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Automated Report

Technical Report for

Kerr-McGee Oil & Gas Onshore LP

GWA_Pettinger_18_1HZ

FID:752918 Reg:318A.f Freq.:1SUB

SGS Job Number: DA25801

Sampling Date: 05/01/20

Report to:

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Total number of pages in report: **19**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

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Laboratory Director

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Certifications: CO (CO00049), NE (NE-OS-06-04), ND (R-027), UT (NELAP CO00049)
LA (LA150028), TX (T104704511), WY (8TMS-L)

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Test results relate only to samples analyzed.

Table of Contents

-1-

Section 1: Sample Summary	3
Section 2: Case Narrative/Conformance Summary	4
Section 3: Summary of Hits	5
Section 4: Sample Results	6
4.1: DA25801-1: BW_PETTINGER_13007_R_TRIP_BLANK	7
Section 5: Misc. Forms	9
5.1: Chain of Custody	10
Section 6: MS Volatiles - QC Data Summaries	12
6.1: Method Blank Summary	13
6.2: Blank Spike Summary	14
6.3: Matrix Spike/Matrix Spike Duplicate Summary	15
Section 7: GC Volatiles - QC Data Summaries	16
7.1: Method Blank Summary	17
7.2: Blank Spike Summary	18
7.3: Matrix Spike/Matrix Spike Duplicate Summary	19

1

2

3

4

5

6

7



Sample Summary

Kerr-McGee Oil & Gas Onshore LP

Job No: DA25801

GWA_Pettinger_18_1HZ

Project No: FID:752918 Reg:318A.f Freq.:1SUB

Sample Number	Collected Date	Time By	Received	Matrix Code Type	Client Sample ID
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This report contains results reported as ND = Not detected. The following applies:

Organics ND = Not detected above the MDL

DA25801-1	05/01/20	09:20	TS	05/01/20	AQ	Trip Blank Water	BW_PETTINGER_13007_R_TRIP_B LANK
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CASE NARRATIVE / CONFORMANCE SUMMARY

Client: Kerr-McGee Oil & Gas Onshore LP

Job No: DA25801

Site: GWA_Pettinger_18_1HZ

Report Date 5/6/2020 5:25:16 PM

On 05/01/2020, 0 sample(s), 1 Trip Blank(s), and 0 Field Blank(s) were received at SGS North America Inc. (SGS) at a temperature of 1.3 °C. The samples were intact and properly preserved, unless noted below. An SGS Job Number of DA25801 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

MS Volatiles By Method SW846 8260B

Matrix: AQ	Batch ID: V7V3352
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- All samples were analyzed within the recommended method holding time.
- Sample(s) DA19336-9MS, DA19336-9MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

GC Volatiles By Method SW846 8015B

Matrix: AQ	Batch ID: GGA2377
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- All samples were analyzed within the recommended method holding time.
- Sample(s) DA19336-4MS, DA19336-4MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

SGS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting SGS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by SGS indicated via signature on the report cover.

Summary of Hits

Job Number: DA25801
Account: Kerr-McGee Oil & Gas Onshore LP
Project: GWA_Pettinger_18_1HZ
Collected: 05/01/20



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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DA25801-1 BW_PETTINGER_13007_R_TRIP_BLANK

No hits reported in this sample.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: BW_PETTINGER_13007_R_TRIP_BLANK	Date Sampled: 05/01/20
Lab Sample ID: DA25801-1	Date Received: 05/01/20
Matrix: AQ - Trip Blank Water	Percent Solids: n/a
Method: SW846 8260B	
Project: GWA_Pettinger_18_1HZ	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7V66716.D	1	05/04/20 12:37	DC	n/a	n/a	V7V3352
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	ND	1.0	1.0	ug/l	
	m,p-Xylene	ND	1.0	0.70	ug/l	
95-47-6	o-Xylene	ND	1.0	0.50	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	109%		70-130%
17060-07-0	1,2-Dichloroethane-D4	103%		70-130%
2037-26-5	Toluene-D8	95%		70-130%
460-00-4	4-Bromofluorobenzene	100%		70-130%

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.1
4

Report of Analysis

Client Sample ID: BW_PETTINGER_13007_R_TRIP_BLANK Lab Sample ID: DA25801-1 Matrix: AQ - Trip Blank Water Method: SW846 8015B Project: GWA_Pettinger_18_1HZ	Date Sampled: 05/01/20 Date Received: 05/01/20 Percent Solids: n/a
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Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GA52619.D	1	05/04/20 23:56	JB	n/a	n/a	GGA2377
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.050	0.050	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	97%		60-140%		

ND = Not detected MDL = Method Detection Limit J = Indicates an estimated value
 RL = Reporting Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.1
4

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody



CHAIN OF CUSTODY

4036 Youngfield Street, Wheat Ridge, CO 80033
TEL: 303-425-8021 FAX: 303-425-8854
www.acctest.com

Table with 2 columns: Bottle Order Control #, FED-EX Tracking #; SGS Quote #, SGS Job # DA25801

Main data entry section including Client/Reporting Information, Project Information, Requested Analysis (see TEST CODE sheet), Matrix Codes, and a large table for Collection data with columns for Date, Time, Matrix, # of bottles, and various chemical analysis parameters.

Turnaround Time (Business days) and Data Deliverable Information section with checkboxes for reporting instructions and delivery options.

Sample Custody section with a table for documenting possession changes, including columns for Relinquished/Received By, Date/Time, and Custody Seal #.

SGS Accutest Sample Receipt Summary

Job Number: DA25801

Client: ABSAROKA

Project: GWA

Date / Time Received: 5/1/2020 12:00:00 PM

Delivery Method: _____

Airbill #'s: CO

Cooler Temps (Initial/Adjusted): #1: (1.3/1.3);

Cooler Security

Y or N

Y or N

- | | | | | | |
|---------------------------|-------------------------------------|--------------------------|-----------------------|-------------------------------------|--------------------------|
| 1. Custody Seals Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 3. COC Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Custody Seals Intact: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 4. Smpl Dates/Time OK | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Cooler Temperature

Y or N

- | | | |
|------------------------------|-------------------------------------|--------------------------|
| 1. Temp criteria achieved: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Cooler temp verification: | <u>IR Gun;</u> | |
| 3. Cooler media: | <u>Ice (Bag)</u> | |
| 4. No. Coolers: | <u>1</u> | |

Quality Control Preservation

Y or N

N/A

- | | | | |
|---------------------------------|-------------------------------------|--------------------------|--------------------------|
| 1. Trip Blank present / cooler: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Trip Blank listed on COC: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Samples preserved properly: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 4. VOCs headspace free: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Comments

Sample Integrity - Documentation

Y or N

- | | | |
|--|-------------------------------------|--------------------------|
| 1. Sample labels present on bottles: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Container labeling complete: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Sample container label / COC agree: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Sample Integrity - Condition

Y or N

- | | | |
|----------------------------------|-------------------------------------|--------------------------|
| 1. Sample recvd within HT: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. All containers accounted for: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Condition of sample: | <u>Intact</u> | |

Sample Integrity - Instructions

Y or N

N/A

- | | | | |
|---|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Analysis requested is clear: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 2. Bottles received for unspecified tests | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 3. Sufficient volume recvd for analysis: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 4. Compositing instructions clear: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. Filtering instructions clear: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

5.1
5

MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: DA25801
 Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP
 Project: GWA_Pettinger_18_1HZ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V7V3352-MB	7V66711.D	1	05/04/20	DC	n/a	n/a	V7V3352

The QC reported here applies to the following samples:

Method: SW846 8260B

DA25801-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
	m,p-Xylene	ND	1.0	0.70	ug/l	
95-47-6	o-Xylene	ND	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	ND	1.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	112% 70-130%
17060-07-0	1,2-Dichloroethane-D4	107% 70-130%
2037-26-5	Toluene-D8	96% 70-130%
460-00-4	4-Bromofluorobenzene	100% 70-130%

6.1.1
6

Blank Spike Summary

Job Number: DA25801
 Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP
 Project: GWA_Pettinger_18_1HZ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V7V3352-BS	7V66708.D	1	05/04/20	DC	n/a	n/a	V7V3352

The QC reported here applies to the following samples:

Method: SW846 8260B

DA25801-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	50	51.9	104	70-130
100-41-4	Ethylbenzene	50	55.7	111	69-130
108-88-3	Toluene	50	52.2	104	70-130
	m,p-Xylene	100	114	114	70-130
95-47-6	o-Xylene	50	53.3	107	70-130
1330-20-7	Xylene (total)	150	167	111	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	103%	70-130%
17060-07-0	1,2-Dichloroethane-D4	100%	70-130%
2037-26-5	Toluene-D8	99%	70-130%
460-00-4	4-Bromofluorobenzene	99%	70-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: DA25801
 Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP
 Project: GWA_Pettinger_18_1HZ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
DA19336-9MS	7V66712.D	1	05/04/20	DC	n/a	n/a	V7V3352
DA19336-9MSD	7V66713.D	1	05/04/20	DC	n/a	n/a	V7V3352
DA19336-9	7V66714.D	1	05/04/20	DC	n/a	n/a	V7V3352

The QC reported here applies to the following samples:

Method: SW846 8260B

DA25801-1

CAS No.	Compound	DA19336-9 ug/l	Spike Q ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND	50	51.5	103	50	55.5	111	7	67-130/30
100-41-4	Ethylbenzene	ND	50	55.4	111	50	55.9	112	1	69-130/30
108-88-3	Toluene	ND	50	52.4	105	50	53.5	107	2	70-130/30
	m,p-Xylene	ND	100	114	114	100	115	115	1	70-130/30
95-47-6	o-Xylene	ND	50	53.3	107	50	53.6	107	1	70-130/30
1330-20-7	Xylene (total)	ND	150	168	112	150	168	112	0	67-130/30

CAS No.	Surrogate Recoveries	MS	MSD	DA19336-9	Limits
1868-53-7	Dibromofluoromethane	99%	98%	107%	70-130%
17060-07-0	1,2-Dichloroethane-D4	99%	101%	105%	70-130%
2037-26-5	Toluene-D8	101%	100%	94%	70-130%
460-00-4	4-Bromofluorobenzene	93%	101%	94%	70-130%

* = Outside of Control Limits.

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: DA25801
Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP
Project: GWA_Pettinger_18_1HZ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGA2377-MB	GA52612.D	1	05/04/20	JB	n/a	n/a	GGA2377

The QC reported here applies to the following samples:

Method: SW846 8015B

DA25801-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.050	0.050	mg/l	

CAS No.	Surrogate Recoveries	Limits
120-82-1	1,2,4-Trichlorobenzene	105% 60-140%

7.1.1

7

Blank Spike Summary

Job Number: DA25801
 Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP
 Project: GWA_Pettinger_18_1HZ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGA2377-BS	GA52611.D	1	05/04/20	JB	n/a	n/a	GGA2377

The QC reported here applies to the following samples:

Method: SW846 8015B

DA25801-1

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
	TPH-GRO (C6-C10)	2.2	1.82	83	51-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	105%	60-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: DA25801
 Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP
 Project: GWA_Pettinger_18_1HZ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
DA19336-4MS	GA52614.D	1	05/04/20	JB	n/a	n/a	GGA2377
DA19336-4MSD	GA52615.D	1	05/04/20	JB	n/a	n/a	GGA2377
DA19336-4	GA52613.D	1	05/04/20	JB	n/a	n/a	GGA2377

The QC reported here applies to the following samples:

Method: SW846 8015B

DA25801-1

CAS No.	Compound	DA19336-4 mg/l	Spike Q mg/l	MS mg/l	MS %	Spike mg/l	MSD mg/l	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND	2.2	1.80	82	2.2	1.79	81	1	40-132/30

CAS No.	Surrogate Recoveries	MS	MSD	DA19336-4	Limits
120-82-1	1,2,4-Trichlorobenzene	113%	105%	94%	60-140%

* = Outside of Control Limits.