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Automated Report

Technical Report for

Kerr-McGee Oil & Gas Onshore LP

GWA_Henrickson_Water_Well

FID:752520 Reg:Vol. Freq.:Q4

SGS Job Number: DA21371

Sampling Date: 10/22/19

Report to:

Kerr-McGee Oil & Gas Onshore LP
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Total number of pages in report: 51



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	7
Section 4: Sample Results	8
4.1: DA21371-1: BW_7_3N_66W_HENRICKSON SWSE_7_3N_66W	9
4.2: DA21371-1A: BW_7_3N_66W_HENRICKSON SWSE_7_3N_66W	13
4.3: DA21371-1B: BW_7_3N_66W_HENRICKSON SWSE_7_3N_66W	14
4.4: DA21371-1F: BW_7_3N_66W_HENRICKSON SWSE_7_3N_66W	15
Section 5: Misc. Forms	16
5.1: Chain of Custody	17
Section 6: MS Volatiles - QC Data Summaries	19
6.1: Method Blank Summary	20
6.2: Blank Spike Summary	21
6.3: Matrix Spike/Matrix Spike Duplicate Summary	22
Section 7: GC Volatiles - QC Data Summaries	23
7.1: Method Blank Summary	24
7.2: Blank Spike Summary	26
7.3: Matrix Spike/Matrix Spike Duplicate Summary	28
Section 8: GC/LC Semi-volatiles - QC Data Summaries	30
8.1: Method Blank Summary	31
8.2: Blank Spike Summary	32
8.3: Matrix Spike/Matrix Spike Duplicate Summary	33
Section 9: Metals Analysis - QC Data Summaries	34
9.1: Prep QC MP29283: B,Ca,Fe,Mg,Mn,K,Na,Sr	35
9.2: Prep QC MP29288: Ba,Se	43
Section 10: General Chemistry - QC Data Summaries	47
10.1: Method Blank and Spike Results Summary	48
10.2: Duplicate Results Summary	49
10.3: Matrix Spike Results Summary	50
10.4: Matrix Spike Duplicate Results Summary	51



Sample Summary

Kerr-McGee Oil & Gas Onshore LP

Job No: DA21371

GWA_Henrickson_Water_Well
Project No: FID:752520 Reg:Vol. Freq.:Q4

Sample Number	Collected		Matrix		Client	
	Date	Time By	Received	Code Type	Sample ID	

This report contains results reported as ND = Not detected. The following applies:
Organics ND = Not detected above the MDL

DA21371-1	10/22/19	12:37 JB	10/23/19	AQ	Ground Water	BW_7_3N_66W_HENRICKSON SWSE_7_3N_66W
DA21371-1A	10/22/19	12:37 JB	10/23/19	AQ	Ground Water	BW_7_3N_66W_HENRICKSON SWSE_7_3N_66W
DA21371-1B	10/22/19	12:37 JB	10/23/19	AQ	Ground Water	BW_7_3N_66W_HENRICKSON SWSE_7_3N_66W
DA21371-1F	10/22/19	12:37 JB	10/23/19	AQ	Groundwater Filtered	BW_7_3N_66W_HENRICKSON SWSE_7_3N_66W

CASE NARRATIVE / CONFORMANCE SUMMARY

2

Client: Kerr-McGee Oil & Gas Onshore LP

Job No DA21371

Site: GWA_Henrickson_Water_Well

Report Date 11/7/2019 6:15:27 PM

On 10/23/2019, 1 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at SGS North America Inc. (SGS) at a temperature of 1.8 °C. The samples were intact and properly preserved, unless noted below. An SGS Job Number of DA21371 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: V6V1992

- All samples were analyzed within the recommended method holding time.
- Sample(s) DA17875-3MS, DA17875-3MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

GC Volatiles By Method RSK175 MOD

Matrix: AQ

Batch ID: GFK59

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) DA21395-1MS, DA21395-1MSD were used as the QC samples indicated.
- DA21371-1A: The pH of the sample was >2 at time of analysis.

GC Volatiles By Method SW846 8015B

Matrix: AQ

Batch ID: GGA2283

- All samples were analyzed within the recommended method holding time.
- Sample(s) DA17875-6MS, DA17875-6MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

GC/LC Semi-volatiles By Method SW846-8015B

Matrix: AQ

Batch ID: OP18449

- All samples were extracted and analyzed within the recommended method holding time.
- Sample(s) DA17876-4MS, DA17876-4MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Metals Analysis By Method EPA 200.7

Matrix: AQ

Batch ID: MP29283

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) DA21308-2FMS, DA21308-2FMSD were used as the QC samples for the metals analysis.
- The matrix spike (MS) recovery(s) of Calcium are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

Thursday, November 07, 2019

Page 1 of 3

Metals Analysis By Method EPA 200.8

Matrix: AQ

Batch ID: MP29288

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) DA21371-1FMS, DA21371-1FMSD were used as the QC samples for the metals analysis.

General Chemistry By Method EPA 365.1

Matrix: AQ

Batch ID: GP26148

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) DA21236-1MS, DA21313-3DUP were used as the QC samples for the Phosphorus, Total analysis.

General Chemistry By Method EPA300.0/SW846 9056A

Matrix: AQ

Batch ID: GP26144

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) DA21327-1MS, DA21327-1MSD were used as the QC samples for the Bromide, Chloride, Fluoride, Nitrogen, Nitrate, Nitrogen, Nitrite, Sulfate, Bromide analysis.
- DA21371-1 for Sulfate; Nitrogen, Nitrate and Nitrogen, Nitrite: Elevated detection limit due to matrix interference.

Matrix: AQ

Batch ID: R49578

- The data for EPA300.0/SW846 9056A meets quality control requirements.
- DA21371-1 for Nitrogen, Nitrate + Nitrite: Calculated as: (Nitrogen, Nitrate) + (Nitrogen, Nitrite)

General Chemistry By Method HACH IRB-BART

Matrix: AQ

Batch ID: MB1242

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

General Chemistry By Method HACH SLYM-BART

Matrix: AQ

Batch ID: MB1243

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

General Chemistry By Method HACH SRB-BART

Matrix: AQ

Batch ID: MB1244

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

General Chemistry By Method SM 2320B-2011

Matrix: AQ

Batch ID: GN48667

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) DA21321-1DUP, DA21321-1MS, DA21321-1MSD were used as the QC samples for the Alkalinity, Total as CaCO₃ analysis.

Matrix: AQ

Batch ID: GN48668

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Matrix: AQ

Batch ID: GN48669

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

General Chemistry By Method SM 2510B-2011

Matrix: AQ

Batch ID: GP26160

- Sample(s) DA21344-10DUP were used as the QC samples for the Specific Conductivity analysis.

General Chemistry By Method SM 2540C-2011

Matrix: AQ

Batch ID: GN48660

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) DA21365-1DUP were used as the QC samples for the Solids, Total Dissolved analysis.

General Chemistry By Method SM1030E-2011

Matrix: AQ

Batch ID: GN48788

- The data for SM1030E-2011 meets quality control requirements.

General Chemistry By Method SM4500HB+-2011/9040C

Matrix: AQ

Batch ID: GN48684

- The data for SM4500HB+-2011/9040C meets quality control requirements.
- The following samples were run outside of holding time for method SM4500HB+-2011/9040C: DA21371-1 Analysis performed past recommended hold time.

Field Data By Method FIELD

Matrix: AQ

Batch ID: R49540

- The data for FIELD meets quality control requirements.

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.

Thursday, November 07, 2019

Page 3 of 3

Summary of Hits

Page 1 of 1

Job Number: DA21371
Account: Kerr-McGee Oil & Gas Onshore LP
Project: GWA_Henrickson_Water_Well
Collected: 10/22/19

Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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DA21371-1 BW_7_3N_66W_HENRICKSON SWSE_7_3N_66W

TPH-GRO (C6-C10)	0.0613	0.050	0.050	mg/l	SW846 8015B
Alkalinity, Bicarbonate as CaCO ₃	460	5.0		mg/l	SM 2320B-2011
Alkalinity, Total as CaCO ₃	460	5.0		mg/l	SM 2320B-2011
Bromide	0.51	0.10		mg/l	EPA300.0/SW846 9056A
Cation Anion Balance	6.5			%	SM1030E-2011
Chloride	47.7	5.0		mg/l	EPA300.0/SW846 9056A
Fluoride	1.8	0.20		mg/l	EPA300.0/SW846 9056A
Phosphorus, Total	0.027	0.010		mg/l	EPA 365.1
Solids, Total Dissolved	558	10		mg/l	SM 2540C-2011
Specific Conductivity	838	1.0		umhos/cm	SM 2510B-2011
pH ^a	8.52			su	SM4500HB+ -2011/9040C
pH (Field)	8.35			su	FIELD
Temperature (Field)	16.4			Deg. C	FIELD
Oxygen, Dissolved (Field)	0.1			mg/l	FIELD
Turbidity	0.02			NTU	FIELD
Specific Conductivity (Field)	960.5	0.50		umhos/cm	FIELD

DA21371-1A BW_7_3N_66W_HENRICKSON SWSE_7_3N_66W

Methane ^b	6.17	0.020	0.018	mg/l	RSK175 MOD
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DA21371-1B BW_7_3N_66W_HENRICKSON SWSE_7_3N_66W

Iron-Related Bacteria	9000	25		CFU/ml	HACH IRB-BART
Slime Forming Bacteria	440000	500		CFU/ml	HACH SLYM-BART
Sulfate Reducing Bacteria	6000	200		CFU/ml	HACH SRB-BART

DA21371-1F BW_7_3N_66W_HENRICKSON SWSE_7_3N_66W

Barium	0.0703	0.0040		mg/l	EPA 200.8
Boron	0.0995	0.050		mg/l	EPA 200.7
Calcium	3.62	0.40		mg/l	EPA 200.7
Iron	0.0159	0.010		mg/l	EPA 200.7
Magnesium	0.717	0.20		mg/l	EPA 200.7
Manganese	0.0108	0.0050		mg/l	EPA 200.7
Potassium	1.50	1.0		mg/l	EPA 200.7
Sodium	218	0.40		mg/l	EPA 200.7
Strontium	0.113	0.0050		mg/l	EPA 200.7

(a) Analysis performed past recommended hold time.

(b) The pH of the sample was > 2 at time of analysis.



Wheat Ridge, CO

Section 4

4

Sample Results

Report of Analysis

Report of Analysis

Page 1 of 1

Client Sample ID:	BW_7_3N_66W_HENRICKSON SWSE_7_3N_66W	Date Sampled:	10/22/19
Lab Sample ID:	DA21371-1	Date Received:	10/23/19
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	GWA_Henrickson_Water_Well		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6V8733.D	1	10/24/19 16:14	DC	n/a	n/a	V6V1992
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	92%		70-130%
17060-07-0	1,2-Dichloroethane-D4	94%		70-130%
2037-26-5	Toluene-D8	96%		70-130%
460-00-4	4-Bromofluorobenzene	100%		70-130%

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BW_7_3N_66W_HENRICKSON SWSE_7_3N_66W					Date Sampled:	10/22/19
Lab Sample ID:	DA21371-1					Date Received:	10/23/19
Matrix:	AQ - Ground Water					Percent Solids:	n/a
Method:	SW846 8015B						
Project:	GWA_Henrickson_Water_Well						

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	GA50180.D	1	10/25/19 05:12	MB	n/a	n/a	GGA2283

Run #1	Purge Volume
Run #2	5.0 ml

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	0.0613	0.050	0.050	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	103%		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

Report of Analysis

Page 1 of 1

Client Sample ID:	BW_7_3N_66W_HENRICKSON SWSE_7_3N_66W	Date Sampled:	10/22/19
Lab Sample ID:	DA21371-1	Date Received:	10/23/19
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846-8015B SW846 3510C		
Project:	GWA_Henrickson_Water_Well		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FC65022.D	1	10/25/19 08:18	RB	10/24/19	OP18449	GFC2685
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1040 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	0.19	0.18	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	60%		11-142%		

ND = Not detected MDL = Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: BW_7_3N_66W_HENRICKSON SWSE_7_3N_66W
 Lab Sample ID: DA21371-1
 Matrix: AQ - Ground Water
 Project: GWA_Henrickson_Water_Well

Date Sampled: 10/22/19
 Date Received: 10/23/19
 Percent Solids: n/a

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate as CaC	460	5.0	mg/l	1	10/24/19	JD	SM 2320B-2011
Alkalinity, Carbonate	< 5.0	5.0	mg/l	1	10/24/19	JD	SM 2320B-2011
Alkalinity, Total as CaCO ₃	460	5.0	mg/l	1	10/24/19	JD	SM 2320B-2011
Bromide	0.51	0.10	mg/l	2	10/23/19 17:04	AM	EPA300.0/SW846 9056A
Cation Anion Balance	6.5		%	1	11/07/19	SH	SM1030E-2011
Chloride	47.7	5.0	mg/l	10	10/23/19 17:18	AM	EPA300.0/SW846 9056A
Fluoride	1.8	0.20	mg/l	2	10/23/19 17:04	AM	EPA300.0/SW846 9056A
Nitrogen, Nitrate ^a	< 0.020	0.020	mg/l	2	10/23/19 17:04	AM	EPA300.0/SW846 9056A
Nitrogen, Nitrate + Nitrite ^b	< 0.028	0.028	mg/l	1	10/23/19 17:04	AM	EPA300.0/SW846 9056A
Nitrogen, Nitrite ^a	< 0.0080	0.0080	mg/l	2	10/23/19 17:04	AM	EPA300.0/SW846 9056A
Phosphorus, Total	0.027	0.010	mg/l	1	10/24/19 13:21	PV	EPA 365.1
Solids, Total Dissolved	558	10	mg/l	1	10/24/19	AK	SM 2540C-2011
Specific Conductivity	838	1.0	umhos/cm	1	10/28/19	SK	SM 2510B-2011
Sulfate ^a	< 1.0	1.0	mg/l	2	10/23/19 17:04	AM	EPA300.0/SW846 9056A
pH ^c	8.52		su	1	10/25/19 10:30	SK	SM4500HB+ -2011/9040C

Field Parameters

Oxygen, Dissolved (Field)	0.1		mg/l	1	10/29/19	SUB	FIELD
Redox Potential Vs H ₂	-95.5		mv	1	10/29/19	SUB	FIELD
Specific Conductivity (Field)	960.5	0.50	umhos/cm	1	10/29/19	SUB	FIELD
Temperature (Field)	16.4		Deg. C	1	10/29/19	SUB	FIELD
Turbidity	0.02		NTU	1	10/29/19	SUB	FIELD
pH (Field)	8.35		su	1	10/29/19	SUB	FIELD

(a) Elevated detection limit due to matrix interference.

(b) Calculated as: (Nitrogen, Nitrate) + (Nitrogen, Nitrite)

(c) Analysis performed past recommended hold time.

RL = Reporting Limit

Report of Analysis

Page 1 of 1

Client Sample ID:	BW_7_3N_66W_HENRICKSON SWSE_7_3N_66W					Date Sampled:	10/22/19
Lab Sample ID:	DA21371-1A					Date Received:	10/23/19
Matrix:	AQ - Ground Water					Percent Solids:	n/a
Method:	RSK175 MOD						
Project:	GWA_Henrickson_Water_Well						

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	FK644.D	1	10/29/19 17:28	GN	n/a	n/a	GFK59
Run #2 ^a	FK646.D	25	10/29/19 17:37	GN	n/a	n/a	GFK59

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	39.0 ml	4.0 ml	500 ul	20.0 Deg. C
Run #2	39.0 ml	4.0 ml	500 ul	20.0 Deg. C

Methane, Ethane and Propane

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	6.17 ^b	0.020	0.018	mg/l	
74-84-0	Ethane	ND	0.0016	0.00080	mg/l	
74-98-6	Propane	ND	0.0022	0.0011	mg/l	

(a) The pH of the sample was > 2 at time of analysis.

(b) Result is from Run# 2

ND = Not detected MDL = Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BW_7_3N_66W_HENRICKSON SWSE_7_3N_66W	Date Sampled:	10/22/19
Lab Sample ID:	DA21371-1B	Date Received:	10/23/19
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	GWA_Henrickson_Water_Well		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Iron-Related Bacteria	9000	25	CFU/ml	1	10/28/19 16:00	SK	HACH IRB-BART
Slime Forming Bacteria	440000	500	CFU/ml	1	10/28/19 16:00	SK	HACH SLYM-BART
Sulfate Reducing Bacteria	6000	200	CFU/ml	1	10/28/19 16:00	SK	HACH SRB-BART

RL = Reporting Limit

Report of Analysis

Client Sample ID: BW_7_3N_66W_HENRICKSON SWSE_7_3N_66W

Lab Sample ID: DA21371-1F

Matrix: AQ - Groundwater Filtered

Date Sampled: 10/22/19

Date Received: 10/23/19

Percent Solids: n/a

Project: GWA_Henrickson_Water_Well

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	0.0703	0.0040	mg/l	2	10/24/19	10/26/19 JM	EPA 200.8 ¹	EPA 200.8 ⁵
Boron	0.0995	0.050	mg/l	1	10/25/19	10/29/19 JM	EPA 200.7 ²	EPA 200.7 ⁴
Calcium	3.62	0.40	mg/l	1	10/25/19	10/29/19 JM	EPA 200.7 ²	EPA 200.7 ⁴
Iron	0.0159	0.010	mg/l	1	10/25/19	10/31/19 JM	EPA 200.7 ³	EPA 200.7 ⁴
Magnesium	0.717	0.20	mg/l	1	10/25/19	10/29/19 JM	EPA 200.7 ²	EPA 200.7 ⁴
Manganese	0.0108	0.0050	mg/l	1	10/25/19	10/29/19 JM	EPA 200.7 ²	EPA 200.7 ⁴
Potassium	1.50	1.0	mg/l	1	10/25/19	10/29/19 JM	EPA 200.7 ²	EPA 200.7 ⁴
Selenium	< 0.00080	0.00080	mg/l	2	10/24/19	10/26/19 JM	EPA 200.8 ¹	EPA 200.8 ⁵
Sodium	218	0.40	mg/l	1	10/25/19	10/29/19 JM	EPA 200.7 ²	EPA 200.7 ⁴
Strontium	0.113	0.0050	mg/l	1	10/25/19	10/29/19 JM	EPA 200.7 ²	EPA 200.7 ⁴

(1) Instrument QC Batch: MA11918

(2) Instrument QC Batch: MA11927

(3) Instrument QC Batch: MA11933

(4) Prep QC Batch: MP29283

(5) Prep QC Batch: MP29288

RL = Reporting Limit

Misc. Forms

5

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody



CHAIN OF CUSTODY

4036 Youngfield Street, Wheat Ridge, CO 80033
TEL: 303-425-6021 FAX: 303-425-6854
www.acctest.com

Page 1 of 1

Bottle Order Control #	FED-EX Tracking #
SGS Quote #	SGS Job # DA21371
Requested Analysis (see TEST CODE sheet)	
Matrix Codes	
DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WIP - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank	
LAB USE ONLY	

Client / Reporting Information		Project Information	
Company: (Report to) Absaroka Solutions	Project Name: GWA_Henrickson_Water_Well	Frequency: Q4	
Street: 112 High Street	Regulation: Voluntary	Billing Information (if different from Report to)	
City, State: Buffalo, WY 82834	Facility ID: 752520	Company: Occidental Petroleum Corporation (OXY)	
Project Contact: Tanya Cude	EQUIS Facility Code: 0089019-AN-GWABWQ	Street Address: 1099 18th Street, Suite 1800	
Phone: 352-318-4034	Client Purchase Order #: WO#88363888	City, State ZIP: Denver, CO 80202-1918	
Email: Tanya.Cude@absarokasolutions.com	Project Manager: Joel Mason	Attention: Erik Mickelson User ID: fv451	
Sampler(s) Name(s): John Brouwer	Number of preserved bottles		
Field ID / Point of Collection	Date	Time	Sampled by
BVW_7_3N_66W_Henrickson	10/22/2019	12:37	JB
SWSE_7_3N_66W			
Temperature, field	16.40	°C	
pH, field	8.35	s.u.	
Specific Conductivity, field	460.5	uS/cm	
Oxidation Reduction Potential, field	-95.5	mV	
Dissolved Oxygen, field	0.6	mg/L	
Turbidity, field	0.02	NTU	
Turnaround Time (Business days)			
Data Deliverable Information			
Comments / Special Instructions			
*Dissolved Metals (200.7/200.8): BaMS, B, Ca, Fe, Mg, Mn, K, SeMS, Na, Sr			
Please also send reports to Joel.Mason@Absarokasolutions.com and Max.Moran@Absarokasolutions.com			
M. Brouwer / G. A. Cude			
Sample Custody must be documented below each time samples change possession, including courier delivery.			
Relinquished by Sampler:	Date/Time:	Received By:	Date/Time:
1. [Signature]	10/22/19 16:00	1. [Signature]	10/22/19 17:00
Relinquished by Sampler:	Date/Time:	Received By:	Date/Time:
3		3	
Custody Seal #	Intact <input checked="" type="checkbox"/> Not Intact <input type="checkbox"/> Absent <input type="checkbox"/>	Preserved where applicable <input type="checkbox"/>	Cooler Temp. °C: 18 Therm. ID: T090 On Ice <input checked="" type="checkbox"/>

DA21371: Chain of Custody

Page 1 of 2



SGS Accutest Sample Receipt Summary

Job Number: DA21371

Client: ABSAROKA SOLUTIONS

Project: GWA_HENRICKSON_WATER_WELL

Date / Time Received: 10/23/2019 1:00:00 PM

Delivery Method:

Airbill #'s: co

Cooler Temps (Initial/Adjusted): 0

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: | ; | |
| 3. Cooler media: | Ice (Bag) | |
| 4. No. Coolers: | 1 | |

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"/> |

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: | Intact | |

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"/> |

Comments

DA21371: Chain of Custody

Page 2 of 2

MS Volatiles**QC Data Summaries**

Includes the following where applicable:

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

Method Blank Summary

Page 1 of 1

Job Number: DA21371

Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP

Project: GWA_Henrickson_Water_Well

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V6V1992-MB	6V8718.D	1	10/24/19	DC	n/a	n/a	V6V1992

The QC reported here applies to the following samples:

Method: SW846 8260B

DA21371-1

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	92% 70-130%
17060-07-0	1,2-Dichloroethane-D4	90% 70-130%
2037-26-5	Toluene-D8	94% 70-130%
460-00-4	4-Bromofluorobenzene	96% 70-130%

Blank Spike Summary

Page 1 of 1

Job Number: DA21371

Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP

Project: GWA_Henrickson_Water_Well

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V6V1992-BS	6V8716.D	1	10/24/19	DC	n/a	n/a	V6V1992

The QC reported here applies to the following samples:

Method: SW846 8260B

DA21371-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	50	53.8	108	70-130
100-41-4	Ethylbenzene	50	49.5	99	69-130
108-88-3	Toluene	50	48.9	98	70-130
	m,p-Xylene	100	105	105	70-130
95-47-6	o-Xylene	50	49.7	99	70-130
1330-20-7	Xylene (total)	150	154	103	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	95%	70-130%
17060-07-0	1,2-Dichloroethane-D4	94%	70-130%
2037-26-5	Toluene-D8	91%	70-130%
460-00-4	4-Bromofluorobenzene	97%	70-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: DA21371

Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP

Project: GWA_Henrickson_Water_Well

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
DA17875-3MS	6V8719.D	1	10/24/19	DC	n/a	n/a	V6V1992
DA17875-3MSD	6V8720.D	1	10/24/19	DC	n/a	n/a	V6V1992
DA17875-3	6V8721.D	1	10/24/19	DC	n/a	n/a	V6V1992

The QC reported here applies to the following samples:

Method: SW846 8260B

DA21371-1

CAS No.	Compound	DA17875-3 ug/l	Spike Q	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND	50	52.9	106	50	54.2	108	2	67-130/30
100-41-4	Ethylbenzene	ND	50	49.4	99	50	50.2	100	2	69-130/30
108-88-3	Toluene	ND	50	48.2	96	50	49.6	99	3	70-130/30
	m,p-Xylene	ND	100	103	103	100	106	106	3	70-130/30
95-47-6	o-Xylene	ND	50	49.2	98	50	51.3	103	4	70-130/30
1330-20-7	Xylene (total)	ND	150	152	101	150	157	105	3	67-130/30

CAS No.	Surrogate Recoveries	MS	MSD	DA17875-3	Limits
1868-53-7	Dibromofluoromethane	94%	96%	93%	70-130%
17060-07-0	1,2-Dichloroethane-D4	94%	89%	86%	70-130%
2037-26-5	Toluene-D8	90%	90%	92%	70-130%
460-00-4	4-Bromofluorobenzene	100%	98%	102%	70-130%

* = Outside of Control Limits.

GC Volatiles**QC Data Summaries**

7

Includes the following where applicable:

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

Method Blank Summary

Job Number: DA21371
Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP
Project: GWA_Henrickson_Water_Well

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGA2283-MB	GA50160.D	1	10/24/19	MB	n/a	n/a	GGA2283

The QC reported here applies to the following samples: Method: SW846 8015B

DA21371-1

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	93% 60-140%

Method Blank Summary

Job Number: DA21371
Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP
Project: GWA_Henrickson_Water_Well

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GFK59-MB	FK634.D	1	10/29/19	GN	n/a	n/a	GFK59

The QC reported here applies to the following samples: Method: RSK175 MOD

DA21371-1A

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	ND	0.00080	0.00070	mg/l	
74-84-0	Ethane	ND	0.0016	0.00080	mg/l	
74-98-6	Propane	ND	0.0022	0.0011	mg/l	

7.1.2
7

Blank Spike Summary

Job Number: DA21371
Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP
Project: GWA_Henrickson_Water_Well

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGA2283-BS	GA50158.D	1	10/24/19	MB	n/a	n/a	GGA2283

The QC reported here applies to the following samples: Method: SW846 8015B

DA21371-1

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
	TPH-GRO (C6-C10)	2.2	1.88	85	51-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	112%	60-140%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: DA21371
Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP
Project: GWA_Henrickson_Water_Well

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GFK59-BS	FK635.D	10	10/29/19	GN	n/a	n/a	GFK59

The QC reported here applies to the following samples: Method: RSK175 MOD

DA21371-1A

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
74-82-8	Methane	0.512	0.600	117	70-130
74-84-0	Ethane	0.923	1.17	127	70-142
74-98-6	Propane	1.38	1.70	123	70-137

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: DA21371
Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP
Project: GWA_Henrickson_Water_Well

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
DA17875-6MS	GA50161.D	1	10/24/19	MB	n/a	n/a	GGA2283
DA17875-6MSD	GA50162.D	1	10/24/19	MB	n/a	n/a	GGA2283
DA17875-6	GA50163.D	1	10/24/19	MB	n/a	n/a	GGA2283

The QC reported here applies to the following samples: Method: SW846 8015B

DA21371-1

CAS No.	Compound	DA17875-6 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	1.84	84	2.2	1.84	84	0	40-132/30

CAS No.	Surrogate Recoveries	MS	MSD	DA17875-6	Limits
120-82-1	1,2,4-Trichlorobenzene	111%	115%	103%	60-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: DA21371
Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP
Project: GWA_Henrickson_Water_Well

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
DA21395-1MS	FK637.D	10	10/29/19	GN	n/a	n/a	GFK59
DA21395-1MSD	FK638.D	10	10/29/19	GN	n/a	n/a	GFK59
DA21395-1	FK636.D	1	10/29/19	GN	n/a	n/a	GFK59

The QC reported here applies to the following samples: Method: RSK175 MOD

DA21371-1A

CAS No.	Compound	DA21395-1 mg/l	Spike Q mg/l	MS mg/l	MS %	Spike mg/l	MSD mg/l	MSD %	RPD	Limits Rec/RPD
74-82-8	Methane	0.0038	0.512	0.553	107	0.512	0.552	107	0	15-200/30
74-84-0	Ethane	ND	0.923	1.07	116	0.923	1.06	115	1	64-147/30
74-98-6	Propane	ND	1.38	1.55	112	1.38	1.54	112	1	63-139/30

* = Outside of Control Limits.

GC/LC Semi-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: DA21371
Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP
Project: GWA_Henrickson_Water_Well

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP18449-MB	FC65023.D	1	10/25/19	RB	10/24/19	OP18449	GFC2685

The QC reported here applies to the following samples: Method: SW846-8015B

DA21371-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	0.20	0.19	mg/l	

CAS No.	Surrogate Recoveries	Limits
84-15-1	o-Terphenyl	48% 11-142%

8.1.1
8

Blank Spike Summary

Job Number: DA21371
Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP
Project: GWA_Henrickson_Water_Well

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP18449-BS	FC65024.D	1	10/25/19	RB	10/24/19	OP18449	GFC2685

The QC reported here applies to the following samples: Method: SW846-8015B

DA21371-1

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
	TPH-DRO (C10-C28)	5	3.12	62	22-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	66%	11-142%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: DA21371
Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP
Project: GWA_Henrickson_Water_Well

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP18449-MS	FC65025.D	1	10/25/19	RB	10/24/19	OP18449	GFC2685
OP18449-MSD	FC65031.D	1	10/25/19	RB	10/24/19	OP18449	GFC2685
DA17876-4	FD65023.D	1	10/25/19	RB	10/24/19	OP18449	GFD2684

The QC reported here applies to the following samples: Method: SW846-8015B

DA21371-1

CAS No.	Compound	DA17876-4 mg/l	Spike Q mg/l	MS mg/l	MS %	Spike mg/l	MSD mg/l	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	ND	5	3.62	72	5	3.46	69	5	22-130/30

CAS No.	Surrogate Recoveries	MS	MSD	DA17876-4	Limits
84-15-1	o-Terphenyl	69%	57%	50%	11-142%

* = Outside of Control Limits.

Metals Analysis

QC Data Summaries

6

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: DA21371
Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
Project: GWA_Henrickson_Water_Well

QC Batch ID: MP29283
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 10/25/19

Metal	RL	IDL	MDL	MB raw	final
Aluminum	100	46	30		
Antimony	30	14	10		
Arsenic	25	22	7		
Barium	10	.3	2		
Beryllium	10	1	1.3		
Boron	50	3.3	7.4	-11	<50
Cadmium	10	1.9	1.6		
Calcium	400	6.6	53	7.2	<400
Chromium	10	1.1	1.7		
Cobalt	5.0	2.7	2.3		
Copper	10	4.6	2.3		
Iron	10	8.9	3.1	0.10	<10
Lead	50	13	6.3		
Lithium	5.0	.6	4		
Magnesium	200	50	31	-6.2	<200
Manganese	5.0	.5	1.1	0.0	<5.0
Molybdenum	10	8.5	4.3		
Nickel	30	6.2	6.1		
Phosphorus	100	91	24		
Potassium	1000	84	250	107	<1000
Selenium	50	30	21		
Silicon	50	41	45		
Silver	30	.6	4		
Sodium	400	13	51	170	<400
Strontium	5.0	.1	.6	-0.10	<5.0
Thallium	10	17	7.5		
Tin	60	41	51		
Titanium	10	.5	1.9		
Uranium	50	3.9	8.5		
Vanadium	10	.9	.7		
Zinc	30	9	3.8		

Associated samples MP29283: DA21371-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: DA21371
Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
Project: GWA_Henrickson_Water_Well

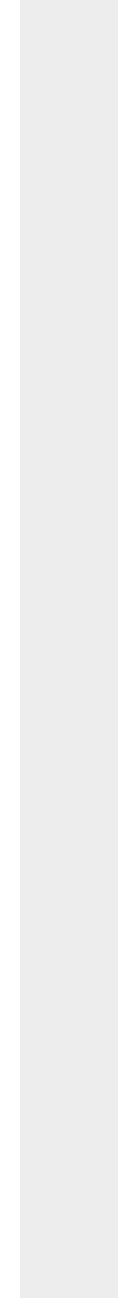
QC Batch ID: MP29283
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 10/25/19

Metal	RL	IDL	MDL	MB raw	final
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(anr) Analyte not requested



MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: DA21371
 Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
 Project: GWA_Henrickson_Water_Well

QC Batch ID: MP29283
 Matrix Type: AQUEOUS

Methods: EPA 200.7
 Units: ug/l

Prep Date: 10/25/19

Metal	DA21308-2F Original MS		Spikelot ICPAL2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Boron	435	1620	1000	118.5	70-130
Cadmium					
Calcium	117000	149000	25000	132.0(a)	70-130
Chromium					
Cobalt					
Copper					
Iron	23.4	5140	5000	102.5	70-130
Lead					
Lithium					
Magnesium	26000	50100	25000	96.4	70-130
Manganese	53.3	564	500	102.1	70-130
Molybdenum					
Nickel					
Phosphorus					
Potassium	30400	56600	25000	105.2	70-130
Selenium					
Silicon					
Silver					
Sodium	183000	206000	25000	92.0	70-130
Strontium	931	1420	500	97.8	70-130
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP29283: DA21371-1F

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: DA21371
 Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
 Project: GWA_Henrickson_Water_Well

QC Batch ID: MP29283
 Matrix Type: AQUEOUS

Methods: EPA 200.7
 Units: ug/l

Prep Date: 10/25/19

Metal	DA21308-2F Original MS	Spikelot ICPALL2	% Rec	QC Limits
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(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: DA21371
 Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
 Project: GWA_Henrickson_Water_Well

QC Batch ID: MP29283
 Matrix Type: AQUEOUS

Methods: EPA 200.7
 Units: ug/l

Prep Date: 10/25/19

	DA21308-2F		Spikelot		MSD	QC
Metal	Original	MSD	ICPAL2	% Rec	RPD	Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron	435	1600	1000	116.5	1.2	20
Cadmium						
Calcium	117000	146000	25000	120.0	2.0	20
Chromium						
Cobalt						
Copper						
Iron	23.4	5130	5000	102.3	0.2	20
Lead						
Lithium						
Magnesium	26000	50500	25000	98.0	0.8	20
Manganese	53.3	561	500	101.5	0.5	20
Molybdenum						
Nickel						
Phosphorus						
Potassium	30400	57400	25000	108.4	1.4	20
Selenium						
Silicon						
Silver						
Sodium	183000	207000	25000	96.0	0.5	20
Strontium	931	1430	500	99.8	0.7	20
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc						

Associated samples MP29283: DA21371-1F

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: DA21371
 Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
 Project: GWA_Henrickson_Water_Well

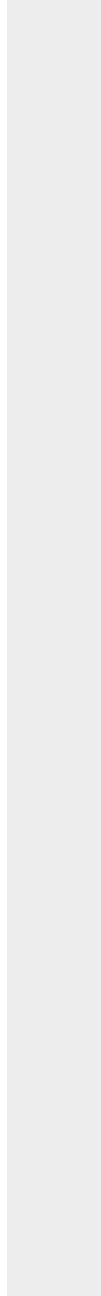
QC Batch ID: MP29283
 Matrix Type: AQUEOUS

Methods: EPA 200.7
 Units: ug/l

Prep Date: 10/25/19

Metal	DA21308-2F Original MSD	Spielot ICPALL2 % Rec	MSD RPD	QC Limit
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(N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested



SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: DA21371
 Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
 Project: GWA_Henrickson_Water_Well

QC Batch ID: MP29283
 Matrix Type: AQUEOUS

Methods: EPA 200.7
 Units: ug/l

Prep Date: 10/25/19

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron	1070	1000	107.0	85-115
Cadmium				
Calcium	24800	25000	99.2	85-115
Chromium				
Cobalt				
Copper				
Iron	4970	5000	99.4	85-115
Lead				
Lithium				
Magnesium	23600	25000	94.4	85-115
Manganese	492	500	98.4	85-115
Molybdenum				
Nickel				
Phosphorus				
Potassium	24900	25000	99.6	85-115
Selenium				
Silicon				
Silver				
Sodium	24400	25000	97.6	85-115
Strontium	501	500	100.2	85-115
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP29283: DA21371-1F

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: DA21371
Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
Project: GWA_Henrickson_Water_Well

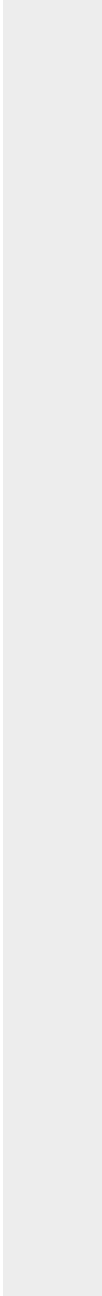
QC Batch ID: MP29283
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 10/25/19

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
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(anr) Analyte not requested



BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: DA21371
Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
Project: GWA_Henrickson_Water_Well

QC Batch ID: MP29288
Matrix Type: AQUEOUS

Methods: EPA 200.8
Units: ug/l

Prep Date: 10/24/19

Metal	RL	IDL	MDL	MB raw	final
Aluminum	50	1.1	2		
Antimony	0.40	.0022	.011		
Arsenic	0.20	.017	.044		
Barium	2.0	.016	.079	0.057	<2.0
Beryllium	0.20	.016	.069		
Boron	40	.49	2.1		
Cadmium	0.10	.036	.042		
Calcium	400	5.6	12		
Chromium	2.0	.053	.053		
Cobalt	0.20	.0049	.015		
Copper	2.0	.06	.13		
Iron	10	3.5	4.6		
Lead	0.50	.0079	.008		
Magnesium	100	1.3	1.3		
Manganese	1.0	.12	.13		
Molybdenum	1.0	.049	.029		
Nickel	2.0	.0088	.027		
Phosphorus	60	2.6	4.3		
Potassium	200	2.9	2.9		
Selenium	0.40	.06	.21	-0.061	<0.40
Silver	0.10	.0019	.008		
Sodium	500	4.9	4.9		
Strontium	20	.01	.015		
Thallium	0.20	.0024	.005		
Tin	10	.063	1.3		
Titanium	2.0	.059	.092		
Uranium	0.20	.0017	.002		
Vanadium	1.0	.037	.2		
Zinc	10	.21	.96		

Associated samples MP29288: DA21371-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: DA21371
 Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
 Project: GWA_Henrickson_Water_Well

QC Batch ID: MP29288
 Matrix Type: AQUEOUS

Methods: EPA 200.8
 Units: ug/l

Prep Date: 10/24/19

Metal	DA21371-1F Original MS		Spikelot ICPALL2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic					
Barium	70.3	491	400	105.2	70-130
Beryllium					
Boron					
Cadmium	anr				
Calcium					
Chromium					
Cobalt					
Copper	anr				
Iron	anr				
Lead	anr				
Magnesium					
Manganese					
Molybdenum	anr				
Nickel	anr				
Phosphorus					
Potassium					
Selenium	0.18	190	200	94.9	70-130
Silver	anr				
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc	anr				

Associated samples MP29288: DA21371-1F

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: DA21371
 Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
 Project: GWA_Henrickson_Water_Well

QC Batch ID: MP29288
 Matrix Type: AQUEOUS

Methods: EPA 200.8
 Units: ug/l

Prep Date: 10/24/19

Metal	DA21371-1F Original MSD		Spikelot ICPALL2 % Rec		MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium	70.3	499	400	107.2	1.6	20
Beryllium						
Boron						
Cadmium	anr					
Calcium						
Chromium						
Cobalt						
Copper	anr					
Iron	anr					
Lead	anr					
Magnesium						
Manganese						
Molybdenum	anr					
Nickel	anr					
Phosphorus						
Potassium						
Selenium	0.18	191	200	95.4	0.5	20
Silver	anr					
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc	anr					

Associated samples MP29288: DA21371-1F

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: DA21371

Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP

Project: GWA_Henrickson_Water_Well

QC Batch ID: MP29288

Methods: EPA 200.8

Matrix Type: AQUEOUS

Units: ug/l

Prep Date: 10/24/19

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium	406	400	101.5	85-115
Beryllium				
Boron				
Cadmium	anr			
Calcium				
Chromium				
Cobalt				
Copper	anr			
Iron	anr			
Lead	anr			
Magnesium				
Manganese				
Molybdenum	anr			
Nickel	anr			
Phosphorus				
Potassium				
Selenium	187	200	93.5	85-115
Silver	anr			
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	anr			

Associated samples MP29288: DA21371-1F

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(anr) Analyte not requested

General Chemistry

QC Data Summaries

Includes the following where applicable:

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

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: DA21371
Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
Project: GWA_Henrickson_Water_Well

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Alkalinity, Bicarbonate as CaC	GN48668	5.0	2.3	mg/l	100	106	106.0	90-110%
Alkalinity, Carbonate	GN48669	5.0	0.0	mg/l	100	106	106.0	80-120%
Alkalinity, Total as CaCO3	GN48667	5.0	2.3	mg/l	100	106	106.0	90-110%
Bromide	GP26144/GN48664	0.050	0.0	mg/l	0.5	0.498	99.6	90-110%
Chloride	GP26144/GN48664	0.50	0.0	mg/l	5	5.01	100.2	90-110%
Fluoride	GP26144/GN48664	0.10	0.0	mg/l	1	0.985	98.5	90-110%
Iron-Related Bacteria	MB1242	25	<25	CFU/ml				
Nitrogen, Nitrate	GP26144/GN48664	0.010	0.0	mg/l	0.1	0.0973	97.3	90-110%
Nitrogen, Nitrite	GP26144/GN48664	0.0040	0.0	mg/l	0.05	0.0504	100.8	90-110%
Phosphorus, Total	GP26148/GN48672	0.010	0.00	mg/l	0.2	0.190	95.0	90-110%
Phosphorus, Total	GP26148/GN48672	0.010	0.00	mg/l	0.2	0.197	98.5	90-110%
Slime Forming Bacteria	MB1243	500	<500	CFU/ml				
Solids, Total Dissolved	GN48660	10	0.0	mg/l	250	253	101.2	90-110%
Specific Conductivity	GP26160/GN48698			umhos/cm	992	992	99.4	90-110%
Specific Conductivity	GP26160/GN48698			umhos/cm	9860	9860	98.6	90-110%
Sulfate	GP26144/GN48664	0.50	0.0	mg/l	5	4.94	98.8	90-110%
Sulfate Reducing Bacteria	MB1244	200	<200	CFU/ml				

Associated Samples:

Batch MB1242: DA21371-1B
Batch MB1243: DA21371-1B
Batch MB1244: DA21371-1B
Batch GN48660: DA21371-1
Batch GN48667: DA21371-1
Batch GN48668: DA21371-1
Batch GN48669: DA21371-1
Batch GP26144: DA21371-1
Batch GP26148: DA21371-1
Batch GP26160: DA21371-1
(*) Outside of QC limits

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DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: DA21371
Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
Project: GWA_Henrickson_Water_Well

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Alkalinity, Total as CaCO ₃	GN48667	DA21321-1	mg/l	191	193	1.0	0-20%
Phosphorus, Total	GP26148/GN48672	DA21313-3	mg/l	0.077	0.0780	1.3	0-20%
Solids, Total Dissolved	GN48660	DA21365-1	mg/l	1490	1460	2.0	0-5%
Specific Conductivity	GP26160/GN48698	DA21344-10	umhos/cm	13800	14500	5.8	0-20%

Associated Samples:

Batch GN48660: DA21371-1

Batch GN48667: DA21371-1

Batch GP26148: DA21371-1

Batch GP26160: DA21371-1

(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: DA21371
Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
Project: GWA_Henrickson_Water_Well

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Alkalinity, Total as CaCO ₃	GN48667	DA21321-1	mg/l	191	100	308	116.4	80-120%
Bromide	GP26144/GN48664	DA21327-1	mg/l	0.59	5	5.5	98.2	80-120%
Chloride	GP26144/GN48664	DA21327-1	mg/l	53.8	50	106	104.4	80-120%
Fluoride	GP26144/GN48664	DA21327-1	mg/l	2.1	10	12.1	100.0	80-120%
Nitrogen, Nitrate	GP26144/GN48664	DA21327-1	mg/l	0.0	1	0.97	97.0	80-120%
Nitrogen, Nitrite	GP26144/GN48664	DA21327-1	mg/l	0.0	0.5	0.51	102.0	80-120%
Phosphorus, Total	GP26148/GN48672	DA21236-1	mg/l	0.027	0.2	0.232	102.5	90-110%
Sulfate	GP26144/GN48664	DA21327-1	mg/l	8.1	50	58.2	100.2	80-120%

Associated Samples:

Batch GN48667: DA21371-1

Batch GP26144: DA21371-1

Batch GP26148: DA21371-1

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: DA21371
Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
Project: GWA_Henrickson_Water_Well

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Alkalinity, Total as CaCO ₃	GN48667	DA21321-1	mg/l	191	100	292	5.1	20%
Bromide	GP26144/GN48664	DA21327-1	mg/l	0.59	5	5.5	0.0	20%
Chloride	GP26144/GN48664	DA21327-1	mg/l	53.8	50	106	0.0	20%
Fluoride	GP26144/GN48664	DA21327-1	mg/l	2.1	10	12.1	0.0	20%
Nitrogen, Nitrate	GP26144/GN48664	DA21327-1	mg/l	0.0	1	0.98	1.0	20%
Nitrogen, Nitrite	GP26144/GN48664	DA21327-1	mg/l	0.0	0.5	0.51	0.0	20%
Sulfate	GP26144/GN48664	DA21327-1	mg/l	8.1	50	58.2	0.0	20%

Associated Samples:

Batch GN48667: DA21371-1

Batch GP26144: DA21371-1

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits