



August 21, 2015

FedEx Tracking No. 803457848534

Mr. Isaac Chen  
U.S. Environmental Protection Agency, Region 6  
Regional Oil & Gas Coordinator  
1445 Ross Avenue – Mail Code-6WQ-PP  
Dallas, Texas 75202-2733

Subject: GMG290000 Permit –Water Based Drilling Mud Characterization Study  
Byron Energy Inc. – GMG290553

Dear Mr. Chen

Per the permit requirements in Part I.B.1.d – Water Based Drilling Mud Characterization Study, Byron Energy Inc. (Byron) has conducted an individual study and has collected one sample from the one lease block for which they are the designated operator and conducted drilling operations within the 3-year study time frame: South Marsh Island 6 #001BP2.

The water based mud (WBM) samples were analyzed for the required metals, including:  
Dissolved arsenic, dissolved cadmium, dissolved chromium (VI), dissolved copper, cyanide, dissolved lead, dissolved mercury, dissolved nickel, dissolved selenium, dissolved silver, and dissolved zinc

A summary of the analytical results are presented in the attached Excel table and summary page of the laboratory report. This report is being submitted via hard copy, as well as by email to [chen.isaac@epa.gov](mailto:chen.isaac@epa.gov). The emailed report also contains the Electronic Data Deliverable (EDD) from ALS Laboratory which is an Excel table that is not easy to follow in a printed, hard copy format. The Excel table attached herein provides a more readable summary of the EDD. The complete analytical report from the laboratory can be provided upon request.

Should you have any questions, please call me or our consultant, Ms. Marsha Lutz, of J. Connor Consulting, Inc. at 281-698-8557.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

**BYRON ENERGY INC.**

Prent Kallenberger  
President

Attachment  
REF: DT5517/02940

Water Based Mud Characterization Study - Sampling Results

Byron Energy Inc. - GMG290553

Lease Block/Area	Lease No.	Sampling Date
South Marsh Island 6	OCS-G: 33609	5/28/2014

Parameter *All metals analyzed for dissolved phase	Min. Conc. mg/L	Max.Conc. mg/L	Avg. Conc. mg/L	MDL mg/L	RL mg/L
Arsenic	< 0.0200	< 0.0200	< 0.0200	0.0200	0.100
Cadmium	< 0.0160	< 0.0160	< 0.0160	0.0160	0.0400
Chromium, VI	< 0.00400	< 0.00400	< 0.00400	0.0040	0.010
Copper	< 0.0200	< 0.0200	< 0.0200	0.0200	0.100
Cyanide	< 0.0200	< 0.0200	< 0.0200	0.0200	0.0200
Lead	< 0.0140	< 0.0140	< 0.0140	0.0140	0.100
Mercury	<b>0.00286</b>	<b>0.00286</b>	<b>0.00286</b>	<b>0.000168</b>	<b>0.0008</b>
Nickel	<b>0.0337 J</b>	<b>0.0337 J</b>	<b>0.0337 J</b>	<b>0.0200</b>	<b>0.100</b>
Selenium	< 0.0200	< 0.0200	< 0.0200	0.0200	0.100
Silver	< 0.0160	< 0.0160	< 0.0160	0.0160	0.100
Zinc	< 0.0500	< 0.0500	< 0.0500	0.0500	0.100

MDL - Minimum Detection Limit

RL/MRL - Method Reporting Limit. Also known as LOQ Limit of Quantitation (LOQ)

Values between the MDL and MRL are estimated (see J qualifier).

J - Analyte Detected Below Quantitation Limit

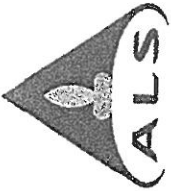
U - Analyzed but not detected above the MDL. Shown as < MDL value.

Client: Tetra Tech, Inc.  
 Project: Gulf of Mexico MPWCS 112C06521  
 Sample ID: Water Base Mud 5/28/14  
 Collection Date: 28-May-2014 08:45

**ANALYTICAL REPORT**  
 WorkOrder:HS14060046  
 Lab ID:HS14060046-01  
 Matrix:Sludge

ANALYSES	RESULT	QUAL	MDL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
<b>SW6020</b>		<b>Method:SW6020</b>		Prep:SW3050A / 18-Jun-2014		Analyst: JCJ	
Arsenic	0.649		0.0950	0.475	mg/Kg	1	18-Jun-2014 21:27
Cadmium	U		0.0475	0.475	mg/Kg	1	18-Jun-2014 21:27
Copper	2.27		0.0950	0.475	mg/Kg	1	18-Jun-2014 21:27
Lead	2.87		0.0475	0.475	mg/Kg	1	18-Jun-2014 21:27
Nickel	2.10		0.0855	0.475	mg/Kg	1	18-Jun-2014 21:27
Selenium	U		0.171	0.475	mg/Kg	1	18-Jun-2014 21:27
Silver	U		0.0760	0.475	mg/Kg	1	18-Jun-2014 21:27
Zinc	7.13		0.237	0.475	mg/Kg	1	19-Jun-2014 18:11
<b>DISSOLVED METALS</b>		<b>Method:SW6020</b>		Prep:SW3010A / 07-Jun-2014		Analyst: RPM	
Arsenic	U		0.0200	0.100	mg/L	20	10-Jun-2014 17:31
Cadmium	U		0.0160	0.0400	mg/L	20	10-Jun-2014 17:31
Copper	U		0.0200	0.100	mg/L	20	11-Jun-2014 12:39
Lead	U		0.0140	0.100	mg/L	20	10-Jun-2014 17:31
Nickel	0.0337	J	0.0200	0.100	mg/L	20	10-Jun-2014 17:31
Selenium	U		0.0200	0.100	mg/L	20	10-Jun-2014 17:31
Silver	U		0.0160	0.100	mg/L	20	10-Jun-2014 17:31
Zinc	U		0.0500	0.100	mg/L	20	10-Jun-2014 17:31
<b>HEXAVALENT CHROMIUM, DISSOLVED</b>		<b>Method:SW7196</b>				Analyst: KHT	
Chromium, Hexavalent	U		0.00400	0.0100	mg/L	1	03-Jun-2014 14:45
<b>HEXAVALENT CHROMIUM - SW7196A</b>		<b>Method:SW7196</b>		Prep:SW3060A / 13-Jun-2014		Analyst: KHT	
Chromium, Hexavalent	5.32		0.679	1.94	mg/Kg	1	13-Jun-2014 11:34
<b>CYANIDE</b>		<b>Method:SW9014</b>		Prep:SW9010C / 05-Jun-2014		Analyst: KHT	
Cyanide	U		0.544	1.81	mg/Kg	1	05-Jun-2014 16:30
<b>CYANIDE - SW9014</b>		<b>Method:SW9014</b>		Prep:SW9010C / 11-Jun-2014		Analyst: KHT	
Cyanide, Dissolved	U		0.0200	0.0200	mg/L	1	11-Jun-2014 12:31
<b>MERCURY - SW7471B</b>		<b>Method:SW7471A</b>		Prep:SW7471A / 20-Jun-2014		Analyst: OFO	
Mercury	0.0344		0.000485	0.00343	mg/Kg	1	20-Jun-2014 13:21
<b>DISSOLVED MERCURY BY 7470A</b>		<b>Method:SW7470</b>		Prep:SW7470 / 21-Jun-2014		Analyst: OFO	
Mercury	0.00286		0.000168	0.000800	mg/L	1	21-Jun-2014 15:47

Note: See Qualifiers Page for a list of qualifiers and their explanation.



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# Chain of Custody Form

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# HS14060046

Tetra Tech EM, Inc.

Gulf of Mexico MPWCS 112C06521



Customer Information		ALS Project Manager: Kristin Brown	
Purchase Order	1097177-Mod 1	Project Name	Gulf of Mexico MPWCS
Work Order	Byron Energy Inc WBM	Project Number	112C06521
Company Name	Tetra Tech, Inc.	Bill To Company	Tetra Tech, Inc.
Send Report To	June Mire	Invoice Attn:	June Mire
Address	1408 Pasadena Ave	Address	1408 Pasadena Ave
City/State/Zip	Metairie, LA 70001	City/State/Zip	Metairie, LA 70001
Phone	504-273-9186	Phone	504-273-9186
Fax		Fax	
e-Mail Address:	june.mire@tetratech.com	e-Mail Address:	june.mire@tetratech.com

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	WATER BASE MUD	5/28/14	08:45				V	V	V								
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s): Please Print & Sign	Shipment Method:	Required Turnaround Time:	Results Due Date:
Steve Swinner	FEDEX	<input checked="" type="checkbox"/> 5Wk Days <input type="checkbox"/> 2Wk Days <input type="checkbox"/> 24 Hour	
Relinquished by:	Received by:	Notes:	
Steve Samin	X [Signature]		
Date: 5/28/14	Time: 09:51		
Date: 5/30/14	Time: 05:55		
Date:	Time:		
Logged by (Laboratory):	Checked by (Laboratory):	Cooler Temp:	QC Package: (Check Box Below)
			Level II: Standard QC
Preservative Key: 1-HGL 2-HNO3 3-H2SO4 4-NaOH 5-NA2S2O3 6-NaHSO4 7-Other 8-4 degrees C 9-5035			Level III: Std QC + Raw Data
			Level IV: SW846 CLP-Like
			Other:

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS Laboratory Group.

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