150		mg/L
GCSV-02-31	Aliphatic >C16-C35	ND	0.150		mg/L
GCSV-02-10	Aliphatic >C8-C10	ND	0.150		mg/L
GCSV-02-30	Aliphatic C6-C8	ND	0.150		mg/L
GCSV-02-15	Aromatic >C10-C12	ND	0.150		mg/L
GCSV-02-16	Aromatic >C12-C16	ND	0.150		mg/L
GCSV-02-17	Aromatic >C16-C21	ND	0.150		mg/L
GCSV-05-18	Aromatic >C21-C35	ND	0.150		mg/L
GCSV-02-14	Aromatic >C8-C10	ND	0.150		mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	16	10.3	mg/L	64	60 - 140

SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 16:50	442970	SW-846 3020A Dissolved	1	10/05/2010 16:49	CNB	443044

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-38-2	Arsenic	ND	0.010		mg/L

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 15:50	442963	SW-846 3010A	1	10/05/2010 17:50	CNB	443036

CAS#	Parameter	Result	RDL	REG LIMIT	Units
<b>7440-39-3</b>	<b>Barium</b>	<b>1.21</b>	<b>0.010</b>		<b>mg/L</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040807	HP-MPA-06-T	Water	09/30/2010 17:00	10/04/2010 08:56

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 15:50	442963	SW-846 3010A	1	10/05/2010 17:50	CNB	443036

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-43-9	Cadmium	ND	0.0050		mg/L
<b>7440-70-2</b>	<b>Calcium</b>	<b>202</b>	<b>0.10</b>		<b>mg/L</b>
<b>7440-47-3</b>	<b>Chromium</b>	<b>0.014</b>	<b>0.010</b>		<b>mg/L</b>
<b>7439-89-6</b>	<b>Iron</b>	<b>6.88</b>	<b>0.10</b>		<b>mg/L</b>
7439-92-1	Lead	ND	0.015		mg/L
<b>7439-95-4</b>	<b>Magnesium</b>	<b>74.1</b>	<b>0.10</b>		<b>mg/L</b>
<b>7439-96-5</b>	<b>Manganese</b>	<b>0.60</b>	<b>0.015</b>		<b>mg/L</b>
<b>7440-09-7</b>	<b>Potassium</b>	<b>5.84</b>	<b>0.50</b>		<b>mg/L</b>
7782-49-2	Selenium	ND	0.040		mg/L
<b>7440-23-5</b>	<b>Sodium</b>	<b>457</b>	<b>1.00</b>		<b>mg/L</b>
<b>7440-24-6</b>	<b>Strontium</b>	<b>1.37</b>	<b>0.050</b>		<b>mg/L</b>
7440-66-6	Zinc	ND	0.020		mg/L

SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 16:15	442882	SW-846 3005 Dissolved	1	10/05/2010 14:39	CNB	443036

CAS#	Parameter	Result	RDL	REG LIMIT	Units
<b>7440-39-3</b>	<b>Barium</b>	<b>0.86</b>	<b>0.010</b>		<b>mg/L</b>
7440-43-9	Cadmium	ND	0.0050		mg/L
<b>7440-70-2</b>	<b>Calcium</b>	<b>206</b>	<b>0.10</b>		<b>mg/L</b>
7440-47-3	Chromium	ND	0.010		mg/L
<b>7439-89-6</b>	<b>Iron</b>	<b>1.93</b>	<b>0.10</b>		<b>mg/L</b>
7439-92-1	Lead	ND	0.015		mg/L
<b>7439-95-4</b>	<b>Magnesium</b>	<b>77.8</b>	<b>0.10</b>		<b>mg/L</b>
<b>7439-96-5</b>	<b>Manganese</b>	<b>0.52</b>	<b>0.015</b>		<b>mg/L</b>
<b>7440-09-7</b>	<b>Potassium</b>	<b>5.53</b>	<b>0.50</b>		<b>mg/L</b>
7782-49-2	Selenium	ND	0.040		mg/L
<b>7440-23-5</b>	<b>Sodium</b>	<b>463</b>	<b>1.00</b>		<b>mg/L</b>
<b>7440-24-6</b>	<b>Strontium</b>	<b>1.37</b>	<b>0.050</b>		<b>mg/L</b>
7440-66-6	Zinc	ND	0.020		mg/L

SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 15:50	442968	SW-846 3020A	1	10/06/2010 16:31	TEA	443127

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-38-2	Arsenic	ND	0.010		mg/L



<b>GCAL ID</b> 21010040807	<b>Client ID</b> HP-MPA-06-T	<b>Matrix</b> Water	<b>Collect Date/Time</b> 09/30/2010 17:00	<b>Receive Date/Time</b> 10/04/2010 08:56
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### SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/05/2010 13:00	DJH	442992
CAS#	Parameter		Result	RDL	REG LIMIT	Units
WET-035	Total Dissolved Solids(TDS)		1920	10.0		mg/L

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	10/05/2010 14:09	AEL	443045
CAS#	Parameter		Result	RDL	REG LIMIT	Units
16887-00-6	Chloride		957	20.0		mg/L

### SM 2320B Carbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/06/2010 10:41	JEM	443058
CAS#	Parameter		Result	RDL	REG LIMIT	Units
T-005-C	Carbonate Alkalinity		ND	1.0		mg/L CaCO3

### SM 2320B Bicarbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/06/2010 10:41	JEM	443058
CAS#	Parameter		Result	RDL	REG LIMIT	Units
T-005-B	Bicarbonate Alkalinity		330	1.0		mg/L CaCO3

### EPA 375.4 Sulfate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/06/2010 09:09	JEM	443056
CAS#	Parameter		Result	RDL	REG LIMIT	Units
14808-79-8	Sulfate		16.4	5.0		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040808	HP-MPA-07-T	Water	10/01/2010 08:30	10/04/2010 08:56

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/04/2010 17:45	SLR	442960

CAS#	Parameter	Result	RDL	REG LIMIT	Units
71-43-2	Benzene	ND	0.005		mg/L
100-41-4	Ethylbenzene	ND	0.005		mg/L
108-88-3	Toluene	ND	0.005		mg/L
1330-20-7	Xylene (total)	ND	0.01		mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	.05	.044	mg/L	88	78 - 130
1868-53-7	Dibromofluoromethane	.05	.056	mg/L	112	77 - 127
2037-26-5	Toluene d8	.05	.052	mg/L	103	76 - 134
17060-07-0	1,2-Dichloroethane-d4	.05	.055	mg/L	109	71 - 127

LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/07/2010 09:00	443181	TNRCC 1006/LA 1006	1	10/10/2010 03:50	SMH	443374

CAS#	Parameter	Result	RDL	REG LIMIT	Units
GCSV-02-11	Aliphatic >C10-C12	ND	0.150		mg/L
GCSV-02-12	Aliphatic >C12-C16	ND	0.150		mg/L
GCSV-02-31	Aliphatic >C16-C35	ND	0.150		mg/L
GCSV-02-10	Aliphatic >C8-C10	ND	0.150		mg/L
GCSV-02-30	Aliphatic C6-C8	ND	0.150		mg/L
GCSV-02-15	Aromatic >C10-C12	ND	0.150		mg/L
GCSV-02-16	Aromatic >C12-C16	ND	0.150		mg/L
GCSV-02-17	Aromatic >C16-C21	ND	0.150		mg/L
GCSV-05-18	Aromatic >C21-C35	ND	0.150		mg/L
GCSV-02-14	Aromatic >C8-C10	ND	0.150		mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	12.6	18.8	mg/L	150*	60 - 140

SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 16:50	442970	SW-846 3020A Dissolved	1	10/05/2010 16:55	CNB	443044

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-38-2	Arsenic	ND	0.010		mg/L

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 15:50	442963	SW-846 3010A	1	10/05/2010 17:57	CNB	443036

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	0.61	0.010		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040808	HP-MPA-07-T	Water	10/01/2010 08:30	10/04/2010 08:56

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 15:50	442963	SW-846 3010A	1	10/05/2010 17:57	CNB	443036

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-43-9	Cadmium	ND	0.0050		mg/L
<b>7440-70-2</b>	<b>Calcium</b>	<b>107</b>	<b>0.10</b>		<b>mg/L</b>
<b>7440-47-3</b>	<b>Chromium</b>	<b>0.029</b>	<b>0.010</b>		<b>mg/L</b>
<b>7439-89-6</b>	<b>Iron</b>	<b>11.1</b>	<b>0.10</b>		<b>mg/L</b>
7439-92-1	Lead	ND	0.015		mg/L
<b>7439-95-4</b>	<b>Magnesium</b>	<b>51.8</b>	<b>0.10</b>		<b>mg/L</b>
<b>7439-96-5</b>	<b>Manganese</b>	<b>0.50</b>	<b>0.015</b>		<b>mg/L</b>
<b>7440-09-7</b>	<b>Potassium</b>	<b>5.19</b>	<b>0.50</b>		<b>mg/L</b>
7782-49-2	Selenium	ND	0.040		mg/L
<b>7440-23-5</b>	<b>Sodium</b>	<b>495</b>	<b>1.00</b>		<b>mg/L</b>
<b>7440-24-6</b>	<b>Strontium</b>	<b>0.82</b>	<b>0.050</b>		<b>mg/L</b>
<b>7440-66-6</b>	<b>Zinc</b>	<b>0.053</b>	<b>0.020</b>		<b>mg/L</b>

### SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 16:15	442882	SW-846 3005 Dissolved	1	10/05/2010 14:47	CNB	443036

CAS#	Parameter	Result	RDL	REG LIMIT	Units
<b>7440-39-3</b>	<b>Barium</b>	<b>0.49</b>	<b>0.010</b>		<b>mg/L</b>
7440-43-9	Cadmium	ND	0.0050		mg/L
<b>7440-70-2</b>	<b>Calcium</b>	<b>104</b>	<b>0.10</b>		<b>mg/L</b>
7440-47-3	Chromium	ND	0.010		mg/L
<b>7439-89-6</b>	<b>Iron</b>	<b>2.60</b>	<b>0.10</b>		<b>mg/L</b>
7439-92-1	Lead	ND	0.015		mg/L
<b>7439-95-4</b>	<b>Magnesium</b>	<b>50.4</b>	<b>0.10</b>		<b>mg/L</b>
<b>7439-96-5</b>	<b>Manganese</b>	<b>0.40</b>	<b>0.015</b>		<b>mg/L</b>
<b>7440-09-7</b>	<b>Potassium</b>	<b>4.11</b>	<b>0.50</b>		<b>mg/L</b>
7782-49-2	Selenium	ND	0.040		mg/L
<b>7440-23-5</b>	<b>Sodium</b>	<b>491</b>	<b>1.00</b>		<b>mg/L</b>
<b>7440-24-6</b>	<b>Strontium</b>	<b>0.78</b>	<b>0.050</b>		<b>mg/L</b>
7440-66-6	Zinc	ND	0.020		mg/L

### SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 15:50	442968	SW-846 3020A	1	10/06/2010 17:00	TEA	443127

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-38-2	Arsenic	ND	0.010		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040808	HP-MPA-07-T	Water	10/01/2010 08:30	10/04/2010 08:56

### SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/05/2010 13:00	DJH	442992
CAS#	Parameter		Result	RDL	REG LIMIT	Units
WET-035	Total Dissolved Solids(TDS)		1570	10.0		mg/L

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	10/05/2010 14:10	AEL	443045
CAS#	Parameter		Result	RDL	REG LIMIT	Units
16887-00-6	Chloride		808	20.0		mg/L

### SM 2320B Carbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/06/2010 10:41	JEM	443058
CAS#	Parameter		Result	RDL	REG LIMIT	Units
T-005-C	Carbonate Alkalinity		ND	1.0		mg/L CaCO3

### SM 2320B Bicarbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/06/2010 10:41	JEM	443058
CAS#	Parameter		Result	RDL	REG LIMIT	Units
T-005-B	Bicarbonate Alkalinity		410	1.0		mg/L CaCO3

### EPA 375.4 Sulfate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/06/2010 09:09	JEM	443056
CAS#	Parameter		Result	RDL	REG LIMIT	Units
14808-79-8	Sulfate		ND	5.0		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040809	HP-MPA-07-T DUP	Water	10/01/2010 08:30	10/04/2010 08:56

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/04/2010 18:08	SLR	442960

CAS#	Parameter	Result	RDL	REG LIMIT	Units
71-43-2	Benzene	ND	0.005		mg/L
100-41-4	Ethylbenzene	ND	0.005		mg/L
108-88-3	Toluene	ND	0.005		mg/L
1330-20-7	Xylene (total)	ND	0.01		mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	.05	.046	mg/L	91	78 - 130
1868-53-7	Dibromofluoromethane	.05	.055	mg/L	110	77 - 127
2037-26-5	Toluene d8	.05	.05	mg/L	100	76 - 134
17060-07-0	1,2-Dichloroethane-d4	.05	.055	mg/L	110	71 - 127

LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/07/2010 09:00	443181	TNRCC 1006/LA 1006	1	10/10/2010 05:48	SMH	443374

CAS#	Parameter	Result	RDL	REG LIMIT	Units
GCSV-02-11	Aliphatic >C10-C12	ND	0.150		mg/L
GCSV-02-12	Aliphatic >C12-C16	ND	0.150		mg/L
GCSV-02-31	Aliphatic >C16-C35	ND	0.150		mg/L
GCSV-02-10	Aliphatic >C8-C10	ND	0.150		mg/L
GCSV-02-30	Aliphatic C6-C8	ND	0.150		mg/L
GCSV-02-15	Aromatic >C10-C12	ND	0.150		mg/L
GCSV-02-16	Aromatic >C12-C16	ND	0.150		mg/L
GCSV-02-17	Aromatic >C16-C21	ND	0.150		mg/L
GCSV-05-18	Aromatic >C21-C35	ND	0.150		mg/L
GCSV-02-14	Aromatic >C8-C10	ND	0.150		mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	16.1	13.1	mg/L	81	60 - 140

SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 16:50	442970	SW-846 3020A Dissolved	1	10/05/2010 17:01	CNB	443044

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-38-2	Arsenic	ND	0.010		mg/L

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 15:50	442963	SW-846 3010A	1	10/05/2010 18:18	CNB	443036

CAS#	Parameter	Result	RDL	REG LIMIT	Units
<b>7440-39-3</b>	<b>Barium</b>	<b>0.63</b>	<b>0.010</b>		<b>mg/L</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040809	HP-MPA-07-T DUP	Water	10/01/2010 08:30	10/04/2010 08:56

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 15:50	442963	SW-846 3010A	1	10/05/2010 18:18	CNB	443036

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-43-9	Cadmium	ND	0.0050		mg/L
<b>7440-70-2</b>	<b>Calcium</b>	<b>107</b>	<b>0.10</b>		<b>mg/L</b>
<b>7440-47-3</b>	<b>Chromium</b>	<b>0.033</b>	<b>0.010</b>		<b>mg/L</b>
<b>7439-89-6</b>	<b>Iron</b>	<b>13.0</b>	<b>0.10</b>		<b>mg/L</b>
7439-92-1	Lead	ND	0.015		mg/L
<b>7439-95-4</b>	<b>Magnesium</b>	<b>52.1</b>	<b>0.10</b>		<b>mg/L</b>
<b>7439-96-5</b>	<b>Manganese</b>	<b>0.51</b>	<b>0.015</b>		<b>mg/L</b>
<b>7440-09-7</b>	<b>Potassium</b>	<b>5.70</b>	<b>0.50</b>		<b>mg/L</b>
7782-49-2	Selenium	ND	0.040		mg/L
<b>7440-23-5</b>	<b>Sodium</b>	<b>490</b>	<b>1.00</b>		<b>mg/L</b>
<b>7440-24-6</b>	<b>Strontium</b>	<b>0.82</b>	<b>0.050</b>		<b>mg/L</b>
<b>7440-66-6</b>	<b>Zinc</b>	<b>0.053</b>	<b>0.020</b>		<b>mg/L</b>

SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 16:15	442882	SW-846 3005 Dissolved	1	10/05/2010 14:55	CNB	443036

CAS#	Parameter	Result	RDL	REG LIMIT	Units
<b>7440-39-3</b>	<b>Barium</b>	<b>0.50</b>	<b>0.010</b>		<b>mg/L</b>
7440-43-9	Cadmium	ND	0.0050		mg/L
<b>7440-70-2</b>	<b>Calcium</b>	<b>105</b>	<b>0.10</b>		<b>mg/L</b>
7440-47-3	Chromium	ND	0.010		mg/L
<b>7439-89-6</b>	<b>Iron</b>	<b>2.51</b>	<b>0.10</b>		<b>mg/L</b>
7439-92-1	Lead	ND	0.015		mg/L
<b>7439-95-4</b>	<b>Magnesium</b>	<b>50.4</b>	<b>0.10</b>		<b>mg/L</b>
<b>7439-96-5</b>	<b>Manganese</b>	<b>0.40</b>	<b>0.015</b>		<b>mg/L</b>
<b>7440-09-7</b>	<b>Potassium</b>	<b>4.07</b>	<b>0.50</b>		<b>mg/L</b>
7782-49-2	Selenium	ND	0.040		mg/L
<b>7440-23-5</b>	<b>Sodium</b>	<b>472</b>	<b>1.00</b>		<b>mg/L</b>
<b>7440-24-6</b>	<b>Strontium</b>	<b>0.79</b>	<b>0.050</b>		<b>mg/L</b>
7440-66-6	Zinc	ND	0.020		mg/L

SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 15:50	442968	SW-846 3020A	1	10/06/2010 15:58	TEA	443127

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-38-2	Arsenic	ND	0.010		mg/L

<b>GCAL ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Collect Date/Time</b>	<b>Receive Date/Time</b>
21010040809	HP-MPA-07-T DUP	Water	10/01/2010 08:30	10/04/2010 08:56

**SM 2540C TDS**

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b>	<b>Analyzed</b>	<b>By</b>	<b>Analytical Batch</b>
			1	10/05/2010 13:00	DJH	442992
<b>CAS#</b>	<b>Parameter</b>		<b>Result</b>	<b>RDL</b>	<b>REG LIMIT</b>	<b>Units</b>
WET-035	Total Dissolved Solids(TDS)		1810	10.0		mg/L

**SM 4500 CL E Chloride**

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b>	<b>Analyzed</b>	<b>By</b>	<b>Analytical Batch</b>
			20	10/05/2010 14:11	AEL	443045
<b>CAS#</b>	<b>Parameter</b>		<b>Result</b>	<b>RDL</b>	<b>REG LIMIT</b>	<b>Units</b>
16887-00-6	Chloride		817	20.0		mg/L

**SM 2320B Carbonate**

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b>	<b>Analyzed</b>	<b>By</b>	<b>Analytical Batch</b>
			1	10/06/2010 10:41	JEM	443058
<b>CAS#</b>	<b>Parameter</b>		<b>Result</b>	<b>RDL</b>	<b>REG LIMIT</b>	<b>Units</b>
T-005-C	Carbonate Alkalinity		ND	1.0		mg/L CaCO3

**SM 2320B Bicarbonate**

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b>	<b>Analyzed</b>	<b>By</b>	<b>Analytical Batch</b>
			1	10/06/2010 10:41	JEM	443058
<b>CAS#</b>	<b>Parameter</b>		<b>Result</b>	<b>RDL</b>	<b>REG LIMIT</b>	<b>Units</b>
T-005-B	Bicarbonate Alkalinity		476	1.0		mg/L CaCO3

**EPA 375.4 Sulfate**

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b>	<b>Analyzed</b>	<b>By</b>	<b>Analytical Batch</b>
			1	10/06/2010 09:10	JEM	443056
<b>CAS#</b>	<b>Parameter</b>		<b>Result</b>	<b>RDL</b>	<b>REG LIMIT</b>	<b>Units</b>
14808-79-8	Sulfate		ND	5.0		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040810	HP-MPA-08-T	Water	10/01/2010 13:45	10/04/2010 08:56

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/04/2010 18:32	SLR	442960

CAS#	Parameter	Result	RDL	REG LIMIT	Units
71-43-2	Benzene	ND	0.005		mg/L
100-41-4	Ethylbenzene	ND	0.005		mg/L
<b>108-88-3</b>	<b>Toluene</b>	<b>0.00577</b>	<b>0.005</b>		<b>mg/L</b>
1330-20-7	Xylene (total)	ND	0.01		mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	.05	.045	mg/L	91	78 - 130
1868-53-7	Dibromofluoromethane	.05	.055	mg/L	111	77 - 127
2037-26-5	Toluene d8	.05	.051	mg/L	102	76 - 134
17060-07-0	1,2-Dichloroethane-d4	.05	.054	mg/L	107	71 - 127

LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/07/2010 09:00	443181	TNRCC 1006/LA 1006	1	10/10/2010 06:48	SMH	443374

CAS#	Parameter	Result	RDL	REG LIMIT	Units
GCSV-02-11	Aliphatic >C10-C12	ND	0.150		mg/L
GCSV-02-12	Aliphatic >C12-C16	ND	0.150		mg/L
GCSV-02-31	Aliphatic >C16-C35	ND	0.150		mg/L
GCSV-02-10	Aliphatic >C8-C10	ND	0.150		mg/L
GCSV-02-30	Aliphatic C6-C8	ND	0.150		mg/L
GCSV-02-15	Aromatic >C10-C12	ND	0.150		mg/L
GCSV-02-16	Aromatic >C12-C16	ND	0.150		mg/L
GCSV-02-17	Aromatic >C16-C21	ND	0.150		mg/L
GCSV-05-18	Aromatic >C21-C35	ND	0.150		mg/L
GCSV-02-14	Aromatic >C8-C10	ND	0.150		mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	16.2	14.1	mg/L	87	60 - 140

SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 16:50	442970	SW-846 3020A Dissolved	1	10/05/2010 17:07	CNB	443044

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-38-2	Arsenic	ND	0.010		mg/L

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 15:50	442963	SW-846 3010A	1	10/05/2010 18:25	CNB	443036

CAS#	Parameter	Result	RDL	REG LIMIT	Units
<b>7440-39-3</b>	<b>Barium</b>	<b>2.04</b>	<b>0.010</b>		<b>mg/L</b>



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040810	HP-MPA-08-T	Water	10/01/2010 13:45	10/04/2010 08:56

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 15:50	442963	SW-846 3010A	1	10/05/2010 18:25	CNB	443036

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-43-9	Cadmium	ND	0.0050		mg/L
<b>7440-70-2</b>	<b>Calcium</b>	<b>223</b>	<b>0.10</b>		<b>mg/L</b>
7440-47-3	Chromium	ND	0.010		mg/L
<b>7439-89-6</b>	<b>Iron</b>	<b>7.19</b>	<b>0.10</b>		<b>mg/L</b>
7439-92-1	Lead	ND	0.015		mg/L
<b>7439-95-4</b>	<b>Magnesium</b>	<b>97.7</b>	<b>0.10</b>		<b>mg/L</b>
<b>7439-96-5</b>	<b>Manganese</b>	<b>0.47</b>	<b>0.015</b>		<b>mg/L</b>
<b>7440-09-7</b>	<b>Potassium</b>	<b>12.0</b>	<b>0.50</b>		<b>mg/L</b>
7782-49-2	Selenium	ND	0.040		mg/L
<b>7440-24-6</b>	<b>Strontium</b>	<b>2.07</b>	<b>0.050</b>		<b>mg/L</b>
7440-66-6	Zinc	ND	0.020		mg/L

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 15:50	442963	SW-846 3010A	5	10/05/2010 19:11	CNB	443036

CAS#	Parameter	Result	RDL	REG LIMIT	Units
<b>7440-23-5</b>	<b>Sodium</b>	<b>1700</b>	<b>5.00</b>		<b>mg/L</b>

SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 16:15	442882	SW-846 3005 Dissolved	1	10/05/2010 15:03	CNB	443036

CAS#	Parameter	Result	RDL	REG LIMIT	Units
<b>7440-39-3</b>	<b>Barium</b>	<b>2.17</b>	<b>0.010</b>		<b>mg/L</b>
7440-43-9	Cadmium	ND	0.0050		mg/L
<b>7440-70-2</b>	<b>Calcium</b>	<b>238</b>	<b>0.10</b>		<b>mg/L</b>
7440-47-3	Chromium	ND	0.010		mg/L
<b>7439-89-6</b>	<b>Iron</b>	<b>5.25</b>	<b>0.10</b>		<b>mg/L</b>
7439-92-1	Lead	ND	0.015		mg/L
<b>7439-95-4</b>	<b>Magnesium</b>	<b>104</b>	<b>0.10</b>		<b>mg/L</b>
<b>7439-96-5</b>	<b>Manganese</b>	<b>0.49</b>	<b>0.015</b>		<b>mg/L</b>
<b>7440-09-7</b>	<b>Potassium</b>	<b>12.9</b>	<b>0.50</b>		<b>mg/L</b>
7782-49-2	Selenium	ND	0.040		mg/L
<b>7440-24-6</b>	<b>Strontium</b>	<b>2.21</b>	<b>0.050</b>		<b>mg/L</b>
7440-66-6	Zinc	ND	0.020		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040810	HP-MPA-08-T	Water	10/01/2010 13:45	10/04/2010 08:56

### SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 16:15	442882	SW-846 3005 Dissolved	5	10/05/2010 19:03	CNB	443036
CAS#	Parameter	Result	RDL	REG LIMIT	Units	
7440-23-5	Sodium	1730	5.00		mg/L	

### SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 15:50	442968	SW-846 3020A	1	10/06/2010 16:07	TEA	443127
CAS#	Parameter	Result	RDL	REG LIMIT	Units	
7440-38-2	Arsenic	ND	0.010		mg/L	

### SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/05/2010 13:00	DJH	442992
CAS#	Parameter	Result	RDL	REG LIMIT	Units	
WET-035	Total Dissolved Solids(TDS)	3090	10.0		mg/L	

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			50	10/05/2010 14:12	AEL	443045
CAS#	Parameter	Result	RDL	REG LIMIT	Units	
16887-00-6	Chloride	1520	50.0		mg/L	

### SM 2320B Carbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/06/2010 10:41	JEM	443058
CAS#	Parameter	Result	RDL	REG LIMIT	Units	
T-005-C	Carbonate Alkalinity	ND	1.0		mg/L CaCO3	

### SM 2320B Bicarbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/06/2010 10:41	JEM	443058
CAS#	Parameter	Result	RDL	REG LIMIT	Units	
T-005-B	Bicarbonate Alkalinity	603	1.0		mg/L CaCO3	

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040810	HP-MPA-08-T	Water	10/01/2010 13:45	10/04/2010 08:56

EPA 375.4 Sulfate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/06/2010 09:11	JEM	443056

CAS#	Parameter	Result	RDL	REG LIMIT	Units
14808-79-8	Sulfate	10.1	5.0		mg/L

<b>GCAL ID</b> 21010040811	<b>Client ID</b> HP-MPA-09-T	<b>Matrix</b> Water	<b>Collect Date/Time</b> 10/01/2010 15:45	<b>Receive Date/Time</b> 10/04/2010 08:56
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SW-846 8260B

<b>Prep Date</b> 10/04/2010 18:55	<b>Prep Batch</b> 442960	<b>Prep Method</b>	<b>Dilution</b> 1	<b>Analyzed</b> 10/04/2010 18:55	<b>By</b> SLR	<b>Analytical Batch</b> 442960
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CAS#	Parameter	Result	RDL	REG LIMIT	Units
<b>71-43-2</b>	<b>Benzene</b>	<b>0.00508</b>	<b>0.005</b>		<b>mg/L</b>
100-41-4	Ethylbenzene	ND	0.005		mg/L
<b>108-88-3</b>	<b>Toluene</b>	<b>0.00646</b>	<b>0.005</b>		<b>mg/L</b>
1330-20-7	Xylene (total)	ND	0.01		mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	.05	.046	mg/L	92	78 - 130
1868-53-7	Dibromofluoromethane	.05	.054	mg/L	108	77 - 127
2037-26-5	Toluene d8	.05	.052	mg/L	104	76 - 134
17060-07-0	1,2-Dichloroethane-d4	.05	.055	mg/L	109	71 - 127

LA1006 Hydrocarbons by Range

<b>Prep Date</b> 10/07/2010 09:00	<b>Prep Batch</b> 443181	<b>Prep Method</b> TNRCC 1006/LA 1006	<b>Dilution</b> 1	<b>Analyzed</b> 10/10/2010 07:47	<b>By</b> SMH	<b>Analytical Batch</b> 443374
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CAS#	Parameter	Result	RDL	REG LIMIT	Units
GCSV-02-11	Aliphatic >C10-C12	ND	0.150		mg/L
GCSV-02-12	Aliphatic >C12-C16	ND	0.150		mg/L
GCSV-02-31	Aliphatic >C16-C35	ND	0.150		mg/L
GCSV-02-10	Aliphatic >C8-C10	ND	0.150		mg/L
GCSV-02-30	Aliphatic C6-C8	ND	0.150		mg/L
GCSV-02-15	Aromatic >C10-C12	ND	0.150		mg/L
GCSV-02-16	Aromatic >C12-C16	ND	0.150		mg/L
GCSV-02-17	Aromatic >C16-C21	ND	0.150		mg/L
GCSV-05-18	Aromatic >C21-C35	ND	0.150		mg/L
GCSV-02-14	Aromatic >C8-C10	ND	0.150		mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	16.1	10.3	mg/L	64	60 - 140

SW-846 7010 Arsenic Dissolved

<b>Prep Date</b> 10/04/2010 16:50	<b>Prep Batch</b> 442970	<b>Prep Method</b> SW-846 3020A Dissolved	<b>Dilution</b> 1	<b>Analyzed</b> 10/05/2010 17:13	<b>By</b> CNB	<b>Analytical Batch</b> 443044
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CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-38-2	Arsenic	ND	0.010		mg/L

SW-846 6010B

<b>Prep Date</b> 10/04/2010 15:50	<b>Prep Batch</b> 442963	<b>Prep Method</b> SW-846 3010A	<b>Dilution</b> 1	<b>Analyzed</b> 10/05/2010 18:33	<b>By</b> CNB	<b>Analytical Batch</b> 443036
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CAS#	Parameter	Result	RDL	REG LIMIT	Units
<b>7440-39-3</b>	<b>Barium</b>	<b>1.59</b>	<b>0.010</b>		<b>mg/L</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040811	HP-MPA-09-T	Water	10/01/2010 15:45	10/04/2010 08:56

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 15:50	442963	SW-846 3010A	1	10/05/2010 18:33	CNB	443036

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-43-9	Cadmium	ND	0.0050		mg/L
<b>7440-70-2</b>	<b>Calcium</b>	<b>170</b>	<b>0.10</b>		<b>mg/L</b>
7440-47-3	Chromium	ND	0.010		mg/L
<b>7439-89-6</b>	<b>Iron</b>	<b>5.92</b>	<b>0.10</b>		<b>mg/L</b>
7439-92-1	Lead	ND	0.015		mg/L
<b>7439-95-4</b>	<b>Magnesium</b>	<b>106</b>	<b>0.10</b>		<b>mg/L</b>
<b>7439-96-5</b>	<b>Manganese</b>	<b>0.76</b>	<b>0.015</b>		<b>mg/L</b>
<b>7440-09-7</b>	<b>Potassium</b>	<b>18.2</b>	<b>0.50</b>		<b>mg/L</b>
7782-49-2	Selenium	ND	0.040		mg/L
<b>7440-24-6</b>	<b>Strontium</b>	<b>2.57</b>	<b>0.050</b>		<b>mg/L</b>
7440-66-6	Zinc	ND	0.020		mg/L

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 15:50	442963	SW-846 3010A	5	10/06/2010 09:56	TEA	443107

CAS#	Parameter	Result	RDL	REG LIMIT	Units
<b>7440-23-5</b>	<b>Sodium</b>	<b>1410</b>	<b>5.00</b>		<b>mg/L</b>

SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 16:15	442882	SW-846 3005 Dissolved	1	10/05/2010 15:25	CNB	443036

CAS#	Parameter	Result	RDL	REG LIMIT	Units
<b>7440-39-3</b>	<b>Barium</b>	<b>1.62</b>	<b>0.010</b>		<b>mg/L</b>
7440-43-9	Cadmium	ND	0.0050		mg/L
<b>7440-70-2</b>	<b>Calcium</b>	<b>178</b>	<b>0.10</b>		<b>mg/L</b>
7440-47-3	Chromium	ND	0.010		mg/L
<b>7439-89-6</b>	<b>Iron</b>	<b>3.57</b>	<b>0.10</b>		<b>mg/L</b>
7439-92-1	Lead	ND	0.015		mg/L
<b>7439-95-4</b>	<b>Magnesium</b>	<b>112</b>	<b>0.10</b>		<b>mg/L</b>
<b>7439-96-5</b>	<b>Manganese</b>	<b>0.76</b>	<b>0.015</b>		<b>mg/L</b>
<b>7440-09-7</b>	<b>Potassium</b>	<b>18.6</b>	<b>0.50</b>		<b>mg/L</b>
7782-49-2	Selenium	ND	0.040		mg/L
<b>7440-24-6</b>	<b>Strontium</b>	<b>2.68</b>	<b>0.050</b>		<b>mg/L</b>
7440-66-6	Zinc	ND	0.020		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040811	HP-MPA-09-T	Water	10/01/2010 15:45	10/04/2010 08:56

### SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 16:15	442882	SW-846 3005 Dissolved	5	10/06/2010 09:48	TEA	443107

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-23-5	Sodium	1140	5.00		mg/L

### SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 15:50	442968	SW-846 3020A	1	10/06/2010 16:13	TEA	443127

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-38-2	Arsenic	ND	0.010		mg/L

### SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/05/2010 13:00	DJH	442992

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-035	Total Dissolved Solids(TDS)	4520	10.0		mg/L

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			50	10/05/2010 14:13	AEL	443045

CAS#	Parameter	Result	RDL	REG LIMIT	Units
16887-00-6	Chloride	2350	50.0		mg/L

### SM 2320B Carbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/06/2010 10:41	JEM	443058

CAS#	Parameter	Result	RDL	REG LIMIT	Units
T-005-C	Carbonate Alkalinity	ND	1.0		mg/L CaCO3

### SM 2320B Bicarbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/06/2010 10:41	JEM	443058

CAS#	Parameter	Result	RDL	REG LIMIT	Units
T-005-B	Bicarbonate Alkalinity	270	1.0		mg/L CaCO3

<b>GCAL ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Collect Date/Time</b>	<b>Receive Date/Time</b>
21010040811	HP-MPA-09-T	Water	10/01/2010 15:45	10/04/2010 08:56

EPA 375.4 Sulfate

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b>	<b>Analyzed</b>	<b>By</b>	<b>Analytical Batch</b>
			2	10/06/2010 09:25	JEM	443056

<b>CAS#</b>	<b>Parameter</b>	<b>Result</b>	<b>RDL</b>	<b>REG LIMIT</b>	<b>Units</b>
14808-79-8	Sulfate	69.1	10.0		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040812	HP-MPA-10-T	Water	10/01/2010 18:00	10/04/2010 08:56

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/04/2010 19:18	SLR	442960

CAS#	Parameter	Result	RDL	REG LIMIT	Units
71-43-2	Benzene	ND	0.005		mg/L
100-41-4	Ethylbenzene	ND	0.005		mg/L
108-88-3	Toluene	ND	0.005		mg/L
1330-20-7	Xylene (total)	ND	0.01		mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	.05	.045	mg/L	90	78 - 130
1868-53-7	Dibromofluoromethane	.05	.053	mg/L	105	77 - 127
2037-26-5	Toluene d8	.05	.052	mg/L	104	76 - 134
17060-07-0	1,2-Dichloroethane-d4	.05	.051	mg/L	103	71 - 127

LA1006 Hydrocarbons by Range

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/07/2010 09:00	443181	TNRCC 1006/LA 1006	1	10/10/2010 08:46	SMH	443374

CAS#	Parameter	Result	RDL	REG LIMIT	Units
GCSV-02-11	Aliphatic >C10-C12	ND	0.150		mg/L
GCSV-02-12	Aliphatic >C12-C16	ND	0.150		mg/L
GCSV-02-31	Aliphatic >C16-C35	ND	0.150		mg/L
GCSV-02-10	Aliphatic >C8-C10	ND	0.150		mg/L
GCSV-02-30	Aliphatic C6-C8	ND	0.150		mg/L
GCSV-02-15	Aromatic >C10-C12	ND	0.150		mg/L
GCSV-02-16	Aromatic >C12-C16	ND	0.150		mg/L
GCSV-02-17	Aromatic >C16-C21	ND	0.150		mg/L
GCSV-05-18	Aromatic >C21-C35	ND	0.150		mg/L
GCSV-02-14	Aromatic >C8-C10	ND	0.150		mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
84-15-1	o-Terphenyl	16.3	16.3	mg/L	100	60 - 140

SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 16:50	442970	SW-846 3020A Dissolved	1	10/05/2010 17:19	CNB	443044

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-38-2	Arsenic	ND	0.010		mg/L

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 15:50	442963	SW-846 3010A	1	10/05/2010 18:40	CNB	443036

CAS#	Parameter	Result	RDL	REG LIMIT	Units
<b>7440-39-3</b>	<b>Barium</b>	<b>1.42</b>	<b>0.010</b>		<b>mg/L</b>



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010040812	HP-MPA-10-T	Water	10/01/2010 18:00	10/04/2010 08:56

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 15:50	442963	SW-846 3010A	1	10/05/2010 18:40	CNB	443036

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-43-9	Cadmium	ND	0.0050		mg/L
7440-70-2	Calcium	185	0.10		mg/L
7440-47-3	Chromium	0.081	0.010		mg/L
7439-89-6	Iron	34.7	0.10		mg/L
7439-92-1	Lead	0.032	0.015		mg/L
7439-95-4	Magnesium	59.7	0.10		mg/L
7439-96-5	Manganese	0.92	0.015		mg/L
7440-09-7	Potassium	8.17	0.50		mg/L
7782-49-2	Selenium	ND	0.040		mg/L
7440-23-5	Sodium	472	1.00		mg/L
7440-24-6	Strontium	1.35	0.050		mg/L
7440-66-6	Zinc	0.12	0.020		mg/L

SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 16:15	442882	SW-846 3005 Dissolved	1	10/05/2010 15:32	CNB	443036

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	1.02	0.010		mg/L
7440-43-9	Cadmium	ND	0.0050		mg/L
7440-70-2	Calcium	146	0.10		mg/L
7440-47-3	Chromium	ND	0.010		mg/L
7439-89-6	Iron	2.11	0.10		mg/L
7439-92-1	Lead	ND	0.015		mg/L
7439-95-4	Magnesium	52.7	0.10		mg/L
7439-96-5	Manganese	0.31	0.015		mg/L
7440-09-7	Potassium	5.35	0.50		mg/L
7782-49-2	Selenium	ND	0.040		mg/L
7440-23-5	Sodium	485	1.00		mg/L
7440-24-6	Strontium	1.24	0.050		mg/L
7440-66-6	Zinc	ND	0.020		mg/L

SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/04/2010 15:50	442968	SW-846 3020A	1	10/06/2010 17:06	TEA	443127

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-38-2	Arsenic	0.032	0.010		mg/L

<b>GCAL ID</b> 21010040812	<b>Client ID</b> HP-MPA-10-T	<b>Matrix</b> Water	<b>Collect Date/Time</b> 10/01/2010 18:00	<b>Receive Date/Time</b> 10/04/2010 08:56
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**SM 2540C TDS**

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b> 1	<b>Analyzed</b> 10/05/2010 13:00	<b>By</b> DJH	<b>Analytical Batch</b> 442992
<b>CAS#</b> WET-035	<b>Parameter</b> Total Dissolved Solids(TDS)		<b>Result</b> 1680	<b>RDL</b> 10.0	<b>REG LIMIT</b>	<b>Units</b> mg/L

**SM 4500 CL E Chloride**

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b> 20	<b>Analyzed</b> 10/05/2010 14:14	<b>By</b> AEL	<b>Analytical Batch</b> 443045
<b>CAS#</b> 16887-00-6	<b>Parameter</b> Chloride		<b>Result</b> 850	<b>RDL</b> 20.0	<b>REG LIMIT</b>	<b>Units</b> mg/L

**SM 2320B Carbonate**

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b> 1	<b>Analyzed</b> 10/06/2010 10:41	<b>By</b> JEM	<b>Analytical Batch</b> 443058
<b>CAS#</b> T-005-C	<b>Parameter</b> Carbonate Alkalinity		<b>Result</b> ND	<b>RDL</b> 1.0	<b>REG LIMIT</b>	<b>Units</b> mg/L CaCO3

**SM 2320B Bicarbonate**

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b> 1	<b>Analyzed</b> 10/06/2010 10:41	<b>By</b> JEM	<b>Analytical Batch</b> 443058
<b>CAS#</b> T-005-B	<b>Parameter</b> Bicarbonate Alkalinity		<b>Result</b> 426	<b>RDL</b> 1.0	<b>REG LIMIT</b>	<b>Units</b> mg/L CaCO3

**EPA 375.4 Sulfate**

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b> 1	<b>Analyzed</b> 10/06/2010 09:26	<b>By</b> JEM	<b>Analytical Batch</b> 443056
<b>CAS#</b> 14808-79-8	<b>Parameter</b> Sulfate		<b>Result</b> ND	<b>RDL</b> 5.0	<b>REG LIMIT</b>	<b>Units</b> mg/L

<b>GCAL ID</b> 21010040813	<b>Client ID</b> TRIP BLANK	<b>Matrix</b> Water	<b>Collect Date/Time</b>	<b>Receive Date/Time</b> 10/04/2010 08:56
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SW-846 8260B

<b>Prep Date</b>	<b>Prep Batch</b>	<b>Prep Method</b>	<b>Dilution</b> 1	<b>Analyzed</b> 10/04/2010 14:37	<b>By</b> RJU	<b>Analytical Batch</b> 442960
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CAS#	Parameter	Result	RDL	REG LIMIT	Units
71-43-2	Benzene	ND	0.005		mg/L
100-41-4	Ethylbenzene	ND	0.005		mg/L
108-88-3	Toluene	ND	0.005		mg/L
1330-20-7	Xylene (total)	ND	0.01		mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	.05	.046	mg/L	92	78 - 130
1868-53-7	Dibromofluoromethane	.05	.056	mg/L	111	77 - 127
2037-26-5	Toluene d8	.05	.052	mg/L	104	76 - 134
17060-07-0	1,2-Dichloroethane-d4	.05	.054	mg/L	107	71 - 127

LA1006 Hydrocarbons by Range

<b>Prep Date</b> 10/07/2010 09:00	<b>Prep Batch</b> 443181	<b>Prep Method</b> TNRCC 1006/LA 1006	<b>Dilution</b> 1	<b>Analyzed</b> 10/10/2010 09:45	<b>By</b> SMH	<b>Analytical Batch</b> 443374
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CAS#	Parameter	Result	RDL	REG LIMIT	Units
GCSV-02-11	Aliphatic >C10-C12	ND	0.150		mg/L
GCSV-02-12	Aliphatic >C12-C16	ND	0.150		mg/L
GCSV-02-31	Aliphatic >C16-C35	ND	0.150		mg/L
GCSV-02-10	Aliphatic >C8-C10	ND	0.150		mg/L
GCSV-02-30	Aliphatic C6-C8	ND	0.150		mg/L
GCSV-02-15	Aromatic >C10-C12	ND	0.150		mg/L
GCSV-02-16	Aromatic >C12-C16	ND	0.150		mg/L
GCSV-02-17	Aromatic >C16-C21	ND	0.150		mg/L
GCSV-05-18	Aromatic >C21-C35	ND	0.150		mg/L
GCSV-02-14	Aromatic >C8-C10	ND	0.150		mg/L

# GC/MS Volatiles Quality Control Summary

Analytical Batch 442960 Prep Batch N/A		Client ID MB442960 GCAL ID 883106 Sample Type Method Blank Analytical Date 10/04/2010 14:14 Matrix Water			LCS442960 883107 LCS 10/04/2010 12:41 Water			LCSD442960 883108 LCSD 10/04/2010 13:27 Water			
<b>SW-846 8260B</b>		Units	mg/L	Spike	Result	% R	Control	Result	% R	RPD	RPD
		Result	RDL	Added			Limits % R				Limit
100-41-4	Ethylbenzene	ND	0.005	0.050	0.046	92	74 - 126	0.047	94	2	30
1330-20-7	Xylene (total)	ND	0.01	0.150	0.134	89	74 - 127	0.136	91	1	30
71-43-2	Benzene	ND	0.005	0.050	0.052	104	70 - 129	0.051	103	2	20
108-88-3	Toluene	ND	0.005	0.050	0.050	99	72 - 120	0.050	100	0	20
<b>Surrogate</b>											
460-00-4	4-Bromofluorobenzene	45	90	50	51	102	78 - 130	51.3	103		
1868-53-7	Dibromofluoromethane	54.6	109	50	53.6	107	77 - 127	50.8	102		
2037-26-5	Toluene d8	52.5	105	50	43.6	87	76 - 134	44.9	90		
17060-07-0	1,2-Dichloroethane-d4	54.7	109	50	53	106	71 - 127	51.3	103		

# General Chromatography Quality Control Summary

Analytical Batch 443374 Prep Batch 443181 Prep Method TNRCC 1006/LA 1006		Client ID MB443181 GCAL ID 884195 Sample Type Method Blank Prep Date 10/07/2010 09:00 Analytical Date 10/09/2010 13:56 Matrix Water		LCS443181 884196 LCS 10/07/2010 09:00 10/09/2010 14:53 Water			LCSD443181 884197 LCSD 10/07/2010 09:00 10/09/2010 15:51 Water				
LA1006 Hydrocarbons by Range		Units	mg/L	Spike	Result	% R	Control	Result	% R	RPD	RPD
		Result	RDL	Added			Limits % R				Limit
GCSV-02-30	Aliphatic C6-C8	ND	0.150								
GCSV-02-10	Aliphatic >C8-C10	ND	0.150								
GCSV-02-11	Aliphatic >C10-C12	ND	0.150								
GCSV-02-12	Aliphatic >C12-C16	ND	0.150								
GCSV-02-31	Aliphatic >C16-C35	ND	0.150								
GCSV-02-14	Aromatic >C8-C10	ND	0.150								
GCSV-02-15	Aromatic >C10-C12	ND	0.150								
GCSV-02-16	Aromatic >C12-C16	ND	0.150								
GCSV-02-17	Aromatic >C16-C21	ND	0.150								
GCSV-05-18	Aromatic >C21-C35	ND	0.150								
GCSV-05-04	Total TPH (C6-C35)	ND	0.150	64.5	52.5	81	60 - 140	57.4	83	9	20
<b>Surrogate</b>											
84-15-1	o-Terphenyl	11200	70	16100	11700	73	60 - 140	12300	71		

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 443044 <b>Prep Batch</b> 442970 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> MB442970 <b>GCAL ID</b> 883161 <b>Sample Type</b> Method Blank <b>Prep Date</b> 10/04/2010 16:50 <b>Analytical Date</b> 10/05/2010 15:24 <b>Matrix</b> Water	LCS442970 883162 LCS 10/04/2010 16:50 10/05/2010 15:30 Water			
<b>SW-846 7010 Arsenic Dissolved</b>					
	<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>
7440-38-2 Arsenic	ND 0.010	0.040	0.034	86	80 - 120

<b>Analytical Batch</b> 443044 <b>Prep Batch</b> 442970 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> HP-MPA-05-T <b>GCAL ID</b> 21010040806 <b>Sample Type</b> SAMPLE <b>Prep Date</b> ORA-00933: SQL command not properly ended 93342000 <b>Analytical Date</b> ORA-00936: missing expression 93642000 <b>Matrix</b> Water	883058MS 883164 MS 10/04/2010 16:50 10/05/2010 15:48 Water			
<b>SW-846 7010 Arsenic Dissolved</b>					
	<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>
7440-38-2 Arsenic	0.0031 0.010	0.040	0.046	107	75 - 125

<b>Analytical Batch</b> 443044 <b>Prep Batch</b> 442970 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> HP-MPA-05-T <b>GCAL ID</b> 21010040806 <b>Sample Type</b> SAMPLE <b>Prep Date</b> ORA-00933: SQL command not properly ended 93342000 <b>Analytical Date</b> ORA-00936: missing expression 93642000 <b>Matrix</b> Water	883058DUP 883163 DUP 10/04/2010 16:50 10/05/2010 15:42 Water		
<b>SW-846 7010 Arsenic Dissolved</b>				
	<b>Units</b> mg/L <b>Result</b> RDL	<b>Result</b>	<b>RPD</b>	<b>RPD Limit</b>
7440-38-2 Arsenic	0.0031 0.010	0.0041	28*	20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 443036 <b>Prep Batch</b> 442963 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> MB442963 <b>GCAL ID</b> 883116 <b>Sample Type</b> Method Blank <b>Prep Date</b> 10/04/2010 15:50 <b>Analytical Date</b> 10/05/2010 15:48 <b>Matrix</b> Water	LCS442963 883117 LCS 10/04/2010 15:50 10/05/2010 15:56 Water				
<b>SW-846 6010B</b>	<b>Units</b> <b>Result</b>	<b>mg/L</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>
7440-39-3 Barium	ND	0.010	0.50	0.47	94	80 - 120
7440-43-9 Cadmium	ND	0.0050	0.50	0.47	95	80 - 120
7440-70-2 Calcium	ND	0.10	5.00	4.53	91	80 - 120
7440-47-3 Chromium	ND	0.010	0.50	0.47	94	80 - 120
7439-89-6 Iron	ND	0.10	5.00	4.65	93	80 - 120
7439-92-1 Lead	ND	0.015	0.50	0.47	94	80 - 120
7439-95-4 Magnesium	ND	0.10	5.00	4.75	95	80 - 120
7439-96-5 Manganese	ND	0.015	0.50	0.47	94	80 - 120
7440-09-7 Potassium	ND	0.50	10.0	9.29	93	80 - 120
7782-49-2 Selenium	ND	0.040	0.50	0.47	93	80 - 120
7440-23-5 Sodium	ND	1.00	20.0	19.2	96	80 - 120
7440-24-6 Strontium	ND	0.050	0.50	0.47	93	80 - 120
7440-66-6 Zinc	ND	0.020	0.50	0.46	93	80 - 120

<b>Analytical Batch</b> 443036 <b>Prep Batch</b> 442963 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> HP-MPA-01-T <b>GCAL ID</b> 21010040801 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 10/04/2010 15:50 <b>Analytical Date</b> 10/05/2010 16:02 <b>Matrix</b> Water	883050MS 883582 MS 10/04/2010 15:50 10/05/2010 16:16 Water				
<b>SW-846 6010B</b>	<b>Units</b> <b>Result</b>	<b>mg/L</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>
7440-39-3 Barium	2.04	0.010	0.50	2.56	104	75 - 125
7440-43-9 Cadmium	0.0	0.0050	0.50	0.46	92	75 - 125
7440-70-2 Calcium	228	0.10	5.00	235	149*	75 - 125
7440-47-3 Chromium	0.071	0.010	0.50	0.54	94	75 - 125
7439-89-6 Iron	29.1	0.10	5.00	37.6	170*	75 - 125
7439-92-1 Lead	0.016	0.015	0.50	0.48	93	75 - 125
7439-95-4 Magnesium	80.1	0.10	5.00	86.7	133*	75 - 125
7439-96-5 Manganese	0.78	0.015	0.50	1.27	97	75 - 125
7440-09-7 Potassium	7.17	0.50	10.0	18.4	112	75 - 125

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 443036 <b>Prep Batch</b> 442963 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> HP-MPA-01-T <b>GCAL ID</b> 21010040801 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 10/04/2010 15:50 <b>Analytical Date</b> 10/05/2010 16:02 <b>Matrix</b> Water	883050MS 883582 MS 10/04/2010 15:50 10/05/2010 16:16 Water				
<b>SW-846 6010B</b>		<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>
7782-49-2	Selenium	0.0039	0.040	0.50	0.50	98 75 - 125
7440-23-5	Sodium	495	1.00	20.0	516	105 75 - 125
7440-24-6	Strontium	1.87	0.050	0.50	2.41	109 75 - 125
7440-66-6	Zinc	0.087	0.020	0.50	0.57	97 75 - 125

<b>Analytical Batch</b> 443036 <b>Prep Batch</b> 442963 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> HP-MPA-01-T <b>GCAL ID</b> 21010040801 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 10/04/2010 15:50 <b>Analytical Date</b> 10/05/2010 16:02 <b>Matrix</b> Water	883050DUP 883581 DUP 10/04/2010 15:50 10/05/2010 16:09 Water			
<b>SW-846 6010B</b>		<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Result</b>	<b>RPD</b>	<b>RPD Limit</b>
7440-39-3	Barium	2.04	0.010	2.05	0.5 20
7440-43-9	Cadmium	0.0	0.0050	0.0	0 20
7440-70-2	Calcium	228	0.10	227	0.4 20
7440-47-3	Chromium	0.071	0.010	0.072	1 20
7439-89-6	Iron	29.1	0.10	28.9	0.7 20
7439-92-1	Lead	0.016	0.015	0.017	6 20
7439-95-4	Magnesium	80.1	0.10	80.1	0 20
7439-96-5	Manganese	0.78	0.015	0.78	0 20
7440-09-7	Potassium	7.17	0.50	7.16	0.1 20
7782-49-2	Selenium	0.0039	0.040	0.0	<b>200*</b> 20
7440-23-5	Sodium	495	1.00	471	5 20
7440-24-6	Strontium	1.87	0.050	1.88	0.5 20
7440-66-6	Zinc	0.087	0.020	0.087	0 20



# Inorganics Quality Control Summary

<b>Analytical Batch</b> 443036	<b>Client ID</b> MB442882	LCS442882					
<b>Prep Batch</b> 442882	<b>GCAL ID</b> 882772	882773					
<b>Prep Method</b> SW-846 3005 Dissolved	<b>Sample Type</b> Method Blank	LCS					
	<b>Prep Date</b> 10/04/2010 16:15	10/04/2010 16:15					
	<b>Analytical Date</b> 10/05/2010 12:25	10/05/2010 12:32					
	<b>Matrix</b> Water	Water					
<b>SW-846 6010B Dissolved</b>		<b>Units</b>	<b>mg/L</b>	<b>Spike</b>	<b>Result</b>	<b>% R</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>			<b>Limits % R</b>
7440-39-3	Barium	ND	0.010	0.50	0.48	97	80 - 120
7440-43-9	Cadmium	ND	0.0050	0.50	0.50	99	80 - 120
7440-70-2	Calcium	ND	0.10	5.00	4.78	96	80 - 120
7440-47-3	Chromium	ND	0.010	0.50	0.48	96	80 - 120
7439-89-6	Iron	ND	0.10	5.00	4.82	96	80 - 120
7439-92-1	Lead	ND	0.015	0.50	0.49	97	80 - 120
7439-95-4	Magnesium	ND	0.10	5.00	4.89	98	80 - 120
7439-96-5	Manganese	ND	0.015	0.50	0.49	98	80 - 120
7440-09-7	Potassium	ND	0.50	10.0	9.38	94	80 - 120
7782-49-2	Selenium	ND	0.040	0.50	0.51	102	80 - 120
7440-23-5	Sodium	ND	1.00	20.0	18.7	93	80 - 120
7440-24-6	Strontium	ND	0.050	0.50	0.48	95	80 - 120
7440-66-6	Zinc	ND	0.020	0.50	0.50	100	80 - 120

<b>Analytical Batch</b> 443036	<b>Client ID</b> MW-1	882751MS					
<b>Prep Batch</b> 442882	<b>GCAL ID</b> 21010013401	882774					
<b>Prep Method</b> SW-846 3005 Dissolved	<b>Sample Type</b> SAMPLE	MS					
	<b>Prep Date</b> 10/04/2010 16:15	10/04/2010 16:15					
	<b>Analytical Date</b> 10/05/2010 12:39	10/05/2010 12:46					
	<b>Matrix</b> Water	Water					
<b>SW-846 6010B Dissolved</b>		<b>Units</b>	<b>mg/L</b>	<b>Spike</b>	<b>Result</b>	<b>% R</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>			<b>Limits % R</b>
7440-39-3	Barium	0.12	0.010	0.50	0.62	100	75 - 125
7440-43-9	Cadmium	0.0	0.0050	0.50	0.50	99	75 - 125
7440-70-2	Calcium	20.2	0.10	5.00	25.7	110	75 - 125
7440-47-3	Chromium	0.0	0.010	0.50	0.49	98	75 - 125
7439-89-6	Iron	2.63	0.10	5.00	7.73	102	75 - 125
7439-92-1	Lead	0.0018	0.015	0.50	0.49	97	75 - 125
7439-95-4	Magnesium	6.31	0.10	5.00	11.6	106	75 - 125
7439-96-5	Manganese	0.25	0.015	0.50	0.76	102	75 - 125
7440-09-7	Potassium	1.52	0.50	10.0	11.3	98	75 - 125

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 443036 <b>Prep Batch</b> 442882 <b>Prep Method</b> SW-846 3005 Dissolved	<b>Client ID</b> MW-1 <b>GCAL ID</b> 21010013401 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 10/04/2010 16:15 <b>Analytical Date</b> 10/05/2010 12:39 <b>Matrix</b> Water	882751MS 882774 MS 10/04/2010 16:15 10/05/2010 12:46 Water			
<b>SW-846 6010B Dissolved</b>					
	<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>
7782-49-2 Selenium	0.0 0.040	0.50	0.52	103	75 - 125
7440-23-5 Sodium	18.3 1.00	20.0	38.7	102	75 - 125
7440-24-6 Strontium	0.25 0.050	0.50	0.75	100	75 - 125
7440-66-6 Zinc	0.0 0.020	0.50	0.53	105	75 - 125

<b>Analytical Batch</b> 443036 <b>Prep Batch</b> 442882 <b>Prep Method</b> SW-846 3005 Dissolved	<b>Client ID</b> MW-1 <b>GCAL ID</b> 21010013401 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 10/04/2010 16:15 <b>Analytical Date</b> 10/05/2010 12:39 <b>Matrix</b> Water	882751DUP 882775 DUP 10/04/2010 16:15 10/05/2010 12:53 Water		
<b>SW-846 6010B Dissolved</b>				
	<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Result</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
7440-39-3 Barium	0.12 0.010	0.13	8	20
7440-43-9 Cadmium	0.0 0.0050	0.0	0	20
7440-70-2 Calcium	20.2 0.10	21.0	4	20
7440-47-3 Chromium	0.0 0.010	0.0	0	20
7439-89-6 Iron	2.63 0.10	2.77	5	20
7439-92-1 Lead	0.0018 0.015	0.0	200*	20
7439-95-4 Magnesium	6.31 0.10	6.65	5	20
7439-96-5 Manganese	0.25 0.015	0.27	8	20
7440-09-7 Potassium	1.52 0.50	1.61	6	20
7782-49-2 Selenium	0.0 0.040	0.0042	200*	20
7440-23-5 Sodium	18.3 1.00	19.6	7	20
7440-24-6 Strontium	0.25 0.050	0.26	4	20
7440-66-6 Zinc	0.0 0.020	0.0	0	20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 443044 <b>Prep Batch</b> 442968 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> MB442968 <b>GCAL ID</b> 883154 <b>Sample Type</b> Method Blank <b>Prep Date</b> 10/04/2010 15:50 <b>Analytical Date</b> 10/05/2010 17:39 <b>Matrix</b> Water	LCS442968 883155 LCS 10/04/2010 15:50 10/05/2010 17:45 Water					
<b>SW-846 7010 Arsenic</b>		<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>	
7440-38-2	Arsenic	ND	0.010	0.040	0.034	84	80 - 120

<b>Analytical Batch</b> 443044 <b>Prep Batch</b> 442968 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> HP-MPA-05-T <b>GCAL ID</b> 21010040806 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 10/04/2010 15:50 <b>Analytical Date</b> 10/05/2010 17:51 <b>Matrix</b> Water	883058MS 883157 MS 10/04/2010 15:50 10/05/2010 18:04 Water					
<b>SW-846 7010 Arsenic</b>		<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>	
7440-38-2	Arsenic	0.0031	0.010	0.040	0.039	90	75 - 125

<b>Analytical Batch</b> 443044 <b>Prep Batch</b> 442968 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> HP-MPA-05-T <b>GCAL ID</b> 21010040806 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 10/04/2010 15:50 <b>Analytical Date</b> 10/05/2010 17:51 <b>Matrix</b> Water	883058DUP 883156 DUP 10/04/2010 15:50 10/05/2010 17:57 Water				
<b>SW-846 7010 Arsenic</b>		<b>Units</b> mg/L <b>Result</b> RDL	<b>Result</b>	<b>RPD</b>	<b>RPD Limit</b>	
7440-38-2	Arsenic	0.0031	0.010	0.0027	14	20

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 442992 <b>Prep Batch</b> N/A	<b>Client ID</b> MB442992 <b>GCAL ID</b> 883325 <b>Sample Type</b> Method Blank <b>Analytical Date</b> 10/05/2010 13:00 <b>Matrix</b> Water	<b>LCS442992</b> 883326 LCS 10/05/2010 13:00 Water				
<b>SM 2540C TDS</b>		<b>Units</b>	mg/L	<b>Spike</b>	<b>Result</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>	<b>% R</b>	<b>Limits % R</b>
WET-035	Total Dissolved Solids(TDS)	ND	10.0	1000	954	95.4 80 - 120

<b>Analytical Batch</b> 442992 <b>Prep Batch</b> N/A	<b>Client ID</b> UNOX EFFLUENT <b>GCAL ID</b> 21010042503 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 10/05/2010 13:00 <b>Matrix</b> Water	<b>883153DUP</b> 883327 DUP 10/05/2010 13:00 Water			
<b>SM 2540C TDS</b>		<b>Units</b>	mg/L	<b>Result</b>	<b>RPD</b>
		<b>Result</b>	<b>RDL</b>	<b>RPD</b>	<b>Limit</b>
WET-035	Total Dissolved Solids(TDS)	2780	10.0	2800	0.72 5

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 443045 <b>Prep Batch</b> N/A	<b>Client ID</b> MB443045 <b>GCAL ID</b> 883528 <b>Sample Type</b> Method Blank <b>Analytical Date</b> 10/05/2010 13:58 <b>Matrix</b> Water	LCS443045 883529 LCS 10/05/2010 13:59 Water
<b>SM 4500 CL E Chloride</b>	<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b> <b>Result</b> <b>% R</b> <b>Control Limits % R</b>
16887-00-6 Chloride	ND 1.0	60.0 61.6 103 80 - 120

<b>Analytical Batch</b> 443045 <b>Prep Batch</b> N/A	<b>Client ID</b> HP-MPA-01-T <b>GCAL ID</b> 21010040801 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 10/05/2010 14:00 <b>Matrix</b> Water	883050MS 883530 MS 10/05/2010 14:01 Water	883050MSD 883531 MSD 10/05/2010 14:23 Water
<b>SM 4500 CL E Chloride</b>	<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b> <b>Result</b> <b>% R</b> <b>Control Limits % R</b>	<b>Result</b> <b>% R</b> <b>RPD</b> <b>RPD Limit</b>
16887-00-6 Chloride	928 50.0	3000 3710 93 75 - 125	3840 97 3 25

<b>Analytical Batch</b> 443045 <b>Prep Batch</b> N/A	<b>Client ID</b> MW-1 <b>GCAL ID</b> 21010013401 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 10/05/2010 14:24 <b>Matrix</b> Water	882751MS 883532 MS 10/05/2010 14:25 Water	882751MSD 883533 MSD 10/05/2010 14:25 Water
<b>SM 4500 CL E Chloride</b>	<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b> <b>Result</b> <b>% R</b> <b>Control Limits % R</b>	<b>Result</b> <b>% R</b> <b>RPD</b> <b>RPD Limit</b>
16887-00-6 Chloride	4.9 1.0	60.0 66.3 102 75 - 125	66.1 102 0.3 25

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 443058 <b>Prep Batch</b> N/A	<b>Client ID</b> HP-MPA-08-T <b>GCAL ID</b> 21010040810 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 10/06/2010 10:41 <b>Matrix</b> Water	883062DUP 883570 DUP 10/06/2010 10:41 Water
<b>SM 2320B Carbonate</b>	<b>Units</b> mg/L CaCO3 <b>Result</b> <b>RDL</b>	<b>Result</b> <b>RPD</b> <b>RPD Limit</b>
T-005-B Bicarbonate Alkalinity	603 1.0	606 0.5 11
T-005-C Carbonate Alkalinity	0.00 1.0	0.00 0 11

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 443056 <b>Prep Batch</b> N/A	<b>Client ID</b> MB443056 <b>GCAL ID</b> 883560 <b>Sample Type</b> Method Blank <b>Analytical Date</b> 10/06/2010 08:39 <b>Matrix</b> Water	LCS443056 883561 LCS 10/06/2010 08:41 Water
<b>EPA 375.4 Sulfate</b>	<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b> <b>Result</b> <b>% R</b> <b>Control Limits % R</b>
14808-79-8 Sulfate	ND 5.0	20.0 20.9 105 80 - 120

<b>Analytical Batch</b> 443056 <b>Prep Batch</b> N/A	<b>Client ID</b> MW-100 <b>GCAL ID</b> 21010013404 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 10/06/2010 08:45 <b>Matrix</b> Water	882754MS 883565 MS 10/06/2010 08:46 Water
<b>EPA 375.4 Sulfate</b>	<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b> <b>Result</b> <b>% R</b> <b>Control Limits % R</b>
14808-79-8 Sulfate	7.0 5.0	20.0 29.4 112 75 - 125

<b>Analytical Batch</b> 443056 <b>Prep Batch</b> N/A	<b>Client ID</b> MW-100 <b>GCAL ID</b> 21010013404 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 10/06/2010 08:45 <b>Matrix</b> Water	882754DUP 883564 DUP 10/06/2010 08:45 Water
<b>EPA 375.4 Sulfate</b>	<b>Units</b> mg/L <b>Result</b> RDL	<b>Result</b> <b>RPD</b> <b>RPD Limit</b>
14808-79-8 Sulfate	7.0 5.0	7.1 1 25

Lab use only

Michael Pisani + Assoc

4271

210100408

10/5/10

Client Name

Client #

Workorder #

Due Date

**Report to:**

**Bill to:**

Client: Michael Pisani + Assoc  
Address: 1100 Paydros St, Suite 1430  
NOLA 70163  
Contact: Jon Miller  
Phone: (504) 582-2468  
Fax: jgmiller@ix.netcom.com

Client: \_\_\_\_\_  
Address: \_\_\_\_\_  
Contact: SAME  
Phone: \_\_\_\_\_  
Fax: \_\_\_\_\_

**Lab use only:**

Custody Seal

used  yes  no

in tact  yes  no

Temperature °C 1.2°, 4.7°

P.O. Number

Project Name/Number

07-47 East White Lake

Sampled By:

PMR + JQM

Matrix <sup>1</sup>	Date	Time (2400)	COE	Grab	Sample Description	Preservatives	No Containers	Analytical Requests & Method	Remarks	Lab ID
W	9/29/10	1020		X	HP-MPA-01-T	HCL, HNO <sub>3</sub> , H <sub>2</sub> O <sub>2</sub>	9	Metal/Alkal/Disacid/Inorg/Mn, Ni, Se, Fe, Mo, Zn Phosphates, TD, Substrate/Bromobenzene Sulfate BIEX TPH Fractions 10006		-01
		1550			HP-MPA-02-T					-02
		1610			HP-MPA-02-I					-03
					<del>HP-MPA-02-D</del>					<del>-04</del>
	9/30/10	950			HP-MPA-03-T					-04
		1230			HP-MPA-04-T					-05
		1410			HP-MPA-05-T					-06
		1700			HP-MPA-06-T					-07
	10/1/10	830			HP-MPA-07-T					-08
		830			HP-MPA-07-TDUP					-09
		1345			HP-MPA-08-T					-10
		1545			HP-MPA-09-T					-11
		1800			HP-MPA-10-T					-12
					TRIP BLANK	HCL	6			-13

Turn Around Time:  24-48 hrs.  3 days  1 week  Standard  Other

Relinquished by: (Signature)

Received by: (Signature)

Date: 10/4/10

Time: 0800

Note:

Relinquished by: (Signature)

Received by: (Signature)

Date: 10/4/10

Time: 0856

Contact Jon Miller when samples are received.  
\* Field Filtered.  
E-mail results to jgmiller@ix.netcom.com and pml@ic@ix.netcom.com

Relinquished by: (Signature)

Received by: (Signature)

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

Time: \_\_\_\_\_

By submitting these samples, you agree to the terms and conditions contained in our most recent schedule of services.

WHITE: CLIENT FINAL REPORT — CANARY: LABORATORY — PINK: CLIENT

GCAL-06 11/08



# ANALYTICAL RESULTS

PERFORMED BY

**GULF COAST ANALYTICAL LABORATORIES, INC.**

7979 GSRI Avenue  
Baton Rouge, LA 70820

**Report Date**

**GCAL Report 210100832**



**Deliver To** Michael Pisani & Associates  
1100 Poydras St  
Suite 1430  
New Orleans, LA 70163  
504-582-2468

**Attn** Jonathan Miller

**Project** East White Lake 07-47

# 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 Utilized in this Report

<b>ND</b>	Indicates the result was Not Detected at the specified RDL
<b>DO</b>	Indicates the result was Diluted Out
<b>MI</b>	Indicates the result was subject to Matrix Interference
<b>TNTC</b>	Indicates the result was Too Numerous To Count
<b>SUBC</b>	Indicates the analysis was Sub-Contracted
<b>FLD</b>	Indicates the analysis was performed in the Field
<b>PQL</b>	Practical Quantitation Limit
<b>MDL</b>	Method Detection Limit
<b>RDL</b>	Reporting Detection Limit
<b>00:00</b>	Reported as a time equivalent to 12:00 AM

## Reporting Flags Utilized in this Report

<b>J</b>	Indicates an estimated value
<b>U</b>	Indicates the compound was analyzed for but not detected
<b>B</b>	(ORGANICS) Indicates the analyte was detected in the associated Method Blank
<b>B</b>	(INORGANICS) Indicates the result is between the RDL and MDL

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 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.

---

Robyn Miguez  
Technical Director  
**GCAL REPORT 210100832**

# Report Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083201	HP-MPA-03-I	Water	10/04/2010 11:30	10/08/2010 11:00
21010083202	HP-MPA-04-I	Water	10/04/2010 15:40	10/08/2010 11:00
21010083203	HP-MPA-05-I	Water	10/06/2010 14:45	10/08/2010 11:00
21010083204	HP-MPA-06-I	Water	10/06/2010 12:00	10/08/2010 11:00
21010083205	HP-MPA-07-I	Water	10/05/2010 15:45	10/08/2010 11:00
21010083206	HP-MPA-08-I	Water	10/05/2010 10:20	10/08/2010 11:00
21010083207	HP-MPA-09-I	Water	10/06/2010 08:45	10/08/2010 11:00
21010083208	HP-MPA-10-I	Water	10/06/2010 17:30	10/08/2010 11:00
21010083209	SP-MPA-03 (0-0.5)	Solid	10/05/2010 16:00	10/08/2010 11:00
21010083210	SP-MPA-03 (0.5-2)	Solid	10/05/2010 16:05	10/08/2010 11:00
21010083211	SP-MPA-03 (4-6)	Solid	10/05/2010 17:20	10/08/2010 11:00
21010083212	SP-MPA-03 (9-10)	Solid	10/05/2010 17:30	10/08/2010 11:00
21010083213	SP-MPA-04 (0-0.5)	Solid	10/06/2010 15:20	10/08/2010 11:00
21010083214	SP-MPA-04 (0.5-2)	Solid	10/06/2010 15:25	10/08/2010 11:00
21010083215	SP-MPA-04 (5-7)	Solid	10/06/2010 15:30	10/08/2010 11:00
21010083216	SP-MPA-04 (9-10)	Solid	10/06/2010 15:40	10/08/2010 11:00
21010083217	SP-MPA-01 (0-0.5)	Solid	10/05/2010 11:00	10/08/2010 11:00
21010083218	SP-MPA-01 (0.5-2)	Solid	10/05/2010 11:05	10/08/2010 11:00
21010083219	SP-MPA-01 (2-4.3)	Solid	10/05/2010 11:10	10/08/2010 11:00
21010083220	SP-MPA-01 (4.3-4.7)	Solid	10/05/2010 11:15	10/08/2010 11:00
21010083221	SP-MPA-01 (8-9)	Solid	10/05/2010 14:15	10/08/2010 11:00
21010083222	SP-MPA-02 (0-0.5)	Solid	10/05/2010 11:45	10/08/2010 11:00
21010083223	SP-MPA-02 (0.5-2)	Solid	10/05/2010 11:50	10/08/2010 11:00
21010083224	SP-MPA-02 (3-4)	Solid	10/05/2010 11:55	10/08/2010 11:00
21010083225	SP-MPA-02 (4-5)	Solid	10/05/2010 12:00	10/08/2010 11:00
21010083226	SP-MPA-02A (3-5)	Solid	10/06/2010 07:35	10/08/2010 11:00
21010083227	SP-MPA-02A (7-8)	Solid	10/06/2010 07:40	10/08/2010 11:00
21010083228	SP-MPA-97 (8-9)	Solid	10/05/2010 00:00	10/08/2010 11:00
21010083229	HG-MPA-05 (0-0.5)	Solid	10/06/2010 17:20	10/08/2010 11:00
21010083230	HG-MPA-05 (0.5-2)	Solid	10/06/2010 17:25	10/08/2010 11:00
21010083231	HG-MPA-05 (6-8)	Solid	10/06/2010 17:30	10/08/2010 11:00
21010083232	HG-MPA-06 (0-0.5)	Solid	10/07/2010 09:45	10/08/2010 11:00
21010083233	HG-MPA-06 (0.5-2)	Solid	10/07/2010 09:50	10/08/2010 11:00
21010083234	HG-MPA-06 (5-6)	Solid	10/07/2010 09:55	10/08/2010 11:00
21010083235	HG-MPA-07 (0-0.5)	Solid	10/07/2010 11:50	10/08/2010 11:00
21010083236	HG-MPA-07 (0.5-2)	Solid	10/07/2010 11:55	10/08/2010 11:00
21010083237	HG-MPA-07 (6.5-7)	Solid	10/07/2010 12:00	10/08/2010 11:00
21010083238	HG-MPA-08 (0-0.5)	Solid	10/07/2010 12:20	10/08/2010 11:00
21010083239	HG-MPA-08 (0.5-2)	Solid	10/07/2010 12:25	10/08/2010 11:00
21010083240	HG-MPA-08 (7.5-8)	Solid	10/07/2010 12:30	10/08/2010 11:00
21010083241	HG-MPA-09 (0-0.5)	Solid	10/07/2010 12:45	10/08/2010 11:00
21010083242	HG-MPA-09 (0.5-2)	Solid	10/07/2010 12:50	10/08/2010 11:00
21010083243	HG-MPA-09 (6-7)	Solid	10/07/2010 12:55	10/08/2010 11:00
21010083244	HG-MPA-98 (0.5-2)	Solid	10/07/2010 00:00	10/08/2010 11:00
21010083245	HG-MPA-01 (0-0.5)	Solid	10/06/2010 12:30	10/08/2010 11:00
21010083246	HG-MPA-01 (0.5-2)	Solid	10/06/2010 12:35	10/08/2010 11:00

## Report Sample Summary (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083247	HG-MPA-01 (5-7)	Solid	10/06/2010 12:40	10/08/2010 11:00
21010083248	HG-MPA-02 (0-0.5)	Solid	10/06/2010 13:00	10/08/2010 11:00
21010083249	HG-MPA-02 (0.5-2)	Solid	10/06/2010 13:05	10/08/2010 11:00
21010083250	HG-MPA-02 (5-7)	Solid	10/06/2010 13:10	10/08/2010 11:00
21010083251	HG-MPA-03 (0-0.5)	Solid	10/06/2010 14:10	10/08/2010 11:00
21010083252	HG-MPA-03 (0.5-2)	Solid	10/06/2010 14:15	10/08/2010 11:00
21010083253	HG-MPA-03 (4-6)	Solid	10/06/2010 14:20	10/08/2010 11:00
21010083254	HG-MPA-04 (0-0.5)	Solid	10/06/2010 14:40	10/08/2010 11:00
21010083255	HG-MPA-04 (0.5-2)	Solid	10/06/2010 14:45	10/08/2010 11:00
21010083256	HG-MPA-04 (5-7)	Solid	10/06/2010 14:50	10/08/2010 11:00

# Summary of Compounds Detected

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083201	HP-MPA-03-I	Water	10/04/2010 11:30	10/08/2010 11:00

## SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	1.58	0.010		mg/L
7440-70-2	Calcium	186	0.10		mg/L
7439-89-6	Iron	5.36	0.10		mg/L
7439-95-4	Magnesium	63.0	0.10		mg/L
7439-96-5	Manganese	0.37	0.015		mg/L
7440-09-7	Potassium	5.72	0.50		mg/L
7440-23-5	Sodium	445	1.00		mg/L
7440-24-6	Strontium	1.42	0.050		mg/L
7440-66-6	Zinc	0.030	0.020		mg/L

## SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	REG LIMIT	Units
16887-00-6	Chloride	959	50.0		mg/L

## SW-846 8260B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
108-88-3	Toluene	0.00774	0.005		mg/L

## SM 2540C TDS

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-035	Total Dissolved Solids(TDS)	2220	10.0		mg/L

## SW-846 6010B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	1.80	0.010		mg/L
7440-70-2	Calcium	195	0.10		mg/L
7440-47-3	Chromium	0.063	0.010		mg/L
7439-89-6	Iron	18.7	0.10		mg/L
7439-95-4	Magnesium	67.8	0.10		mg/L
7439-96-5	Manganese	0.53	0.015		mg/L
7440-09-7	Potassium	6.83	0.50		mg/L
7440-23-5	Sodium	473	1.00		mg/L
7440-24-6	Strontium	1.51	0.050		mg/L
7440-66-6	Zinc	0.19	0.020		mg/L

## SM 2320B Bicarbonate

CAS#	Parameter	Result	RDL	REG LIMIT	Units
T-005-B	Bicarbonate Alkalinity	351	1.0		mg/L CaCO3

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083202	HP-MPA-04-I	Water	10/04/2010 15:40	10/08/2010 11:00

### SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	REG LIMIT	Units
16887-00-6	Chloride	809	20.0		mg/L

### SM 2320B Bicarbonate

CAS#	Parameter	Result	RDL	REG LIMIT	Units
T-005-B	Bicarbonate Alkalinity	379	1.0		mg/L CaCO3

### SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	0.76	0.010		mg/L
7440-70-2	Calcium	129	0.10		mg/L
7440-47-3	Chromium	0.041	0.010		mg/L
7439-89-6	Iron	12.0	0.10		mg/L
7439-95-4	Magnesium	43.0	0.10		mg/L
7439-96-5	Manganese	0.36	0.015		mg/L
7440-09-7	Potassium	6.70	0.50		mg/L
7440-23-5	Sodium	449	1.00		mg/L
7440-24-6	Strontium	1.02	0.050		mg/L
7440-66-6	Zinc	0.081	0.020		mg/L

### SM 2540C TDS

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-035	Total Dissolved Solids(TDS)	1900	10.0		mg/L

### SW-846 8260B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
108-88-3	Toluene	0.011	0.005		mg/L

### SW-846 6010B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	1.02	0.010		mg/L
7440-70-2	Calcium	136	0.10		mg/L
7440-47-3	Chromium	0.18	0.010		mg/L
7439-89-6	Iron	40.9	0.10		mg/L
7439-92-1	Lead	0.032	0.015		mg/L
7439-95-4	Magnesium	47.1	0.10		mg/L
7439-96-5	Manganese	0.69	0.015		mg/L
7440-09-7	Potassium	8.31	0.50		mg/L
7440-23-5	Sodium	460	1.00		mg/L
7440-24-6	Strontium	1.05	0.050		mg/L
7440-66-6	Zinc	0.34	0.020		mg/L

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083203	HP-MPA-05-I	Water	10/06/2010 14:45	10/08/2010 11:00

### SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	0.59	0.010		mg/L
7440-70-2	Calcium	107	0.10		mg/L
7439-89-6	Iron	3.21	0.10		mg/L
7439-95-4	Magnesium	39.1	0.10		mg/L
7439-96-5	Manganese	0.23	0.015		mg/L
7440-09-7	Potassium	5.24	0.50		mg/L
7440-23-5	Sodium	387	1.00		mg/L
7440-24-6	Strontium	0.86	0.050		mg/L

### SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	REG LIMIT	Units
16887-00-6	Chloride	629	20.0		mg/L

### SW-846 6010B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	0.70	0.010		mg/L
7440-70-2	Calcium	102	0.10		mg/L
7440-47-3	Chromium	0.031	0.010		mg/L
7439-89-6	Iron	11.6	0.10		mg/L
7439-95-4	Magnesium	39.7	0.10		mg/L
7439-96-5	Manganese	0.42	0.015		mg/L
7440-09-7	Potassium	5.61	0.50		mg/L
7440-23-5	Sodium	380	1.00		mg/L
7440-24-6	Strontium	0.83	0.050		mg/L
7440-66-6	Zinc	0.067	0.020		mg/L

### SM 2540C TDS

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-035	Total Dissolved Solids(TDS)	1530	10.0		mg/L

### SW-846 8260B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
108-88-3	Toluene	0.00711	0.005		mg/L

### SM 2320B Bicarbonate

CAS#	Parameter	Result	RDL	REG LIMIT	Units
T-005-B	Bicarbonate Alkalinity	407	1.0		mg/L CaCO <sub>3</sub>

# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083204	HP-MPA-06-I	Water	10/06/2010 12:00	10/08/2010 11:00

## SM 2540C TDS

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-035	Total Dissolved Solids(TDS)	2030	10.0		mg/L

## SW-846 6010B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	1.45	0.010		mg/L
7440-70-2	Calcium	145	0.10		mg/L
7440-47-3	Chromium	0.21	0.010		mg/L
7439-89-6	Iron	49.8	0.10		mg/L
7439-92-1	Lead	0.028	0.015		mg/L
7439-95-4	Magnesium	49.6	0.10		mg/L
7439-96-5	Manganese	1.01	0.015		mg/L
7440-09-7	Potassium	8.59	0.50		mg/L
7440-23-5	Sodium	488	1.00		mg/L
7440-24-6	Strontium	1.10	0.050		mg/L
7440-66-6	Zinc	0.24	0.020		mg/L

## SW-846 7010 Arsenic

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-38-2	Arsenic	0.013	0.010		mg/L

## SW-846 8260B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
108-88-3	Toluene	0.00657	0.005		mg/L

## SM 2320B Bicarbonate

CAS#	Parameter	Result	RDL	REG LIMIT	Units
T-005-B	Bicarbonate Alkalinity	457	1.0		mg/L CaCO3

## SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	REG LIMIT	Units
16887-00-6	Chloride	851	20.0		mg/L

## SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	1.02	0.010		mg/L
7440-70-2	Calcium	117	0.10		mg/L
7439-89-6	Iron	4.99	0.10		mg/L
7439-95-4	Magnesium	40.6	0.10		mg/L
7439-96-5	Manganese	0.24	0.015		mg/L
7440-09-7	Potassium	6.51	0.50		mg/L



## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083204	HP-MPA-06-I	Water	10/06/2010 12:00	10/08/2010 11:00

### SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-23-5	Sodium	491	1.00		mg/L
7440-24-6	Strontium	1.00	0.050		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083205	HP-MPA-07-I	Water	10/05/2010 15:45	10/08/2010 11:00

### SM 2540C TDS

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-035	Total Dissolved Solids(TDS)	1710	10.0		mg/L

### SW-846 6010B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	1.10	0.010		mg/L
7440-70-2	Calcium	110	0.10		mg/L
7440-47-3	Chromium	0.095	0.010		mg/L
7439-89-6	Iron	22.7	0.10		mg/L
7439-95-4	Magnesium	42.2	0.10		mg/L
7439-96-5	Manganese	0.46	0.015		mg/L
7440-09-7	Potassium	6.06	0.50		mg/L
7440-23-5	Sodium	429	1.00		mg/L
7440-24-6	Strontium	0.93	0.050		mg/L
7440-66-6	Zinc	0.22	0.020		mg/L

### SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	REG LIMIT	Units
16887-00-6	Chloride	696	20.0		mg/L

### SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	0.90	0.010		mg/L
7440-70-2	Calcium	102	0.10		mg/L
7440-47-3	Chromium	0.011	0.010		mg/L
7439-89-6	Iron	5.79	0.10		mg/L
7439-95-4	Magnesium	37.7	0.10		mg/L
7439-96-5	Manganese	0.29	0.015		mg/L
7440-09-7	Potassium	4.76	0.50		mg/L
7440-23-5	Sodium	391	1.00		mg/L
7440-24-6	Strontium	0.87	0.050		mg/L
7440-66-6	Zinc	0.034	0.020		mg/L

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083205	HP-MPA-07-I	Water	10/05/2010 15:45	10/08/2010 11:00

### SM 2320B Bicarbonate

CAS#	Parameter	Result	RDL	REG LIMIT	Units
T-005-B	Bicarbonate Alkalinity	402	1.0		mg/L CaCO3

### SW-846 8260B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
108-88-3	Toluene	0.00757	0.005		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083206	HP-MPA-08-I	Water	10/05/2010 10:20	10/08/2010 11:00

### SM 2540C TDS

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-035	Total Dissolved Solids(TDS)	1870	10.0		mg/L

### SW-846 8260B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
108-88-3	Toluene	0.00635	0.005		mg/L

### SM 2320B Bicarbonate

CAS#	Parameter	Result	RDL	REG LIMIT	Units
T-005-B	Bicarbonate Alkalinity	339	1.0		mg/L CaCO3

### SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	0.64	0.010		mg/L
7440-70-2	Calcium	85.3	0.10		mg/L
7439-89-6	Iron	3.41	0.10		mg/L
7439-95-4	Magnesium	46.9	0.10		mg/L
7439-96-5	Manganese	0.24	0.015		mg/L
7440-09-7	Potassium	11.5	0.50		mg/L
7440-23-5	Sodium	465	1.00		mg/L
7440-24-6	Strontium	0.78	0.050		mg/L

### SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	REG LIMIT	Units
16887-00-6	Chloride	737	20.0		mg/L

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083206	HP-MPA-08-I	Water	10/05/2010 10:20	10/08/2010 11:00

### EPA 375.4 Sulfate

CAS#	Parameter	Result	RDL	REG LIMIT	Units
14808-79-8	Sulfate	30.0	5.0		mg/L

### SW-846 6010B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	0.89	0.010		mg/L
7440-70-2	Calcium	129	0.10		mg/L
7440-47-3	Chromium	0.034	0.010		mg/L
7439-89-6	Iron	31.7	0.10		mg/L
7439-92-1	Lead	0.027	0.015		mg/L
7439-95-4	Magnesium	66.3	0.10		mg/L
7439-96-5	Manganese	0.83	0.015		mg/L
7440-09-7	Potassium	13.1	0.50		mg/L
7440-23-5	Sodium	466	1.00		mg/L
7440-24-6	Strontium	0.84	0.050		mg/L
7440-66-6	Zinc	0.13	0.020		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083207	HP-MPA-09-I	Water	10/06/2010 08:45	10/08/2010 11:00

### SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	1.64	0.010		mg/L
7440-70-2	Calcium	167	0.10		mg/L
7439-89-6	Iron	7.45	0.10		mg/L
7439-95-4	Magnesium	55.8	0.10		mg/L
7439-96-5	Manganese	0.36	0.015		mg/L
7440-09-7	Potassium	7.16	0.50		mg/L
7440-24-6	Strontium	1.37	0.050		mg/L

### SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-23-5	Sodium	624	2.00		mg/L

### SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	REG LIMIT	Units
16887-00-6	Chloride	1110	20.0		mg/L

### SW-846 8260B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
108-88-3	Toluene	0.00822	0.005		mg/L

# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083207	HP-MPA-09-I	Water	10/06/2010 08:45	10/08/2010 11:00

## SM 2320B Bicarbonate

CAS#	Parameter	Result	RDL	REG LIMIT	Units
T-005-B	Bicarbonate Alkalinity	405	1.0		mg/L CaCO3

## SW-846 6010B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	1.93	0.010		mg/L
7440-70-2	Calcium	176	0.10		mg/L
7440-47-3	Chromium	0.13	0.010		mg/L
7439-89-6	Iron	31.1	0.10		mg/L
7439-95-4	Magnesium	61.0	0.10		mg/L
7439-96-5	Manganese	0.86	0.015		mg/L
7440-09-7	Potassium	8.99	0.50		mg/L
7440-24-6	Strontium	1.41	0.050		mg/L
7440-66-6	Zinc	0.16	0.020		mg/L

## SW-846 6010B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-23-5	Sodium	626	2.00		mg/L

## SM 2540C TDS

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-035	Total Dissolved Solids(TDS)	2610	10.0		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083208	HP-MPA-10-I	Water	10/06/2010 17:30	10/08/2010 11:00

## SW-846 6010B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	1.42	0.010		mg/L
7440-70-2	Calcium	132	0.10		mg/L
7440-47-3	Chromium	0.34	0.010		mg/L
7439-89-6	Iron	82.8	0.10		mg/L
7439-92-1	Lead	0.057	0.015		mg/L
7439-95-4	Magnesium	45.5	0.10		mg/L
7439-96-5	Manganese	1.74	0.015		mg/L
7440-09-7	Potassium	11.9	0.50		mg/L
7440-23-5	Sodium	383	1.00		mg/L
7440-24-6	Strontium	0.88	0.050		mg/L
7440-66-6	Zinc	0.35	0.020		mg/L

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083208	HP-MPA-10-I	Water	10/06/2010 17:30	10/08/2010 11:00

### SW-846 6010B Dissolved

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	0.78	0.010		mg/L
7440-70-2	Calcium	96.4	0.10		mg/L
7439-89-6	Iron	4.37	0.10		mg/L
7439-95-4	Magnesium	30.7	0.10		mg/L
7439-96-5	Manganese	0.20	0.015		mg/L
7440-09-7	Potassium	8.07	0.50		mg/L
7440-23-5	Sodium	416	1.00		mg/L
7440-24-6	Strontium	0.77	0.050		mg/L

### SW-846 8260B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
108-88-3	Toluene	0.00720	0.005		mg/L

### SM 4500 CL E Chloride

CAS#	Parameter	Result	RDL	REG LIMIT	Units
16887-00-6	Chloride	613	20.0		mg/L

### SM 2540C TDS

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-035	Total Dissolved Solids(TDS)	1520	10.0		mg/L

### SW-846 7010 Arsenic

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-38-2	Arsenic	0.028	0.010		mg/L

### SM 2320B Bicarbonate

CAS#	Parameter	Result	RDL	REG LIMIT	Units
T-005-B	Bicarbonate Alkalinity	442	1.0		mg/L CaCO3

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083209	SP-MPA-03 (0-0.5)	Solid	10/05/2010 16:00	10/08/2010 11:00

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	89800	200		mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083210	SP-MPA-03 (0.5-2)	Solid	10/05/2010 16:05	10/08/2010 11:00

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	91900	200		mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083211	SP-MPA-03 (4-6)	Solid	10/05/2010 17:20	10/08/2010 11:00

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	235000	200		mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083212	SP-MPA-03 (9-10)	Solid	10/05/2010 17:30	10/08/2010 11:00

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	28800	200		mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083213	SP-MPA-04 (0-0.5)	Solid	10/06/2010 15:20	10/08/2010 11:00

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	8610	200		mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083214	SP-MPA-04 (0.5-2)	Solid	10/06/2010 15:25	10/08/2010 11:00

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	45700	200		mg/kg

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083215	SP-MPA-04 (5-7)	Solid	10/06/2010 15:30	10/08/2010 11:00

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	78200	200		mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083216	SP-MPA-04 (9-10)	Solid	10/06/2010 15:40	10/08/2010 11:00

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	15800	200		mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083217	SP-MPA-01 (0-0.5)	Solid	10/05/2010 11:00	10/08/2010 11:00

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	39000	200		mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083218	SP-MPA-01 (0.5-2)	Solid	10/05/2010 11:05	10/08/2010 11:00

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	62600	200		mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083219	SP-MPA-01 (2-4.3)	Solid	10/05/2010 11:10	10/08/2010 11:00

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	45800	200		mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083220	SP-MPA-01 (4.3-4.7)	Solid	10/05/2010 11:15	10/08/2010 11:00

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	89800	200		mg/kg

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083221	SP-MPA-01 (8-9)	Solid	10/05/2010 14:15	10/08/2010 11:00

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	21800	200		mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083222	SP-MPA-02 (0-0.5)	Solid	10/05/2010 11:45	10/08/2010 11:00

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	44300	200		mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083223	SP-MPA-02 (0.5-2)	Solid	10/05/2010 11:50	10/08/2010 11:00

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	55500	200		mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083224	SP-MPA-02 (3-4)	Solid	10/05/2010 11:55	10/08/2010 11:00

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	48700	200		mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083225	SP-MPA-02 (4-5)	Solid	10/05/2010 12:00	10/08/2010 11:00

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	67600	200		mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083226	SP-MPA-02A (3-5)	Solid	10/06/2010 07:35	10/08/2010 11:00

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	53200	200		mg/kg



## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083227	SP-MPA-02A (7-8)	Solid	10/06/2010 07:40	10/08/2010 11:00

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	6770	200		mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083228	SP-MPA-97 (8-9)	Solid	10/05/2010 00:00	10/08/2010 11:00

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	27500	200		mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083229	HG-MPA-05 (0-0.5)	Solid	10/06/2010 17:20	10/08/2010 11:00

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	81700	200		mg/kg

### SW-846 7471B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.070	0.012		mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083230	HG-MPA-05 (0.5-2)	Solid	10/06/2010 17:25	10/08/2010 11:00

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	55900	200		mg/kg

### SW-846 7471B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.047	0.012		mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083231	HG-MPA-05 (6-8)	Solid	10/06/2010 17:30	10/08/2010 11:00

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	47400	200		mg/kg

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083231	HG-MPA-05 (6-8)	Solid	10/06/2010 17:30	10/08/2010 11:00

SW-846 7471B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.15	0.012		mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083232	HG-MPA-06 (0-0.5)	Solid	10/07/2010 09:45	10/08/2010 11:00

SW-846 9060 TOC

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	88300	200		mg/kg

SW-846 7471B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.043	0.012		mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083233	HG-MPA-06 (0.5-2)	Solid	10/07/2010 09:50	10/08/2010 11:00

SW-846 9060 TOC

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	46800	200		mg/kg

SW-846 7471B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.045	0.012		mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083234	HG-MPA-06 (5-6)	Solid	10/07/2010 09:55	10/08/2010 11:00

SW-846 7471B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.015	0.012		mg/kg

SW-846 9060 TOC

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	41500	200		mg/kg

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083235	HG-MPA-07 (0-0.5)	Solid	10/07/2010 11:50	10/08/2010 11:00

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	57500	200		mg/kg

### SW-846 7471B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.053	0.012		mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083236	HG-MPA-07 (0.5-2)	Solid	10/07/2010 11:55	10/08/2010 11:00

### SW-846 7471B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.18	0.012		mg/kg

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	29300	200		mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083237	HG-MPA-07 (6.5-7)	Solid	10/07/2010 12:00	10/08/2010 11:00

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	21300	200		mg/kg

### SW-846 7471B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.015	0.012		mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083238	HG-MPA-08 (0-0.5)	Solid	10/07/2010 12:20	10/08/2010 11:00

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	41200	200		mg/kg

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083238	HG-MPA-08 (0-0.5)	Solid	10/07/2010 12:20	10/08/2010 11:00

SW-846 7471B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.036	0.010		mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083239	HG-MPA-08 (0.5-2)	Solid	10/07/2010 12:25	10/08/2010 11:00

SW-846 9060 TOC

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	41300	200		mg/kg

SW-846 7471B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.28	0.012		mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083240	HG-MPA-08 (7.5-8)	Solid	10/07/2010 12:30	10/08/2010 11:00

SW-846 7471B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.046	0.012		mg/kg

SW-846 9060 TOC

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	45000	200		mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083241	HG-MPA-09 (0-0.5)	Solid	10/07/2010 12:45	10/08/2010 11:00

SW-846 7471B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.044	0.012		mg/kg

SW-846 9060 TOC

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	56500	200		mg/kg

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083242	HG-MPA-09 (0.5-2)	Solid	10/07/2010 12:50	10/08/2010 11:00

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	42900	200		mg/kg

### SW-846 7471B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.046	0.012		mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083243	HG-MPA-09 (6-7)	Solid	10/07/2010 12:55	10/08/2010 11:00

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	6590	200		mg/kg

### SW-846 7471B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.017	0.012		mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083244	HG-MPA-98 (0.5-2)	Solid	10/07/2010 00:00	10/08/2010 11:00

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	52800	200		mg/kg

### SW-846 7471B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.059	0.012		mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083245	HG-MPA-01 (0-0.5)	Solid	10/06/2010 12:30	10/08/2010 11:00

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	72600	200		mg/kg

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083245	HG-MPA-01 (0-0.5)	Solid	10/06/2010 12:30	10/08/2010 11:00

SW-846 7471B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.086	0.012		mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083246	HG-MPA-01 (0.5-2)	Solid	10/06/2010 12:35	10/08/2010 11:00

SW-846 9060 TOC

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	45900	200		mg/kg

SW-846 7471B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.11	0.012		mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083247	HG-MPA-01 (5-7)	Solid	10/06/2010 12:40	10/08/2010 11:00

SW-846 7471B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.085	0.012		mg/kg

SW-846 9060 TOC

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	44300	200		mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083248	HG-MPA-02 (0-0.5)	Solid	10/06/2010 13:00	10/08/2010 11:00

SW-846 9060 TOC

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	67200	200		mg/kg

SW-846 7471B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.088	0.012		mg/kg

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083249	HG-MPA-02 (0.5-2)	Solid	10/06/2010 13:05	10/08/2010 11:00

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	58700	200		mg/kg

### SW-846 7471B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.075	0.012		mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083250	HG-MPA-02 (5-7)	Solid	10/06/2010 13:10	10/08/2010 11:00

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	44800	200		mg/kg

### SW-846 7471B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.038	0.010		mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083251	HG-MPA-03 (0-0.5)	Solid	10/06/2010 14:10	10/08/2010 11:00

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	50300	200		mg/kg

### SW-846 7471B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.057	0.012		mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083252	HG-MPA-03 (0.5-2)	Solid	10/06/2010 14:15	10/08/2010 11:00

### SW-846 7471B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.073	0.012		mg/kg

## Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083252	HG-MPA-03 (0.5-2)	Solid	10/06/2010 14:15	10/08/2010 11:00

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	52600	200		mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083253	HG-MPA-03 (4-6)	Solid	10/06/2010 14:20	10/08/2010 11:00

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	74900	200		mg/kg

### SW-846 7471B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.066	0.012		mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083254	HG-MPA-04 (0-0.5)	Solid	10/06/2010 14:40	10/08/2010 11:00

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	51100	200		mg/kg

### SW-846 7471B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.037	0.011		mg/kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083255	HG-MPA-04 (0.5-2)	Solid	10/06/2010 14:45	10/08/2010 11:00

### SW-846 9060 TOC

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	16600	200		mg/kg

### SW-846 7471B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.024	0.012		mg/kg



# Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083256	HG-MPA-04 (5-7)	Solid	10/06/2010 14:50	10/08/2010 11:00

## SW-846 9060 TOC

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	10800	200		mg/kg

## SW-846 7471B

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.012	0.012		mg/kg

<b>GCAL ID</b> 21010083201	<b>Client ID</b> HP-MPA-03-I	<b>Matrix</b> Water	<b>Collect Date/Time</b> 10/04/2010 11:30	<b>Receive Date/Time</b> 10/08/2010 11:00
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SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/09/2010 15:16	RJU	443311

CAS#	Parameter	Result	RDL	REG LIMIT	Units
71-43-2	Benzene	ND	0.005		mg/L
100-41-4	Ethylbenzene	ND	0.005		mg/L
<b>108-88-3</b>	<b>Toluene</b>	<b>0.00774</b>	<b>0.005</b>		<b>mg/L</b>
1330-20-7	Xylene (total)	ND	0.01		mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	.05	.046	mg/L	92	78 - 130
1868-53-7	Dibromofluoromethane	.05	.053	mg/L	106	77 - 127
2037-26-5	Toluene d8	.05	.049	mg/L	99	76 - 134
17060-07-0	1,2-Dichloroethane-d4	.05	.053	mg/L	107	71 - 127

SW-846 7470A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/13/2010 12:55	443536	SW-846 7470A Dissolved	1	10/13/2010 17:58	CLB	443520

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	ND	0.00020		mg/L

SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 09:35	443319	SW-846 3020A Dissolved	1	10/12/2010 13:37	CLB	443352

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-38-2	Arsenic	ND	0.010		mg/L

SW-846 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/13/2010 13:30	443535	SW-846 7470A	1	10/14/2010 15:23	CLB	443591

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	ND	0.00020		mg/L

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 08:25	443320	SW-846 3010A	1	10/11/2010 14:07	CNB	443354

CAS#	Parameter	Result	RDL	REG LIMIT	Units
<b>7440-39-3</b>	<b>Barium</b>	<b>1.80</b>	<b>0.010</b>		<b>mg/L</b>
7440-43-9	Cadmium	ND	0.0050		mg/L
<b>7440-70-2</b>	<b>Calcium</b>	<b>195</b>	<b>0.10</b>		<b>mg/L</b>
<b>7440-47-3</b>	<b>Chromium</b>	<b>0.063</b>	<b>0.010</b>		<b>mg/L</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083201	HP-MPA-03-I	Water	10/04/2010 11:30	10/08/2010 11:00

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 08:25	443320	SW-846 3010A	1	10/11/2010 14:07	CNB	443354

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-89-6	Iron	18.7	0.10		mg/L
7439-92-1	Lead	ND	0.015		mg/L
7439-95-4	Magnesium	67.8	0.10		mg/L
7439-96-5	Manganese	0.53	0.015		mg/L
7440-09-7	Potassium	6.83	0.50		mg/L
7782-49-2	Selenium	ND	0.040		mg/L
7440-23-5	Sodium	473	1.00		mg/L
7440-24-6	Strontium	1.51	0.050		mg/L
7440-66-6	Zinc	0.19	0.020		mg/L

SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 08:25	443318	SW-846 3005 Dissolved	1	10/11/2010 10:31	CNB	443354

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	1.58	0.010		mg/L
7440-43-9	Cadmium	ND	0.0050		mg/L
7440-70-2	Calcium	186	0.10		mg/L
7440-47-3	Chromium	ND	0.010		mg/L
7439-89-6	Iron	5.36	0.10		mg/L
7439-92-1	Lead	ND	0.015		mg/L
7439-95-4	Magnesium	63.0	0.10		mg/L
7439-96-5	Manganese	0.37	0.015		mg/L
7440-09-7	Potassium	5.72	0.50		mg/L
7782-49-2	Selenium	ND	0.040		mg/L
7440-23-5	Sodium	445	1.00		mg/L
7440-24-6	Strontium	1.42	0.050		mg/L
7440-66-6	Zinc	0.030	0.020		mg/L

SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 09:35	443319	SW-846 3020A	1	10/12/2010 13:43	CLB	443352

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-38-2	Arsenic	ND	0.010		mg/L

SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/08/2010 15:20	DJH	443292

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-035	Total Dissolved Solids(TDS)	2220	10.0		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083201	HP-MPA-03-I	Water	10/04/2010 11:30	10/08/2010 11:00

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			50	10/11/2010 09:08	AEL	443338
CAS#	Parameter		Result	RDL	REG LIMIT	Units
16887-00-6	Chloride		959	50.0		mg/L

### SM 2320B Carbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/11/2010 11:43	JEM	443381
CAS#	Parameter		Result	RDL	REG LIMIT	Units
T-005-C	Carbonate Alkalinity		ND	1.0		mg/L CaCO3

### SM 2320B Bicarbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/11/2010 11:43	JEM	443381
CAS#	Parameter		Result	RDL	REG LIMIT	Units
T-005-B	Bicarbonate Alkalinity		351	1.0		mg/L CaCO3

### EPA 375.4 Sulfate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/12/2010 10:07	JEM	443438
CAS#	Parameter		Result	RDL	REG LIMIT	Units
14808-79-8	Sulfate		ND	5.0		mg/L

<b>GCAL ID</b> 21010083202	<b>Client ID</b> HP-MPA-04-I	<b>Matrix</b> Water	<b>Collect Date/Time</b> 10/04/2010 15:40	<b>Receive Date/Time</b> 10/08/2010 11:00
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SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/09/2010 15:39	RJU	443311

CAS#	Parameter	Result	RDL	REG LIMIT	Units
71-43-2	Benzene	ND	0.005		mg/L
100-41-4	Ethylbenzene	ND	0.005		mg/L
<b>108-88-3</b>	<b>Toluene</b>	<b>0.011</b>	<b>0.005</b>		<b>mg/L</b>
1330-20-7	Xylene (total)	ND	0.01		mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	.05	.047	mg/L	93	78 - 130
1868-53-7	Dibromofluoromethane	.05	.052	mg/L	103	77 - 127
2037-26-5	Toluene d8	.05	.05	mg/L	99	76 - 134
17060-07-0	1,2-Dichloroethane-d4	.05	.051	mg/L	103	71 - 127

SW-846 7470A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/13/2010 12:55	443536	SW-846 7470A Dissolved	1	10/13/2010 18:00	CLB	443520

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	ND	0.00020		mg/L

SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 09:35	443319	SW-846 3020A Dissolved	1	10/12/2010 13:31	CLB	443352

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-38-2	Arsenic	ND	0.010		mg/L

SW-846 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/13/2010 13:30	443535	SW-846 7470A	1	10/14/2010 15:25	CLB	443591

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	ND	0.00020		mg/L

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 08:25	443320	SW-846 3010A	1	10/11/2010 14:14	CNB	443354

CAS#	Parameter	Result	RDL	REG LIMIT	Units
<b>7440-39-3</b>	<b>Barium</b>	<b>1.02</b>	<b>0.010</b>		<b>mg/L</b>
7440-43-9	Cadmium	ND	0.0050		mg/L
<b>7440-70-2</b>	<b>Calcium</b>	<b>136</b>	<b>0.10</b>		<b>mg/L</b>
<b>7440-47-3</b>	<b>Chromium</b>	<b>0.18</b>	<b>0.010</b>		<b>mg/L</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083202	HP-MPA-04-I	Water	10/04/2010 15:40	10/08/2010 11:00

### SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 08:25	443320	SW-846 3010A	1	10/11/2010 14:14	CNB	443354

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-89-6	Iron	40.9	0.10		mg/L
7439-92-1	Lead	0.032	0.015		mg/L
7439-95-4	Magnesium	47.1	0.10		mg/L
7439-96-5	Manganese	0.69	0.015		mg/L
7440-09-7	Potassium	8.31	0.50		mg/L
7782-49-2	Selenium	ND	0.040		mg/L
7440-23-5	Sodium	460	1.00		mg/L
7440-24-6	Strontium	1.05	0.050		mg/L
7440-66-6	Zinc	0.34	0.020		mg/L

### SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 08:25	443318	SW-846 3005 Dissolved	1	10/11/2010 11:06	CNB	443354

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	0.76	0.010		mg/L
7440-43-9	Cadmium	ND	0.0050		mg/L
7440-70-2	Calcium	129	0.10		mg/L
7440-47-3	Chromium	0.041	0.010		mg/L
7439-89-6	Iron	12.0	0.10		mg/L
7439-92-1	Lead	ND	0.015		mg/L
7439-95-4	Magnesium	43.0	0.10		mg/L
7439-96-5	Manganese	0.36	0.015		mg/L
7440-09-7	Potassium	6.70	0.50		mg/L
7782-49-2	Selenium	ND	0.040		mg/L
7440-23-5	Sodium	449	1.00		mg/L
7440-24-6	Strontium	1.02	0.050		mg/L
7440-66-6	Zinc	0.081	0.020		mg/L

### SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 09:35	443319	SW-846 3020A	1	10/12/2010 13:00	CLB	443352

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-38-2	Arsenic	ND	0.010		mg/L

### SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/08/2010 15:20	DJH	443292

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-035	Total Dissolved Solids(TDS)	1900	10.0		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083202	HP-MPA-04-I	Water	10/04/2010 15:40	10/08/2010 11:00

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	10/11/2010 09:11	AEL	443338
CAS#	Parameter		Result	RDL	REG LIMIT	Units
16887-00-6	Chloride		809	20.0		mg/L

### SM 2320B Carbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/11/2010 11:43	JEM	443381
CAS#	Parameter		Result	RDL	REG LIMIT	Units
T-005-C	Carbonate Alkalinity		ND	1.0		mg/L CaCO3

### SM 2320B Bicarbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/11/2010 11:43	JEM	443381
CAS#	Parameter		Result	RDL	REG LIMIT	Units
T-005-B	Bicarbonate Alkalinity		379	1.0		mg/L CaCO3

### EPA 375.4 Sulfate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/12/2010 10:09	JEM	443438
CAS#	Parameter		Result	RDL	REG LIMIT	Units
14808-79-8	Sulfate		ND	5.0		mg/L

<b>GCAL ID</b> 21010083203	<b>Client ID</b> HP-MPA-05-I	<b>Matrix</b> Water	<b>Collect Date/Time</b> 10/06/2010 14:45	<b>Receive Date/Time</b> 10/08/2010 11:00
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SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/09/2010 16:02	RJU	443311

CAS#	Parameter	Result	RDL	REG LIMIT	Units
71-43-2	Benzene	ND	0.005		mg/L
100-41-4	Ethylbenzene	ND	0.005		mg/L
<b>108-88-3</b>	<b>Toluene</b>	<b>0.00711</b>	<b>0.005</b>		<b>mg/L</b>
1330-20-7	Xylene (total)	ND	0.01		mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	.05	.048	mg/L	95	78 - 130
1868-53-7	Dibromofluoromethane	.05	.053	mg/L	105	77 - 127
2037-26-5	Toluene d8	.05	.05	mg/L	100	76 - 134
17060-07-0	1,2-Dichloroethane-d4	.05	.055	mg/L	110	71 - 127

SW-846 7470A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/13/2010 12:55	443536	SW-846 7470A Dissolved	1	10/13/2010 18:02	CLB	443520

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	ND	0.00020		mg/L

SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 09:35	443319	SW-846 3020A Dissolved	1	10/12/2010 14:01	CLB	443352

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-38-2	Arsenic	ND	0.010		mg/L

SW-846 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/13/2010 13:30	443535	SW-846 7470A	1	10/14/2010 15:26	CLB	443591

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	ND	0.00020		mg/L

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 08:25	443320	SW-846 3010A	1	10/11/2010 14:21	CNB	443354

CAS#	Parameter	Result	RDL	REG LIMIT	Units
<b>7440-39-3</b>	<b>Barium</b>	<b>0.70</b>	<b>0.010</b>		<b>mg/L</b>
7440-43-9	Cadmium	ND	0.0050		mg/L
<b>7440-70-2</b>	<b>Calcium</b>	<b>102</b>	<b>0.10</b>		<b>mg/L</b>
<b>7440-47-3</b>	<b>Chromium</b>	<b>0.031</b>	<b>0.010</b>		<b>mg/L</b>



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083203	HP-MPA-05-I	Water	10/06/2010 14:45	10/08/2010 11:00

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 08:25	443320	SW-846 3010A	1	10/11/2010 14:21	CNB	443354

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-89-6	Iron	11.6	0.10		mg/L
7439-92-1	Lead	ND	0.015		mg/L
7439-95-4	Magnesium	39.7	0.10		mg/L
7439-96-5	Manganese	0.42	0.015		mg/L
7440-09-7	Potassium	5.61	0.50		mg/L
7782-49-2	Selenium	ND	0.040		mg/L
7440-23-5	Sodium	380	1.00		mg/L
7440-24-6	Strontium	0.83	0.050		mg/L
7440-66-6	Zinc	0.067	0.020		mg/L

SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 08:25	443318	SW-846 3005 Dissolved	1	10/11/2010 11:13	CNB	443354

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	0.59	0.010		mg/L
7440-43-9	Cadmium	ND	0.0050		mg/L
7440-70-2	Calcium	107	0.10		mg/L
7440-47-3	Chromium	ND	0.010		mg/L
7439-89-6	Iron	3.21	0.10		mg/L
7439-92-1	Lead	ND	0.015		mg/L
7439-95-4	Magnesium	39.1	0.10		mg/L
7439-96-5	Manganese	0.23	0.015		mg/L
7440-09-7	Potassium	5.24	0.50		mg/L
7782-49-2	Selenium	ND	0.040		mg/L
7440-23-5	Sodium	387	1.00		mg/L
7440-24-6	Strontium	0.86	0.050		mg/L
7440-66-6	Zinc	ND	0.020		mg/L

SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 09:35	443319	SW-846 3020A	1	10/12/2010 14:07	CLB	443352

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-38-2	Arsenic	ND	0.010		mg/L

SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/08/2010 15:20	DJH	443292

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-035	Total Dissolved Solids(TDS)	1530	10.0		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083203	HP-MPA-05-I	Water	10/06/2010 14:45	10/08/2010 11:00

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	10/11/2010 09:12	AEL	443338
CAS#	Parameter		Result	RDL	REG LIMIT	Units
16887-00-6	Chloride		629	20.0		mg/L

### SM 2320B Carbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/11/2010 11:43	JEM	443381
CAS#	Parameter		Result	RDL	REG LIMIT	Units
T-005-C	Carbonate Alkalinity		ND	1.0		mg/L CaCO3

### SM 2320B Bicarbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/11/2010 11:43	JEM	443381
CAS#	Parameter		Result	RDL	REG LIMIT	Units
T-005-B	Bicarbonate Alkalinity		407	1.0		mg/L CaCO3

### EPA 375.4 Sulfate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/12/2010 10:09	JEM	443438
CAS#	Parameter		Result	RDL	REG LIMIT	Units
14808-79-8	Sulfate		ND	5.0		mg/L

<b>GCAL ID</b> 21010083204	<b>Client ID</b> HP-MPA-06-I	<b>Matrix</b> Water	<b>Collect Date/Time</b> 10/06/2010 12:00	<b>Receive Date/Time</b> 10/08/2010 11:00
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SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/09/2010 16:25	RJU	443311

CAS#	Parameter	Result	RDL	REG LIMIT	Units
71-43-2	Benzene	ND	0.005		mg/L
100-41-4	Ethylbenzene	ND	0.005		mg/L
<b>108-88-3</b>	<b>Toluene</b>	<b>0.00657</b>	<b>0.005</b>		<b>mg/L</b>
1330-20-7	Xylene (total)	ND	0.01		mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	.05	.047	mg/L	94	78 - 130
1868-53-7	Dibromofluoromethane	.05	.053	mg/L	106	77 - 127
2037-26-5	Toluene d8	.05	.05	mg/L	100	76 - 134
17060-07-0	1,2-Dichloroethane-d4	.05	.055	mg/L	110	71 - 127

SW-846 7470A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/13/2010 12:55	443536	SW-846 7470A Dissolved	1	10/13/2010 18:03	CLB	443520

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	ND	0.00020		mg/L

SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 09:35	443319	SW-846 3020A Dissolved	1	10/12/2010 14:13	CLB	443352

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-38-2	Arsenic	ND	0.010		mg/L

SW-846 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/13/2010 13:30	443535	SW-846 7470A	1	10/14/2010 15:28	CLB	443591

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	ND	0.00020		mg/L

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 08:25	443320	SW-846 3010A	1	10/11/2010 14:50	CNB	443354

CAS#	Parameter	Result	RDL	REG LIMIT	Units
<b>7440-39-3</b>	<b>Barium</b>	<b>1.45</b>	<b>0.010</b>		<b>mg/L</b>
7440-43-9	Cadmium	ND	0.0050		mg/L
<b>7440-70-2</b>	<b>Calcium</b>	<b>145</b>	<b>0.10</b>		<b>mg/L</b>
<b>7440-47-3</b>	<b>Chromium</b>	<b>0.21</b>	<b>0.010</b>		<b>mg/L</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083204	HP-MPA-06-I	Water	10/06/2010 12:00	10/08/2010 11:00

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 08:25	443320	SW-846 3010A	1	10/11/2010 14:50	CNB	443354

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-89-6	Iron	49.8	0.10		mg/L
7439-92-1	Lead	0.028	0.015		mg/L
7439-95-4	Magnesium	49.6	0.10		mg/L
7439-96-5	Manganese	1.01	0.015		mg/L
7440-09-7	Potassium	8.59	0.50		mg/L
7782-49-2	Selenium	ND	0.040		mg/L
7440-23-5	Sodium	488	1.00		mg/L
7440-24-6	Strontium	1.10	0.050		mg/L
7440-66-6	Zinc	0.24	0.020		mg/L

SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 08:25	443318	SW-846 3005 Dissolved	1	10/11/2010 11:21	CNB	443354

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	1.02	0.010		mg/L
7440-43-9	Cadmium	ND	0.0050		mg/L
7440-70-2	Calcium	117	0.10		mg/L
7440-47-3	Chromium	ND	0.010		mg/L
7439-89-6	Iron	4.99	0.10		mg/L
7439-92-1	Lead	ND	0.015		mg/L
7439-95-4	Magnesium	40.6	0.10		mg/L
7439-96-5	Manganese	0.24	0.015		mg/L
7440-09-7	Potassium	6.51	0.50		mg/L
7782-49-2	Selenium	ND	0.040		mg/L
7440-23-5	Sodium	491	1.00		mg/L
7440-24-6	Strontium	1.00	0.050		mg/L
7440-66-6	Zinc	ND	0.020		mg/L

SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 09:35	443319	SW-846 3020A	1	10/12/2010 14:19	CLB	443352

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-38-2	Arsenic	0.013	0.010		mg/L

SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/08/2010 15:20	DJH	443292

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-035	Total Dissolved Solids(TDS)	2030	10.0		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083204	HP-MPA-06-I	Water	10/06/2010 12:00	10/08/2010 11:00

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	10/11/2010 09:13	AEL	443338
CAS#	Parameter		Result	RDL	REG LIMIT	Units
16887-00-6	Chloride		851	20.0		mg/L

### SM 2320B Carbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/11/2010 11:43	JEM	443381
CAS#	Parameter		Result	RDL	REG LIMIT	Units
T-005-C	Carbonate Alkalinity		ND	1.0		mg/L CaCO3

### SM 2320B Bicarbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/11/2010 11:43	JEM	443381
CAS#	Parameter		Result	RDL	REG LIMIT	Units
T-005-B	Bicarbonate Alkalinity		457	1.0		mg/L CaCO3

### EPA 375.4 Sulfate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/12/2010 10:10	JEM	443438
CAS#	Parameter		Result	RDL	REG LIMIT	Units
14808-79-8	Sulfate		ND	5.0		mg/L

<b>GCAL ID</b> 21010083205	<b>Client ID</b> HP-MPA-07-I	<b>Matrix</b> Water	<b>Collect Date/Time</b> 10/05/2010 15:45	<b>Receive Date/Time</b> 10/08/2010 11:00
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SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/09/2010 16:48	RJU	443311

CAS#	Parameter	Result	RDL	REG LIMIT	Units
71-43-2	Benzene	ND	0.005		mg/L
100-41-4	Ethylbenzene	ND	0.005		mg/L
<b>108-88-3</b>	<b>Toluene</b>	<b>0.00757</b>	<b>0.005</b>		<b>mg/L</b>
1330-20-7	Xylene (total)	ND	0.01		mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	.05	.047	mg/L	94	78 - 130
1868-53-7	Dibromofluoromethane	.05	.053	mg/L	106	77 - 127
2037-26-5	Toluene d8	.05	.049	mg/L	99	76 - 134
17060-07-0	1,2-Dichloroethane-d4	.05	.056	mg/L	113	71 - 127

SW-846 7470A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/13/2010 12:55	443536	SW-846 7470A Dissolved	1	10/13/2010 18:05	CLB	443520

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	ND	0.00020		mg/L

SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 09:35	443319	SW-846 3020A Dissolved	1	10/12/2010 14:25	CLB	443352

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-38-2	Arsenic	ND	0.010		mg/L

SW-846 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/13/2010 13:30	443535	SW-846 7470A	1	10/14/2010 15:30	CLB	443591

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	ND	0.00020		mg/L

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 08:25	443320	SW-846 3010A	1	10/11/2010 14:58	CNB	443354

CAS#	Parameter	Result	RDL	REG LIMIT	Units
<b>7440-39-3</b>	<b>Barium</b>	<b>1.10</b>	<b>0.010</b>		<b>mg/L</b>
7440-43-9	Cadmium	ND	0.0050		mg/L
<b>7440-70-2</b>	<b>Calcium</b>	<b>110</b>	<b>0.10</b>		<b>mg/L</b>
<b>7440-47-3</b>	<b>Chromium</b>	<b>0.095</b>	<b>0.010</b>		<b>mg/L</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083205	HP-MPA-07-I	Water	10/05/2010 15:45	10/08/2010 11:00

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 08:25	443320	SW-846 3010A	1	10/11/2010 14:58	CNB	443354

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-89-6	Iron	22.7	0.10		mg/L
7439-92-1	Lead	ND	0.015		mg/L
7439-95-4	Magnesium	42.2	0.10		mg/L
7439-96-5	Manganese	0.46	0.015		mg/L
7440-09-7	Potassium	6.06	0.50		mg/L
7782-49-2	Selenium	ND	0.040		mg/L
7440-23-5	Sodium	429	1.00		mg/L
7440-24-6	Strontium	0.93	0.050		mg/L
7440-66-6	Zinc	0.22	0.020		mg/L

SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 08:25	443318	SW-846 3005 Dissolved	1	10/11/2010 11:44	CNB	443354

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	0.90	0.010		mg/L
7440-43-9	Cadmium	ND	0.0050		mg/L
7440-70-2	Calcium	102	0.10		mg/L
7440-47-3	Chromium	0.011	0.010		mg/L
7439-89-6	Iron	5.79	0.10		mg/L
7439-92-1	Lead	ND	0.015		mg/L
7439-95-4	Magnesium	37.7	0.10		mg/L
7439-96-5	Manganese	0.29	0.015		mg/L
7440-09-7	Potassium	4.76	0.50		mg/L
7782-49-2	Selenium	ND	0.040		mg/L
7440-23-5	Sodium	391	1.00		mg/L
7440-24-6	Strontium	0.87	0.050		mg/L
7440-66-6	Zinc	0.034	0.020		mg/L

SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 09:35	443319	SW-846 3020A	1	10/12/2010 14:32	CLB	443352

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-38-2	Arsenic	ND	0.010		mg/L

SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/08/2010 15:20	DJH	443292

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-035	Total Dissolved Solids(TDS)	1710	10.0		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083205	HP-MPA-07-I	Water	10/05/2010 15:45	10/08/2010 11:00

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	10/11/2010 09:14	AEL	443338
CAS#	Parameter		Result	RDL	REG LIMIT	Units
16887-00-6	Chloride		696	20.0		mg/L

### SM 2320B Carbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/11/2010 11:43	JEM	443381
CAS#	Parameter		Result	RDL	REG LIMIT	Units
T-005-C	Carbonate Alkalinity		ND	1.0		mg/L CaCO3

### SM 2320B Bicarbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/11/2010 11:43	JEM	443381
CAS#	Parameter		Result	RDL	REG LIMIT	Units
T-005-B	Bicarbonate Alkalinity		402	1.0		mg/L CaCO3

### EPA 375.4 Sulfate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/12/2010 10:10	JEM	443438
CAS#	Parameter		Result	RDL	REG LIMIT	Units
14808-79-8	Sulfate		ND	5.0		mg/L



<b>GCAL ID</b> 21010083206	<b>Client ID</b> HP-MPA-08-I	<b>Matrix</b> Water	<b>Collect Date/Time</b> 10/05/2010 10:20	<b>Receive Date/Time</b> 10/08/2010 11:00
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SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/09/2010 17:11	RJU	443311

CAS#	Parameter	Result	RDL	REG LIMIT	Units
71-43-2	Benzene	ND	0.005		mg/L
100-41-4	Ethylbenzene	ND	0.005		mg/L
<b>108-88-3</b>	<b>Toluene</b>	<b>0.00635</b>	<b>0.005</b>		<b>mg/L</b>
1330-20-7	Xylene (total)	ND	0.01		mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	.05	.047	mg/L	94	78 - 130
1868-53-7	Dibromofluoromethane	.05	.055	mg/L	109	77 - 127
2037-26-5	Toluene d8	.05	.049	mg/L	98	76 - 134
17060-07-0	1,2-Dichloroethane-d4	.05	.055	mg/L	110	71 - 127

SW-846 7470A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/13/2010 12:55	443536	SW-846 7470A Dissolved	1	10/13/2010 18:06	CLB	443520

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	ND	0.00020		mg/L

SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 09:35	443319	SW-846 3020A Dissolved	1	10/12/2010 14:38	CLB	443352

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-38-2	Arsenic	ND	0.010		mg/L

SW-846 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/13/2010 13:30	443535	SW-846 7470A	1	10/14/2010 15:31	CLB	443591

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	ND	0.00020		mg/L

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 08:25	443320	SW-846 3010A	1	10/11/2010 13:33	CNB	443354

CAS#	Parameter	Result	RDL	REG LIMIT	Units
<b>7440-39-3</b>	<b>Barium</b>	<b>0.89</b>	<b>0.010</b>		<b>mg/L</b>
7440-43-9	Cadmium	ND	0.0050		mg/L
<b>7440-70-2</b>	<b>Calcium</b>	<b>129</b>	<b>0.10</b>		<b>mg/L</b>
<b>7440-47-3</b>	<b>Chromium</b>	<b>0.034</b>	<b>0.010</b>		<b>mg/L</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083206	HP-MPA-08-I	Water	10/05/2010 10:20	10/08/2010 11:00

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 08:25	443320	SW-846 3010A	1	10/11/2010 13:33	CNB	443354

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-89-6	Iron	31.7	0.10		mg/L
7439-92-1	Lead	0.027	0.015		mg/L
7439-95-4	Magnesium	66.3	0.10		mg/L
7439-96-5	Manganese	0.83	0.015		mg/L
7440-09-7	Potassium	13.1	0.50		mg/L
7782-49-2	Selenium	ND	0.040		mg/L
7440-23-5	Sodium	466	1.00		mg/L
7440-24-6	Strontium	0.84	0.050		mg/L
7440-66-6	Zinc	0.13	0.020		mg/L

SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 08:25	443318	SW-846 3005 Dissolved	1	10/11/2010 11:53	CNB	443354

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	0.64	0.010		mg/L
7440-43-9	Cadmium	ND	0.0050		mg/L
7440-70-2	Calcium	85.3	0.10		mg/L
7440-47-3	Chromium	ND	0.010		mg/L
7439-89-6	Iron	3.41	0.10		mg/L
7439-92-1	Lead	ND	0.015		mg/L
7439-95-4	Magnesium	46.9	0.10		mg/L
7439-96-5	Manganese	0.24	0.015		mg/L
7440-09-7	Potassium	11.5	0.50		mg/L
7782-49-2	Selenium	ND	0.040		mg/L
7440-23-5	Sodium	465	1.00		mg/L
7440-24-6	Strontium	0.78	0.050		mg/L
7440-66-6	Zinc	ND	0.020		mg/L

SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 09:35	443319	SW-846 3020A	1	10/12/2010 14:44	CLB	443352

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-38-2	Arsenic	ND	0.010		mg/L

SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/08/2010 15:20	DJH	443292

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-035	Total Dissolved Solids(TDS)	1870	10.0		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083206	HP-MPA-08-I	Water	10/05/2010 10:20	10/08/2010 11:00

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	10/11/2010 09:16	AEL	443338
CAS#	Parameter		Result	RDL	REG LIMIT	Units
16887-00-6	Chloride		737	20.0		mg/L

### SM 2320B Carbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/11/2010 11:43	JEM	443381
CAS#	Parameter		Result	RDL	REG LIMIT	Units
T-005-C	Carbonate Alkalinity		ND	1.0		mg/L CaCO3

### SM 2320B Bicarbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/11/2010 11:43	JEM	443381
CAS#	Parameter		Result	RDL	REG LIMIT	Units
T-005-B	Bicarbonate Alkalinity		339	1.0		mg/L CaCO3

### EPA 375.4 Sulfate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/12/2010 10:11	JEM	443438
CAS#	Parameter		Result	RDL	REG LIMIT	Units
14808-79-8	Sulfate		30.0	5.0		mg/L

<b>GCAL ID</b> 21010083207	<b>Client ID</b> HP-MPA-09-I	<b>Matrix</b> Water	<b>Collect Date/Time</b> 10/06/2010 08:45	<b>Receive Date/Time</b> 10/08/2010 11:00
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SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/09/2010 17:33	RJU	443311

CAS#	Parameter	Result	RDL	REG LIMIT	Units
71-43-2	Benzene	ND	0.005		mg/L
100-41-4	Ethylbenzene	ND	0.005		mg/L
<b>108-88-3</b>	<b>Toluene</b>	<b>0.00822</b>	<b>0.005</b>		<b>mg/L</b>
1330-20-7	Xylene (total)	ND	0.01		mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	.05	.048	mg/L	95	78 - 130
1868-53-7	Dibromofluoromethane	.05	.054	mg/L	109	77 - 127
2037-26-5	Toluene d8	.05	.051	mg/L	101	76 - 134
17060-07-0	1,2-Dichloroethane-d4	.05	.055	mg/L	111	71 - 127

SW-846 7470A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/13/2010 12:55	443536	SW-846 7470A Dissolved	1	10/13/2010 18:08	CLB	443520

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	ND	0.00020		mg/L

SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 09:35	443319	SW-846 3020A Dissolved	1	10/12/2010 14:50	CLB	443352

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-38-2	Arsenic	ND	0.010		mg/L

SW-846 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/13/2010 13:30	443535	SW-846 7470A	1	10/14/2010 15:36	CLB	443591

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	ND	0.00020		mg/L

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 08:25	443320	SW-846 3010A	1	10/11/2010 15:06	CNB	443354

CAS#	Parameter	Result	RDL	REG LIMIT	Units
<b>7440-39-3</b>	<b>Barium</b>	<b>1.93</b>	<b>0.010</b>		<b>mg/L</b>
7440-43-9	Cadmium	ND	0.0050		mg/L
<b>7440-70-2</b>	<b>Calcium</b>	<b>176</b>	<b>0.10</b>		<b>mg/L</b>
<b>7440-47-3</b>	<b>Chromium</b>	<b>0.13</b>	<b>0.010</b>		<b>mg/L</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083207	HP-MPA-09-I	Water	10/06/2010 08:45	10/08/2010 11:00

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 08:25	443320	SW-846 3010A	1	10/11/2010 15:06	CNB	443354

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-89-6	Iron	31.1	0.10		mg/L
7439-92-1	Lead	ND	0.015		mg/L
7439-95-4	Magnesium	61.0	0.10		mg/L
7439-96-5	Manganese	0.86	0.015		mg/L
7440-09-7	Potassium	8.99	0.50		mg/L
7782-49-2	Selenium	ND	0.040		mg/L
7440-24-6	Strontium	1.41	0.050		mg/L
7440-66-6	Zinc	0.16	0.020		mg/L

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 08:25	443320	SW-846 3010A	2	10/11/2010 17:54	CNB	443354

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-23-5	Sodium	626	2.00		mg/L

SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 08:25	443318	SW-846 3005 Dissolved	1	10/11/2010 12:00	CNB	443354

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	1.64	0.010		mg/L
7440-43-9	Cadmium	ND	0.0050		mg/L
7440-70-2	Calcium	167	0.10		mg/L
7440-47-3	Chromium	ND	0.010		mg/L
7439-89-6	Iron	7.45	0.10		mg/L
7439-92-1	Lead	ND	0.015		mg/L
7439-95-4	Magnesium	55.8	0.10		mg/L
7439-96-5	Manganese	0.36	0.015		mg/L
7440-09-7	Potassium	7.16	0.50		mg/L
7782-49-2	Selenium	ND	0.040		mg/L
7440-24-6	Strontium	1.37	0.050		mg/L
7440-66-6	Zinc	ND	0.020		mg/L

SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 08:25	443318	SW-846 3005 Dissolved	2	10/11/2010 17:46	CNB	443354

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-23-5	Sodium	624	2.00		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083207	HP-MPA-09-I	Water	10/06/2010 08:45	10/08/2010 11:00

### SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 09:35	443319	SW-846 3020A	1	10/12/2010 14:56	CLB	443352
CAS#	Parameter	Result	RDL	REG LIMIT	Units	
7440-38-2	Arsenic	ND	0.010		mg/L	

### SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/08/2010 15:20	DJH	443292
CAS#	Parameter	Result	RDL	REG LIMIT	Units	
WET-035	Total Dissolved Solids(TDS)	2610	10.0		mg/L	

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	10/11/2010 09:17	AEL	443338
CAS#	Parameter	Result	RDL	REG LIMIT	Units	
16887-00-6	Chloride	1110	20.0		mg/L	

### SM 2320B Carbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/11/2010 11:43	JEM	443381
CAS#	Parameter	Result	RDL	REG LIMIT	Units	
T-005-C	Carbonate Alkalinity	ND	1.0		mg/L CaCO3	

### SM 2320B Bicarbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/11/2010 11:43	JEM	443381
CAS#	Parameter	Result	RDL	REG LIMIT	Units	
T-005-B	Bicarbonate Alkalinity	405	1.0		mg/L CaCO3	

### EPA 375.4 Sulfate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/12/2010 10:25	JEM	443438
CAS#	Parameter	Result	RDL	REG LIMIT	Units	
14808-79-8	Sulfate	ND	5.0		mg/L	

<b>GCAL ID</b> 21010083208	<b>Client ID</b> HP-MPA-10-I	<b>Matrix</b> Water	<b>Collect Date/Time</b> 10/06/2010 17:30	<b>Receive Date/Time</b> 10/08/2010 11:00
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SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/09/2010 17:56	RJU	443311

CAS#	Parameter	Result	RDL	REG LIMIT	Units
71-43-2	Benzene	ND	0.005		mg/L
100-41-4	Ethylbenzene	ND	0.005		mg/L
<b>108-88-3</b>	<b>Toluene</b>	<b>0.00720</b>	<b>0.005</b>		<b>mg/L</b>
1330-20-7	Xylene (total)	ND	0.01		mg/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	.05	.049	mg/L	98	78 - 130
1868-53-7	Dibromofluoromethane	.05	.05	mg/L	101	77 - 127
2037-26-5	Toluene d8	.05	.05	mg/L	100	76 - 134
17060-07-0	1,2-Dichloroethane-d4	.05	.055	mg/L	111	71 - 127

SW-846 7470A Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/13/2010 12:55	443536	SW-846 7470A Dissolved	1	10/13/2010 18:09	CLB	443520

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	ND	0.00020		mg/L

SW-846 7010 Arsenic Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 09:35	443319	SW-846 3020A Dissolved	1	10/12/2010 15:14	CLB	443352

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-38-2	Arsenic	ND	0.010		mg/L

SW-846 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/13/2010 13:30	443535	SW-846 7470A	1	10/14/2010 15:37	CLB	443591

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	ND	0.00020		mg/L

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 08:25	443320	SW-846 3010A	1	10/11/2010 15:13	CNB	443354

CAS#	Parameter	Result	RDL	REG LIMIT	Units
<b>7440-39-3</b>	<b>Barium</b>	<b>1.42</b>	<b>0.010</b>		<b>mg/L</b>
7440-43-9	Cadmium	ND	0.0050		mg/L
<b>7440-70-2</b>	<b>Calcium</b>	<b>132</b>	<b>0.10</b>		<b>mg/L</b>
<b>7440-47-3</b>	<b>Chromium</b>	<b>0.34</b>	<b>0.010</b>		<b>mg/L</b>

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083208	HP-MPA-10-I	Water	10/06/2010 17:30	10/08/2010 11:00

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 08:25	443320	SW-846 3010A	1	10/11/2010 15:13	CNB	443354

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-89-6	Iron	82.8	0.10		mg/L
7439-92-1	Lead	0.057	0.015		mg/L
7439-95-4	Magnesium	45.5	0.10		mg/L
7439-96-5	Manganese	1.74	0.015		mg/L
7440-09-7	Potassium	11.9	0.50		mg/L
7782-49-2	Selenium	ND	0.040		mg/L
7440-23-5	Sodium	383	1.00		mg/L
7440-24-6	Strontium	0.88	0.050		mg/L
7440-66-6	Zinc	0.35	0.020		mg/L

SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 08:25	443318	SW-846 3005 Dissolved	1	10/11/2010 12:08	CNB	443354

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	0.78	0.010		mg/L
7440-43-9	Cadmium	ND	0.0050		mg/L
7440-70-2	Calcium	96.4	0.10		mg/L
7440-47-3	Chromium	ND	0.010		mg/L
7439-89-6	Iron	4.37	0.10		mg/L
7439-92-1	Lead	ND	0.015		mg/L
7439-95-4	Magnesium	30.7	0.10		mg/L
7439-96-5	Manganese	0.20	0.015		mg/L
7440-09-7	Potassium	8.07	0.50		mg/L
7782-49-2	Selenium	ND	0.040		mg/L
7440-23-5	Sodium	416	1.00		mg/L
7440-24-6	Strontium	0.77	0.050		mg/L
7440-66-6	Zinc	ND	0.020		mg/L

SW-846 7010 Arsenic

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 09:35	443319	SW-846 3020A	1	10/12/2010 15:20	CLB	443352

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-38-2	Arsenic	0.028	0.010		mg/L

SM 2540C TDS

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/08/2010 15:20	DJH	443292

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-035	Total Dissolved Solids(TDS)	1520	10.0		mg/L



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083208	HP-MPA-10-I	Water	10/06/2010 17:30	10/08/2010 11:00

### SM 4500 CL E Chloride

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			20	10/11/2010 09:18	AEL	443338
CAS#	Parameter		Result	RDL	REG LIMIT	Units
16887-00-6	Chloride		613	20.0		mg/L

### SM 2320B Carbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/11/2010 11:43	JEM	443381
CAS#	Parameter		Result	RDL	REG LIMIT	Units
T-005-C	Carbonate Alkalinity		ND	1.0		mg/L CaCO3

### SM 2320B Bicarbonate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/11/2010 11:43	JEM	443381
CAS#	Parameter		Result	RDL	REG LIMIT	Units
T-005-B	Bicarbonate Alkalinity		442	1.0		mg/L CaCO3

### EPA 375.4 Sulfate

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/12/2010 10:26	JEM	443438
CAS#	Parameter		Result	RDL	REG LIMIT	Units
14808-79-8	Sulfate		ND	5.0		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083209	SP-MPA-03 (0-0.5)	Solid	10/05/2010 16:00	10/08/2010 11:00

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 14:16	MDT	443642

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-037	Total Moisture	44.4	0.010		%

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/12/2010 10:47	AEL	443435

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	89800	200		mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083210	SP-MPA-03 (0.5-2)	Solid	10/05/2010 16:05	10/08/2010 11:00

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 14:16	MDT	443642

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-037	Total Moisture	66.1	0.010		%

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/12/2010 13:25	AEL	443435

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	91900	200		mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083211	SP-MPA-03 (4-6)	Solid	10/05/2010 17:20	10/08/2010 11:00

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 14:16	MDT	443642

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-037	Total Moisture	47.4	0.010		%

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/12/2010 13:41	AEL	443435

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	235000	200		mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083212	SP-MPA-03 (9-10)	Solid	10/05/2010 17:30	10/08/2010 11:00

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 14:16	MDT	443642

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-037	Total Moisture	44.8	0.010		%

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/12/2010 14:08	AEL	443435

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	28800	200		mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083213	SP-MPA-04 (0-0.5)	Solid	10/06/2010 15:20	10/08/2010 11:00

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 14:16	MDT	443642

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-037	Total Moisture	22.2	0.010		%

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/12/2010 14:16	AEL	443435

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	8610	200		mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083214	SP-MPA-04 (0.5-2)	Solid	10/06/2010 15:25	10/08/2010 11:00

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 14:16	MDT	443642

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-037	Total Moisture	36.8	0.010		%

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/12/2010 14:29	AEL	443435

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	45700	200		mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083215	SP-MPA-04 (5-7)	Solid	10/06/2010 15:30	10/08/2010 11:00

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 14:16	MDT	443642

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-037	Total Moisture	64.9	0.010		%

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/12/2010 14:43	AEL	443435

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	78200	200		mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083216	SP-MPA-04 (9-10)	Solid	10/06/2010 15:40	10/08/2010 11:00

### SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 14:16	MDT	443642

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-037	Total Moisture	45.5	0.010		%

### SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/12/2010 14:52	AEL	443435

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	15800	200		mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083217	SP-MPA-01 (0-0.5)	Solid	10/05/2010 11:00	10/08/2010 11:00

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 14:16	MDT	443642

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-037	Total Moisture	59.3	0.010		%

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/12/2010 15:04	AEL	443435

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	39000	200		mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083218	SP-MPA-01 (0.5-2)	Solid	10/05/2010 11:05	10/08/2010 11:00

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 14:16	MDT	443642

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-037	Total Moisture	58.5	0.010		%

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/12/2010 15:18	AEL	443435

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	62600	200		mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083219	SP-MPA-01 (2-4.3)	Solid	10/05/2010 11:10	10/08/2010 11:00

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 14:16	MDT	443642

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-037	Total Moisture	53.8	0.010		%

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/12/2010 15:34	AEL	443435

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	45800	200		mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083220	SP-MPA-01 (4.3-4.7)	Solid	10/05/2010 11:15	10/08/2010 11:00

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 14:16	MDT	443642

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-037	Total Moisture	63.5	0.010		%

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/12/2010 15:48	AEL	443435

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	89800	200		mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083221	SP-MPA-01 (8-9)	Solid	10/05/2010 14:15	10/08/2010 11:00

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 14:16	MDT	443642

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-037	Total Moisture	37.6	0.010		%

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/12/2010 15:56	AEL	443435

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	21800	200		mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083222	SP-MPA-02 (0-0.5)	Solid	10/05/2010 11:45	10/08/2010 11:00

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 14:16	MDT	443642

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-037	Total Moisture	65.0	0.010		%

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/12/2010 16:23	AEL	443435

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	44300	200		mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083223	SP-MPA-02 (0.5-2)	Solid	10/05/2010 11:50	10/08/2010 11:00

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 14:16	MDT	443642

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-037	Total Moisture	64.9	0.010		%

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/12/2010 16:36	AEL	443435

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	55500	200		mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083224	SP-MPA-02 (3-4)	Solid	10/05/2010 11:55	10/08/2010 11:00

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 14:16	MDT	443642

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-037	Total Moisture	66.3	0.010		%

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/13/2010 09:07	AEL	443502

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	48700	200		mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083225	SP-MPA-02 (4-5)	Solid	10/05/2010 12:00	10/08/2010 11:00

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 14:16	MDT	443642

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-037	Total Moisture	64.8	0.010		%

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/13/2010 09:22	AEL	443502

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	67600	200		mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083226	SP-MPA-02A (3-5)	Solid	10/06/2010 07:35	10/08/2010 11:00

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 14:16	MDT	443642

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-037	Total Moisture	71.8	0.010		%

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/13/2010 09:37	AEL	443502

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	53200	200		mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083227	SP-MPA-02A (7-8)	Solid	10/06/2010 07:40	10/08/2010 11:00

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 14:16	MDT	443642

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-037	Total Moisture	35.4	0.010		%

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/13/2010 09:50	AEL	443502

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	6770	200		mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083228	SP-MPA-97 (8-9)	Solid	10/05/2010 00:00	10/08/2010 11:00

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 14:16	MDT	443642

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-037	Total Moisture	50.0	0.010		%

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/13/2010 10:00	AEL	443502

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	27500	200		mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083229	HG-MPA-05 (0-0.5)	Solid	10/06/2010 17:20	10/08/2010 11:00

SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 11:30	443322	SW-846 7471B	1	10/11/2010 12:04	CLB	443348

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.070	0.012		mg/kg

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 15:34	MDT	443643

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-037	Total Moisture	72.4	0.010		%

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/13/2010 10:16	AEL	443502

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	81700	200		mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083230	HG-MPA-05 (0.5-2)	Solid	10/06/2010 17:25	10/08/2010 11:00

SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 11:30	443322	SW-846 7471B	1	10/11/2010 12:05	CLB	443348

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.047	0.012		mg/kg

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 15:34	MDT	443643

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-037	Total Moisture	63.0	0.010		%

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/13/2010 10:29	AEL	443502

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	55900	200		mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083231	HG-MPA-05 (6-8)	Solid	10/06/2010 17:30	10/08/2010 11:00

SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 11:30	443322	SW-846 7471B	1	10/11/2010 12:07	CLB	443348

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.15	0.012		mg/kg

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 15:34	MDT	443643

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-037	Total Moisture	56.0	0.010		%

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/13/2010 10:54	AEL	443502

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	47400	200		mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083232	HG-MPA-06 (0-0.5)	Solid	10/07/2010 09:45	10/08/2010 11:00

SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 11:30	443322	SW-846 7471B	1	10/11/2010 12:09	CLB	443348

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.043	0.012		mg/kg

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 15:34	MDT	443643

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-037	Total Moisture	67.8	0.010		%

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/13/2010 12:00	AEL	443502

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	88300	200		mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083233	HG-MPA-06 (0.5-2)	Solid	10/07/2010 09:50	10/08/2010 11:00

SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 11:30	443322	SW-846 7471B	1	10/11/2010 12:10	CLB	443348

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.045	0.012		mg/kg

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 15:34	MDT	443643

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-037	Total Moisture	60.2	0.010		%

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/13/2010 12:15	AEL	443502

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	46800	200		mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083234	HG-MPA-06 (5-6)	Solid	10/07/2010 09:55	10/08/2010 11:00

SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 11:30	443322	SW-846 7471B	1	10/11/2010 12:15	CLB	443348

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.015	0.012		mg/kg

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 15:34	MDT	443643

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-037	Total Moisture	51.6	0.010		%

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/13/2010 12:38	AEL	443502

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	41500	200		mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083235	HG-MPA-07 (0-0.5)	Solid	10/07/2010 11:50	10/08/2010 11:00

SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 11:30	443322	SW-846 7471B	1	10/11/2010 12:16	CLB	443348

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.053	0.012		mg/kg

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 15:34	MDT	443643

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-037	Total Moisture	56.5	0.010		%

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/13/2010 12:56	AEL	443502

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	57500	200		mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083236	HG-MPA-07 (0.5-2)	Solid	10/07/2010 11:55	10/08/2010 11:00

SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 11:30	443322	SW-846 7471B	1	10/11/2010 12:18	CLB	443348

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.18	0.012		mg/kg

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 15:34	MDT	443643

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-037	Total Moisture	47.5	0.010		%

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/13/2010 13:13	AEL	443502

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	29300	200		mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083237	HG-MPA-07 (6.5-7)	Solid	10/07/2010 12:00	10/08/2010 11:00

SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 11:30	443322	SW-846 7471B	1	10/11/2010 12:20	CLB	443348

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.015	0.012		mg/kg

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 15:34	MDT	443643

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-037	Total Moisture	47.0	0.010		%

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/13/2010 13:30	AEL	443502

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	21300	200		mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083238	HG-MPA-08 (0-0.5)	Solid	10/07/2010 12:20	10/08/2010 11:00

SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 11:30	443322	SW-846 7471B	1	10/11/2010 11:57	CLB	443348

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.036	0.010		mg/kg

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 15:34	MDT	443643

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-037	Total Moisture	66.6	0.010		%

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/13/2010 13:57	AEL	443502

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	41200	200		mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083239	HG-MPA-08 (0.5-2)	Solid	10/07/2010 12:25	10/08/2010 11:00

SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 11:30	443322	SW-846 7471B	1	10/11/2010 12:21	CLB	443348

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.28	0.012		mg/kg

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 15:34	MDT	443643

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-037	Total Moisture	60.9	0.010		%

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/13/2010 14:11	AEL	443502

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	41300	200		mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083240	HG-MPA-08 (7.5-8)	Solid	10/07/2010 12:30	10/08/2010 11:00

SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 11:30	443322	SW-846 7471B	1	10/11/2010 12:23	CLB	443348

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.046	0.012		mg/kg

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 15:34	MDT	443643

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-037	Total Moisture	55.8	0.010		%

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/13/2010 14:24	AEL	443502

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	45000	200		mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083241	HG-MPA-09 (0-0.5)	Solid	10/07/2010 12:45	10/08/2010 11:00

SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 11:30	443322	SW-846 7471B	1	10/11/2010 12:24	CLB	443348

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.044	0.012		mg/kg

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 15:34	MDT	443643

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-037	Total Moisture	68.7	0.010		%

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/13/2010 14:40	AEL	443502

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	56500	200		mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083242	HG-MPA-09 (0.5-2)	Solid	10/07/2010 12:50	10/08/2010 11:00

SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 11:30	443322	SW-846 7471B	1	10/11/2010 12:26	CLB	443348

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.046	0.012		mg/kg

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 15:34	MDT	443643

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-037	Total Moisture	63.6	0.010		%

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/13/2010 14:54	AEL	443502

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	42900	200		mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083243	HG-MPA-09 (6-7)	Solid	10/07/2010 12:55	10/08/2010 11:00

SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 11:30	443322	SW-846 7471B	1	10/11/2010 12:28	CLB	443348

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.017	0.012		mg/kg

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 15:34	MDT	443643

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-037	Total Moisture	44.4	0.010		%

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/13/2010 15:03	AEL	443502

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	6590	200		mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083244	HG-MPA-98 (0.5-2)	Solid	10/07/2010 00:00	10/08/2010 11:00

SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 11:30	443322	SW-846 7471B	1	10/11/2010 12:29	CLB	443348

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.059	0.012		mg/kg

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 15:34	MDT	443643

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-037	Total Moisture	61.3	0.010		%

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 08:47	AEL	443578

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	52800	200		mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083245	HG-MPA-01 (0-0.5)	Solid	10/06/2010 12:30	10/08/2010 11:00

SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 11:30	443322	SW-846 7471B	1	10/11/2010 12:34	CLB	443348

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.086	0.012		mg/kg

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 15:34	MDT	443643

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-037	Total Moisture	64.9	0.010		%

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 09:02	AEL	443578

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	72600	200		mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083246	HG-MPA-01 (0.5-2)	Solid	10/06/2010 12:35	10/08/2010 11:00

SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 11:30	443322	SW-846 7471B	1	10/11/2010 12:36	CLB	443348

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.11	0.012		mg/kg

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 15:34	MDT	443643

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-037	Total Moisture	62.6	0.010		%

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 09:16	AEL	443578

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	45900	200		mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083247	HG-MPA-01 (5-7)	Solid	10/06/2010 12:40	10/08/2010 11:00

SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 11:30	443322	SW-846 7471B	1	10/11/2010 12:37	CLB	443348

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.085	0.012		mg/kg

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 15:34	MDT	443643

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-037	Total Moisture	53.5	0.010		%

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 09:42	AEL	443578

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	44300	200		mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083248	HG-MPA-02 (0-0.5)	Solid	10/06/2010 13:00	10/08/2010 11:00

SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 11:30	443322	SW-846 7471B	1	10/11/2010 12:39	CLB	443348

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.088	0.012		mg/kg

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 15:34	MDT	443643

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-037	Total Moisture	72.7	0.010		%

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 11:21	AEL	443578

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	67200	200		mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083249	HG-MPA-02 (0.5-2)	Solid	10/06/2010 13:05	10/08/2010 11:00

SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 12:00	443323	SW-846 7471B	1	10/11/2010 14:17	CLB	443348

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.075	0.012		mg/kg

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 16:37	MDT	443644

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-037	Total Moisture	63.7	0.010		%

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 11:35	AEL	443578

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	58700	200		mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083250	HG-MPA-02 (5-7)	Solid	10/06/2010 13:10	10/08/2010 11:00

SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 12:00	443323	SW-846 7471B	1	10/11/2010 12:44	CLB	443348

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.038	0.010		mg/kg

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 16:37	MDT	443644

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-037	Total Moisture	55.4	0.010		%

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 12:03	AEL	443578

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	44800	200		mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083251	HG-MPA-03 (0-0.5)	Solid	10/06/2010 14:10	10/08/2010 11:00

SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 12:00	443323	SW-846 7471B	1	10/11/2010 14:18	CLB	443348

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.057	0.012		mg/kg

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 16:37	MDT	443644

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-037	Total Moisture	67.1	0.010		%

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 12:17	AEL	443578

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	50300	200		mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083252	HG-MPA-03 (0.5-2)	Solid	10/06/2010 14:15	10/08/2010 11:00

SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 12:00	443323	SW-846 7471B	1	10/11/2010 14:20	CLB	443348

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.073	0.012		mg/kg

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 16:37	MDT	443644

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-037	Total Moisture	59.5	0.010		%

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 13:16	AEL	443578

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	52600	200		mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083253	HG-MPA-03 (4-6)	Solid	10/06/2010 14:20	10/08/2010 11:00

SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 12:00	443323	SW-846 7471B	1	10/11/2010 14:21	CLB	443348

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.066	0.012		mg/kg

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 16:37	MDT	443644

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-037	Total Moisture	57.0	0.010		%

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 13:42	AEL	443578

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	74900	200		mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083254	HG-MPA-04 (0-0.5)	Solid	10/06/2010 14:40	10/08/2010 11:00

SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 12:00	443323	SW-846 7471B	1	10/11/2010 14:23	CLB	443348

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.037	0.011		mg/kg

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 16:37	MDT	443644

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-037	Total Moisture	67.9	0.010		%

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 13:58	AEL	443578

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	51100	200		mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083255	HG-MPA-04 (0.5-2)	Solid	10/06/2010 14:45	10/08/2010 11:00

SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 12:00	443323	SW-846 7471B	1	10/11/2010 14:25	CLB	443348

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.024	0.012		mg/kg

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 16:37	MDT	443644

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-037	Total Moisture	48.0	0.010		%

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 14:08	AEL	443578

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	16600	200		mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS



GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21010083256	HG-MPA-04 (5-7)	Solid	10/06/2010 14:50	10/08/2010 11:00

SW-846 7471B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
10/10/2010 12:00	443323	SW-846 7471B	1	10/11/2010 14:26	CLB	443348

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.012	0.012		mg/kg

SM 2540G Dry Weight

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 16:37	MDT	443644

CAS#	Parameter	Result	RDL	REG LIMIT	Units
WET-037	Total Moisture	53.6	0.010		%

SW-846 9060 TOC

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	10/14/2010 14:22	AEL	443578

CAS#	Parameter	Result	RDL	REG LIMIT	Units
C-012	Total Organic Carbon	10800	200		mg/kg

RESULTS REPORTED ON A WET WEIGHT BASIS

# GC/MS Volatiles Quality Control Summary

Analytical Batch 443311 Prep Batch N/A		Client ID GCAL ID 885043 Sample Type Method Blank Analytical Date 10/09/2010 11:03 Matrix Water		LCS443311 885044 LCS 10/09/2010 09:32 Water			LCSD443311 885045 LCSD 10/09/2010 09:54 Water						
SW-846 8260B				Units Result	mg/L RDL	Spike Added	Result	% R	Control Limits % R	Result	% R	RPD	RPD Limit
100-41-4	Ethylbenzene	ND	0.005	0.050	0.046	91	74 - 126	0.051	102	10	30		
1330-20-7	Xylene (total)	ND	0.01	0.150	0.140	93	74 - 127	0.153	102	9	30		
71-43-2	Benzene	ND	0.005	0.050	0.049	97	70 - 129	0.049	98	0	20		
108-88-3	Toluene	ND	0.005	0.050	0.044	89	72 - 120	0.048	96	9	20		
<b>Surrogate</b>													
460-00-4	4-Bromofluorobenzene	46.7	93	50	44.2	88	78 - 130	48.5	97				
1868-53-7	Dibromofluoromethane	51.2	102	50	49.4	99	77 - 127	48.4	97				
2037-26-5	Toluene d8	52.2	104	50	46.4	93	76 - 134	50.7	101				
17060-07-0	1,2-Dichloroethane-d4	51.4	103	50	49.1	98	71 - 127	49.8	100				

Analytical Batch 443311 Prep Batch N/A		Client ID GCAL ID 21010071601 Sample Type SAMPLE Analytical Date 10/09/2010 11:26 Matrix Water		2010-0065 MS 21010071606 MS 10/09/2010 12:35 Water			2010-0065 MSD 21010071607 MSD 10/09/2010 12:59 Water						
SW-846 8260B				Units Result	mg/L RDL	Spike Added	Result	% R	Control Limits % R	Result	% R	RPD	RPD Limit
100-41-4	Ethylbenzene	0.00	0.005	0.050	0.055	109	74 - 126	0.053	105	4	30		
1330-20-7	Xylene (total)	0.00	0.01	0.150	0.166	111	74 - 127	0.157	105	6	30		
71-43-2	Benzene	0.00	0.005	0.050	0.059	118	70 - 129	0.054	108	9	30		
108-88-3	Toluene	0.00	0.005	0.050	0.055	109	72 - 120	0.050	100	10	30		
<b>Surrogate</b>													
460-00-4	4-Bromofluorobenzene			50	48.1	96	78 - 130	46	92				
1868-53-7	Dibromofluoromethane			50	52.8	106	77 - 127	52.7	105				
2037-26-5	Toluene d8			50	49.7	99	76 - 134	48	96				
17060-07-0	1,2-Dichloroethane-d4			50	54.2	108	71 - 127	51.5	103				

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 443520 <b>Prep Batch</b> 443536 <b>Prep Method</b> SW-846 7470A	<b>Client ID</b> MB443536 <b>GCAL ID</b> 886135 <b>Sample Type</b> Method Blank <b>Prep Date</b> 10/13/2010 12:55 <b>Analytical Date</b> 10/13/2010 17:25 <b>Matrix</b> Water	LCS443536 886136 LCS 10/13/2010 12:55 10/13/2010 17:27 Water				
<b>SW-846 7470A Dissolved</b>		<b>Units</b> mg/L <b>Result</b> ND	<b>RDL</b> 0.00020	<b>Spike Added</b> 0.00500	<b>Result</b> 0.00449	<b>% R</b> 90 <b>Control Limits % R</b> 80 - 120
7439-97-6	Mercury	ND	0.00020	0.00500	0.00449	90 80 - 120

<b>Analytical Batch</b> 443520 <b>Prep Batch</b> 443536 <b>Prep Method</b> SW-846 7470A	<b>Client ID</b> HP-MPA-01-T <b>GCAL ID</b> 21010040801 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 10/13/2010 12:55 <b>Analytical Date</b> 10/13/2010 17:28 <b>Matrix</b> Water	883050MS 886138 MS 10/13/2010 12:55 10/13/2010 17:32 Water				
<b>SW-846 7470A Dissolved</b>		<b>Units</b> mg/L <b>Result</b> 0.00000	<b>RDL</b> 0.00020	<b>Spike Added</b> 0.00500	<b>Result</b> 0.00369	<b>% R</b> 74* <b>Control Limits % R</b> 75 - 125
7439-97-6	Mercury	0.00000	0.00020	0.00500	0.00369	74* 75 - 125

<b>Analytical Batch</b> 443520 <b>Prep Batch</b> 443536 <b>Prep Method</b> SW-846 7470A	<b>Client ID</b> HP-MPA-01-T <b>GCAL ID</b> 21010040801 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 10/13/2010 12:55 <b>Analytical Date</b> 10/13/2010 17:28 <b>Matrix</b> Water	883050DUP 886137 DUP 10/13/2010 12:55 10/13/2010 17:30 Water				
<b>SW-846 7470A Dissolved</b>		<b>Units</b> mg/L <b>Result</b> 0.00000	<b>RDL</b> 0.00020	<b>Result</b> 0.00000	<b>RPD</b> 0	<b>RPD Limit</b> 20
7439-97-6	Mercury	0.00000	0.00020	0.00000	0	20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 443352 <b>Prep Batch</b> 443319 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> MB443319 <b>GCAL ID</b> 885060 <b>Sample Type</b> Method Blank <b>Prep Date</b> 10/10/2010 09:35 <b>Analytical Date</b> 10/12/2010 12:48 <b>Matrix</b> Water	LCS443319 885061 LCS 10/10/2010 09:35 10/12/2010 12:54 Water					
<b>SW-846 7010 Arsenic</b>		<b>Units</b> mg/L <b>Result</b> ND <b>RDL</b> 0.010 <b>Spike Added</b> 0.040	<b>Result</b> 0.037 <b>% R</b> 93 <b>Control Limits % R</b> 80 - 120				
7440-38-2	Arsenic	ND	0.010	0.040	0.037	93	80 - 120

<b>Analytical Batch</b> 443352 <b>Prep Batch</b> 443319 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> HP-MPA-04-I <b>GCAL ID</b> 21010083202 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 10/10/2010 09:35 <b>Analytical Date</b> 10/12/2010 13:31 <b>Matrix</b> Water	884835MS 885063 MS 10/10/2010 09:35 10/12/2010 13:12 Water					
<b>SW-846 7010 Arsenic</b>		<b>Units</b> mg/L <b>Result</b> 0.0050 <b>RDL</b> 0.010 <b>Spike Added</b> 0.040	<b>Result</b> 0.049 <b>% R</b> 109 <b>Control Limits % R</b> 75 - 125				
7440-38-2	Arsenic	0.0050	0.010	0.040	0.049	109	75 - 125

<b>Analytical Batch</b> 443352 <b>Prep Batch</b> 443319 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> HP-MPA-04-I <b>GCAL ID</b> 21010083202 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 10/10/2010 09:35 <b>Analytical Date</b> 10/12/2010 13:31 <b>Matrix</b> Water	884835DUP 885062 DUP 10/10/2010 09:35 10/12/2010 13:06 Water				
<b>SW-846 7010 Arsenic</b>		<b>Units</b> mg/L <b>Result</b> 0.0050 <b>RDL</b> 0.010	<b>Result</b> 0.0057 <b>RPD</b> 13 <b>RPD Limit</b> 20			
7440-38-2	Arsenic	0.0050	0.010	0.0057	13	20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 443591 <b>Prep Batch</b> 443535 <b>Prep Method</b> SW-846 7470A	<b>Client ID</b> MB443535 <b>GCAL ID</b> 886131 <b>Sample Type</b> Method Blank <b>Prep Date</b> 10/13/2010 13:30 <b>Analytical Date</b> 10/14/2010 14:47 <b>Matrix</b> Water	LCS443535 886132 LCS 10/13/2010 13:30 10/14/2010 14:49 Water					
<b>SW-846 7470A</b>		<b>Units</b> mg/L <b>Result</b> ND <b>RDL</b> 0.00020 <b>Spike Added</b> 0.00500	<b>Result</b> 0.00509 <b>% R</b> 102 <b>Control Limits % R</b> 80 - 120				
7439-97-6	Mercury	ND	0.00020	0.00500	0.00509	102	80 - 120

<b>Analytical Batch</b> 443591 <b>Prep Batch</b> 443535 <b>Prep Method</b> SW-846 7470A	<b>Client ID</b> HP-MPA-02-T <b>GCAL ID</b> 21010040802 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 10/13/2010 13:30 <b>Analytical Date</b> 10/14/2010 14:51 <b>Matrix</b> Water	883051MS 886175 MS 10/13/2010 13:30 10/14/2010 14:59 Water					
<b>SW-846 7470A</b>		<b>Units</b> mg/L <b>Result</b> 0.00000 <b>RDL</b> 0.00020 <b>Spike Added</b> 0.00500	<b>Result</b> 0.00485 <b>% R</b> 97 <b>Control Limits % R</b> 75 - 125				
7439-97-6	Mercury	0.00000	0.00020	0.00500	0.00485	97	75 - 125

<b>Analytical Batch</b> 443591 <b>Prep Batch</b> 443535 <b>Prep Method</b> SW-846 7470A	<b>Client ID</b> HP-MPA-02-T <b>GCAL ID</b> 21010040802 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 10/13/2010 13:30 <b>Analytical Date</b> 10/14/2010 14:51 <b>Matrix</b> Water	883051DUP 886174 DUP 10/13/2010 13:30 10/14/2010 14:58 Water				
<b>SW-846 7470A</b>		<b>Units</b> mg/L <b>Result</b> 0.00000 <b>RDL</b> 0.00020	<b>Result</b> 0.00000 <b>RPD</b> 0 <b>RPD Limit</b> 20			
7439-97-6	Mercury	0.00000	0.00020	0.00000	0	20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 443348 <b>Prep Batch</b> 443322 <b>Prep Method</b> SW-846 7471B	<b>Client ID</b> MB443322 <b>GCAL ID</b> 885072 <b>Sample Type</b> Method Blank <b>Prep Date</b> 10/10/2010 11:30 <b>Analytical Date</b> 10/11/2010 11:42 <b>Matrix</b> Solid	LCS443322 885073 LCS 10/10/2010 11:30 10/11/2010 11:56 Solid				
<b>SW-846 7471B</b>		<b>Units</b>	mg/kg	<b>Spike</b>	<b>Result</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>		<b>Limits % R</b>
7439-97-6	Mercury	ND	0.010	0.25	0.25	98 80 - 120

<b>Analytical Batch</b> 443348 <b>Prep Batch</b> 443323 <b>Prep Method</b> SW-846 7471B	<b>Client ID</b> MB443323 <b>GCAL ID</b> 885076 <b>Sample Type</b> Method Blank <b>Prep Date</b> 10/10/2010 12:00 <b>Analytical Date</b> 10/11/2010 12:41 <b>Matrix</b> Solid	LCS443323 885077 LCS 10/10/2010 12:00 10/11/2010 12:42 Solid				
<b>SW-846 7471B</b>		<b>Units</b>	mg/kg	<b>Spike</b>	<b>Result</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>		<b>Limits % R</b>
7439-97-6	Mercury	ND	0.010	0.25	0.24	96 80 - 120

<b>Analytical Batch</b> 443348 <b>Prep Batch</b> 443322 <b>Prep Method</b> SW-846 7471B	<b>Client ID</b> HG-MPA-08 (0-0.5) <b>GCAL ID</b> 21010083238 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 10/10/2010 11:30 <b>Analytical Date</b> 10/11/2010 11:57 <b>Matrix</b> Solid	884878MS 885075 MS 10/10/2010 11:30 10/11/2010 12:01 Solid				
<b>SW-846 7471B</b>		<b>Units</b>	mg/kg	<b>Spike</b>	<b>Result</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>		<b>Limits % R</b>
7439-97-6	Mercury	0.036	0.010	0.25	0.28	97 75 - 125

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 443348 <b>Prep Batch</b> 443323 <b>Prep Method</b> SW-846 7471B	<b>Client ID</b> HG-MPA-02 (5-7) <b>GCAL ID</b> 21010083250 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 10/10/2010 12:00 <b>Analytical Date</b> 10/11/2010 12:44 <b>Matrix</b> Solid	884890MS 885079 MS 10/10/2010 12:00 10/11/2010 12:47 Solid				
<b>SW-846 7471B</b>		<b>Units</b> mg/kg <b>Result</b> RDL	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>
7439-97-6	Mercury	0.038	0.010	0.25	0.25	87 75 - 125

<b>Analytical Batch</b> 443348 <b>Prep Batch</b> 443322 <b>Prep Method</b> SW-846 7471B	<b>Client ID</b> HG-MPA-08 (0-0.5) <b>GCAL ID</b> 21010083238 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 10/10/2010 11:30 <b>Analytical Date</b> 10/11/2010 11:57 <b>Matrix</b> Solid	884878DUP 885074 DUP 10/10/2010 11:30 10/11/2010 11:59 Solid			
<b>SW-846 7471B</b>		<b>Units</b> mg/kg <b>Result</b> RDL	<b>Result</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
7439-97-6	Mercury	0.036	0.010	0.039	8 20

<b>Analytical Batch</b> 443348 <b>Prep Batch</b> 443323 <b>Prep Method</b> SW-846 7471B	<b>Client ID</b> HG-MPA-02 (5-7) <b>GCAL ID</b> 21010083250 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 10/10/2010 12:00 <b>Analytical Date</b> 10/11/2010 12:44 <b>Matrix</b> Solid	884890DUP 885078 DUP 10/10/2010 12:00 10/11/2010 12:45 Solid			
<b>SW-846 7471B</b>		<b>Units</b> mg/kg <b>Result</b> RDL	<b>Result</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
7439-97-6	Mercury	0.038	0.010	0.033	14 20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 443354 <b>Prep Batch</b> 443320 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> MB443320 <b>GCAL ID</b> 885064 <b>Sample Type</b> Method Blank <b>Prep Date</b> 10/10/2010 08:25 <b>Analytical Date</b> 10/11/2010 13:19 <b>Matrix</b> Water	LCS443320 885065 LCS 10/10/2010 08:25 10/11/2010 13:26 Water				
<b>SW-846 6010B</b>	<b>Units</b> <b>Result</b>	<b>mg/L</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>
7440-39-3 Barium	ND	0.010	0.50	0.45	91	80 - 120
7440-43-9 Cadmium	ND	0.0050	0.50	0.45	91	80 - 120
7440-70-2 Calcium	ND	0.10	5.00	4.53	91	80 - 120
7440-47-3 Chromium	ND	0.010	0.50	0.45	91	80 - 120
7439-89-6 Iron	ND	0.10	5.00	4.52	90	80 - 120
7439-92-1 Lead	ND	0.015	0.50	0.46	92	80 - 120
7439-95-4 Magnesium	ND	0.10	5.00	4.61	92	80 - 120
7439-96-5 Manganese	ND	0.015	0.50	0.45	91	80 - 120
7440-09-7 Potassium	ND	0.50	10.0	9.08	91	80 - 120
7782-49-2 Selenium	ND	0.040	0.50	0.46	93	80 - 120
7440-23-5 Sodium	ND	1.00	20.0	18.7	94	80 - 120
7440-24-6 Strontium	ND	0.050	0.50	0.45	90	80 - 120
7440-66-6 Zinc	ND	0.020	0.50	0.45	89	80 - 120

<b>Analytical Batch</b> 443354 <b>Prep Batch</b> 443320 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> HP-MPA-08-I <b>GCAL ID</b> 21010083206 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 10/10/2010 08:25 <b>Analytical Date</b> 10/11/2010 11:53 <b>Matrix</b> Water	884839MS 885067 MS 10/10/2010 08:25 10/11/2010 13:47 Water				
<b>SW-846 6010B</b>	<b>Units</b> <b>Result</b>	<b>mg/L</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>
7440-39-3 Barium	0.89	0.010	0.50	1.32	86	75 - 125
7440-43-9 Cadmium	0.0	0.0050	0.50	0.47	93	75 - 125
7440-70-2 Calcium	129	0.10	5.00	128	-20*	75 - 125
7440-47-3 Chromium	0.034	0.010	0.50	0.50	93	75 - 125
7439-89-6 Iron	31.7	0.10	5.00	35.6	78	75 - 125
7439-92-1 Lead	0.027	0.015	0.50	0.50	95	75 - 125
7439-95-4 Magnesium	66.3	0.10	5.00	67.4	23*	75 - 125
7439-96-5 Manganese	0.83	0.015	0.50	1.26	86	75 - 125
7440-09-7 Potassium	13.1	0.50	10.0	22.8	98	75 - 125



# Inorganics Quality Control Summary

<b>Analytical Batch</b> 443354 <b>Prep Batch</b> 443320 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> HP-MPA-08-I <b>GCAL ID</b> 21010083206 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 10/10/2010 08:25 <b>Analytical Date</b> 10/11/2010 11:53 <b>Matrix</b> Water	884839MS 885067 MS 10/10/2010 08:25 10/11/2010 13:47 Water					
<b>SW-846 6010B</b>		<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	
7782-49-2	Selenium	0.0	0.040	0.50	0.50	99	75 - 125
7440-23-5	Sodium	466	1.00	20.0	462	-20*	75 - 125
7440-24-6	Strontium	0.84	0.050	0.50	1.27	85	75 - 125
7440-66-6	Zinc	0.13	0.020	0.50	0.60	94	75 - 125

<b>Analytical Batch</b> 443354 <b>Prep Batch</b> 443320 <b>Prep Method</b> SW-846 3010A	<b>Client ID</b> HP-MPA-08-I <b>GCAL ID</b> 21010083206 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 10/10/2010 08:25 <b>Analytical Date</b> 10/11/2010 11:53 <b>Matrix</b> Water	884839DUP 885066 DUP 10/10/2010 08:25 10/11/2010 13:40 Water				
<b>SW-846 6010B</b>		<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Result</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>	
7440-39-3	Barium	0.89	0.010	0.85	5	20
7440-43-9	Cadmium	0.0	0.0050	0.0	0	20
7440-70-2	Calcium	129	0.10	128	0.8	20
7440-47-3	Chromium	0.034	0.010	0.030	13	20
7439-89-6	Iron	31.7	0.10	28.7	10	20
7439-92-1	Lead	0.027	0.015	0.025	8	20
7439-95-4	Magnesium	66.3	0.10	64.2	3	20
7439-96-5	Manganese	0.83	0.015	0.80	4	20
7440-09-7	Potassium	13.1	0.50	12.6	4	20
7782-49-2	Selenium	0.0	0.040	0.0	0	20
7440-23-5	Sodium	466	1.00	460	1	20
7440-24-6	Strontium	0.84	0.050	0.83	1	20
7440-66-6	Zinc	0.13	0.020	0.12	8	20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 443354 <b>Prep Batch</b> 443318 <b>Prep Method</b> SW-846 3005 Dissolved	<b>Client ID</b> MB443318 <b>GCAL ID</b> 885056 <b>Sample Type</b> Method Blank <b>Prep Date</b> 10/10/2010 08:25 <b>Analytical Date</b> 10/11/2010 10:17 <b>Matrix</b> Water	LCS443318 885057 LCS 10/10/2010 08:25 10/11/2010 10:24 Water					
<b>SW-846 6010B Dissolved</b>		<b>Units</b>	mg/L	<b>Spike</b>	<b>Result</b>	<b>% R</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>			<b>Limits % R</b>
7440-39-3	Barium	ND	0.010	0.50	0.47	94	80 - 120
7440-43-9	Cadmium	ND	0.0050	0.50	0.48	95	80 - 120
7440-70-2	Calcium	ND	0.10	5.00	4.69	94	80 - 120
7440-47-3	Chromium	ND	0.010	0.50	0.47	93	80 - 120
7439-89-6	Iron	ND	0.10	5.00	4.68	94	80 - 120
7439-92-1	Lead	ND	0.015	0.50	0.48	96	80 - 120
7439-95-4	Magnesium	ND	0.10	5.00	4.72	94	80 - 120
7439-96-5	Manganese	ND	0.015	0.50	0.47	94	80 - 120
7440-09-7	Potassium	ND	0.50	10.0	9.27	93	80 - 120
7782-49-2	Selenium	ND	0.040	0.50	0.50	100	80 - 120
7440-23-5	Sodium	ND	1.00	20.0	18.2	91	80 - 120
7440-24-6	Strontium	ND	0.050	0.50	0.47	93	80 - 120
7440-66-6	Zinc	ND	0.020	0.50	0.47	94	80 - 120

<b>Analytical Batch</b> 443354 <b>Prep Batch</b> 443318 <b>Prep Method</b> SW-846 3005 Dissolved	<b>Client ID</b> HP-MPA-03-I <b>GCAL ID</b> 21010083201 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 10/10/2010 08:25 <b>Analytical Date</b> 10/11/2010 10:31 <b>Matrix</b> Water	884834MS 885059 MS 10/10/2010 08:25 10/11/2010 10:46 Water					
<b>SW-846 6010B Dissolved</b>		<b>Units</b>	mg/L	<b>Spike</b>	<b>Result</b>	<b>% R</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>			<b>Limits % R</b>
7440-39-3	Barium	1.58	0.010	0.50	2.12	108	75 - 125
7440-43-9	Cadmium	0.0	0.0050	0.50	0.46	92	75 - 125
7440-70-2	Calcium	186	0.10	5.00	196	205*	75 - 125
7440-47-3	Chromium	0.0016	0.010	0.50	0.46	91	75 - 125
7439-89-6	Iron	5.36	0.10	5.00	10.1	95	75 - 125
7439-92-1	Lead	0.0	0.015	0.50	0.47	95	75 - 125
7439-95-4	Magnesium	63.0	0.10	5.00	70.8	155*	75 - 125
7439-96-5	Manganese	0.37	0.015	0.50	0.84	95	75 - 125
7440-09-7	Potassium	5.72	0.50	10.0	16.1	103	75 - 125

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 443354 <b>Prep Batch</b> 443318 <b>Prep Method</b> SW-846 3005 Dissolved	<b>Client ID</b> HP-MPA-03-I <b>GCAL ID</b> 21010083201 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 10/10/2010 08:25 <b>Analytical Date</b> 10/11/2010 10:31 <b>Matrix</b> Water	884834MS 885059 MS 10/10/2010 08:25 10/11/2010 10:46 Water					
<b>SW-846 6010B Dissolved</b>		<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	
7782-49-2	Selenium	0.0	0.040	0.50	0.51	102	75 - 125
7440-23-5	Sodium	445	1.00	20.0	478	165*	75 - 125
7440-24-6	Strontium	1.42	0.050	0.50	1.94	105	75 - 125
7440-66-6	Zinc	0.030	0.020	0.50	0.51	95	75 - 125

<b>Analytical Batch</b> 443354 <b>Prep Batch</b> 443318 <b>Prep Method</b> SW-846 3005 Dissolved	<b>Client ID</b> HP-MPA-03-I <b>GCAL ID</b> 21010083201 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 10/10/2010 08:25 <b>Analytical Date</b> 10/11/2010 10:31 <b>Matrix</b> Water	884834DUP 885058 DUP 10/10/2010 08:25 10/11/2010 10:39 Water				
<b>SW-846 6010B Dissolved</b>		<b>Units</b> mg/L <b>Result</b> <b>RDL</b>	<b>Result</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>	
7440-39-3	Barium	1.58	0.010	1.65	4	20
7440-43-9	Cadmium	0.0	0.0050	0.0	0	20
7440-70-2	Calcium	186	0.10	192	3	20
7440-47-3	Chromium	0.0016	0.010	0.0016	0	20
7439-89-6	Iron	5.36	0.10	5.61	5	20
7439-92-1	Lead	0.0	0.015	0.0	0	20
7439-95-4	Magnesium	63.0	0.10	66.0	5	20
7439-96-5	Manganese	0.37	0.015	0.39	5	20
7440-09-7	Potassium	5.72	0.50	6.12	7	20
7782-49-2	Selenium	0.0	0.040	0.0	0	20
7440-23-5	Sodium	445	1.00	459	3	20
7440-24-6	Strontium	1.42	0.050	1.47	3	20
7440-66-6	Zinc	0.030	0.020	0.033	10	20

# Inorganics Quality Control Summary

<b>Analytical Batch</b> 443352 <b>Prep Batch</b> 443319 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> MB443319 <b>GCAL ID</b> 885060 <b>Sample Type</b> Method Blank <b>Prep Date</b> 10/10/2010 09:35 <b>Analytical Date</b> 10/12/2010 12:48 <b>Matrix</b> Water	LCS443319 885061 LCS 10/10/2010 09:35 10/12/2010 12:54 Water
<b>SW-846 7010 Arsenic</b>		
<b>Units</b> mg/L <b>Result</b> ND	<b>RDL</b> 0.010	<b>Spike Added</b> 0.040
7440-38-2 Arsenic		<b>Result</b> 0.037 <b>% R</b> 93 <b>Control Limits % R</b> 80 - 120

<b>Analytical Batch</b> 443352 <b>Prep Batch</b> 443319 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> HP-MPA-04-I <b>GCAL ID</b> 21010083202 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 10/10/2010 09:35 <b>Analytical Date</b> 10/12/2010 13:31 <b>Matrix</b> Water	884835MS 885063 MS 10/10/2010 09:35 10/12/2010 13:12 Water
<b>SW-846 7010 Arsenic</b>		
<b>Units</b> mg/L <b>Result</b> 0.0050	<b>RDL</b> 0.010	<b>Spike Added</b> 0.040
7440-38-2 Arsenic		<b>Result</b> 0.049 <b>% R</b> 109 <b>Control Limits % R</b> 75 - 125

<b>Analytical Batch</b> 443352 <b>Prep Batch</b> 443319 <b>Prep Method</b> SW-846 3020A	<b>Client ID</b> HP-MPA-04-I <b>GCAL ID</b> 21010083202 <b>Sample Type</b> SAMPLE <b>Prep Date</b> 10/10/2010 09:35 <b>Analytical Date</b> 10/12/2010 13:31 <b>Matrix</b> Water	884835DUP 885062 DUP 10/10/2010 09:35 10/12/2010 13:06 Water
<b>SW-846 7010 Arsenic</b>		
<b>Units</b> mg/L <b>Result</b> 0.0050	<b>RDL</b> 0.010	<b>Result</b> 0.0057
7440-38-2 Arsenic		<b>RPD</b> 13 <b>RPD Limit</b> 20

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 443292 <b>Prep Batch</b> N/A	<b>Client ID</b> MB443292 <b>GCAL ID</b> 884800 <b>Sample Type</b> Method Blank <b>Analytical Date</b> 10/08/2010 14:00 <b>Matrix</b> Water	LCS443292 884801 LCS 10/08/2010 14:00 Water					
<b>SM 2540C TDS</b>		<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b>	<b>Result</b>	<b>% R</b>	<b>Control Limits % R</b>	
WET-035	Total Dissolved Solids(TDS)	ND	10.0	1000	976	97.6	80 - 120

<b>Analytical Batch</b> 443292 <b>Prep Batch</b> N/A	<b>Client ID</b> U43010B <b>GCAL ID</b> 21010070401 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 10/08/2010 14:00 <b>Matrix</b> Water	884165DUP 884802 DUP 10/08/2010 14:00 Water				
<b>SM 2540C TDS</b>		<b>Units</b> mg/L <b>Result</b> RDL	<b>Result</b>	<b>RPD</b>	<b>RPD Limit</b>	
WET-035	Total Dissolved Solids(TDS)	2860	10.0	2830	1.1	5

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 443642 <b>Prep Batch</b> N/A	<b>Client ID</b> <b>GCAL ID</b> <b>Sample Type</b> <b>Analytical Date</b> <b>Matrix</b>	SP-MPA-03 (0-0.5) 21010083209 SAMPLE 10/14/2010 14:16 Solid	884842DUP 886931 DUP 10/14/2010 14:16 Solid			
<b>SM 2540G Dry Weight</b>		<b>Units</b> <b>Result</b>	<b>%</b> <b>RDL</b>	<b>Result</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
WET-037	Total Moisture	44.4	0.010	44.6	0.45	25

<b>Analytical Batch</b> 443643 <b>Prep Batch</b> N/A	<b>Client ID</b> <b>GCAL ID</b> <b>Sample Type</b> <b>Analytical Date</b> <b>Matrix</b>	HG-MPA-05 (0-0.5) 21010083229 SAMPLE 10/14/2010 15:34 Solid	884869DUP 886932 DUP 10/14/2010 15:34 Solid			
<b>SM 2540G Dry Weight</b>		<b>Units</b> <b>Result</b>	<b>%</b> <b>RDL</b>	<b>Result</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
WET-037	Total Moisture	72.4	0.010	72.1	0.42	25

<b>Analytical Batch</b> 443644 <b>Prep Batch</b> N/A	<b>Client ID</b> <b>GCAL ID</b> <b>Sample Type</b> <b>Analytical Date</b> <b>Matrix</b>	HG-MPA-02 (0.5-2) 21010083249 SAMPLE 10/14/2010 16:37 Solid	884889DUP 886933 DUP 10/14/2010 16:37 Solid			
<b>SM 2540G Dry Weight</b>		<b>Units</b> <b>Result</b>	<b>%</b> <b>RDL</b>	<b>Result</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
WET-037	Total Moisture	63.7	0.010	64.0	0.47	25

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 443338 <b>Prep Batch</b> N/A	<b>Client ID</b> MB443338 <b>GCAL ID</b> 885209 <b>Sample Type</b> Method Blank <b>Analytical Date</b> 10/11/2010 09:05 <b>Matrix</b> Water	LCS443338 885210 LCS 10/11/2010 09:06 Water
<b>SM 4500 CL E Chloride</b>	<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b> <b>Result</b> <b>% R</b> <b>Control Limits % R</b>
16887-00-6 Chloride	ND 1.0	60.0 56.6 94 80 - 120

<b>Analytical Batch</b> 443338 <b>Prep Batch</b> N/A	<b>Client ID</b> 2010-0065 <b>GCAL ID</b> 21010071601 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 10/11/2010 09:20 <b>Matrix</b> Water	2010-0065 MS 21010071606 MS 10/11/2010 09:23 Water	2010-0065 MSD 21010071607 MSD 10/11/2010 09:24 Water
<b>SM 4500 CL E Chloride</b>	<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b> <b>Result</b> <b>% R</b> <b>Control Limits % R</b>	<b>Result</b> <b>% R</b> <b>RPD</b> <b>RPD Limit</b>
16887-00-6 Chloride	34.5 1.0	60.0 81.0 78 75 - 125	81.2 78 0.2 25

<b>Analytical Batch</b> 443338 <b>Prep Batch</b> N/A	<b>Client ID</b> HP-MPA-03-I <b>GCAL ID</b> 21010083201 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 10/11/2010 09:08 <b>Matrix</b> Water	884834MS 885211 MS 10/11/2010 09:09 Water	884834MSD 885212 MSD 10/11/2010 09:10 Water
<b>SM 4500 CL E Chloride</b>	<b>Units</b> mg/L <b>Result</b> RDL	<b>Spike Added</b> <b>Result</b> <b>% R</b> <b>Control Limits % R</b>	<b>Result</b> <b>% R</b> <b>RPD</b> <b>RPD Limit</b>
16887-00-6 Chloride	959 50.0	3000 3600 88 75 - 125	3590 88 0.3 25

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 443381 <b>Prep Batch</b> N/A	<b>Client ID</b> HP-MPA-03-I <b>GCAL ID</b> 21010083201 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 10/11/2010 11:43 <b>Matrix</b> Water	884834DUP 885329 DUP 10/11/2010 11:43 Water
<b>SM 2320B Carbonate</b>	<b>Units</b> mg/L CaCO3 <b>Result</b> <b>RDL</b>	<b>Result</b> <b>RPD</b> <b>RPD Limit</b>
T-005-B Bicarbonate Alkalinity	351 1.0	361 3 11
T-005-C Carbonate Alkalinity	0.00 1.0	0.00 0 11



# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 443435 <b>Prep Batch</b> N/A	<b>Client ID</b> MB443435 <b>GCAL ID</b> 885704 <b>Sample Type</b> Method Blank <b>Analytical Date</b> 10/12/2010 09:18 <b>Matrix</b> Solid	LCS443435 885705 LCS 10/12/2010 09:30 Solid	LCSD443435 885706 LCSD 10/12/2010 09:38 Solid								
<b>SW-846 9060 TOC</b>		<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
C-012	Total Organic Carbon	ND	200	10000	10300	103	69 - 128	10300	103	0	25

<b>Analytical Batch</b> 443435 <b>Prep Batch</b> N/A	<b>Client ID</b> SP-MPA-03 (0-0.5) <b>GCAL ID</b> 21010083209 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 10/12/2010 10:47 <b>Matrix</b> Solid	884842DUP 885707 DUP 10/12/2010 11:38 Solid				
<b>SW-846 9060 TOC</b>		<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Result</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
C-012	Total Organic Carbon	89800	200	89000	0.9	25

<b>Analytical Batch</b> 443435 <b>Prep Batch</b> N/A	<b>Client ID</b> SP-MPA-03 (0-0.5) <b>GCAL ID</b> 21010083209 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 10/12/2010 10:47 <b>Matrix</b> Solid	884842DUP 885709 DUP 10/12/2010 13:10 Solid				
<b>SW-846 9060 TOC</b>		<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Result</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
C-012	Total Organic Carbon	89800	200	84400	6	25

<b>Analytical Batch</b> 443502 <b>Prep Batch</b> N/A	<b>Client ID</b> MB443502 <b>GCAL ID</b> 886003 <b>Sample Type</b> Method Blank <b>Analytical Date</b> 10/13/2010 08:39 <b>Matrix</b> Solid	LCS443502 886004 LCS 10/13/2010 08:47 Solid	LCSD443502 886005 LCSD 10/13/2010 08:53 Solid								
<b>SW-846 9060 TOC</b>		<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
C-012	Total Organic Carbon	ND	200	10000	10300	103	69 - 128	9920	99	4	25

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 443502 <b>Prep Batch</b> N/A	<b>Client ID</b> <b>GCAL ID</b> <b>Sample Type</b> <b>Analytical Date</b> <b>Matrix</b>	HG-MPA-05 (6-8) 21010083231 SAMPLE 10/13/2010 10:54 Solid	884871DUP 886006 DUP 10/13/2010 11:07 Solid			
<b>SW-846 9060 TOC</b>		<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Result</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
C-012	Total Organic Carbon	47400	200	47700	0.6	25

<b>Analytical Batch</b> 443502 <b>Prep Batch</b> N/A	<b>Client ID</b> <b>GCAL ID</b> <b>Sample Type</b> <b>Analytical Date</b> <b>Matrix</b>	HG-MPA-05 (6-8) 21010083231 SAMPLE 10/13/2010 10:54 Solid	884871DUP 886008 DUP 10/13/2010 11:30 Solid			
<b>SW-846 9060 TOC</b>		<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Result</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
C-012	Total Organic Carbon	47400	200	50200	6	25

<b>Analytical Batch</b> 443578 <b>Prep Batch</b> N/A	<b>Client ID</b> <b>GCAL ID</b> <b>Sample Type</b> <b>Analytical Date</b> <b>Matrix</b>	MB443578 886416 Method Blank 10/14/2010 08:22 Solid	LCS443578 886417 LCS 10/14/2010 08:28 Solid	LCSD443578 886418 LCSD 10/14/2010 08:34 Solid							
<b>SW-846 9060 TOC</b>		<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Spike</b> <b>Added</b>	<b>Result</b>	<b>% R</b>	<b>Control</b> <b>Limits % R</b>	<b>Result</b>	<b>% R</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
C-012	Total Organic Carbon	ND	200	10000	10400	104	69 - 128	9920	99	5	25

<b>Analytical Batch</b> 443578 <b>Prep Batch</b> N/A	<b>Client ID</b> <b>GCAL ID</b> <b>Sample Type</b> <b>Analytical Date</b> <b>Matrix</b>	HG-MPA-01 (5-7) 21010083247 SAMPLE 10/14/2010 09:42 Solid	884887DUP 886419 DUP 10/14/2010 09:55 Solid			
<b>SW-846 9060 TOC</b>		<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Result</b>	<b>RPD</b>	<b>RPD</b> <b>Limit</b>
C-012	Total Organic Carbon	44300	200	44600	0.7	25

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 443578 <b>Prep Batch</b> N/A	<b>Client ID</b> <b>GCAL ID</b> <b>Sample Type</b> <b>Analytical Date</b> <b>Matrix</b>	HG-MPA-01 (5-7) 21010083247 SAMPLE 10/14/2010 09:42 Solid	884887DUP 886421 DUP 10/14/2010 10:44 Solid		
<b>SW-846 9060 TOC</b>		<b>Units</b> <b>Result</b>	<b>mg/kg</b> <b>RDL</b>	<b>Result</b>	<b>RPD</b> <b>Limit</b>
C-012	Total Organic Carbon	44300	200	46500	5 25

# General Chemistry Quality Control Summary

<b>Analytical Batch</b> 443438 <b>Prep Batch</b> N/A	<b>Client ID</b> MB443438 <b>GCAL ID</b> 885719 <b>Sample Type</b> Method Blank <b>Analytical Date</b> 10/12/2010 10:06 <b>Matrix</b> Water	<b>LCS443438</b> 885720 LCS 10/12/2010 10:06 Water				
<b>EPA 375.4 Sulfate</b>		<b>Units</b>	<b>mg/L</b>	<b>Spike</b>	<b>Result</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>		<b>Limits % R</b>
14808-79-8	Sulfate	ND	5.0	20.0	20.7	103 80 - 120

<b>Analytical Batch</b> 443438 <b>Prep Batch</b> N/A	<b>Client ID</b> HP-MPA-03-I <b>GCAL ID</b> 21010083201 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 10/12/2010 10:07 <b>Matrix</b> Water	<b>884834MS</b> 885722 MS 10/12/2010 10:07 Water				
<b>EPA 375.4 Sulfate</b>		<b>Units</b>	<b>mg/L</b>	<b>Spike</b>	<b>Result</b>	<b>Control</b>
		<b>Result</b>	<b>RDL</b>	<b>Added</b>		<b>Limits % R</b>
14808-79-8	Sulfate	0.00	5.0	20.0	23.3	116 75 - 125

<b>Analytical Batch</b> 443438 <b>Prep Batch</b> N/A	<b>Client ID</b> HP-MPA-03-I <b>GCAL ID</b> 21010083201 <b>Sample Type</b> SAMPLE <b>Analytical Date</b> 10/12/2010 10:07 <b>Matrix</b> Water	<b>884834DUP</b> 885721 DUP 10/12/2010 10:07 Water				
<b>EPA 375.4 Sulfate</b>		<b>Units</b>	<b>mg/L</b>	<b>Result</b>	<b>RPD</b>	<b>RPD</b>
		<b>Result</b>	<b>RDL</b>		<b>Limit</b>	
14808-79-8	Sulfate	0.00	5.0	0.00	0	25

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Lab use only

Client Name <i>P. Sani</i>	Client # 4271	Workorder # 210100832	Due Date 10-15-10
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**Report to:**  
 Client: *Michael Pisani & Assoc.*  
 Address: *100 Paydros St Suite 1430*  
*NOLA 70163*  
 Contact: *Jon Miller*  
 Phone: *(504) 582-2468*  
 Fax: *jgmiller@ix.netcom.com*

**Bill to:**  
 Client: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Contact: *SAME*  
 Phone: \_\_\_\_\_  
 Fax: \_\_\_\_\_

**Analytical Requests & Method**  
*Metals (total/dissolved) Pb, Cu, Cr, Fe, Pb, Cd, Ni, Mn, K, Se, Al, Zn, Sr*  
*Chlorides, TDS, Carbonate/Bicarbonate/Alk.*  
*Sulfate*  
*BTEX*  
*TPH Fractions 1006*  
*Hg (total/dissolved) 10-13.10 bym*

**Lab use only:**  
 Custody Seal  
 used  yes  no  
 in tact  yes  no  
 Temperature °C *24*

P.O. Number \_\_\_\_\_ Project Name/Number  
*07-47 East White Lake*  
 Sampled By: *PMR + JQM*

Matrix <sup>1</sup>	Date	Time (2400)	Coed	Grab	Sample Description	Preservatives	No Containers	Remarks	Lab ID
W	10-4-10	1130		X	HP-MPA-03-I	<i>None NO A/B/C</i>	9		1
	10-4-10	1540			HP-MPA-04-I				2
	10-6-10	1445			HP-MPA-05-I				3
	10-6-10	1600			HP-MPA-06-I				4
	10-5-10	1545			HP-MPA-07-I				5
	10-5-10	1000			HP-MPA-08-I			<i>Sample time 1000</i>	6
	10-6-10	845			HP-MPA-09-I				7
	10-6-10	1730			HP-MPA-10-I				8

Turn Around Time:  24-48 hrs.  3 days  1 week  Standard  Other \_\_\_\_\_

Relinquished by: (Signature) <i>[Signature]</i>	Received by: (Signature) <i>[Signature]</i>	Date: 10-7-10	Time: 1700
Relinquished by: (Signature) <i>[Signature]</i>	Received by: (Signature) <i>[Signature]</i>	Date: 10-8-10	Time: 1100
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:

**Note:**  
 Contact Jon Miller when samples are received.  
 \*Field Filtered. Email results to *jgmiller@ix.netcom.com*  
*pmr@ix.netcom.com*  
 By submitting these samples, you agree to the terms and conditions contained in our most recent schedule of services.

Matrix<sup>1</sup>: W = water, S = soil, SD = solid, L = liquid, SL = sludge, o = oil, CT = charcoal tube, A = air bag

We cannot accept verbal changes. Please fax written changes to (225) 767-5717

WHITE: CLIENT FINAL REPORT — CANARY: LABORATORY — PINK: CLIENT

Lab use only	P. Sani	4271	210100632	10-15-10
	Client Name	Client #	Workorder #	Due Date

<b>Report to:</b> Client: <u>MICHAEL PICHNI ASSOCIATES</u> Address: <u>1100 Poydras St Suite 1470</u> <u>New Orleans La 70163</u> Contact: <u>Jon Miller</u> Phone: <u>504-582-2460</u> Fax: <u>504-582-2470</u>		<b>Bill to:</b> Client: _____ Address: _____ Contact: <u>SAWZ</u> Phone: _____ Fax: _____		<b>Analytical Requests &amp; Method</b> TPH 1006 TOC * 70 Moisture * * per client request 10-14-10 Bgm			<b>Lab use only:</b> Custody Seal used <input type="checkbox"/> yes <input type="checkbox"/> no in tact <input type="checkbox"/> yes <input type="checkbox"/> no Temperature °C <u>44</u>					
P.O. Number: <u>07-47</u> Project Name/Number: <u>East White Lake / 07-47</u>		Sampled By: <u>JQM / JHT / PMR</u>										
Matrix <sup>1</sup>	Date	Time (2400)	Comp	Gabb	Sample Description	Preservatives	No Containers	TPH 1006	TOC	70 Moisture *	Remarks:	Lab ID
S	10-5-10	1600	X	X	SP-MPA-03 (0-0.5')	None	1	X	X	X		9
		1605	X	X	(0.5-2')		1	X	X			10
		1700	X	X	(4-6')		1	X	X			11
		1730	X	X	(9-10')		1	X	X			12
	10-6-10	1520	X	X	SP-MPA-04 (0-0.5')		1	X	X			13
		1525	X	X	(0.5-2')		1	X	X			14
		1530	X	X	(5-7')		1	X	X			15
		1540	X	X	(9-10')		1	X	X			16

Turn Around Time:  24-48 hrs.  3 days  1 week  Standard  Other

Relinquished by: (Signature) <u>[Signature]</u>	Received by: (Signature) <u>[Signature]</u>	Date: <u>10-8-10</u>	Time: <u>1100</u>	Note: Contact Jon Miller when samples received Results to <u>jquiller@ix.netcom.com</u> <u>pmritchie@ix.netcom.com</u> By submitting these samples, you agree to the terms and conditions contained in our most recent schedule of services.
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:	
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:	

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Lab use only	Client Name: <u>Pisani</u>	Client #: <u>4271</u>	Workorder #: <u>210100837</u>	Due Date: <u>10-13-10</u>
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<b>Report to:</b> Client: <u>MICHAEL PISANI &amp; ASSOCIATES</u> Address: <u>1100 Poydras St Suite 1430</u> <u>New Orleans La 70163</u> Contact: <u>Jon Miller</u> Phone: <u>(504) 582-2468</u> Fax: <u>jqmiller@ix.netcom.com</u>	<b>Bill to:</b> Client: _____ Address: _____ Contact: <u>JAME</u> Phone: _____ Fax: _____	<b>Analytical Requests &amp; Method</b> TPH 1006 TOC 90 Moisture * * per client request	<b>Lab use only:</b> Custody Seal used <input type="checkbox"/> yes <input type="checkbox"/> no in tact <input type="checkbox"/> yes <input type="checkbox"/> no Temperature °C <u>9.4</u>
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P.O. Number: <u>07-47</u>	Project Name/Number: <u>East White Lake 107-47</u>
Sampled By: <u>JRM/JHS/PMR</u>	

Matrix <sup>1</sup>	Date	Time (2400)	Comp	Grab	Sample Description	Preservatives	No Containers	TPH	TOC	90 Moisture *	Remarks	Lab ID
S	10-5-10	1100	X	X	SP-MPA-01 (0-0.5')	None	1	X	X	X		17
		1105	X	X	(0.5-2')		1	X	X			18
		1110	X	X	(2-4.3')		1	X	X			19
		1115	X	X	(4.3-4.7')		1	X	X			20
		1415	X	X	(8-9')		1	X	X			21
		1145	X	X	SP-MPA-02 (0-0.5')		1	X	X			22
		1150	X	X	(0.5-2')		1	X	X			23
		1155	X	X	(3-4')		1	X	X			24
		1200	X	X	(4-5')		1	X	X			25
	10-6-10	0735	X	X	SP-MPA-02A (3-5')		1	X	X			26
		0740	X	X	(7-8')		1	X	X			27
	10-5-10	0000	X	X	SP-MPA-97 (8-9')		1	X	X			28

Turn Around Time:  24-48 hrs.  3 days  1 week  Standard  Other

Relinquished by: (Signature) <u>[Signature]</u>	Received by: (Signature) <u>[Signature]</u>	Date: <u>10-8-10</u>	Time: <u>1100</u>	Note: <u>Contact Jon Miller when samples received.</u> <u>Results to jqmiller@ix.netcom.com</u> <u>pmritchie@ix.netcom.com</u> By submitting these samples, you agree to the terms and conditions contained in our most recent schedule of services.
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:	
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:	

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Lab use only	Client Name: <u>P. Sani</u>	Client #: <u>4271</u>	Workorder #: <u>210100232</u>	Due Date: <u>10-15-10</u>
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<b>Report to:</b> Client: <u>MICHAEL P. SANI &amp; ASSOCIATES</u> Address: <u>1100 Poydras St Suite 1430</u> <u>New Orleans LA 70163</u> Contact: <u>Jon Miller</u> Phone: <u>504-582-2468</u> Fax: <u>504-582-2470</u>	<b>Bill to:</b> Client: _____ Address: <u>St Luke</u> Contact: _____ Phone: _____ Fax: _____	<b>Analytical Requests &amp; Method</b> Mercury TOC % Moisture * * per client request <u>10-14-10 Bgm</u>	<b>Lab use only:</b> Custody Seal used <input type="checkbox"/> yes <input type="checkbox"/> no in tact <input type="checkbox"/> yes <input type="checkbox"/> no Temperature °C <u>4.4</u>
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P.O. Number: 07-47 Project Name/Number: East White Lake / 07-47

Sampled By: JOM / JHS / PAR

Matrix <sup>1</sup>	Date	Time (2400)	Comp	Gr	Sample Description	Preservatives	No Con-tainers	Mercury	TOC	% Moisture *	Remarks:	Lab ID
S	10-6-10	1720	X		HG-MPA-05 (0-0.5')	None	2	X	X	X		29
		1725	X		(0.5-2')		2	X	X			30
		1730	X		(6-8')		2	X	X			31
	10-7-10	0945	X		HG-MPA-06 (0-0.5')		2	X	X			32
		0950	X		(0.5-2')		2	X	X			33
		0955	X		(5-6')		2	X	X			34
		1150	X		HG-MPA-07 (0-0.5')		2	X	X			35
		1155	X		(0.5-2')		2	X	X			36
		1200	X		(6.5-7')		2	X	X			37
		1220	X		HG-MPA-08 (0-0.5')		2	X	X			38
		1225	X		(0.5-2')		2	X	X			39
		1230	X		(7.5-8')		2	X	X			40

Turn Around Time:  24-48 hrs.  3 days  1 week  Standard  Other

Relinquished by: (Signature) <u>[Signature]</u>	Received by: (Signature) <u>[Signature]</u>	Date: <u>10-8-10</u>	Time: <u>1120</u>	Note: <u>Contact Jon Miller when received</u> <u>jmiller@ix.netcom.com</u> <u>pmritelia@ix.netcom.com</u> By submitting these samples, you agree to the terms and conditions contained in our most recent schedule of services.
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:	
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:	

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Lab use only	Client Name: <u>Pisani</u>	Client #: <u>4271</u>	Workorder #: <u>210100632</u>	Due Date: <u>10-15-10</u>
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<b>Report to:</b> Client: <u>Michael Pisani + Associates</u> Address: <u>1100 Poydras St Suite 1430</u> <u>New Orleans La 70163</u> Contact: <u>Jon Miller</u> Phone: <u>504-502-2468</u> Fax: <u>504-502-2470</u>	<b>Bill to:</b> Client: _____ Address: _____ Contact: <u>JAM</u> Phone: _____ Fax: _____	<b>Analytical Requests &amp; Method</b> Mercury TOC % Moisture * * per client request <u>10-14-10 8pm</u>	<b>Lab use only:</b> Custody Seal used <input type="checkbox"/> yes <input type="checkbox"/> no in tact <input type="checkbox"/> yes <input type="checkbox"/> no Temperature °C <u>9.4</u>
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P.O. Number: <u>0747</u>	Project Name/Number: <u>East White Lake</u>
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Sampled By: JAM/JHS/PMR

Matrix <sup>1</sup>	Date	Time (2400)	C O S P	G r a b	Sample Description	Preservatives	No Con-tainers	Mercury	TOC	% Moisture *	Remarks:	Lab ID
S	10-7-10	1245		X	HG-MPA-09 (0-0.5)	None	2	X	X	X		41
↓	↓	1250		X	(0.5-2)	↓	2	X	X	↓		42
↓	↓	1255		X	(6-7)	↓	2	X	X	↓		43
↓	↓	2000		X	HG-MPA-98 (0.5-2)	↓	1	X	X	↓		44

Turn Around Time:  24-48 hrs.  3 days  1 week  Standard  Other \_\_\_\_\_

Relinquished by: (Signature) <u>[Signature]</u>	Received by: (Signature) <u>[Signature]</u>	Date: <u>10-8-10</u>	Time: <u>11:20</u>	Note: <u>Contact Jon Miller when received</u> <u>jmiller@ix.netcom.com</u> <u>jsprithie@ix.netcom.com</u> By submitting these samples, you agree to the terms and conditions contained in our most recent schedule of services.
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:	
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:	

Matrix<sup>1</sup>: W = water, S = soil, SD = solid, L = liquid, SL = sludge, o = oil, CT = charcoal tube, A = air bag

We cannot accept verbal changes. Please fax written changes to (225) 767-5717

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GULF COAST ANALYTICAL LABORATORIES, INC.  
7979 GSRI Avenue, Baton Rouge, Louisiana 70820-7402  
Phone 225.769.4900 • Fax 225.767.5717

Lab use only	Client Name: <u>P. Sani</u>	Client #: <u>4271</u>	Workorder #: <u>210100832</u>	Due Date: <u>10-15-10</u>
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**Report to:**  
 Client: MICHAEL PISANI & ASSOCIATES  
 Address: 1100 Poydras St Suite 1430  
New Orleans LA 70163  
 Contact: Jon Miller  
 Phone: 504-582-2468  
 Fax: 504-582-2470

**Bill to:**  
 Client: \_\_\_\_\_  
 Address: JANU  
 Contact: \_\_\_\_\_  
 Phone: \_\_\_\_\_  
 Fax: \_\_\_\_\_

**Analytical Requests & Method**

Mercury	TOC	90 Moisture *	* per client request	10-14-10	8pm
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**Lab use only:**  
 Custody Seal  
 used  yes  no  
 in tact  yes  no  
 Temperature °C 47

P.O. Number: 07-47 Project Name/Number: East White Lake / 07-47

Sampled By: JQM / JHS / pmr

Matrix <sup>1</sup>	Date	Time (2400)	Comp	Grab	Sample Description	Preservatives	No Con-tainers	Remarks:	Lab ID
S	10/6/10	1230		X	HG-MPA - 01 (0-0.5')	None	2		45
		1235		X	↓ (0.5-2')		2		46
		1240		X	↓ (5-7')		2		47
		1300		X	HG-MPA - 02 (0-0.5')		2		48
		1305		X	↓ (0.5-2')		2		49
		1310		X	↓ (5-7')		2		50
		1410		X	HG-MPA - 03 (0-0.5')		2		51
		1415		X	↓ (0.5-2')		2		52
		1420		X	↓ (4-6')		2		53
		1440		X	HG-MPA - 04 (0-0.5')		2		54
		1445		X	↓ (0.5-2')		2		55
		1450		X	↓ (5-7')		2		56

Turn Around Time:  24-48 hrs.  3 days  1 week  Standard  Other

Relinquished by: (Signature) <u>[Signature]</u>	Received by: (Signature) <u>[Signature]</u>	Date: <u>10-8-10</u>	Time: <u>11:00</u>
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:

Note: Contact Jon Miller when received  
jqmiller@ix.netcom.com  
pmritchie@ix.netcom.com  
 By submitting these samples, you agree to the terms and conditions contained in our most recent schedule of services.

Matrix<sup>1</sup>: W = water, S = soil, SD = solid, L = liquid, SL = sludge, o = oil, CT = charcoal tube, A = air bag

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