



August 21, 2015

FedEx Tracking No. 803457848615

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  
Repsol E&P USA Inc. – GMG290338

Dear Mr. Chen:

Per the permit requirements in Part I.B.1.d – Water Based Drilling Mud Characterization Study, Repsol E & P USA Inc. (Repsol) 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 – Keathley Canyon 642 Well # SS001BP01.

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. 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.

Repsol E&P USA Inc.

  
Mark Gress  
Vice President - Land  
Attachment

REF: DT5520/18630

Repsol E&P USA Inc.

2455 Technology Forest Blvd.  
The Woodlands, Texas 77381

Tel: 832/442-1144

**Water Based Mud Characterization Study - Sampling Results****Repsol E&P USA INC. - GMG290338**

Lease Block/Area	Lease No.	Sampling Date
Keathley Canyon 642	OCS-G: 33335	1/14/2014

Parameter *All metals analyzed for dissolved phase	Conc. mg/L	MDL mg/L	RL mg/L
Arsenic	<b>0.527</b>	<b>0.10</b>	<b>0.500</b>
Cadmium	<b>0.0932 J</b>	<b>0.080</b>	<b>0.200</b>
Chromium, VI	< 0.040	0.040	0.100
Copper	<b>0.950</b>	<b>0.10</b>	<b>0.500</b>
Cyanide	< 0.20	0.20	0.200
Lead	<b>5.57</b>	<b>0.070</b>	<b>0.500</b>
Mercury	<b>0.00976</b>	<b>0.000420</b>	<b>0.00200</b>
Nickel	< 0.10	0.10	0.500
Selenium	< 0.10	0.10	0.500
Silver	<b>0.261 J</b>	<b>0.080</b>	<b>0.500</b>
Zinc	<b>2.40</b>	<b>0.25</b>	<b>0.500</b>

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 &lt; MDL value.

**ALS Environmental**

Date: 07-Feb-14

Client: Tetra Tech, Inc.  
 Project: Gulf of Mexico MPWCS 112C06164  
 Sample ID: Reposol KC642 WBM  
 Collection Date: 1/14/2014 01:45 PM

Work Order: 1401623  
 Lab ID: 1401623-01  
 Matrix: SLUDGE

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DISSOLVED MERCURY BY 7470A</b> Method: SW7470 Prep: SW7470 / 1/27/14 Analyst: OFO							
Mercury	0.00976		0.00042	0.00200	mg/L	1	1/27/2014 16:59
<b>MERCURY - SW7471B</b> Method: SW7471A Prep: SW7471A / 2/3/14 Analyst: OFO							
Mercury	0.288		0.00047	0.00336	mg/Kg	1	2/3/2014 15:40
<b>DISSOLVED METALS</b> Method: SW6020 Prep: SW3010A / 1/28/14 Analyst: SKS							
Arsenic	0.527		0.10	0.500	mg/L	10	1/28/2014 14:28
Cadmium	0.0932	J	0.080	0.200	mg/L	10	1/28/2014 14:28
Copper	0.950		0.10	0.500	mg/L	10	1/28/2014 14:28
Lead	5.57		0.070	0.500	mg/L	10	1/28/2014 14:28
Nickel	U		0.10	0.500	mg/L	10	1/28/2014 14:28
Selenium	U		0.10	0.500	mg/L	10	1/28/2014 14:28
Silver	0.261	J	0.080	0.500	mg/L	10	1/28/2014 14:28
Zinc	2.40		0.25	0.500	mg/L	10	1/28/2014 14:28
<b>METALS</b> Method: SW6020 Prep: SW3050A / 2/4/14 Analyst: SKS							
Arsenic	61.4		0.0966	0.483	mg/Kg	1	2/4/2014 14:43
Cadmium	0.424	J	0.0483	0.483	mg/Kg	1	2/4/2014 14:43
Copper	120		0.0966	0.483	mg/Kg	1	2/4/2014 14:43
Lead	325		0.483	4.83	mg/Kg	10	2/5/2014 12:16
Nickel	9.20		0.0870	0.483	mg/Kg	1	2/4/2014 14:43
Selenium	0.407	J	0.174	0.483	mg/Kg	1	2/4/2014 14:43
Silver	0.285	J	0.0773	0.483	mg/Kg	1	2/4/2014 14:43
Zinc	114		0.242	0.483	mg/Kg	1	2/4/2014 14:43
<b>CYANIDE - SW9014</b> Method: SW9014 Analyst: KKB							
Cyanide, Dissolved	U		0.20	0.200	mg/L	1	1/27/2014 17:57
<b>HEXAVALENT CHROMIUM, DISSOLVED</b> Method: SW7196 Analyst: KKB							
Chromium, Hexavalent	U		0.040	0.100	mg/L	1	1/28/2014 08:00

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







ALS Laboratory Group  
 10450 Stancliff Rd. #210  
 Houston, Texas 77099  
 (Tel) 281.530.5656  
 (Fax) 281.530.5887

### Chain of Custody Form

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# 1401623

TTEMI-ATLANTA: Tetra Tech EM, Inc.

Project: Gulf of Mexico MPWCS 112C06164



Customer Information		ALS Project Manager: Kristin Brown	
Project Information		Parameter/Method: Request for Analysis	
Purchase Order	1097177-Mod 1	Project Name	Gulf of Mexico MPWCS
Work Order	Repsol WBM	Project Number	112C06164
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
1	Repsol KC 642 WBM	1-14-14	1:45
2			
3			
4			
5			
6			
7			
8			
9			
10			
Samples: Please Print & Sign		Shipment Method: Fed-Ex	
Richard Coleman		Received by: S. Yanez 1/16/14 750	
Richard Coleman		Checked by (Laboratory):	
Date:	1-14-14	Date:	
Date:		Date:	
Date:		Date:	
Preservative Key: 1-HCL 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 degrees C 9-5035		QC Package: (Check Box Below)	
		Level II: Standard QC	
		Level III: Std QC + Raw Data	
		Level IV: SW846 CLP-Like	
		Other:	
Required Turnaround Time:		Results Due Date:	
<input checked="" type="checkbox"/> STD 10 Wk Days <input type="checkbox"/> 5 Wk Days <input type="checkbox"/> 2 Wk Days <input type="checkbox"/> Other		<input type="checkbox"/> 24 Hour	
Notes:		Cooler Temp.	

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

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