TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Petroglyph Operating Co., Inc.

Raton Basin (Colorado)

Lot #: D8B260200

Tom Melland

Petroglyph
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TestAmerica DENVER

Danielle Fougere
Project Manager

March 10, 2008

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Standard Deliverables

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Standard Deliverables *The **Cover Letter** and the **Report Cover** page are considered integral parts of this Standard Deliverable package. This report is incomplete unless all pages indicated in this Table of Contents are included.*	

Case Narrative
Lot #: D8B260200

The following report contains the analytical results for two water samples submitted to TestAmerica Denver by Petroglyph Operating Company. The samples were received on February 26, 2008, according to documented sample acceptance procedures.

This report may include data with reporting limits (RLs) less than TestAmerica's standard reporting limit. These data and reporting limits are being used specifically to meet the needs of this project. Note that, data are not customarily reported to these levels without qualifiers, because they are inherently less reliable and potentially less defensible than the latest industry standards require.

Denver utilizes USEPA approved methods in all analytical work. The sample presented in this report was analyzed for the parameters listed on the methods summary page in accordance with the methods indicated. A summary of QC data for these analyses is included.

The results included in this report have been reviewed for compliance with the laboratory QA/QC plan and meet all requirements of NELAC. The results relate only to the samples in this report. All data have been found to be compliant with laboratory protocol, with the exception of any items noted below.

SUPPLEMENTAL QC INFORMATION

Sample Arrival and Receipt

The sample containers were received in acceptable condition. The temperature of the cooler upon receipt was 2.6°C.

No anomalies were observed.

Dissloved Methane – Method RSK SOP-175

Each sample is analyzed to achieve the lowest possible reporting limits within the constraints of the method. Due to analytes present above the linear calibration curve, sample HOPKE, B. WW had to be analyzed at a dilution. The reporting limits have been adjusted relative to the dilution required.

The method required MS/MSD could not be performed for QC batch 8067260, due to insufficient sample volume. Method precision and accuracy have been verified by the acceptable LCS/LCSD analysis data.

No other anomalies were observed.

EXECUTIVE SUMMARY - Detection Highlights

D8B260200

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
HOUGHTLING, J.WW 02/25/08 14:54 001				
Methane	9.2	5.0	ug/L	RSK SOP-175
HOPKE, B.WW 02/25/08 15:12 002				
Methane	5900	50	ug/L	RSK SOP-175

METHODS SUMMARY

D8B260200

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Dissolved Gases in Water	RSK SOP-175	RSK RSKSOP-175

References:

RSK Sample Prep and Calculations for Dissolved Gas Analysis in Water Samples Using a GC Headspace Equilibration Technique, RSKSOP-175, REV. 0, 8/11/94, USEPA Research Lab

METHOD / ANALYST SUMMARY

D8B260200

ANALYTICAL METHOD	ANALYST	ANALYST ID
RSK SOP-175	Adam Pavlakovich	003128

References:

RSK Sample Prep and Calculations for Dissolved Gas Analysis in Water Samples Using a GC Headspace Equilibration Technique, RSKSOP-175, REV. 0, 8/11/94, USEPA Research Lab

SAMPLE SUMMARY

D8B260200

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
KHMGX	001	HOUGHTLING, J.WW	02/25/08	14:54
KHMHA	002	HOPKE, B.WW	02/25/08	15:12

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Petroglyph

Client Sample ID: HOUGHTLING, J.WW

GC Volatiles

Lot-Sample #...:	D8B260200-001	**Work Order #...:**	KHMGX1AA	**Matrix.....:**	WATER
Date Sampled...:	02/25/08 14:54	**Date Received..:**	02/26/08		
Prep Date.....:	03/06/08	**Analysis Date..:**	03/06/08		
Prep Batch #...:	8067260	**Analysis Time..:**	11:18		
Dilution Factor:	1				
		Method.....:	RSK SOP-175		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Methane	**9.2**	**5.0**	**ug/L**	**0.22**

Petroglyph

Client Sample ID: HOPKE, B.WW

GC Volatiles

Lot-Sample #...: D8B260200-002 **Work Order #...:** KHMHA1AA **Matrix.....:** WATER
Date Sampled...: 02/25/08 15:12 **Date Received..:** 02/26/08
Prep Date.....: 03/06/08 **Analysis Date..:** 03/06/08
Prep Batch #...: 8067260 **Analysis Time..:** 15:10
Dilution Factor: 10
Method.....: RSK SOP-175

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Methane	**5900**	**50**	**ug/L**	**2.2**

QC DATA ASSOCIATION SUMMARY

D8B260200

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	WATER	RSK SOP-175		8067260	
002	WATER	RSK SOP-175		8067260	

METHOD BLANK REPORT

GC Volatiles

Client Lot #...: D8B260200 **Work Order #...:** KH7NH1AA **Matrix.....:** WATER
MB Lot-Sample #: D8C070000-260

Prep Date.....: 03/06/08 **Analysis Time..:** 10:38
Analysis Date..: 03/06/08 **Prep Batch #...:** 8067260
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Methane	ND	5.0	ug/L	RSK SOP-175

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Volatiles

Client Lot #...: D8B260200 **Work Order #...:** KH7NH1AC **Matrix.....:** WATER
LCS Lot-Sample#: D8C070000-260
Prep Date.....: 03/06/08 **Analysis Date..:** 03/06/08
Prep Batch #...: 8067260 **Analysis Time..:** 10:28
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Ethane	**105**	**(75 - 125)**	**RSK SOP-175**
Ethene	**98**	**(75 - 125)**	**RSK SOP-175**
Methane	**105**	**(75 - 125)**	**RSK SOP-175**
Acetylene	**104**	**(75 - 125)**	**RSK SOP-175**

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC Volatiles

Client Lot #...: D8B260200 **Work Order #...:** KH7NH1AC **Matrix.....:** WATER
LCS Lot-Sample#: D8C070000-260
Prep Date.....: 03/06/08 **Analysis Date..:** 03/06/08
Prep Batch #...: 8067260 **Analysis Time..:** 10:28
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Ethane	**137**	**144**	**ug/L**	**105**	**RSK SOP-175**
Ethene	**127**	**124**	**ug/L**	**98**	**RSK SOP-175**
Methane	**73.0**	**76.5**	**ug/L**	**105**	**RSK SOP-175**
Acetylene	**118**	**123**	**ug/L**	**104**	**RSK SOP-175**

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

Chain of Custody Record

Temperature on Receipt 2.6°C 121 LM

Drinking Water? Yes ☒ No ☐ 2/26/08

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4124 (0907)

Client	Project Manager	Date	Chain of Custody Number
Petroglyph Energy	Tom Melland	2/25/08	407741
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page 1 of 1**
124 N Main P.O.Box 979	719-742-5570		
City / **State** / **Zip Code**	**Site Contact**	**Lab Contact**	**Analysis (Attach list if more space is needed)**
La Veta / CO / 81055	Konrad Quast	Michelle Johnston	RSK-175 Dissolved Gas
Project Name and Location (State)	~~Carrier/Waybill Number~~		
Raton Basin, CO	Michael Barrett		
Contract/Purchase Order/Quote No.			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	RSK-175 Dissolved Gas	Special Instructions/ Conditions of Receipt
Houghtling, J. WW	2/25/08	14:54		X						3			X	
Hopke, B. WW	2/25/08	15:12		X						3			X	

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☑ Unknown

Sample Disposal
☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☑ Other Routine

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: Michael J. Barrett	2/25/08	18:00	1. Received By:	2/26/08	1000
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy