The results set forth herein are provided by SGS North America Inc.

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Automated Report

Technical Report for

Kerr-McGee Oil & Gas Onshore LP

GWA_NGL_Water_Well

FID:755053 Reg:Vol. Freq.:Q4

SGS Job Number: DA21200

Sampling Date: 10/15/19

Report to:

Kerr-McGee Oil & Gas Onshore LP
112 High Street
Buffalo, WY 82834
tanya.cude@absarokasolutions.com; AnadarkoDataMmgt@ghd.com;
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ATTN: Tanya Cude

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.

Scott Heideman
Laboratory Director

Client Service contact: Carissa Cumine 303-425-6021

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

Sections: 1 2 3 4 5 6 7 8 9 10

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Sample Summary

Kerr-McGee Oil & Gas Onshore LP

Job No: DA21200

GWA_NGL_Water_Well
Project No: FID:755053 Reg:Vol. Freq.:Q4

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
This report contains results reported as ND = Not detected. The following applies: Organics ND = Not detected above the MDL							
DA21200-1	10/15/19	13:12	JB	10/16/19	AQ	Ground Water	BW_NGL_78801_F_R SESE_30_3N_65W
DA21200-1A	10/15/19	13:12	JB	10/16/19	AQ	Ground Water	BW_NGL_78801_F_R SESE_30_3N_65W
DA21200-1B	10/15/19	13:12	JB	10/16/19	AQ	Ground Water	BW_NGL_78801_F_R SESE_30_3N_65W
DA21200-1F	10/15/19	13:12	JB	10/16/19	AQ	Groundwater Filtered	BW_NGL_78801_F_R SESE_30_3N_65W

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Kerr-McGee Oil & Gas Onshore LP **Job No** DA21200

Site: GWA_NGL_Water_Well **Report Date** 10/30/2019 6:49:31 P

1 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were collected on 10/15/2019 and were received at SGS North America Inc - Orlando on 10/16/2019 properly preserved, at 3.8 Deg. C and intact. These Samples received an SGS Orlando job number of DA21200. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Volatiles By Method SW846 8260B

Matrix: AQ **Batch ID:** V6V1984

- All samples were analyzed within the recommended method holding time.
- Sample(s) DA17867-10MS, DA17867-10MSD 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:** GFB1107

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) DA21178-7MS, DA21178-7MSD were used as the QC samples indicated.
- DA21200-1A: The pH of the sample was >2 at time of analysis.

GC Volatiles By Method SW846 8015B

Matrix: AQ **Batch ID:** GGB2437

- All samples were analyzed within the recommended method holding time.
- Sample(s) DA21192-1MS, DA21192-1MSD 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:** OP18422

- All samples were extracted and analyzed within the recommended method holding time.
- Sample(s) DA17872-2MS, DA17872-2MSD 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:** MP29249

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) DA21159-1FMS, DA21159-1FMSD were used as the QC samples for metals.

Metals Analysis By Method EPA 200.8

Matrix: AQ	Batch ID: MP29254

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) DA21180-15FMS, DA21180-15FMSD were used as the QC samples for metals.

General Chemistry By Method EPA 365.1

Matrix: AQ	Batch ID: GP26123

- All samples were prepped and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) DA21081-1DUP, DA21180-1MS were used as the QC samples for Phosphorus, Total.

General Chemistry By Method EPA300.0/SW846 9056A

Matrix: AQ	Batch ID: GP26114

- All samples were prepped and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) DA21192-1MS, DA21192-1MSD were used as the QC samples for Bromide, Chloride, Fluoride, Nitrogen, Nitrate, Nitrogen, Nitrite, Sulfate.
- DA21200-1 for Nitrogen, Nitrate: Elevated detection limit due to matrix interference.
- DA21200-1 for Nitrogen, Nitrite: Elevated detection limit due to matrix interference.

Matrix: AQ	Batch ID: R49480

- DA21200-1 for Nitrogen, Nitrate + Nitrite: Calculated as: (Nitrogen, Nitrate) + (Nitrogen, Nitrite)

General Chemistry By Method HACH IRB-BART

Matrix: AQ	Batch ID: MB1239

- 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: MB1240

- 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: MB1241

- 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: GN48633

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) DA20925-1DUP, DA20931-1MS, DA20931-1MSD were used as the QC samples for Alkalinity, Total as CaCO3.

Matrix: AQ	Batch ID: GN48634

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

Matrix: AQ	Batch ID: GN48635

- 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: GP26124

- Sample(s) DA21155-3DUP were used as the QC samples for Specific Conductivity.

General Chemistry By Method SM 2540C-2011

Matrix: AQ	Batch ID: GN48588

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) DA21138-1DUP were used as the QC samples for Solids, Total Dissolved.

General Chemistry By Method SM4500HB+-2011/9040C

Matrix: AQ	Batch ID: GN48610

- The following samples were run outside of holding time for method SM4500HB+-2011/9040C: DA21200-1 Analysis performed past recommended hold time.

SGS Orlando certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS Orlando and as stated on the COC. SGS Orlando certifies that the data meets the Data Quality Objectives for precision,accuracy and completeness as specified in the SGS Orlando Quality Manual except as noted above. This report is to be used in its entirety. SGS Orlando is not responsible for any assumptions of data quality if partial data packages are used.

Summary of Hits

Job Number: DA21200
Account: Kerr-McGee Oil & Gas Onshore LP
Project: GWA_NGL_Water_Well
Collected: 10/15/19

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
DA21200-1	**BW_NGL_78801_F_R SESE_30_3N_65W**					
Alkalinity, Bicarbonate as CaCO3		499	5.0		mg/l	SM 2320B-2011
Alkalinity, Total as CaCO3		499	5.0		mg/l	SM 2320B-2011
Bromide		1.1	0.25		mg/l	EPA300.0/SW846 9056A
Cation Anion Balance		0.65			%	SM1030E-2011
Chloride		257	13		mg/l	EPA300.0/SW846 9056A
Fluoride		1.5	0.50		mg/l	EPA300.0/SW846 9056A
Phosphorus, Total		0.024	0.010		mg/l	EPA 365.1
Solids, Total Dissolved		1460	10		mg/l	SM 2540C-2011
Specific Conductivity		2160	1.0		umhos/cm	SM 2510B-2011
Sulfate		388	13		mg/l	EPA300.0/SW846 9056A
pH [a]		7.95			su	SM4500HB + -2011/9040C
Temperature (Field)		19.52			Deg. C	FIELD
Specific Conductivity (Field)		2562.2	0.50		umhos/cm	FIELD
Oxygen, Dissolved (Field)		0.04			mg/l	FIELD
pH (Field)		7.64			su	FIELD
Turbidity		0.02			NTU	FIELD
DA21200-1A	**BW_NGL_78801_F_R SESE_30_3N_65W**					
Methane [b]		5.99	0.020	0.018	mg/l	RSK175 MOD
DA21200-1B	**BW_NGL_78801_F_R SESE_30_3N_65W**					
Iron-Related Bacteria		9000	25		CFU/ml	HACH IRB-BART
Slime Forming Bacteria		440000	500		CFU/ml	HACH SLYM-BART
Sulfate Reducing Bacteria		115000	200		CFU/ml	HACH SRB-BART
DA21200-1F	**BW_NGL_78801_F_R SESE_30_3N_65W**					
Barium		0.0552	0.0040		mg/l	EPA 200.8
Boron		0.213	0.050		mg/l	EPA 200.7
Calcium		37.9	0.40		mg/l	EPA 200.7
Iron		0.0509	0.010		mg/l	EPA 200.7
Magnesium		11.7	0.20		mg/l	EPA 200.7
Manganese		0.0218	0.0050		mg/l	EPA 200.7
Potassium		4.28	1.0		mg/l	EPA 200.7
Sodium		506	0.40		mg/l	EPA 200.7
Strontium		0.960	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.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	BW_NGL_78801_F_R SESE_30_3N_65W		
Lab Sample ID:	DA21200-1	**Date Sampled:**	10/15/19
Matrix:	AQ - Ground Water	**Date Received:**	10/16/19
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	GWA_NGL_Water_Well		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6V8603.D	1	10/17/19 17:22	DC	n/a	n/a	V6V1984
Run #2							

	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	97%		70-130%
17060-07-0	1,2-Dichloroethane-D4	94%		70-130%
2037-26-5	Toluene-D8	100%		70-130%
460-00-4	4-Bromofluorobenzene	97%		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_NGL_78801_F_R SESE_30_3N_65W		
Lab Sample ID:	DA21200-1	**Date Sampled:**	10/15/19
Matrix:	AQ - Ground Water	**Date Received:**	10/16/19
Method:	SW846 8015B	**Percent Solids:**	n/a
Project:	GWA_NGL_Water_Well		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB52613.D	1	10/18/19 08:06	MB	n/a	n/a	GGB2437
Run #2							

	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	100%		60-140%

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_NGL_78801_F_R SESE_30_3N_65W		
Lab Sample ID:	DA21200-1	**Date Sampled:**	10/15/19
Matrix:	AQ - Ground Water	**Date Received:**	10/16/19
Method:	SW846-8015B SW846 3510C	**Percent Solids:**	n/a
Project:	GWA_NGL_Water_Well		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FC64953.D	1	10/17/19 13:36	RB	10/17/19	OP18422	GFC2682
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

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

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	53%		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_NGL_78801_F_R SESE_30_3N_65W
Lab Sample ID: DA21200-1
Matrix: AQ - Ground Water
Project: GWA_NGL_Water_Well

Date Sampled: 10/15/19
Date Received: 10/16/19
Percent Solids: n/a

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate as CaC	499	5.0	mg/l	1	10/22/19	JD	SM 2320B-2011
Alkalinity, Carbonate	< 5.0	5.0	mg/l	1	10/22/19	JD	SM 2320B-2011
Alkalinity, Total as CaCO3	499	5.0	mg/l	1	10/22/19	JD	SM 2320B-2011
Bromide	1.1	0.25	mg/l	5	10/17/19 11:16	AM	EPA300.0/SW846 9056A
Cation Anion Balance	0.65		%	1	10/30/19	SH	SM1030E-2011
Chloride	257	13	mg/l	25	10/17/19 13:22	AM	EPA300.0/SW846 9056A
Fluoride	1.5	0.50	mg/l	5	10/17/19 11:16	AM	EPA300.0/SW846 9056A
Nitrogen, Nitrate [a]	< 0.050	0.050	mg/l	5	10/17/19 11:16	AM	EPA300.0/SW846 9056A
Nitrogen, Nitrate + Nitrite [b]	< 0.070	0.070	mg/l	1	10/17/19 11:16	AM	EPA300.0/SW846 9056A
Nitrogen, Nitrite [a]	< 0.020	0.020	mg/l	5	10/17/19 11:16	AM	EPA300.0/SW846 9056A
Phosphorus, Total	0.024	0.010	mg/l	1	10/18/19 17:56	PV	EPA 365.1
Solids, Total Dissolved	1460	10	mg/l	1	10/17/19	AK	SM 2540C-2011
Specific Conductivity	2160	1.0	umhos/cm	1	10/21/19	SK	SM 2510B-2011
Sulfate	388	13	mg/l	25	10/17/19 13:22	AM	EPA300.0/SW846 9056A
pH [c]	7.95		su	1	10/18/19 11:00	SK	SM4500HB+-2011/9040C

Field Parameters

Oxygen, Dissolved (Field)	0.04		mg/l	1	10/22/19	SH	FIELD
Redox Potential Vs H2	-139.5		mv	1	10/22/19	SH	FIELD
Specific Conductivity (Field)	2562.2	0.50	umhos/cm	1	10/22/19	SH	FIELD
Temperature (Field)	19.52		Deg. C	1	10/22/19	SH	FIELD
Turbidity	0.02		NTU	1	10/22/19	SH	FIELD
pH (Field)	7.64		su	1	10/22/19	SH	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

Client Sample ID:	BW_NGL_78801_F_R SESE_30_3N_65W		
Lab Sample ID:	DA21200-1A	**Date Sampled:**	10/15/19
Matrix:	AQ - Ground Water	**Date Received:**	10/16/19
Method:	RSK175 MOD	**Percent Solids:**	n/a
Project:	GWA_NGL_Water_Well		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	FB24230.D	1	10/22/19 17:32	GN	n/a	n/a	GFB1107
Run #2 [a]	FB24232.D	25	10/22/19 17:46	GN	n/a	n/a	GFB1107

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	39.0 ml	4.0 ml	500 ul	21.0 Deg. C
Run #2	39.0 ml	4.0 ml	500 ul	21.0 Deg. C

Methane, Ethane and Propane

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	5.99 [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_NGL_78801_F_R SESE_30_3N_65W		
Lab Sample ID:	DA21200-1B	**Date Sampled:**	10/15/19
Matrix:	AQ - Ground Water	**Date Received:**	10/16/19
		Percent Solids:	n/a
Project:	GWA_NGL_Water_Well		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Iron-Related Bacteria	9000	25	CFU/ml	1	10/21/19 10:00	SK	HACH IRB-BART
Slime Forming Bacteria	440000	500	CFU/ml	1	10/21/19 10:00	SK	HACH SLYM-BART
Sulfate Reducing Bacteria	115000	200	CFU/ml	1	10/21/19 10:00	SK	HACH SRB-BART

RL = Reporting Limit

Report of Analysis

Client Sample ID:	BW_NGL_78801_F_R SESE_30_3N_65W		
Lab Sample ID:	DA21200-1F	**Date Sampled:**	10/15/19
Matrix:	AQ - Groundwater Filtered	**Date Received:**	10/16/19
		Percent Solids:	n/a
Project:	GWA_NGL_Water_Well		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Barium	0.0552	0.0040	mg/l	2	10/18/19	10/19/19	JM	EPA 200.8 [1]	EPA 200.8 [6]
Boron	0.213	0.050	mg/l	1	10/18/19	10/22/19	JM	EPA 200.7 [3]	EPA 200.7 [5]
Calcium	37.9	0.40	mg/l	1	10/18/19	10/22/19	JM	EPA 200.7 [3]	EPA 200.7 [5]
Iron	0.0509	0.010	mg/l	1	10/18/19	10/22/19	JM	EPA 200.7 [3]	EPA 200.7 [5]
Magnesium	11.7	0.20	mg/l	1	10/18/19	10/18/19	JM	EPA 200.7 [2]	EPA 200.7 [5]
Manganese	0.0218	0.0050	mg/l	1	10/18/19	10/22/19	JM	EPA 200.7 [3]	EPA 200.7 [5]
Potassium	4.28	1.0	mg/l	1	10/18/19	10/18/19	JM	EPA 200.7 [2]	EPA 200.7 [5]
Selenium	< 0.00080	0.00080	mg/l	2	10/18/19	10/22/19	JM	EPA 200.8 [4]	EPA 200.8 [6]
Sodium	506	0.40	mg/l	1	10/18/19	10/18/19	JM	EPA 200.7 [2]	EPA 200.7 [5]
Strontium	0.960	0.0050	mg/l	1	10/18/19	10/18/19	JM	EPA 200.7 [2]	EPA 200.7 [5]

(1) Instrument QC Batch: MA11900
(2) Instrument QC Batch: MA11902
(3) Instrument QC Batch: MA11911
(4) Instrument QC Batch: MA11912
(5) Prep QC Batch: MP29249
(6) Prep QC Batch: MP29254

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

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

Bottle Order Control #:
FED-EX Tracking #:
SGS Quote #:
SGS Job #: DA21200

Client / Reporting Information

Company: (Report to) **Absaroka Solutions**
Street: 112 High Street
City, State: Buffalo, WY 82834
Project Contact: Tanya Cude
Phone: 352-318-4034
Email: Tanya.Cude@Absarokasolutions.com
Sampler(s) Name(s): John Brouwer

Project Information

Project Name: GWA_NGL_Water_Well
Frequency: Q4
Regulation: Voluntary
Facility ID: 755053
EQuIS Facility Code: 0089019-AN-GWABWQ
Client Purchase Order #: WO#89225208
Project Manager: Joel Mason

Billing Information (if different from Report to)

Company: Occidental Petroleum Corporation (OXY)
Street Address: 1099 16th Street, Suite 1800
City, State ZIP: Denver, CO 80202-1918
Attention: Erik Mickelson User ID: fvv451

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; WP - Wipe; FB-Field Blank; EB-Equipment Blank; RB- Rinse Blank; TB-Trip Blank

Field ID / Point of Collection	Collection Date	Time	Sampled by	Matrix	# of bottles	Number of preserved Bottles: NONE	HCl	NaOH	HNO3	H2SO4	DI Water	MEOH	ENCORE	Na2S2O4	Other	PH, SCON, TDS	XCARBICALK	BRO, CHL, F, NO2, XNO3O, NO32, SO4	TPO4	Dissolved Metals - Lab Filtered*	VRSK175DGMEP	V8260BTX	B8015DRO	V8015GRO	IRBAC, SFBAC, SO4RBAC	CABAL	LAB USE ONLY
BW_NGL_78801_F_R	10/15/2019	1312	JB	GW	17	9	6			1					1	X	X	X	X	X	X	X	X	X	X	X	01
SESE_30_3N_65W																											SR10/L6
Temperature, field	10/15/2019	19.52	°C																								
pH, field		7.64	s.u.																								
Specific Conductivity, field		2662.2	uS/cm																								
Oxidation Reduction Potential, field		-139.5	mV																								
Dissolved Oxygen, field		0.04	mg/L																								
Turbidity, field		0.02	NTU																								

Turnaround Time (Business days)

- [X] Std. 10 Business Days
- [ ] 5 Day RUSH
- [ ] 3 Day Emergency
- [ ] 2 Day Emergency
- [ ] 1 Day Emergency

Emergency & Rush T/A data available VIA LabLink. RUSH TAT approval needed.

Special Reporting Instructions

- [ ] Report in PPB
- [ ] Report in PPM
- [ ] Report MDLs

Data Deliverable Information

- [ ] Commercial "A" (Level 1, Results Only)
- [ ] Commercial "B" (Level 2, Results + QC Summary)
- [ ] COMMBN (Results/QC/Narrative)
- [ ] COMMBN+ [Results/QC/Narrative (+ chromatograms)]
- [ ] REDT2
- [ ] FULT1
- [X] EDD Format: COGCC Compatible

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

EPA Program

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date/Time:	Received By:	Relinquished By:	Date/Time:	Received By:
1	10/15/19 1400	1	2 1500		2
Relinquished by Sampler:	Date/Time:	Received By:	Relinquished By:	Date/Time:	Received By:
3		3	4		4

Custody Seal # Intact ☐ Not Intact ☐ Absent ☐ | Preserved where applicable ☐ | Cooler Temp. °C: 2 C1 | Therm. ID: | On Ice ☐

Form MSQA 084-01, RV 6/19/17
http://www.sgs.com/terms-and-conditions

DA21200: Chain of Custody
Page 1 of 2

SGS Accutest Sample Receipt Summary

Job Number: DA21200 **Client:** ABSAROKA SOLUTIONS **Project:** GWA_NGL_WATER_WELL

Date / Time Received: 10/16/2019 3:00:00 PM **Delivery Method:** **Airbill #'s:** co

Cooler Temps (Initial/Adjusted): 0

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
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:	☑		☐	☐
2. Trip Blank listed on COC:	☑		☐	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☑		☐	☐

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

DA21200: Chain of Custody
Page 2 of 2

MS Volatiles

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QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: DA21200
Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP
Project: GWA_NGL_Water_Well

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V6V1984-MB	6V8586.D	1	10/17/19	DC	n/a	n/a	V6V1984

The QC reported here applies to the following samples: **Method:** SW846 8260B

DA21200-1

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	93%	70-130%
17060-07-0	1,2-Dichloroethane-D4	93%	70-130%
2037-26-5	Toluene-D8	97%	70-130%
460-00-4	4-Bromofluorobenzene	96%	70-130%

Blank Spike Summary

Job Number: DA21200
Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP
Project: GWA_NGL_Water_Well

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V6V1984-BS	6V8584.D	1	10/17/19	DC	n/a	n/a	V6V1984

The QC reported here applies to the following samples: **Method:** SW846 8260B

DA21200-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	50	53.6	107	70-130
100-41-4	Ethylbenzene	50	51.9	104	69-130
108-88-3	Toluene	50	50.9	102	70-130
	m,p-Xylene	100	106	106	70-130
95-47-6	o-Xylene	50	50.4	101	70-130
1330-20-7	Xylene (total)	150	156	104	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	94%	70-130%
17060-07-0	1,2-Dichloroethane-D4	95%	70-130%
2037-26-5	Toluene-D8	94%	70-130%
460-00-4	4-Bromofluorobenzene	101%	70-130%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: DA21200
Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP
Project: GWA_NGL_Water_Well

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
DA17867-10MS	6V8587.D	1	10/17/19	DC	n/a	n/a	V6V1984
DA17867-10MSD	6V8588.D	1	10/17/19	DC	n/a	n/a	V6V1984
DA17867-10	6V8589.D	1	10/17/19	DC	n/a	n/a	V6V1984

The QC reported here applies to the following samples: **Method:** SW846 8260B

DA21200-1

CAS No.	Compound	DA17867-10 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		50	52.4	105	50	53.1	106	1	67-130/30
100-41-4	Ethylbenzene	ND		50	50.4	101	50	51.2	102	2	69-130/30
108-88-3	Toluene	ND		50	48.9	98	50	50.8	102	4	70-130/30
	m,p-Xylene	ND		100	104	104	100	106	106	2	70-130/30
95-47-6	o-Xylene	ND		50	49.9	100	50	50.3	101	1	70-130/30
1330-20-7	Xylene (total)	ND		150	154	103	150	156	104	1	67-130/30

CAS No.	Surrogate Recoveries	MS	MSD	DA17867-10	Limits
1868-53-7	Dibromofluoromethane	96%	92%	93%	70-130%
17060-07-0	1,2-Dichloroethane-D4	92%	93%	91%	70-130%
2037-26-5	Toluene-D8	93%	95%	97%	70-130%
460-00-4	4-Bromofluorobenzene	100%	102%	100%	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: DA21200
Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP
Project: GWA_NGL_Water_Well

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB2437-MB	GB52591.D	1	10/17/19	MB	n/a	n/a	GGB2437

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

DA21200-1

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	101%	60-140%

Method Blank Summary

Job Number: DA21200
Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP
Project: GWA_NGL_Water_Well

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GFB1107-MB	FB24219.D	1	10/22/19	GN	n/a	n/a	GFB1107

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

DA21200-1A

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	

Blank Spike Summary

Job Number: DA21200
Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP
Project: GWA_NGL_Water_Well

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB2437-BS	GB52590.D	1	10/17/19	MB	n/a	n/a	GGB2437

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

DA21200-1

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
	TPH-GRO (C6-C10)	2.2	1.63	74	51-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	104%	60-140%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: DA21200
Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP
Project: GWA_NGL_Water_Well

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GFB1107-BS	FB24220.D	10	10/22/19	GN	n/a	n/a	GFB1107

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

DA21200-1A

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
74-82-8	Methane	0.512	0.590	115	70-130
74-84-0	Ethane	0.923	1.16	126	70-142
74-98-6	Propane	1.38	1.68	122	70-137

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: DA21200
Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP
Project: GWA_NGL_Water_Well

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
DA21192-1MS	GB52593.D	25	10/17/19	MB	n/a	n/a	GGB2437
DA21192-1MSD	GB52594.D	25	10/17/19	MB	n/a	n/a	GGB2437
DA21192-1	GB52592.D	25	10/17/19	MB	n/a	n/a	GGB2437

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

DA21200-1

CAS No.	Compound	DA21192-1 mg/l	Q	Spike mg/l	MS mg/l	MS %	Spike mg/l	MSD mg/l	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	9.62		55	52.7	78	55	51.4	76	2	40-132/30

CAS No.	Surrogate Recoveries	MS	MSD	DA21192-1	Limits
120-82-1	1,2,4-Trichlorobenzene	133%	131%	131%	60-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: DA21200
Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP
Project: GWA_NGL_Water_Well

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
DA21178-7MS [a]	FB24222.D	10	10/22/19	GN	n/a	n/a	GFB1107
DA21178-7MSD [a]	FB24223.D	10	10/22/19	GN	n/a	n/a	GFB1107
DA21178-7 [a]	FB24221.D	1	10/22/19	GN	n/a	n/a	GFB1107

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

DA21200-1A

CAS No.	Compound	DA21178-7 mg/l	Q	Spike mg/l	MS mg/l	MS %	Spike mg/l	MSD mg/l	MSD %	RPD	Limits Rec/RPD
74-82-8	Methane	ND		0.512	0.587	115	0.512	0.581	113	1	15-200/30
74-84-0	Ethane	ND		0.923	1.14	124	0.923	1.13	122	1	64-147/30
74-98-6	Propane	ND		1.38	1.66	120	1.38	1.67	121	1	63-139/30

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

* = 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: DA21200
Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP
Project: GWA_NGL_Water_Well

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP18422-MB	FC64947.D	1	10/17/19	RB	10/17/19	OP18422	GFC2682

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

DA21200-1

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	35%	11-142%

Blank Spike Summary

Job Number: DA21200
Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP
Project: GWA_NGL_Water_Well

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP18422-BS	FC64948.D	1	10/17/19	RB	10/17/19	OP18422	GFC2682

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

DA21200-1

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
	TPH-DRO (C10-C28)	5	1.41	28	22-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	36%	11-142%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: DA21200
Account: ANADACOD Kerr-McGee Oil & Gas Onshore LP
Project: GWA_NGL_Water_Well

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP18422-MS	FC64949.D	1	10/17/19	RB	10/17/19	OP18422	GFC2682
OP18422-MSD	FC64950.D	1	10/17/19	RB	10/17/19	OP18422	GFC2682
DA17872-2	FC64951.D	1	10/17/19	RB	10/17/19	OP18422	GFC2682

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

DA21200-1

CAS No.	Compound	DA17872-2 mg/l	Q	Spike mg/l	MS mg/l	MS %	Spike mg/l	MSD mg/l	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	ND		5	1.95	39	5	1.67	33	15	22-130/30

CAS No.	Surrogate Recoveries	MS	MSD	DA17872-2	Limits
84-15-1	o-Terphenyl	47%	43%	31%	11-142%

* = Outside of Control Limits.

Metals Analysis

QC Data Summaries

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: DA21200
Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
Project: GWA_NGL_Water_Well

QC Batch ID: MP29249
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 10/18/19

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	-4.4	<50
Cadmium	10	1.9	1.6		
Calcium	400	6.6	53	2.6	<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	-4.2	<10
Lead	50	13	6.3		
Lithium	5.0	.6	4		
Magnesium	200	50	31	-20	<200
Manganese	5.0	.5	1.1	-0.40	<5.0
Molybdenum	10	8.5	4.3		
Nickel	30	6.2	6.1		
Phosphorus	100	91	24		
Potassium	1000	84	250	99.9	<1000
Selenium	50	30	21		
Silicon	50	41	45		
Silver	30	.6	4		
Sodium	400	13	51	166	<400
Strontium	5.0	.1	.6	0.0	<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 MP29249: DA21200-1F

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

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: DA21200
Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
Project: GWA_NGL_Water_Well

QC Batch ID: MP29249 Methods: EPA 200.7
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 10/18/19

Metal	RL	IDL	MDL	MB raw	final

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: DA21200
Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
Project: GWA_NGL_Water_Well

QC Batch ID: MP29249
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 10/18/19

Metal	DA21159-1F Original	MS	Spikelot ICPALL2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Boron	288	1350	1000	110.0	70-130
Cadmium					
Calcium	119000	142000	25000	92.0	70-130
Chromium					
Cobalt					
Copper					
Iron	49.0	5240	5000	103.8	70-130
Lead					
Lithium					
Magnesium	37900	64300	25000	105.6	70-130
Manganese	6.9	508	500	100.2	70-130
Molybdenum					
Nickel					
Phosphorus					
Potassium	11700	40000	25000	113.2	70-130
Selenium					
Silicon					
Silver					
Sodium	109000	136000	25000	108.0	70-130
Strontium	1270	1820	500	110.0	70-130
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP29249: DA21200-1F

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: DA21200
Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
Project: GWA_NGL_Water_Well

QC Batch ID: MP29249 Methods: EPA 200.7
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 10/18/19

Metal	DA21159-1F Original MS	Spikelot ICPALL2	% Rec	QC Limits

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: DA21200
Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
Project: GWA_NGL_Water_Well

QC Batch ID: MP29249 Methods: EPA 200.7
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 10/18/19

Metal	DA21159-1F Original	MSD	Spikelot ICPALL2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron	288	1370	1000	112.0	1.5	20
Cadmium						
Calcium	119000	145000	25000	104.0	2.1	20
Chromium						
Cobalt						
Copper						
Iron	49.0	5300	5000	105.0	1.1	20
Lead						
Lithium						
Magnesium	37900	63900	25000	104.0	0.6	20
Manganese	6.9	519	500	102.4	2.1	20
Molybdenum						
Nickel						
Phosphorus						
Potassium	11700	39000	25000	109.2	2.5	20
Selenium						
Silicon						
Silver						
Sodium	109000	132000	25000	92.0	3.0	20
Strontium	1270	1780	500	102.0	2.2	20
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc						

Associated samples MP29249: DA21200-1F

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

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: DA21200
Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
Project: GWA_NGL_Water_Well

QC Batch ID: MP29249 Methods: EPA 200.7
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 10/18/19

Metal	DA21159-1F Original MSD	Spikelot ICPALL2 % Rec	MSD RPD	QC Limit

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: DA21200
Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
Project: GWA_NGL_Water_Well

QC Batch ID: MP29249
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 10/18/19

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron	1080	1000	108.0	85-115
Cadmium				
Calcium	25000	25000	100.0	85-115
Chromium				
Cobalt				
Copper				
Iron	5080	5000	101.6	85-115
Lead				
Lithium				
Magnesium	25700	25000	102.8	85-115
Manganese	505	500	101.0	85-115
Molybdenum				
Nickel				
Phosphorus				
Potassium	26400	25000	105.6	85-115
Selenium				
Silicon				
Silver				
Sodium	26200	25000	104.8	85-115
Strontium	540	500	108.0	85-115
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP29249: DA21200-1F

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

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: DA21200
Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
Project: GWA_NGL_Water_Well

QC Batch ID: MP29249
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 10/18/19

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits

(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: DA21200
Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
Project: GWA_NGL_Water_Well

QC Batch ID: MP29254
Matrix Type: AQUEOUS

Methods: EPA 200.8
Units: ug/l

Prep Date: 10/18/19

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	0.096	<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	-0.16	<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 MP29254: DA21200-1F

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: DA21200
Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
Project: GWA_NGL_Water_Well

QC Batch ID: MP29254
Matrix Type: AQUEOUS

Methods: EPA 200.8
Units: ug/l

Prep Date: 10/18/19

Metal	DA21180-15F Original	MS	Spikelot ICPALL2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic	anr				
Barium	1.0	399	400	99.5	70-130
Beryllium					
Boron					
Cadmium	anr				
Calcium					
Chromium					
Cobalt					
Copper	anr				
Iron					
Lead					
Magnesium					
Manganese					
Molybdenum					
Nickel					
Phosphorus					
Potassium					
Selenium	0.91	182	200	90.5	70-130
Silver					
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP29254: DA21200-1F

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: DA21200
Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
Project: GWA_NGL_Water_Well

QC Batch ID: MP29254 Methods: EPA 200.8
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 10/18/19

Metal	DA21180-15F Original	MSD	Spikelot ICPALL2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	anr					
Barium	1.0	405	400	101.0	1.5	20
Beryllium						
Boron						
Cadmium	anr					
Calcium						
Chromium						
Cobalt						
Copper	anr					
Iron						
Lead						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Phosphorus						
Potassium						
Selenium	0.91	187	200	93.0	2.7	20
Silver						
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc						

Associated samples MP29254: DA21200-1F

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: DA21200
Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
Project: GWA_NGL_Water_Well

QC Batch ID: MP29254
Matrix Type: AQUEOUS

Methods: EPA 200.8
Units: ug/l

Prep Date: 10/18/19

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	393	400	98.3	85-115
Beryllium				
Boron				
Cadmium	anr			
Calcium				
Chromium				
Cobalt				
Copper	anr			
Iron				
Lead				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium	188	200	94.0	85-115
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP29254: DA21200-1F

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: DA21200
Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
Project: GWA_NGL_Water_Well

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Alkalinity, Bicarbonate as CaC	GN48634	5.0	2.1	mg/l	100	96.7	96.7	90-110%
Alkalinity, Carbonate	GN48635	5.0	0.0	mg/l	100	96.7	96.7	80-120%
Alkalinity, Total as CaCO3	GN48633	5.0	2.1	mg/l	100	96.7	96.7	90-110%
Bromide	GP26114/GN48606	0.050	0.0	mg/l	0.5	0.495	99.0	90-110%
Chloride	GP26114/GN48606	0.50	0.0	mg/l	5	5.01	100.2	90-110%
Fluoride	GP26114/GN48606	0.10	0.0	mg/l	1	1.00	100.0	90-110%
Iron-Related Bacteria	MB1239	25	<25	CFU/ml				
Nitrogen, Nitrate	GP26114/GN48606	0.010	0.0	mg/l	0.1	0.0987	98.7	90-110%
Nitrogen, Nitrite	GP26114/GN48606	0.0040	0.0	mg/l	0.05	0.0511	102.2	90-110%
Phosphorus, Total	GP26123/GN48619	0.010	0.00	mg/l	0.2	0.203	101.5	90-110%
Phosphorus, Total	GP26123/GN48619	0.010	0.00	mg/l	0.2	0.205	102.5	90-110%
Phosphorus, Total	GP26123/GN48619	0.010	0.00	mg/l				
Slime Forming Bacteria	MB1240	500	<500	CFU/ml				
Solids, Total Dissolved	GN48588	10	0.0	mg/l	250	251	100.4	90-110%
Specific Conductivity	GP26124/GN48624			umhos/cm	999	1010	100.8	90-110%
Specific Conductivity	GP26124/GN48624			umhos/cm	9997	9880	98.8	90-110%
Sulfate	GP26114/GN48606	0.50	0.0	mg/l	5	4.97	99.4	90-110%
Sulfate Reducing Bacteria	MB1241	200	<200	CFU/ml				

Associated Samples:
Batch MB1239: DA21200-1B
Batch MB1240: DA21200-1B
Batch MB1241: DA21200-1B
Batch GN48588: DA21200-1
Batch GN48633: DA21200-1
Batch GN48634: DA21200-1
Batch GN48635: DA21200-1
Batch GP26114: DA21200-1
Batch GP26123: DA21200-1
Batch GP26124: DA21200-1
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: DA21200
Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
Project: GWA_NGL_Water_Well

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Alkalinity, Total as CaCO3	GN48633	DA20925-1	mg/l	127	126	0.6	0-20%
Phosphorus, Total	GP26123/GN48619	DA21081-1	mg/l	0.050	0.0490	0.0	0-20%
Solids, Total Dissolved	GN48588	DA21138-1	mg/l	879	888	1.0	0-5%
Specific Conductivity	GP26124/GN48624	DA21155-3	umhos/cm	1140	1130	0.7	0-20%

Associated Samples:
Batch GN48588: DA21200-1
Batch GN48633: DA21200-1
Batch GP26123: DA21200-1
Batch GP26124: DA21200-1
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: DA21200
Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
Project: GWA_NGL_Water_Well

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Alkalinity, Total as CaCO3	GN48633	DA20931-1	mg/l	80.0	100	174	93.9	80-120%
Bromide	GP26114/GN48606	DA21192-1	mg/l	0.91	12.5	13.1	97.1	80-120%
Chloride	GP26114/GN48606	DA21192-1	mg/l	260	125	386	100.8	80-120%
Fluoride	GP26114/GN48606	DA21192-1	mg/l	38.8	25	61.7	91.6	80-120%
Nitrogen, Nitrate	GP26114/GN48606	DA21192-1	mg/l	0.0	2.5	2.6	104.0	80-120%
Nitrogen, Nitrite	GP26114/GN48606	DA21192-1	mg/l	0.0	1.25	1.2	96.0	80-120%
Phosphorus, Total	GP26123/GN48619	DA21180-1	mg/l	0.0070 U	0.2	0.209	104.0	90-110%
Sulfate	GP26114/GN48606	DA21192-1	mg/l	0.0	125	124	99.2	80-120%

Associated Samples:
Batch GN48633: DA21200-1
Batch GP26114: DA21200-1
Batch GP26123: DA21200-1
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: DA21200
Account: ANADACOD - Kerr-McGee Oil & Gas Onshore LP
Project: GWA_NGL_Water_Well

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Alkalinity, Total as CaCO3	GN48633	DA20931-1	mg/l	80.0	100	175	0.9	20%
Bromide	GP26114/GN48606	DA21192-1	mg/l	0.91	12.5	13.1	0.0	20%
Chloride	GP26114/GN48606	DA21192-1	mg/l	260	125	387	0.3	20%
Fluoride	GP26114/GN48606	DA21192-1	mg/l	38.8	25	61.5	0.3	20%
Nitrogen, Nitrate	GP26114/GN48606	DA21192-1	mg/l	0.0	2.5	2.6	0.0	20%
Nitrogen, Nitrite	GP26114/GN48606	DA21192-1	mg/l	0.0	1.25	1.2	0.0	20%
Sulfate	GP26114/GN48606	DA21192-1	mg/l	0.0	125	124	0.0	20%

Associated Samples:
Batch GN48633: DA21200-1
Batch GP26114: DA21200-1
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits