



*Environmental Chemistry Services, Inc.
2 Oakwood Park Plaza; 100
Castle Rock, CO 80104-1885
TEL: (303) 850-7606 FAX: (303) 850-7609
Website: www.ecs-corp.com*

August 22, 2017

Clint Wagner
Geologic Services and Consultants, Inc.
2185 Executive Circle
Colorado Springs, CO 80906
TEL: (719) 579-8066
FAX (719) 579-8028

RE: Sheep Mtn Operations Garcia Well

Order No.: 1708030

Dear Clint Wagner:

Environmental Chemistry Services, Inc. received 2 sample(s) on 8/17/2017 for the analyses presented in the following report.

There were no problems with the analytical events associated with this report, 1708030, unless noted in the Case Narrative.

Quality control data is within laboratory defined or method specified acceptance limits except if noted.

If you have any questions regarding these tests results, please feel free to call or email.

TEL: (303) 850-7606 ext:300
kris@ecs-corp.com

Sincerely,

A handwritten signature in dark ink, appearing to be "Kris Mascarenas", written in a cursive style.

Kris Mascarenas
Director of Client Services
2 Oakwood Park Plaza; 100
Castle Rock, CO 80104-1885



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Case Narrative

WO#: 1708030
Date: 8/22/2017

CLIENT: Geologic Services and Consultants, Inc.
Project: Sheep Mtn Operations Garcia Well

WorkOrder Narrative:

1708030: This report in its entirety consists of the documents listed below. All documents contain the Environmental Chemistry Services, Inc. Work Order Number assigned to this report.

1. Paginated Report including: A Cover Letter, Case Narrative, Analytical Results, and Applicable Quality Control Reports.
2. Copies of the Chain of Custody Document(s) supplied with this sample set.
3. Electronic Data Deliverables (EDD) if requested.

Samples were analyzed for BTEX and TVPH by EPA Method 8260C. This is a gas chromatography/mass spectrometry method using purge and trap concentration and a capillary chromatography column. The surrogate standards are added to monitor purging efficiency.

Samples were analyzed for TPH-DRO (Diesel Range Organics) by EPA Method 8015.

Any comments or problems with the analytical events associated with this report are noted below.

Prep Comments for METHOD (3545A), samples required Silica Gel Cleanup Procedure (Using Method No 3630C).

Environmental Chemistry Services, Inc.

Date: 22-Aug-17

Client: Geologic Services and Consultants, Inc.
Work Order: 1708030
Project: Sheep Mtn Operations Garcia Well
Lab ID: 1708030-01A

Client Sample ID: Source Area, 12"
Canister ID:
Collection Date: 8/16/2017
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
BTEX AND TVPH (GRO)		Method: SW8260C			Analyst: KM	
Benzene	ND	0.0010		mg/Kg	1	8/18/2017 2:15:00 PM
Toluene	ND	0.0020		mg/Kg	1	8/18/2017 2:15:00 PM
Ethylbenzene	ND	0.0010		mg/Kg	1	8/18/2017 2:15:00 PM
Xylenes, Total	ND	0.0010		mg/Kg	1	8/18/2017 2:15:00 PM
TVPH	19	0.50		mg/Kg	1	8/18/2017 2:15:00 PM
Surr: Toluene-d8	99.9	50-150		%Rec	1	8/18/2017 2:15:00 PM
Surr: Dibromofluoromethane	95.6	50-150		%Rec	1	8/18/2017 2:15:00 PM

Qualifiers:			
B	Analyte detected in the associated Method Blank	D	Dilution was required.
DF	Dilution Factor	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected above MDL below RL
N	Tentatively identified compounds (Values are estimated)	ND	Not Detected at the RL
R	RPD outside accepted recovery limits	R	Percent Difference outside accepted limits

Environmental Chemistry Services, Inc.

Date: 22-Aug-17

Client: Geologic Services and Consultants, Inc.
Work Order: 1708030
Project: Sheep Mtn Operations Garcia Well
Lab ID: 1708030-01B

Client Sample ID: Source Area, 12"
Canister ID:
Collection Date: 8/16/2017
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS		Method: SW8015B		SW3545A		Analyst: TSM
Diesel Range Organics C10-C28	170	2.6		mg/Kg-dry	1	8/21/2017 5:23:00 PM
Surr: OTP	102	70-130		%Rec	1	8/21/2017 5:23:00 PM
PERCENT MOISTURE		Method: D2216				Analyst: KM
Percent Moisture	22	1.0			1	8/21/2017 8:00:00 AM

Qualifiers:	B	Analyte detected in the associated Method Blank	D	Dilution was required.
	DF	Dilution Factor	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected above MDL below RL
	N	Tentatively identified compounds (Values are estimated)	ND	Not Detected at the RL
	R	RPD outside accepted recovery limits	R	Percent Difference outside accepted limits

Environmental Chemistry Services, Inc.

Date: 22-Aug-17

Client: Geologic Services and Consultants, Inc.
Work Order: 1708030
Project: Sheep Mtn Operations Garcia Well
Lab ID: 1708030-02A

Client Sample ID: South End, 12"
Canister ID:
Collection Date: 8/16/2017
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
BTEX AND TVPH (GRO)		Method: SW8260C			Analyst: KM	
Benzene	ND	0.0010		mg/Kg	1	8/18/2017 2:38:00 PM
Toluene	ND	0.0020		mg/Kg	1	8/18/2017 2:38:00 PM
Ethylbenzene	ND	0.0010		mg/Kg	1	8/18/2017 2:38:00 PM
Xylenes, Total	ND	0.0010		mg/Kg	1	8/18/2017 2:38:00 PM
TVPH	2.7	0.50		mg/Kg	1	8/18/2017 2:38:00 PM
Surr: Toluene-d8	101	50-150		%Rec	1	8/18/2017 2:38:00 PM
Surr: Dibromofluoromethane	99.5	50-150		%Rec	1	8/18/2017 2:38:00 PM

Qualifiers:			
B	Analyte detected in the associated Method Blank	D	Dilution was required.
DF	Dilution Factor	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected above MDL below RL
N	Tentatively identified compounds (Values are estimated)	ND	Not Detected at the RL
R	RPD outside accepted recovery limits	R	Percent Difference outside accepted limits

Environmental Chemistry Services, Inc.

Date: 22-Aug-17

Client: Geologic Services and Consultants, Inc.
Work Order: 1708030
Project: Sheep Mtn Operations Garcia Well
Lab ID: 1708030-02B

Client Sample ID: South End, 12"
Canister ID:
Collection Date: 8/16/2017
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS		Method: SW8015B		SW3545A		Analyst: TSM
Diesel Range Organics C10-C28	330	2.2		mg/Kg-dry	1	8/21/2017 5:50:00 PM
Surr: OTP	102	70-130		%Rec	1	8/21/2017 5:50:00 PM
PERCENT MOISTURE		Method: D2216				Analyst: KM
Percent Moisture	9.0	1.0			1	8/21/2017 8:01:00 AM

Qualifiers:	B	Analyte detected in the associated Method Blank	D	Dilution was required.
	DF	Dilution Factor	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected above MDL below RL
	N	Tentatively identified compounds (Values are estimated)	ND	Not Detected at the RL
	R	RPD outside accepted recovery limits	R	Percent Difference outside accepted limits



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QC SUMMARY REPORT

Work Order: **1708030**
 22-Aug-17

Client: Geologic Services and Consultants, Inc.
Project: Sheep Mtn Operations Garcia Well

BatchID: 350

Sample ID: LCS-350	SampType: LCS	TestCode: DRO_S	Units: mg/Kg	Prep Date: 8/21/2017	RunNo: 3783						
Client ID: LCSS	Batch ID: 350	TestNo: SW8015B	SW3545A	Analysis Date: 8/21/2017	SeqNo: 50523						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel Range Organics C10-C28	350	2.0	333.3	0	104	70	130				
Surr: OTP	6.7		6.666		100	70	130				

Sample ID: LCSD-350	SampType: LCSD	TestCode: DRO_S	Units: mg/Kg	Prep Date: 8/21/2017	RunNo: 3783						
Client ID: LCSS02	Batch ID: 350	TestNo: SW8015B	SW3545A	Analysis Date: 8/21/2017	SeqNo: 50524						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel Range Organics C10-C28	330	2.0	333.3	0	98.6	70	130	346.0	5.13	30	
Surr: OTP	6.1		6.666		91.4	70	130		0	0	

Sample ID: MB-350	SampType: MBLK	TestCode: DRO_S	Units: mg/Kg	Prep Date: 8/21/2017	RunNo: 3783						
Client ID: PBS	Batch ID: 350	TestNo: SW8015B	SW3545A	Analysis Date: 8/21/2017	SeqNo: 50525						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel Range Organics C10-C28	ND	2.0									
Surr: OTP	6.7		6.666		100	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank	D Dilution was required.	H Holding times for preparation or analy
ND Not Detected at the RL	O RSD is greater than RSDlimit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	W Sample container temperature is out o



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QC SUMMARY REPORT

Work Order: **1708030**
 22-Aug-17

Client: Geologic Services and Consultants, Inc.
Project: Sheep Mtn Operations Garcia Well

BatchID: R3774

Sample ID: BTEXM LCS	SampType: LCS	TestCode: BTEX_S	Units: mg/Kg	Prep Date:	RunNo: 3774						
Client ID: LCSS	Batch ID: R3774	TestNo: SW8260C		Analysis Date: 8/18/2017	SeqNo: 50426						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	0.049	0.0010	0.05000	0	98.0	50	150				
Toluene	0.050	0.0020	0.05000	0	101	50	150				
Ethylbenzene	0.050	0.0010	0.05000	0	101	50	150				
Xylenes, Total	0.15	0.0010	0.1500	0	99.5	50	150				
Surr: Toluene-d8	0.051		0.05000		102	50	150				
Surr: Dibromofluoromethane	0.051		0.05000		102	50	150				

Sample ID: TVPH LCS	SampType: LCS	TestCode: BTEX_S	Units: mg/Kg	Prep Date:	RunNo: 3774						
Client ID: LCSS	Batch ID: R3774	TestNo: SW8260C		Analysis Date: 8/18/2017	SeqNo: 50427						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TVPH	5.8	0.50	5.000	0	116	50	150				

Sample ID: BTEXM LCSD	SampType: LCSD	TestCode: BTEX_S	Units: mg/Kg	Prep Date:	RunNo: 3774						
Client ID: LCSS02	Batch ID: R3774	TestNo: SW8260C		Analysis Date: 8/18/2017	SeqNo: 50428						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	0.048	0.0010	0.05000	0	96.3	50	150	0.04902	1.75	30	
Toluene	0.050	0.0020	0.05000	0	99.2	50	150	0.05026	1.30	30	
Ethylbenzene	0.050	0.0010	0.05000	0	99.9	50	150	0.05038	0.877	30	
Xylenes, Total	0.15	0.0010	0.1500	0	98.9	50	150	0.1493	0.598	30	
Surr: Toluene-d8	0.051		0.05000		101	50	150		0	30	
Surr: Dibromofluoromethane	0.048		0.05000		96.7	50	150		0	30	

Qualifiers: B Analyte detected in the associated Method Blank D Dilution was required. H Holding times for preparation or analy
 ND Not Detected at the RL O RSD is greater than RSDlimit R RPD outside accepted recovery limits
 RL Reporting Limit S Spike Recovery outside accepted recovery limits W Sample container temperature is out o



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QC SUMMARY REPORT

Work Order: **1708030**
 22-Aug-17

Client: Geologic Services and Consultants, Inc.
Project: Sheep Mtn Operations Garcia Well

BatchID: R3774

Sample ID: BTEXM LCSD	SampType: LCSD	TestCode: BTEX_S	Units: mg/Kg	Prep Date:	RunNo: 3774						
Client ID: LCSS02	Batch ID: R3774	TestNo: SW8260C		Analysis Date: 8/18/2017	SeqNo: 50428						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: TVPH LCSD	SampType: LCSD	TestCode: BTEX_S	Units: mg/Kg	Prep Date:	RunNo: 3774						
Client ID: LCSS02	Batch ID: R3774	TestNo: SW8260C		Analysis Date: 8/18/2017	SeqNo: 50429						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TVPH	5.5	0.50	5.000	0	111	50	150	5.806	4.78	30	

Sample ID: MBLK	SampType: MBLK	TestCode: BTEX_S	Units: mg/Kg	Prep Date:	RunNo: 3774						
Client ID: PBS	Batch ID: R3774	TestNo: SW8260C		Analysis Date: 8/18/2017	SeqNo: 50430						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.0010									
Toluene	ND	0.0020									
Ethylbenzene	ND	0.0010									
Xylenes, Total	ND	0.0010									
TVPH	ND	0.50									
Surr: Toluene-d8	0.052		0.05000		104	50	150				
Surr: Dibromofluoromethane	0.048		0.05000		97.0	50	150				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required.	H	Holding times for preparation or analy
ND	Not Detected at the RL	O	RSD is greater than RSDlimit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	W	Sample container temperature is out o

