



Date of Report: 01/06/2016

Megan Graves

Aera Energy

P O Box 11164

Bakersfield, CA 93389-1164

Client Project: [none]

BCL Project: Geochem

BCL Work Order: 1532911

Invoice ID: B223178

Enclosed are the results of analyses for samples received by the laboratory on 12/23/2015. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Kerrie Vaughan
Client Services

Authorized Signature

Certifications: CA ELAP #1186; NV #CA00014; OR ELAP #4032-001; AK UST101

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Table of Contents

Sample Information

Chain of Custody and Cooler Receipt form.....	3
Laboratory / Client Sample Cross Reference.....	5

Sample Results

1532911-01 - TAY34

Geochemical Analysis.....	6
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Quality Control Reports

Water Analysis (General Chemistry)

Method Blank Analysis.....	7
Laboratory Control Sample.....	9
Precision and Accuracy.....	10

Metals Analysis

Method Blank Analysis.....	11
Laboratory Control Sample.....	12
Precision and Accuracy.....	13

Notes

Notes and Definitions.....	14
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BC LABORATORIES INC. COOLER RECEIPT FORM Page 1 Of 1

Submission #: 15-32911

SHIPPING INFORMATION
 Fed Ex UPS Ontrac Hand Delivery
 BC Lab Field Service Other (Specify) _____

SHIPPING CONTAINER
 Ice Chest None Box
 Other (Specify) _____

FREE LIQUID
 YES NO

Refrigerant: Ice Blue Ice None Other Comments: _____

Custody Seals Ice Chest Containers None Comments: _____
 Intact? Yes No Intact? Yes No

All samples received? Yes No All samples containers intact? Yes No Description(s) match COC? Yes No

COC Received YES NO
 Emissivity: 0.97 Container: JDL Thermometer ID: 208 Date/Time 12-23-15
 Temperature: (A) 22 °C / (C) 1.7 °C Analyst Init JDL 14:15

SAMPLE CONTAINERS	SAMPLE NUMBERS									
	1	2	3	4	5	6	7	8	9	10
QT PE UNPRES										
4oz / 8oz / 16oz PE UNPRES										
2oz Cr ⁶⁺										
QT INORGANIC CHEMICAL METALS										
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT CHEMICAL OXYGEN DEMAND										
PIA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL										
QT EPA 1664										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA 508/608/8080										
QT EPA 515.1/8150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK.										
10ml EPA 547										
10ml EPA 531.1										
1oz EPA 548										
YT EPA 549										
YT EPA 8015M										
YT EPA 8270										
oz / 16oz / 32oz AMBER										
oz / 16oz / 32oz JAR										
OIL SLEEVE										
CB VIAL										
LASTIC BAG										
EDLAR BAG										
ERROUS IRON										
NCORE										
MART KIT										
UMMA CANISTER										

Comments: _____
 Sample Numbering Completed By: JDL Date/Time: 12-23-15 1510
 = Actual / C = Corrected



Aera Energy
P O Box 11164
Bakersfield, CA 93389-1164

Reported: 01/06/2016 10:40
Project: Geochem
Project Number: [none]
Project Manager: Megan Graves

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1532911-01	COC Number:	---	Receive Date:	12/23/2015 14:15
	Project Number:	---	Sampling Date:	12/22/2015 00:00
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	TAY34	Lab Matrix:	Water
	Sampled By:	---	Sample Type:	Water

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Project: Geochem
Project Number: [none]
Project Manager: Megan Graves

BCL Sample ID: 1532911-01 Client Sample Name: TAY34, 12/22/2015 12:00:00AM

Geochemical Analysis

Table with 5 columns: Parameter, Value, Standard, Property, and Reference. Includes pH, Specific Gravity @ 15.6 C, Electrical Conductivity mmhos/cm @ 25 C, and Resistivity, ohm meters @ 25 C.

Main table with 5 columns: Ion/Compound, mg/L, meq/L, Reacting Percent, and Method. Lists various ions like Calcium, Magnesium, Sodium, Potassium, Iron, Manganese, Chloride, Sulfate, Hydroxide, Carbonate, and Bicarbonate.

Summary table with 4 columns: Parameter, Value, Unit, and Reference. Includes Total Dissolved Solids, TDS, Dissolved Sulfide, Hydrogen Sulfide, Boron, Barium, Silica, Strontium, Alkalinity, Chloride as NaCl, EC as NaCl, Hardness, Dissolved, Langlier Index, Stiff and Davis Index, and Cation/Anion Balance.

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Reported: 01/06/2016 10:40
Project: Geochem
Project Number: [none]
Project Manager: Megan Graves

Water Analysis (General Chemistry)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BYL2325						
Chloride	BYL2325-BLK1	ND	mg/L	0.50	0.061	
Sulfate	BYL2325-BLK1	ND	mg/L	1.0	0.10	
QC Batch ID: BYL2332						
Total Dissolved Solids @ 180 C	BYL2332-BLK1	ND	mg/L	6.7	6.7	
QC Batch ID: BYL2391						
Hydrogen Sulfide (H2S)	BYL2391-BLK1	ND	mg/L	0.10	0.050	
Alkalinity as CaCO3	BYL2391-BLK1	ND	mg/L	4.1	4.1	
Dissolved Total mg/L (Sum)	BYL2391-BLK1	ND	mg/L	0.10	0.10	
Dissolved Calcium	BYL2391-BLK1	ND	meq/L	0.0050	0.0050	
Dissolved Magnesium	BYL2391-BLK1	ND	meq/L	0.0050	0.0050	
Dissolved Sodium	BYL2391-BLK1	ND	meq/L	0.030	0.030	
Dissolved Potassium	BYL2391-BLK1	ND	meq/L	0.030	0.030	
Dissolved Iron	BYL2391-BLK1	ND	meq/L	0.0030	0.0030	
Dissolved Manganese	BYL2391-BLK1	ND	meq/L	0.0010	0.0010	
Bicarbonate	BYL2391-BLK1	ND	meq/L	0.10	0.10	
Carbonate	BYL2391-BLK1	ND	meq/L	0.10	0.10	
Hydroxide	BYL2391-BLK1	ND	meq/L	0.10	0.10	
Chloride	BYL2391-BLK1	ND	meq/L	0.10	0.10	
Sulfate	BYL2391-BLK1	ND	meq/L	0.10	0.10	
Anion / Cation Balance	BYL2391-BLK1	ND	%	0.10	0.10	
Dissolved Total meq/L (Sum)	BYL2391-BLK1	ND	meq/L	0.10	0.10	
Dissolved Calcium	BYL2391-BLK1	ND	Reacting %	0.01	0.01	
Dissolved Magnesium	BYL2391-BLK1	ND	Reacting %	0.01	0.01	
Dissolved Sodium	BYL2391-BLK1	ND	Reacting %	0.01	0.01	
Dissolved Potassium	BYL2391-BLK1	ND	Reacting %	0.01	0.01	
Dissolved Iron	BYL2391-BLK1	ND	Reacting %	0.01	0.01	
Dissolved Manganese	BYL2391-BLK1	ND	Reacting %	0.01	0.01	
Carbonate	BYL2391-BLK1	ND	Reacting %	0.01	0.01	
Bicarbonate	BYL2391-BLK1	ND	Reacting %	0.01	0.01	
Hydroxide	BYL2391-BLK1	ND	Reacting %	0.01	0.01	
Chloride	BYL2391-BLK1	ND	Reacting %	0.01	0.01	
Sulfate	BYL2391-BLK1	ND	Reacting %	0.01	0.01	
Dissolved Total Reacting Percent (Sum)	BYL2391-BLK1	ND	Reacting %	0.100	0.100	

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Water Analysis (General Chemistry)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BYL2391						
Chloride as NaCl (Salinity)	BYL2391-BLK1	ND	mg/L	1.0	0.11	
EC as NaCl (Salinity)	BYL2391-BLK1	ND	mg/L	1.0	1.0	
Dissolved Hardness as CaCO3	BYL2391-BLK1	ND	mg/L	0.50	0.10	
Langlier Index	BYL2391-BLK1	0	NA	-2.00	-2.00	
Resistivity	BYL2391-BLK1	ND	Ohmmeter	0.010	0.010	
Dissolved Stiff/Davis Stability Index	BYL2391-BLK1	0	NA			
QC Batch ID: BYL2404						
Bicarbonate	BYL2404-BLK1	ND	mg/L	5.0	5.0	
Carbonate	BYL2404-BLK1	ND	mg/L	2.5	2.5	
Hydroxide	BYL2404-BLK1	ND	mg/L	1.4	1.4	
QC Batch ID: BYL2517						
Dissolved Sulfide	BYL2517-BLK1	ND	mg/L	0.10	0.050	
QC Batch ID: BYL2543						
Dissolved Calcium	BYL2543-BLK1	0.019507	mg/L	0.10	0.016	J
Dissolved Magnesium	BYL2543-BLK1	ND	mg/L	0.050	0.019	
Dissolved Sodium	BYL2543-BLK1	ND	mg/L	0.50	0.051	
Dissolved Potassium	BYL2543-BLK1	ND	mg/L	1.0	0.10	

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Reported: 01/06/2016 10:40
Project: Geochem
Project Number: [none]
Project Manager: Megan Graves

Water Analysis (General Chemistry)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab Quals
								Percent Recovery	RPD	
QC Batch ID: BYL2325										
Chloride	BYL2325-BS1	LCS	49.430	50.000	mg/L	98.9		90 - 110		
Sulfate	BYL2325-BS1	LCS	99.708	100.00	mg/L	99.7		90 - 110		
QC Batch ID: BYL2332										
Total Dissolved Solids @ 180 C	BYL2332-BS1	LCS	585.00	586.00	mg/L	99.8		90 - 110		
QC Batch ID: BYL2404										
pH	BYL2404-BS2	LCS	7.0600	7.0000	pH Units	101		95 - 105		
Electrical Conductivity @ 25 C	BYL2404-BS1	LCS	313.30	303.00	umhos/cm	103		90 - 110		
QC Batch ID: BYL2517										
Dissolved Sulfide	BYL2517-BS1	LCS	0.52145	0.50000	mg/L	104		90 - 110		
QC Batch ID: BYL2543										
Dissolved Calcium	BYL2543-BS1	LCS	10.389	10.000	mg/L	104		85 - 115		
Dissolved Magnesium	BYL2543-BS1	LCS	9.2119	10.000	mg/L	92.1		85 - 115		
Dissolved Sodium	BYL2543-BS1	LCS	9.9165	10.000	mg/L	99.2		85 - 115		
Dissolved Potassium	BYL2543-BS1	LCS	9.6327	10.000	mg/L	96.3		85 - 115		

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Water Analysis (General Chemistry)

Quality Control Report - Precision & Accuracy

Table with columns: Constituent, Source Type, Source Sample ID, Source Result, Result, Spike Added, Units, RPD, Percent Recovery, Control Limits RPD, Control Limits Percent Recovery, Lab Qualls. Includes QC batches BYL2325, BYL2332, BYL2404, BYL2517, BYL2543, and BYL2613.

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Metals Analysis

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BYL2543						
Dissolved Barium	BYL2543-BLK1	ND	mg/L	0.010	0.0035	
Dissolved Boron	BYL2543-BLK1	0.016824	mg/L	0.10	0.010	J
Dissolved Iron	BYL2543-BLK1	ND	mg/L	0.050	0.030	
Dissolved Manganese	BYL2543-BLK1	ND	mg/L	0.010	0.0040	
Dissolved Silicon as SiO2	BYL2543-BLK1	0.056825	mg/L	0.20	0.031	J
Dissolved Strontium	BYL2543-BLK1	ND	mg/L	0.010	0.0010	

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Project Manager: Megan Graves

Metals Analysis

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	
QC Batch ID: BYL2543										
Dissolved Barium	BYL2543-BS1	LCS	0.37879	0.40000	mg/L	94.7		85	115	
Dissolved Boron	BYL2543-BS1	LCS	0.90356	1.0000	mg/L	90.4		85	115	
Dissolved Iron	BYL2543-BS1	LCS	0.98558	1.0000	mg/L	98.6		85	115	
Dissolved Manganese	BYL2543-BS1	LCS	0.45668	0.50000	mg/L	91.3		85	115	
Dissolved Silicon as SiO ₂	BYL2543-BS1	LCS	19.249	21.392	mg/L	90.0		85	115	
Dissolved Strontium	BYL2543-BS1	LCS	0.48872	0.50000	mg/L	97.7		85	115	

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Metals Analysis

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Control Limits		Lab
								Percent Recovery	Percent Recovery	
QC Batch ID: BYL2543		Used client sample: N								
Dissolved Barium	DUP	1532792-01	14.526	13.322		mg/L	8.6		20	
	MS	1532792-01	14.526	16.444	2.0000	mg/L		95.9		75 - 125
	MSD	1532792-01	14.526	15.603	2.0000	mg/L	5.2	53.9	20	75 - 125 Q03
Dissolved Boron	DUP	1532792-01	110.06	101.87		mg/L	7.7		20	
	MS	1532792-01	110.06	114.39	5.0000	mg/L		86.7		75 - 125
	MSD	1532792-01	110.06	112.28	5.0000	mg/L	1.9	44.4	20	75 - 125 A03
Dissolved Iron	DUP	1532792-01	4.8621	4.3959		mg/L	10.1		20	
	MS	1532792-01	4.8621	9.8088	5.0000	mg/L		98.9		75 - 125
	MSD	1532792-01	4.8621	9.4796	5.0000	mg/L	3.4	92.4	20	75 - 125
Dissolved Manganese	DUP	1532792-01	0.20778	0.18645		mg/L	10.8		20	J
	MS	1532792-01	0.20778	2.4803	2.5000	mg/L		90.9		75 - 125
	MSD	1532792-01	0.20778	2.4726	2.5000	mg/L	0.3	90.6	20	75 - 125
Dissolved Silicon as SiO2	DUP	1532792-01	94.862	87.079		mg/L	8.6		20	
	MS	1532792-01	94.862	193.76	106.96	mg/L		92.5		75 - 125
	MSD	1532792-01	94.862	185.15	106.96	mg/L	4.5	84.4	20	75 - 125
Dissolved Strontium	DUP	1532792-01	42.969	38.882		mg/L	10.0		20	
	MS	1532792-01	42.969	45.183	2.5000	mg/L		88.5		75 - 125
	MSD	1532792-01	42.969	42.891	2.5000	mg/L	5.2	-3.1	20	75 - 125 Q03

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Notes And Definitions

- J Estimated Value (CLP Flag)
- MDL Method Detection Limit
- ND Analyte Not Detected
- PQL Practical Quantitation Limit
- A03 The sample concentration is more than 4 times the spike level.
- A07 Detection and quantitation limits were raised due to sample dilution caused by high analyte concentration or matrix interference.
- Q03 Matrix spike recovery(s) is(are) not within the control limits.
- R_LI-P The Langlier Index result indicates a tendency to deposit CaCO3.
- S05 The sample holding time was exceeded.