

Thursday, February 08, 2018

Timber Creek Energy

Joe Amato

21603 Hwy 12

Trinidad, CO 81082

Tel: (719) 845-2110 Fax: (719) 845-0108

josephamato@tcenergy.us

Re: Project Name: Hill Ranch

Project Location: Hill Ranch

Oxidor received 1 liquid sample(s). The analysis performed were as follows:

<u>Sample</u>	<u>Sample ID</u>	<u>Matrix</u>	<u>Collected</u>	<u>Analysis</u>
18020053-001	DPHR 093A	Liquid	2/1/2018 10:25	Bicarbonate Alkalinity, Calcium, Magnesium, Sodium, Sodium Adsorption Ratio (SAR), Adjusted, Specific Conductance

To the best of my knowledge, all problems/ anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified via associated flags and/ or in the case narrative. The analyses and data met requirements of NELAC except where noted. All non-NELAC methods are identified accordingly and all estimated uncertainties of test results are within method or EPA specifications.

Respectfully submitted,



Charles Brungardt
President

Timber Creek Energy
Joe Amato

Analytical Report

Project Name: **Hill Ranch**

Customer Sample ID: **DPHR 093A**

Oxidor Sample ID: 18020053-001

Sample Received: 2/2/2018

Matrix: **Liquid**

Sample Collected: **2/1/2018 10:25**

Parameter	MQL	PQL	Result	Units	Date Analyzed	Method	Analyst	Flags
General Chemistry								
Alkalinity, Bicarbonate	10	10.0	540	mg/L	02/05/18 08:30	SM-2320-B	B.F.	
SAR, Adjusted			35.1			Calculation		E-5
Conductivity	0.1	0.100	1.17	dS/m	02/02/18 14:00	120.1	B.F.	S-14
Metals								
<i>Digested by method 200.8 on 02/06/18 at 09:03</i>								
Calcium	0.5	0.100	2.31	mg/L	02/07/18 12:09	200.8	S.M.	C-1
Magnesium	0.5	0.100	0.436	mg/L	02/07/18 12:09	200.8	S.M.	C-1
Sodium	0.5	5.00	283	mg/L	02/07/18 12:07	200.8	S.M.	D-1

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Sample Cross Reference

Project Name: **Hill Ranch**

Customer ID:	Lab ID:	Test	Method	QCBatchID:
DPHR 093A	18020053-001	Bicarbonate Alkalinity	SM-2320-B	ALKA_00122_L
		Specific Conductance	120.1	COND_05517_L
		Sodium	200.8	META_11271_L
		Magnesium	200.8	META_11271_L
		Calcium	200.8	META_11271_L

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QC Summary

Project Name: **Hill Ranch**

QC Type	Parameter	Result	Reference Value	Spike Conc	Rec	Rec Limits	RPD	RPD Limits	Flags
QCBatchID ALKA_00122_L									
Blank	Alkalinity, Bicarbonate	ND mg/L							
LCS	Alkalinity, Total	96.0 mg/L		100 mg/L	96%	90-110%			
LCSD	Alkalinity, Total	96.0 mg/L		100 mg/L	96%	90-110%	0.0%	0-20%	
MS	Alkalinity, Total	1900 mg/L	880 mg/L	1000 mg/L	102%	80-120%			
MSD	Alkalinity, Total	1880 mg/L	880 mg/L	1000 mg/L	100%	80-120%	1.1%	0-20%	
QCBatchID COND_05517_L									
Blank	Conductivity	ND µmhos/cm							
LCS	Conductivity	503 µmhos/cm		500 µmhos/cm	101%	90-110%			
LCSD	Conductivity	503 µmhos/cm		500 µmhos/cm	101%	90-110%	0.0%	0-25%	
Replicate	Conductivity	1900 µmhos/cm	1900 µmhos/cm				0.0%	0-25%	
QCBatchID META_11271_L									
Blank	Calcium	ND mg/L							
	Magnesium	ND mg/L							
	Sodium	ND mg/L							
LCS	Calcium	9.90 mg/L		10.1 mg/L	98%	85-115%			
	Magnesium	9.79 mg/L		10.1 mg/L	97%	85-115%			
	Sodium	9.89 mg/L		10.1 mg/L	98%	85-115%			
LCSD	Calcium	10.2 mg/L		10.1 mg/L	101%	85-115%	3.0%	0-20%	
	Magnesium	10.1 mg/L		10.1 mg/L	100%	85-115%	3.1%	0-20%	
	Sodium	9.92 mg/L		10.1 mg/L	98%	85-115%	0.3%	0-20%	
MS	Calcium	81.4 mg/L	35.1 mg/L	50.5 mg/L	92%	80-120%			
	Magnesium	52.3 mg/L	2.87 mg/L	50.5 mg/L	98%	80-120%			
	Sodium	91.4 mg/L	47.9 mg/L	50.5 mg/L	86%	80-120%			
MSD	Calcium	83.1 mg/L	35.1 mg/L	50.5 mg/L	95%	80-120%	2.1%	0-20%	
	Magnesium	52.9 mg/L	2.87 mg/L	50.5 mg/L	99%	80-120%	1.1%	0-20%	
	Sodium	94.9 mg/L	47.9 mg/L	50.5 mg/L	93%	80-120%	3.8%	0-20%	

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Case Narrative

Project Name: **Hill Ranch**

C-1	SDL / SQL lowered by means of initial sample aliquot adjustment.
D-1	Elevated reporting limit(s) due to dilution. Dilution resulted from sample matrix interference, high target analyte(s), high non-target analyte(s) or a combination thereof.
E-5	Calculation not available under scope of NELAP accreditations. Individual components may or may not be available.
S-14	Reported @ 25.0 °C
ppm	Parts per million = mg/Kg or mg/L
ppb	Parts per billion = ug/Kg or ug/L
MQL	Method quantitation limit
SDL	Sample detection limit (reflects any laboratory adjustments made to the sample during analysis such as dry weight or dilutions)
SQL	Sample quantitation limit (reflects any laboratory adjustments made to the sample during analysis such as dry weight or dilution)
ND	Analyte not detected at or above SQL
LCS/LCSD	Laboratory control spike / Laboratory control spike duplicate
MS/MSD	Matrix spike / Matrix spike duplicate
RPD	Relative percent difference
Sub	Analysis performed by subcontract laboratory
*	Refer to QC section and / or Case Narrative

Solid samples submitted to the laboratory for analysis by SW-846 Method 8260 should be collected by SW-846 Method 5035. Those samples in which concentrations are less than or equal to 200 ug/kg should be collected in accordance with SW-846 Method 5035, Section 6.2.1. For samples with higher concentrations (> 200 ug/kg), collect samples by SW-846 Method 5035, Section 6.2.2 or 6.2.3. Sample results may not accurately reflect volatile concentrations if collection is not performed according to the referenced methodologies.

Solid samples submitted to the laboratory for analysis by TNRCC Method 1005 should be collected in accordance to the methodology. Those samples in which concentrations of C6 to C12 are known to be absent, or fall under the Petroleum Storage Tank (PST) rule, may be collected in bulk sample jars in accordance with TNRCC Method 1005, Revision 3 clarifications. For samples with concentrations of C6 to C12, or where knowledge of the site does not exist, collect samples by TNRCC Method 1005, Section 6.1. Sample results may not accurately reflect TPH concentrations if collection is not performed according to the referenced methodologies.

Solid sample results reported on a dry weight basis for all applicable analysis, unless otherwise noted. Dry weight calculations based upon % solids obtained as outlined in EPA method 5035 section 7.5.

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Oxidor Laboratories, LLC certifies to the best of its knowledge that all results contained in this report are consistent with the National Environmental Laboratory Accreditation Program, except where otherwise noted.

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Sample Preservation Verification

Project Name: **Hill Ranch**

Receipt temp: **3.1 °C on Ice**

Receipt method: **Fed Ex**

Custody seal intact: **Yes**

All samples / labels received intact: **Yes**

Customer Sample ID: **DPHR 093A**

Collected By: **Dennis Barton**

Oxidor Sample ID: **18020053-001**

Collector Affiliation: **Timber Creek Energy**

Collected: **02/01/18 10:25**

Matrix: **Liquid**

<u>Bottle Type</u>	<u>Count</u>	<u>Collection Method</u>	<u>Parts / Interval</u>	<u>Indicated Preservation</u>	<u>pH</u>
250 mL Plastic	1	Grab		HNO3	<2
250 mL Plastic	1	Grab		Temp	-

Sample conditions at time of receipt at laboratory verified in part or in whole by:

N.F.



Documentation

PROJECT DESCRIPTION: Hill Ranch

OXIDOR Laboratories, LLC
1825 East Plano Parkway, #160
Plano, TX 75074-8570
P: 972.424.6422 F: 972.424.6508
customerservice@oxidor.com

Chain of Custody Record

Page ____ of ____



Send Report To		Project / Report Information	
Company Name Timber Creek Energy		Circle Requested Turn Around Time (Less than 2 Days must be verified with lab) <input checked="" type="checkbox"/> 7-10 Days <input type="checkbox"/> 5-7 Days <input type="checkbox"/> RUSH <input type="checkbox"/> 3-4 Days <input type="checkbox"/> 2 Days <input type="checkbox"/> ASAP	
Address 21603 Hwy 12		Project Name Hill Ranch	
City Trinidad	State CO	Zip 81082	Project Location Hill Ranch
Contact Name Dennis Barton		Project #	PO #
Contact Email dennisbarton@tcenergy.us		Sampler Name Dennis Barton	
Phone (719) 845-2126	Fax (719) 859-1826	Sampler Company Timber Creek Energy	
Send Invoice To (Only if Different from above)		Sampler Signature <i>Dennis Barton</i>	
Company Name		Special Instructions *	
Address		Matrix Codes L - Liquid S - Solid W - Wipes A - Air	
City	State	Zip	Preservation Codes 1 - None 4 - HCl 2 - HNO ₃ 5 - NaOH 3 - H ₂ SO ₄ 6 - Ice 7 - Other
Contact Name		Container Codes P - Plastic G - Glass O - Other	
Phone	Fax	*Please confirm conditional requests prior to additional analysis	

OXIDOR Order ID	Customer Sample ID	Sample Info		Matrix	# of Containers	Container Type	Pres Code	(Comp / Grab)	Parts / Interval	Hold	SAR/EC	Requested Analysis										Total Solids / Dry Weight	Laboratory Review Checklist	Chromatograms / Data Pages
		Date	Time																					
18020053 - 001	1 DPHR 093A	2/01/18	9:25 AM	L	2	P	6/2	G			✓													
	2 DPHR 035A	2/01/18	9:42 AM	L	2	P	6/2	G			✓													
	3 DPHR 078A	2/01/18	9:58 AM	L	2	P	6/2	G			✓													
	4 DPHR 010A	2/01/18	10:33AM	L	2	P	6/2	G			✓													
	5																							
	6																							
	7																							
	8																							
	9																							
	10																							
	11																							
	12																							
	13																							
	14																							
	15																							

Relinquished by <i>Dennis Barton</i>	Affiliation TCO	Date 2/01/2018	Time 16:30 MST	Received by X	Affiliation	Date	Time
Relinquished by X	Affiliation	Date	Time	Received by X	Affiliation	Date	Time
Relinquished by X	Affiliation	Date	Time	Received by <i>[Signature]</i>	Affiliation	Date 2/2/18	Time 840

5/22/2008 - Rev. 4.0

Submittal of samples signifies acceptance of OXIDOR's Standard Terms and Conditions.
OXIDOR cannot accept verbal changes to this document. Please fax or email written modifications.

Temp at Receipt 3.1 °C

0x104