



EOG Resources, Inc.

Artesia Division Office
104 S. 4th Street
Artesia, N. M. 88210

August 28, 2022

Bradford Billings
EMNRD
1220 South St. Francis Drive
Santa Fe, NM 87505

Re: Tenneco SWD System (Vince BGH #1)
30-025-37104
N-30-9S-35E
Lea County, NM
1RP-4530
Incident # nAB1635557047

EOG Resources, Inc. is submitting the enclosed Closure Report for the above referenced site which currently has an open incident on the NMOCD E-Permitting website. The report is being submitted in reference to the C-141 Initial dated December 8, 2016, with an original Closure Report submittal date of November 2, 2017. EOG Resources, Inc. has included a C-141 Final on the most current form in this Closure Report, and hereby requests closure of the open incident.

If you have any questions, feel free to call me at (575) 748-1471.

Respectfully,

Chase Settle

Chase Settle
Rep Safety & Environmental Sr
EOG Resources, Inc.

Tenneco SWD System (Vince BGH #1)
Closure Report
#nAB1635557047



August 28, 2022

Tenneco SWD System (Vince BGH #1)

Closure Report

30-025-37104

N-30-9S-35E

Lea County, NM

August 28, 2022

nAB1635557047

Tenneco SWD System (Vince BGH #1)
Closure Report
#nAB1635557047



August 28, 2022

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Tenneco SWD System (Vince BGH #1)
Closure Report
#nAB1635557047



August 28, 2022

I. Location

The site is located in Lea County, New Mexico approximately 3.5 miles west of Crossroads.

II. Background

On November 30, 2016, EOG Y Resources Inc. (EOG) had a release of 440 barrels produced water at the Tenneco SWD System pipeline near the Vince BGH #1 battery with 0 barrels of the fluid recovered. The area impacted was approximately 215 feet by 30 feet along the pipeline Right of Way. A C-141 Initial (Appendix A) was submitted to NMOCD on December 8, 2016.

Characterization activities were completed on the site, with a Remediation Plan submitted to NMOCD on May 5, 2017. NMOCD provided approval of the Remediation Plan on May 19, 2017, this is attached as Appendix B.

III. Scope of Work Completed

Remediation included the excavation of impacted soils to a depth of four (4) feet below grade surface, disposal of the excavated impacted soils, installation of a 20 ml synthetic liner, backfilling with clean soil, and revegetation of the site.

On November 2, 2017, the original Closure Report and C-141 Final was submitted to the NMOCD-District I office, with an automatic reply returned from NMOCD confirming the receipt of the report. These documents are included as Appendix C.

IV. Closure Request

This release, remediation work, and original C-141 Final submission occurred prior to the passage of the current Spill Rule (NMAC 19.15.29), therefore the requirements for confirmation samples cannot be accommodated as they were not required or requested when the work plan was approved by NMOCD.

Based on the completion of the approved work plan, EOG Resources, Inc. requests Closure of nAB1635557047, the current C-141 Closure Form is included with this Closure Report as Appendix D.

Tenneco SWD System (Vince BGH #1)
Closure Report
#nAB1635557047



August 28, 2022

Appendix A

Original C-141 Initial

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources
NM OIL CONSERVATION
ARTESIA DISTRICT
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.
DEC 08 2016

Release Notification and Corrective Action

NAB1635557047

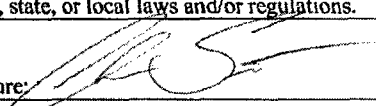
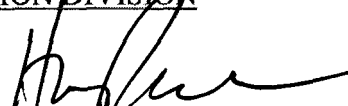
OPERATOR		<input checked="" type="checkbox"/> Initial Report	<input type="checkbox"/> Final Report
Name of Company EOG Y Resources, Inc.	<i>25575</i>	Contact Chase Settle	
Address 104 S. 4 th Street, Artesia, NM 88210		Telephone No. 575-748-4171	
Facility Name Tenneco SWD System (Vince BGH #1)		Facility Type Pipeline	
Surface Owner Fee	Mineral Owner Fee	API No. <i>30-025-37104</i>	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
N	30	09S	35E					Lea

Latitude 32.65552 Longitude -104.49193

NATURE OF RELEASE

Type of Release Produced Water	Volume of Release 440 B/PW	Volume Recovered 0 B/PW
Source of Release 10" Poly Line	Date and Hour of Occurrence 11/30/2016; 3:30 p.m.	Date and Hour of Discovery 11/30/2016; 3:30 p.m.
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Kristen Lynch	
By Whom? Bob Asher	Date and Hour 12/1/2016; 6:35 a.m.	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. N/A	
If a Watercourse was Impacted, Describe Fully.* N/A		
Describe Cause of Problem and Remedial Action Taken.* There was a failure of a 10" poly transfer line that caused the release.		
Describe Area Affected and Cleanup Action Taken.* The release impacted an approximate area of 212' X 27' along the pipeline ROW. An excavator and roustabout crew were dispatched to repair the transfer line and excavate impacted soils. Impacted soils will be excavated and hauled to a NMOCD approved facility. Vertical and horizontal delineation samples will be taken and analysis ran for TPH & BTEX (chlorides for documentation). If initial analytical results for TPH & BTEX are under RRAL's (site ranking is 0) a Final Report, C-141 will be submitted to the OCD requesting closure. If the analytical results are above the RRAL's a work plan will be submitted to the OCD. Depth to Ground Water: >100' (approximately 130', Section 30, T09S-R35E, per Trend Map), Wellhead Protection Area: No, Distance to Surface Water Body: >1000', SITE RANKING IS 0.		
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.		
Signature: 	OIL CONSERVATION DIVISION	
Printed Name: Chase Settle	Approved by Environmental Specialist: 	
Title: NM Adv. Environmental Representative	Approval Date: <i>12/20/16</i>	Expiration Date: <i>N/A</i>
E-mail Address: Chase.Settle@eogresources.com	Conditions of Approval:	Attached <input checked="" type="checkbox"/>
Date: 12/8/2016	Phone: 575-748-4171	

Site Ranking to be determined After Delineation
HM

IRP-4530

Tenneco SWD System (Vince BGH #1)
Closure Report
#nAB1635557047



August 28, 2022

Appendix B

Remediation Plan Approval Email

From: [Yu, Olivia, EMNRD](#)
To: [Chase Settle](#)
Cc: [Oberding, Tomas, EMNRD](#); [Katie Parker](#); [Bob Asher](#)
Subject: RE: Tenneco SWD System (Vince BGH #1) Work Plan
Date: Friday, May 19, 2017 10:49:08 AM
Attachments: [image001.png](#)
[approved Tenneco SWD System \(Vince BGH #1\) Work Plan 1RP-4530.pdf](#)

****External email. Use caution.****

Dear Mr. Settle:

NMOCD approves the delineation workplan for 1RP-4530 with one condition: submit soil bore logs. Please see the attachment for your records.

Thanks,

Olivia Yu
Environmental Specialist
NMOCD, District I
Olivia.yu@state.nm.us
575-393-6161 x113

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations.

From: Chase Settle [mailto:Chase_Settle@eogresources.com]
Sent: Friday, May 5, 2017 3:29 PM
To: Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>
Cc: Oberding, Tomas, EMNRD <Tomas.Oberding@state.nm.us>; Katie Parker <Katie_Parker@eogresources.com>; Bob Asher <Bob_Asher@eogresources.com>
Subject: Tenneco SWD System (Vince BGH #1) Work Plan

Please find attached the work plan for the below listed location.

Tenneco Pipe Line System (Vince BGH #1)
Section 30, T9S-R35E
Lea County, New Mexico
33.50109, -103.40025
1RP-4530

Thank you,

Chase Settle, M.S.

Rep Safety & Environmental II

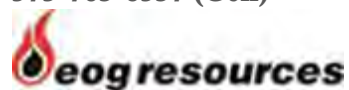
EOG Resources

105 S. 4th Street

Artesia, NM 88210

575-748-4171 (Office)

575-703-6537 (Cell)



Tenneco SWD System (Vince BGH #1)
Closure Report
#nAB1635557047



August 28, 2022

Appendix C

Original Closure Report



EOG Resources, Inc.
Artesia Division Office
104 S. 4th Street
Artesia, N. M. 88210

November 2, 2017

Ms. Olivia Yu
NMOCD District I
1625 N. French Drive
Hobbs, New Mexico 88240

Re: Tenneco SWD System (Vince BGH #1)
Section 30, T09S-R35E
Lea County, New Mexico
33.50109, -103.40025
1RP-4530

Ms. Yu,

EOG Y Resources, Inc. is submitting the enclosed CLOSURE REPORT and C-141 Final for the above captioned remediation. The plan is being submitted in response to the C-141 report dated December 8, 2016 with a Work Plan that was approved on May 18, 2017.

If you have any questions, feel free to call me at (575) 748-1471

Thank you.

EOG Y Resources, Inc.

Chase Settle

Chase Settle
Rep Safety & Environmental II



November 2, 2017

EOG Y Resources, Inc.

CLOSURE REPORT

Tenneco SWD System (Vince BGH #1)

Section 30, T09S-R35E

Lea County, New Mexico

November 2, 2017

1RP- 4530

Tenneco SWD System
IRP-4530
Closure Report



November 2, 2017

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Appendix B: Sample Data Sheet

Appendix C: Core Rig Bore Log

Appendix D: Analytical Data

Appendix E: Form C-141 Initial

Appendix F: Form C-141 Final

I. Location

From Crossroads, NM, take Carrol Rd (T-170) west for approximately 3.5 miles, then turn south on lease road, follow lease road for 0.7 mile, and then follow the pipeline ROW southwest for 1200 feet to the release area.

II. Background

On December 8, 2016, EOG Y Resources, Inc. submitted to the NMOCD District I office a Form C-141 for the release of 440 B/PW with none recovered. The affected area is approximately 215 feet by 30 feet around a pipeline Right of Way. Failure of a poly transfer line caused the release. Initial delineation samples were taken (12/14/2016) and sent to a NMOCD approved laboratory (12/27/2016, 12/28/2016, & 12/29/2016, results enclosed). Further sampling was conducted, at which time an impermeable/impenetrable rock plate was encountered at a depth between 14 to 17 feet BSL, (1/4/2017 & 1/10/2017) with samples sent to a NMOCD approved laboratory (1/20/2017, results enclosed). On the instruction of NMOCD, further sampling was conducted (3/17/2017, **NMOCD was provided 48 hours' notice prior to sampling as an invitation to witness and provide guidance for sampling activities**) and sent to a NMOCD approved laboratory (3/21/2017).

III. Surface and Ground Water

Area surface geology is Paleozoic Permian. The New Mexico Office of the State Engineer displays one well within 10,000 meters to have recorded depth of water. That depth is 137 feet. That well is approximately 2.9 miles east of the release area at an elevation of 4126 feet, while the release is at an elevation of 4169 feet. Therefore, depth to groundwater at this location (Section 30, T09S-R35E) is approximately 180 feet, making the site ranking a zero (0). Watercourses in the area are dry except for infrequent flows in response to major precipitation events.

The ranking for this site is zero (0) based on the as following:

Depth to ground water	> 100'
Wellhead Protection Area	> 1000'
Distance to surface water body	> 1000'

IV. Soils

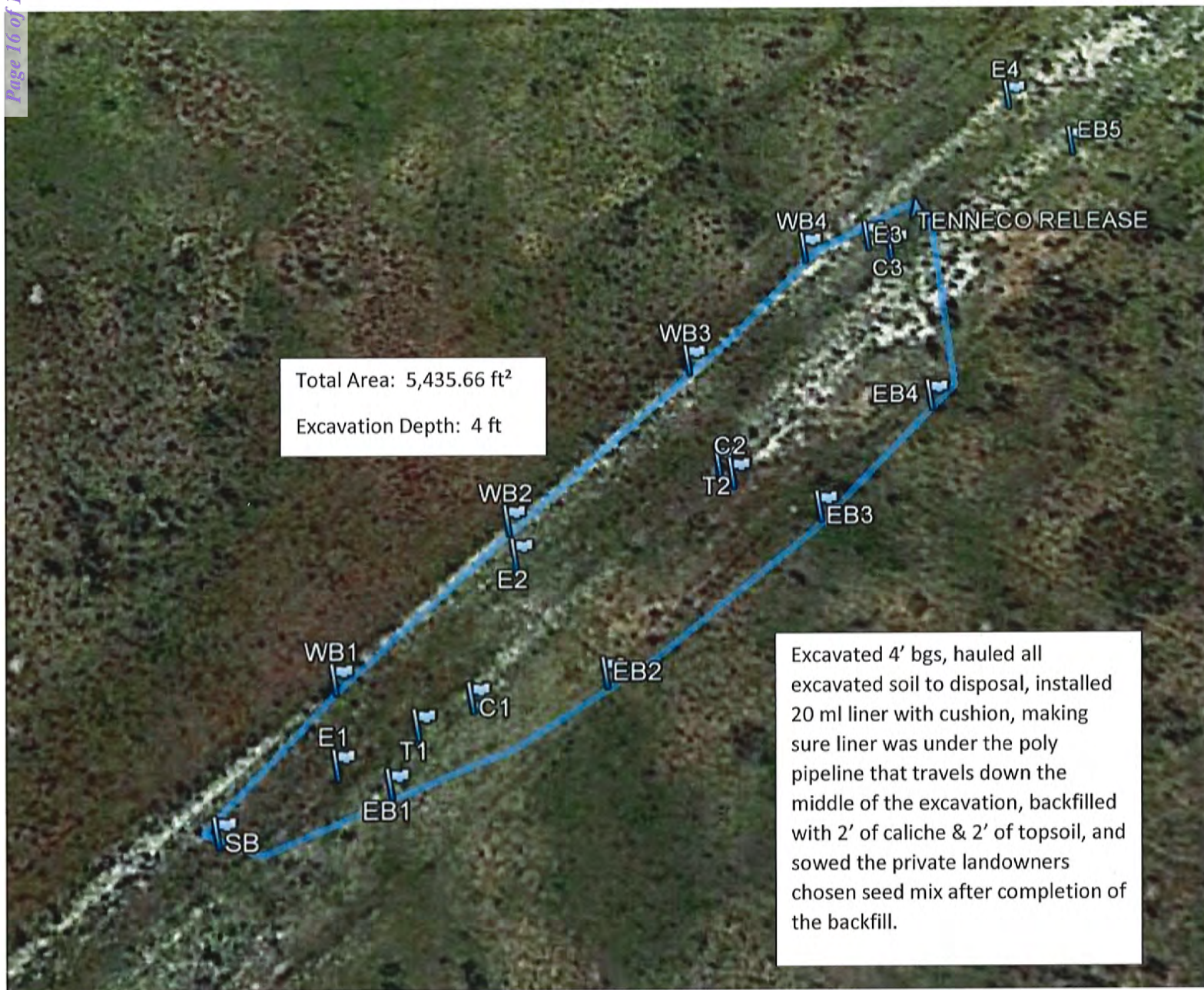
The area consists of soils that are loam based topsoil on top of a caliche layer which overlies a rock plate, providing a naturally occurring, restrictive barrier that along with a thick clay layer at 35' to 40' below surface level (BSL) prevent migration of contaminants through the vadose zone.

V. Scope of Work Completed

After approval of the work plan by NMOCD on May 18, 2017, EOG Y Resources, Inc. contracted with Hungry Horse LLC to perform the remediation work at the release site. Four (4) feet of impacted soil was excavated from the release area, hauling all excavated soil to a NMOCD approved facility for disposal. Then six (6) inches of topsoil cushion was installed in the excavation, followed by the 20 ml synthetic liner which was run under the poly pipeline that laid within the excavation. Another six (6) inches of topsoil was then installed on top of the liner completing the liner and cushion installation. Next in the backfill process was the two (2) feet of caliche, followed by two (2) feet of topsoil to allow for vegetative repopulation of the release site. The site was then reseeded in accordance with the private surface owner's requests. Because there were no TPH or BTEX issues at the release site, there were no further testing activities for those constituents. All chloride contamination was delineated vertically and horizontally prior to the submission and approval of the work plan. With all remedial activities completed according to the NMOCD approved work plan, **a C-141 Final is submitted requesting closure for the site.**

Figure 1

Site Map







Appendix A

NMOSE Well Log Information



New Mexico Office of the State Engineer Wells with Well Log Information

(A CLW#### In the
POD suffix indicates
the POD has been
replaced & no longer
serves a water right

(R=POD has
been replaced,
O=orphaned,
C=the file is
closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest)

(NAD83 UTM in meters)

(in feet)

POD Number		Code	Subbasin	County	Source	6416 4	Sec	Twa	Rng	X	Y	Distance	Start Date	Finish Date	Log File	Depth Well	Depth Water	Driller	License Number
L 14254 POD1		L	LE	Shallow	1	4	1	27	09S 35E	653241	3708776	4702	04/04/2017	04/04/2017	04/13/2017	240	137	GLENN, TRAVIS	1719
L 12426 POD1		L	LE	Shallow	1	4	1	19	09S 36E	657911	3710545	5651	08/04/2009	08/05/2009	08/20/2009	156		GILLIAM, DUB ALLEN	1145

Record Count: 2

UTMNAD83 Radius Search (in meters):

Easting (X): 648606.41

Northing (Y): 3707981.26

Radius: 10000

The data is furnished by the NMOSE/ISO and is accepted by the recipient with the expressed understanding that the OSE/ISO make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

4/25/17 10:32 AM

WELLS WITH WELL LOG INFORMATION

Appendix B

Sample Data Sheet

Tenneco SWD System (Vince BGH #1)

Area	Analysis	Sample Area	Sample Date	Sample Type	Depth	BTEX	GRO	DRO	Chlorides
E1-4'	1612928	Release Area	12/14/2016	Backhoe	4'	ND	ND	ND	490
E1-6'	1612928	Release Area	12/14/2016	Backhoe	6'	ND	ND	ND	4800
E1-8'	1612928	Release Area	12/14/2016	Backhoe	8'	ND	ND	ND	3300
E1-9.5'	1612928	Release Area	12/14/2016	Backhoe	9.5'	ND	ND	ND	4600
E2-4'	1612928	Release Area	12/14/2016	Backhoe	4'	ND	ND	ND	2400
E2-6'	1612928	Release Area	12/14/2016	Backhoe	6'	ND	ND	ND	4900
E2-8'	1612928	Release Area	12/14/2016	Backhoe	8'	ND	ND	ND	3300
E2-9.5'	1612928	Release Area	12/14/2016	Backhoe	9.5'	ND	ND	ND	3600
E3-4'	1612928	Release Area	12/14/2016	Backhoe	4'	ND	ND	ND	2000
E3-6'	1612928	Release Area	12/14/2016	Backhoe	6'	ND	ND	ND	3000
E3-8'	1612928	Release Area	12/14/2016	Backhoe	8'	ND	ND	ND	4600
E3-10'	1612928	Release Area	12/14/2016	Backhoe	10'	ND	ND	ND	4100
E3-12'	1612928	Release Area	12/14/2016	Backhoe	12'	ND	ND	ND	3700
E3-14.5'	1701495	Release Area	12/14/2016	Trackhoe	14.5'				3100
E3-16.5'	1701495	Release Area	12/14/2016	Trackhoe	16.5'				3700
E4-1'	1612928	Release Area	12/14/2016	Backhoe	1'	ND	ND	ND	ND
E4-2'	1612928	Release Area	12/14/2016	Backhoe	2'	ND	ND	ND	ND
E4-3'	1612928	Release Area	12/14/2016	Backhoe	3'	ND	ND	ND	ND
E4-4'	1612928	Release Area	12/14/2016	Backhoe	4'	ND	ND	ND	ND
E4-5.25'	1612928	Release Area	12/14/2016	Backhoe	5.25'	ND	ND	ND	ND
T1-10.5'	1701495	Release Area	1/4/2017	Trackhoe	10.5'				4200
T1-12.5'	1701495	Release Area	1/4/2017	Trackhoe	12.5'				2800
T1-14.5'	1701495	Release Area	1/4/2017	Trackhoe	14.5'				2700
T1-15.5'	1701495	Release Area	1/4/2017	Trackhoe	15.5'				3400
T2-10.5'	1701495	Release Area	1/10/2017	Trackhoe	10.5'				4300
T2-12.5'	1701495	Release Area	1/10/2017	Trackhoe	12.5'				5400
T2-14.5'	1701495	Release Area	1/10/2017	Trackhoe	14.5'				3800
T2-10.5'	1701495	Release Area	1/10/2017	Trackhoe	10.5'				4300
T2-12.5'	1701495	Release Area	1/10/2017	Trackhoe	12.5'				5400
T2-14.5'	1701495	Release Area	1/10/2017	Trackhoe	14.5'				3800
C1-20'	H700714	Release Area	3/17/2017	Core Rig	20'				944
C1-25'	H700714	Release Area	3/17/2017	Core Rig	25'				240
C1-30'	H700714	Release Area	3/17/2017	Core Rig	30'				128
C1-35'	H700714	Release Area	3/17/2017	Core Rig	35'				112
C2-20'	H700710	Release Area	3/17/2017	Core Rig	20'				2240
C2-25'	H700710	Release Area	3/17/2017	Core Rig	25'				2080
C2-30'	H700710	Release Area	3/17/2017	Core Rig	30'				1500
C2-35'	H700710	Release Area	3/17/2017	Core Rig	35'				1540
C2-40'	H700710	Release Area	3/17/2017	Core Rig	40'				1400
C2-45'	H700710	Release Area	3/17/2017	Core Rig	45'				48
C2-50'	H700710	Release Area	3/17/2017	Core Rig	50'				32
C2-55'	H700710	Release Area	3/17/2017	Core Rig	55'				48
C3-20'	H700709	Release Area	3/17/2017	Core Rig	20'				1560
C3-25'	H700709	Release Area	3/17/2017	Core Rig	25'				400
C3-30'	H700709	Release Area	3/17/2017	Core Rig	30'				208
C3-35'	H700709	Release Area	3/17/2017	Core Rig	35'				1380
C3-40'	H700709	Release Area	3/17/2017	Core Rig	40'				48
C3-45'	H700709	Release Area	3/17/2017	Core Rig	45'				48
C3-50'	H700709	Release Area	3/17/2017	Core Rig	50'				80
EB1-1'	1612936	Edge	12/14/2016	Backhoe	1'	ND	ND	ND	ND
EB1-5'	1612936	Edge	12/14/2016	Backhoe	1'	ND	ND	ND	ND
EB2-1'	1612936	Edge	12/14/2016	Backhoe	1'	ND	ND	ND	ND
EB2-5'	1612936	Edge	12/14/2016	Backhoe	1'	ND	ND	ND	ND
EB3-5'	1612936	Edge	12/14/2016	Backhoe	1'	ND	ND	ND	3900
EB3-10'	1612936	Edge	12/14/2016	Backhoe	1'	ND	ND	ND	4200
EB3-F	1701495	Edge	1/4/2017	Hand Auger	1'				370
EB3-F+3'	1701495	Edge	1/4/2017	Hand Auger	1'				ND
EB3-F+6'	1701495	Edge	1/4/2017	Hand Auger	1'				120
EB3-F+9'	1701495	Edge	1/4/2017	Hand Auger	1'				ND
EB3-F+12'	1701495	Edge	1/4/2017	Hand Auger	1'				ND
EB4-5'	1612936	Edge	12/14/2016	Backhoe	1'	ND	ND	ND	4300

EB4-10'	1612936	Edge	12/14/2016	Backhoe	1'	ND	ND	ND	3900
EB4-F	1701495	Edge	1/4/2017	Hand Auger	1'				ND
EB4-F+3'	1701495	Edge	1/4/2017	Hand Auger	1'				ND
EB4-F+6'	1701495	Edge	1/4/2017	Hand Auger	1'				ND
EB4-F+9'	1701495	Edge	1/4/2017	Hand Auger	1'				ND
EB4-F+12'	1701495	Edge	1/4/2017	Hand Auger	1'				ND
EB5-1'	1612936	Edge	12/14/2016	Backhoe	1'	ND	ND	ND	ND
EB5-5'	1612936	Edge	12/14/2016	Backhoe	1'	ND	ND	ND	ND
EB5-10'	1612936	Edge	12/14/2016	Backhoe	1'	ND	ND	ND	ND
WB1-1'	1612933	Edge	12/14/2016	Backhoe	1'	ND	ND	ND	2000
WB1-2'	1701495	Edge	1/4/2017	Backhoe	1'				ND
WB1-F	1701495	Edge	1/4/2017	Backhoe	1'				ND
WB1-F+1'	1701495	Edge	1/4/2017	Backhoe	1'				ND
WB2-1'	1612933	Edge	12/14/2016	Backhoe	1'	ND	ND	ND	5100
WB2-2'	1701495	Edge	1/4/2017	Backhoe	1'				ND
WB2-F	1701495	Edge	1/4/2017	Backhoe	1'				ND
WB2-F+1'	1701495	Edge	1/4/2017	Backhoe	1'				30
WB3-1'	1612933	Edge	12/14/2016	Backhoe	1'	ND	ND	ND	3500
WB3-2'	1701495	Edge	1/4/2017	Backhoe	1'				ND
WB3-F	1701495	Edge	1/4/2017	Backhoe	1'				ND
WB3-F+1'	1701495	Edge	1/4/2017	Backhoe	1'				ND
WB4-1'	1612933	Edge	12/14/2016	Backhoe	1'	ND	ND	ND	2200
WB4-2'	1701495	Edge	1/4/2017	Backhoe	1'				ND
WB4-F	1701495	Edge	1/4/2017	Backhoe	1'				ND
WB4-F+1'	1701495	Edge	1/4/2017	Backhoe	1'				ND
SB-F	1701495	Edge	1/4/2017	Backhoe	1'				ND

Site Ranking is Zero (0). >100' (180', Section 30, T09S-R35E, NMOSE

All results are ppm. Chlorides for documentation

Released: 440 B/PW; Recovered: 0 B/PW Release Date: 11/30/2016

Tenneco SWD System
1RP-4530
Closure Report



November 2, 2017

Appendix C

Core Rig Bore Log

Tenneco SWD System Core Rig Soil Bore Log 3-17-2017

Sample ID	Time	Soil Type	Sample Color	Water Reached	Comments
C1-20'	10:50	Cal/Rock	White	NO	Hard drilling, rock plate
C1-25'	11:55	Cal/Rock	White	NO	Hard drilling, rock plate
C1-30'	12:07	Sand/Cal	Red	NO	Normal for type
C1-35'	12:20	Sand/Cal	Red	NO	Normal for type
C2-20'	1:00	Cal/Rock	White	NO	Rock plate less solid than C1
C2-25'	1:11	Cal/Rock	White	NO	"
C2-30'	1:20	Cal/Rock	White	NO	"
C2-35'	1:30	Sand/Cal	Cream	NO	Normal for type
C2-40'	1:41	Sand/Cal	Red	NO	"
C2-45'	1:57	Clay	Red	NO	First part of clay layer
C2-50'	3:15	Sand/Clay	Red	NO	Clay layer was very hard last 2-3 feet, then through
C2-55'	3:39	Sand/Clay	Red	NO	Normal for type
C3-20'	4:17	Cal/Rock	White	NO	Rock plate consistent with C2
C3-25'	4:28	Sand/Cal	Cream	NO	Thinner plate, into sand and caliche faster
C3-30'	4:34	Sand/Cal	Red	NO	Normal for type
C3-35'	4:42	Sand/Cal	Red	NO	"
C3-40'	5:16	Clay	Red	NO	Hit clay at 38' - not as hard as C2
C3-45'	5:28	Clay	Red	NO	Normal for type
C3-50'	5:43	Sand	Red	NO	Normal for type

Compiled and created by Chase Settle, EOG Resources, S&E Rep II, Artesia, NM 3/17/2017

Appendix D

Analytical Data



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

December 27, 2016

Chase Settle

EOG Resources

105 South Fourth Street

Artesia, NM 88210

TEL: (575) 748-4111

FAX

RE: Tenneco SWD System

OrderNo.: 1612928

Dear Chase Settle:

Hall Environmental Analysis Laboratory received 18 sample(s) on 12/16/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman".

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order 1612928

Date Reported: 12/27/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG Resources

Client Sample ID: E1-4'

Project: Tenneco SWD System

Collection Date: 12/14/2016 9:57:00 AM

Lab ID: 1612928-001

Matrix: SOIL

Received Date: 12/16/2016 9:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	490	30		mg/Kg	20	12/20/2016 12:06:06 PM	29304
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	12/22/2016 1:40:45 PM	29270
Surr: DNOP	108	70-130		%Rec	1	12/22/2016 1:40:45 PM	29270
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/21/2016 10:01:14 AM	29264
Surr: BFB	90.0	68.3-144		%Rec	1	12/21/2016 10:01:14 AM	29264
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/21/2016 10:01:14 AM	29264
Toluene	ND	0.047		mg/Kg	1	12/21/2016 10:01:14 AM	29264
Ethylbenzene	ND	0.047		mg/Kg	1	12/21/2016 10:01:14 AM	29264
Xylenes, Total	ND	0.094		mg/Kg	1	12/21/2016 10:01:14 AM	29264
Surr: 4-Bromofluorobenzene	97.4	80-120		%Rec	1	12/21/2016 10:01:14 AM	29264

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Page 1 of 22

Analytical Report

Lab Order 1612928

Date Reported: 12/27/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG Resources

Client Sample ID: E1-6'

Project: Tenneco SWD System

Collection Date: 12/14/2016 10:02:00 AM

Lab ID: 1612928-002

Matrix: SOIL

Received Date: 12/16/2016 9:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	4800	150		mg/Kg	100	12/21/2016 3:06:12 PM	29304
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	12/22/2016 2:50:20 PM	29270
Surr: DNOP	114	70-130		%Rec	1	12/22/2016 2:50:20 PM	29270
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/21/2016 10:24:43 AM	29264
Surr: BFB	87.9	68.3-144		%Rec	1	12/21/2016 10:24:43 AM	29264
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	12/21/2016 10:24:43 AM	29264
Toluene	ND	0.049		mg/Kg	1	12/21/2016 10:24:43 AM	29264
Ethylbenzene	ND	0.049		mg/Kg	1	12/21/2016 10:24:43 AM	29264
Xylenes, Total	ND	0.099		mg/Kg	1	12/21/2016 10:24:43 AM	29264
Surr: 4-Bromofluorobenzene	95.9	80-120		%Rec	1	12/21/2016 10:24:43 AM	29264

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

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Analytical Report

Lab Order 1612928

Date Reported: 12/27/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG Resources

Client Sample ID: E1-8'

Project: Tenneco SWD System

Collection Date: 12/14/2016 10:10:00 AM

Lab ID: 1612928-003

Matrix: SOIL

Received Date: 12/16/2016 9:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	3300	150		mg/Kg	100	12/21/2016 3:18:36 PM	29304
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	12/22/2016 3:13:37 PM	29270
Surr: DNOP	108	70-130		%Rec	1	12/22/2016 3:13:37 PM	29270
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/21/2016 10:48:14 AM	29264
Surr: BFB	89.8	68.3-144		%Rec	1	12/21/2016 10:48:14 AM	29264
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	12/21/2016 10:48:14 AM	29264
Toluene	ND	0.049		mg/Kg	1	12/21/2016 10:48:14 AM	29264
Ethylbenzene	ND	0.049		mg/Kg	1	12/21/2016 10:48:14 AM	29264
Xylenes, Total	ND	0.098		mg/Kg	1	12/21/2016 10:48:14 AM	29264
Surr: 4-Bromofluorobenzene	96.9	80-120		%Rec	1	12/21/2016 10:48:14 AM	29264

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

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Analytical Report

Lab Order 1612928

Date Reported: 12/27/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG Resources

Client Sample ID: E1-9.5'

Project: Tenneco SWD System

Collection Date: 12/14/2016 10:20:00 AM

Lab ID: 1612928-004

Matrix: SOIL

Received Date: 12/16/2016 9:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	4600	150		mg/Kg	100	12/21/2016 3:31:01 PM	29304
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	12/22/2016 4:02:09 PM	29270
Surr: DNOP	93.8	70-130		%Rec	1	12/22/2016 4:02:09 PM	29270
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/21/2016 11:11:54 AM	29264
Surr: BFB	90.6	68.3-144		%Rec	1	12/21/2016 11:11:54 AM	29264
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/21/2016 11:11:54 AM	29264
Toluene	ND	0.048		mg/Kg	1	12/21/2016 11:11:54 AM	29264
Ethylbenzene	ND	0.048		mg/Kg	1	12/21/2016 11:11:54 AM	29264
Xylenes, Total	ND	0.096		mg/Kg	1	12/21/2016 11:11:54 AM	29264
Surr: 4-Bromofluorobenzene	98.5	80-120		%Rec	1	12/21/2016 11:11:54 AM	29264

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

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Analytical Report

Lab Order 1612928

Date Reported: 12/27/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG Resources

Client Sample ID: E2-4'

Project: Tenneco SWD System

Collection Date: 12/14/2016 10:25:00 AM

Lab ID: 1612928-005

Matrix: SOIL

Received Date: 12/16/2016 9:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	2400	75		mg/Kg	50	12/21/2016 3:43:26 PM	29317
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	12/22/2016 4:25:24 PM	29270
Surr: DNOP	93.6	70-130		%Rec	1	12/22/2016 4:25:24 PM	29270
EPA METHOD 8016D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/21/2016 11:35:26 AM	29264
Surr: BFB	90.2	68.3-144		%Rec	1	12/21/2016 11:35:26 AM	29264
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/21/2016 11:35:26 AM	29264
Toluene	ND	0.048		mg/Kg	1	12/21/2016 11:35:26 AM	29264
Ethylbenzene	ND	0.048		mg/Kg	1	12/21/2016 11:35:26 AM	29264
Xylenes, Total	ND	0.097		mg/Kg	1	12/21/2016 11:35:26 AM	29264
Surr: 4-Bromofluorobenzene	97.5	80-120		%Rec	1	12/21/2016 11:35:26 AM	29264

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

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Analytical Report

Lab Order 1612928

Date Reported: 12/27/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG Resources

Client Sample ID: E2-6'

Project: Tenneco SWD System

Collection Date: 12/14/2016 10:30:00 AM

Lab ID: 1612928-006

Matrix: SOIL

Received Date: 12/16/2016 9:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	4900	300		mg/Kg	200	12/21/2016 3:55:50 PM	29317
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/22/2016 4:48:44 PM	29270
Surr: DNOP	96.2	70-130		%Rec	1	12/22/2016 4:48:44 PM	29270
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/21/2016 11:59:02 AM	29264
Surr: BFB	91.5	68.3-144		%Rec	1	12/21/2016 11:59:02 AM	29264
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/21/2016 11:59:02 AM	29264
Toluene	ND	0.048		mg/Kg	1	12/21/2016 11:59:02 AM	29264
Ethylbenzene	ND	0.048		mg/Kg	1	12/21/2016 11:59:02 AM	29264
Xylenes, Total	ND	0.096		mg/Kg	1	12/21/2016 11:59:02 AM	29264
Surr: 4-Bromofluorobenzene	99.0	80-120		%Rec	1	12/21/2016 11:59:02 AM	29264

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

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Analytical Report

Lab Order 1612928

Date Reported: 12/27/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG Resources

Project: Tenneco SWD System

Lab ID: 1612928-007

Matrix: SOIL

Client Sample ID: E2-8'

Collection Date: 12/14/2016 10:40:00 AM

Received Date: 12/16/2016 9:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	3300	150		mg/Kg	100	12/21/2016 4:33:04 PM	29317
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	12/22/2016 5:11:56 PM	29270
Surr: DNOP	97.4	70-130		%Rec	1	12/22/2016 5:11:56 PM	29270
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/21/2016 7:25:26 PM	29264
Surr: BFB	92.3	68.3-144		%Rec	1	12/21/2016 7:25:26 PM	29264
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/21/2016 7:25:26 PM	29264
Toluene	ND	0.047		mg/Kg	1	12/21/2016 7:25:26 PM	29264
Ethylbenzene	ND	0.047		mg/Kg	1	12/21/2016 7:25:26 PM	29264
Xylenes, Total	ND	0.095		mg/Kg	1	12/21/2016 7:25:26 PM	29264
Surr: 4-Bromofluorobenzene	100	80-120		%Rec	1	12/21/2016 7:25:26 PM	29264

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

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Analytical Report

Lab Order 1612928

Date Reported: 12/27/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG Resources

Project: Tenneco SWD System

Lab ID: 1612928-008

Matrix: SOIL

Client Sample ID: E2-9.5'

Collection Date: 12/14/2016 10:48:00 AM

Received Date: 12/16/2016 9:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	3600	150		mg/Kg	100	12/21/2016 4:45:28 PM	29317
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	12/22/2016 5:35:16 PM	29270
Surr: DNOP	86.6	70-130		%Rec	1	12/22/2016 5:35:16 PM	29270
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/21/2016 7:48:56 PM	29264
Surr: BFB	91.6	68.3-144		%Rec	1	12/21/2016 7:48:56 PM	29264
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/21/2016 7:48:56 PM	29264
Toluene	ND	0.048		mg/Kg	1	12/21/2016 7:48:56 PM	29264
Ethylbenzene	ND	0.048		mg/Kg	1	12/21/2016 7:48:56 PM	29264
Xylenes, Total	ND	0.096		mg/Kg	1	12/21/2016 7:48:56 PM	29264
Surr: 4-Bromofluorobenzene	102	80-120		%Rec	1	12/21/2016 7:48:56 PM	29264

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

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Analytical Report
Lab Order 1612928
Date Reported: 12/27/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG Resources
Project: Tenneco SWD System
Lab ID: 1612928-009

Matrix: SOIL

Client Sample ID: E3-4'
Collection Date: 12/14/2016 10:59:00 AM
Received Date: 12/16/2016 9:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	2000	75		mg/Kg	50	12/21/2016 4:57:53 PM	29317
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	12/22/2016 5:58:22 PM	29270
Surr: DNOP	90.9	70-130		%Rec	1	12/22/2016 5:58:22 PM	29270
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/21/2016 8:12:24 PM	29264
Surr: BFB	90.4	68.3-144		%Rec	1	12/21/2016 8:12:24 PM	29264
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/21/2016 8:12:24 PM	29264
Toluene	ND	0.048		mg/Kg	1	12/21/2016 8:12:24 PM	29264
Ethylbenzene	ND	0.048		mg/Kg	1	12/21/2016 8:12:24 PM	29264
Xylenes, Total	ND	0.095		mg/Kg	1	12/21/2016 8:12:24 PM	29264
Surr: 4-Bromofluorobenzene	99.3	80-120		%Rec	1	12/21/2016 8:12:24 PM	29264

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E Value above quantitation range
H	Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P Sample pH Not In Range
R	RPD outside accepted recovery limits	RL Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Analytical Report

Lab Order 1612928

Date Reported: 12/27/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG Resources

Client Sample ID: E3-6'

Project: Tenneco SWD System

Collection Date: 12/14/2016 11:03:00 AM

Lab ID: 1612928-010

Matrix: SOIL

Received Date: 12/16/2016 9:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	3000	150		mg/Kg	100	12/21/2016 5:10:17 PM	29317
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/22/2016 6:21:37 PM	29270
Surr: DNOP	90.4	70-130		%Rec	1	12/22/2016 6:21:37 PM	29270
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/21/2016 8:35:43 PM	29264
Surr: BFB	89.8	68.3-144		%Rec	1	12/21/2016 8:35:43 PM	29264
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/21/2016 8:35:43 PM	29264
Toluene	ND	0.048		mg/Kg	1	12/21/2016 8:35:43 PM	29264
Ethylbenzene	ND	0.048		mg/Kg	1	12/21/2016 8:35:43 PM	29264
Xylenes, Total	ND	0.096		mg/Kg	1	12/21/2016 8:35:43 PM	29264
Surr: 4-Bromofluorobenzene	96.8	80-120		%Rec	1	12/21/2016 8:35:43 PM	29264

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

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Analytical Report
Lab Order 1612928
Date Reported: 12/27/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG Resources
Project: Tenneco SWD System
Lab ID: 1612928-011

Matrix: SOIL

Client Sample ID: E3-8'
Collection Date: 12/14/2016 11:09:00 AM
Received Date: 12/16/2016 9:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	4600	150		mg/Kg	100	12/21/2016 5:22:41 PM	29317
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	12/22/2016 6:44:49 PM	29270
Surr: DNOP	91.3	70-130		%Rec	1	12/22/2016 6:44:49 PM	29270
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	12/21/2016 8:59:11 PM	29264
Surr: BFB	87.9	68.3-144		%Rec	1	12/21/2016 8:59:11 PM	29264
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	12/21/2016 8:59:11 PM	29264
Toluene	ND	0.050		mg/Kg	1	12/21/2016 8:59:11 PM	29264
Ethylbenzene	ND	0.050		mg/Kg	1	12/21/2016 8:59:11 PM	29264
Xylenes, Total	ND	0.10		mg/Kg	1	12/21/2016 8:59:11 PM	29264
Surr: 4-Bromofluorobenzene	95.6	80-120		%Rec	1	12/21/2016 8:59:11 PM	29264

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E Value above quantitation range
H	Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P Sample pH Not In Range
R	RPD outside accepted recovery limits	RL Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Analytical Report
 Lab Order 1612928
 Date Reported: 12/27/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG Resources

Project: Tenneco SWD System

Lab ID: 1612928-012

Matrix: SOIL

Client Sample ID: E3-10'

Collection Date: 12/14/2016 11:14:00 AM

Received Date: 12/16/2016 9:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	4100	300		mg/Kg	200	12/21/2016 5:35:06 PM	29317
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	12/22/2016 7:07:57 PM	29270
Surr: DNOP	81.0	70-130		%Rec	1	12/22/2016 7:07:57 PM	29270
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	12/21/2016 9:22:44 PM	29264
Surr: BFB	89.0	68.3-144		%Rec	1	12/21/2016 9:22:44 PM	29264
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	12/21/2016 9:22:44 PM	29264
Toluene	ND	0.050		mg/Kg	1	12/21/2016 9:22:44 PM	29264
Ethylbenzene	ND	0.050		mg/Kg	1	12/21/2016 9:22:44 PM	29264
Xylenes, Total	ND	0.10		mg/Kg	1	12/21/2016 9:22:44 PM	29264
Surr: 4-Bromofluorobenzene	96.7	80-120		%Rec	1	12/21/2016 9:22:44 PM	29264

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

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Analytical Report

Lab Order 1612928

Date Reported: 12/27/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG Resources

Project: Tenneco SWD System

Lab ID: 1612928-013

Matrix: SOIL

Client Sample ID: E3-12'

Collection Date: 12/14/2016 11:20:00 AM

Received Date: 12/16/2016 9:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	3700	300		mg/Kg	200	12/21/2016 5:47:30 PM	29317
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	12/22/2016 7:30:56 PM	29270
Surr: DNOP	89.1	70-130		%Rec	1	12/22/2016 7:30:56 PM	29270
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/21/2016 9:46:15 PM	29264
Surr: BFB	90.0	68.3-144		%Rec	1	12/21/2016 9:46:15 PM	29264
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/21/2016 9:46:15 PM	29264
Toluene	ND	0.048		mg/Kg	1	12/21/2016 9:46:15 PM	29264
Ethylbenzene	ND	0.048		mg/Kg	1	12/21/2016 9:46:15 PM	29264
Xylenes, Total	ND	0.096		mg/Kg	1	12/21/2016 9:46:15 PM	29264
Surr: 4-Bromofluorobenzene	97.7	80-120		%Rec	1	12/21/2016 9:46:15 PM	29264

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

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Analytical Report

Lab Order 1612928

Date Reported: 12/27/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG Resources

Client Sample ID: E4-1'

Project: Tenneco SWD System

Collection Date: 12/14/2016 11:24:00 AM

Lab ID: 1612928-014

Matrix: SOIL

Received Date: 12/16/2016 9:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	12/21/2016 12:42:48 AM	29317
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/22/2016 7:54:11 PM	29270
Surr: DNOP	103	70-130		%Rec	1	12/22/2016 7:54:11 PM	29270
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/21/2016 10:09:46 PM	29264
Surr: BFB	89.8	68.3-144		%Rec	1	12/21/2016 10:09:46 PM	29264
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/21/2016 10:09:46 PM	29264
Toluene	ND	0.048		mg/Kg	1	12/21/2016 10:09:46 PM	29264
Ethylbenzene	ND	0.048		mg/Kg	1	12/21/2016 10:09:46 PM	29264
Xylenes, Total	ND	0.096		mg/Kg	1	12/21/2016 10:09:46 PM	29264
Surr: 4-Bromofluorobenzene	98.0	80-120		%Rec	1	12/21/2016 10:09:46 PM	29264

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

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Analytical Report

Lab Order 1612928

Date Reported: 12/27/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG Resources

Client Sample ID: E4-2'

Project: Tenneco SWD System

Collection Date: 12/14/2016 11:25:00 AM

Lab ID: 1612928-015

Matrix: SOIL

Received Date: 12/16/2016 9:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	12/21/2016 12:55:12 AM	29317
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	12/22/2016 8:17:18 PM	29270
Surr: DNOP	89.3	70-130		%Rec	1	12/22/2016 8:17:18 PM	29270
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/21/2016 10:33:17 PM	29264
Surr: BFB	90.1	68.3-144		%Rec	1	12/21/2016 10:33:17 PM	29264
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.023		mg/Kg	1	12/21/2016 10:33:17 PM	29264
Toluene	ND	0.047		mg/Kg	1	12/21/2016 10:33:17 PM	29264
Ethylbenzene	ND	0.047		mg/Kg	1	12/21/2016 10:33:17 PM	29264
Xylenes, Total	ND	0.094		mg/Kg	1	12/21/2016 10:33:17 PM	29264
Surr: 4-Bromofluorobenzene	97.9	80-120		%Rec	1	12/21/2016 10:33:17 PM	29264

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

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Analytical Report

Lab Order 1612928

Date Reported: 12/27/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG Resources

Client Sample ID: E4-3'

Project: Tenneco SWD System

Collection Date: 12/14/2016 11:26:00 AM

Lab ID: 1612928-016

Matrix: SOIL

Received Date: 12/16/2016 9:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	12/21/2016 1:07:37 AM	29317
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	12/22/2016 8:40:29 PM	29270
Surr: DNOP	104	70-130		%Rec	1	12/22/2016 8:40:29 PM	29270
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/21/2016 10:56:46 PM	29264
Surr: BFB	90.4	68.3-144		%Rec	1	12/21/2016 10:56:46 PM	29264
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/21/2016 10:56:46 PM	29264
Toluene	ND	0.048		mg/Kg	1	12/21/2016 10:56:46 PM	29264
Ethylbenzene	ND	0.048		mg/Kg	1	12/21/2016 10:56:46 PM	29264
Xylenes, Total	ND	0.097		mg/Kg	1	12/21/2016 10:56:46 PM	29264
Surr: 4-Bromofluorobenzene	98.9	80-120		%Rec	1	12/21/2016 10:56:46 PM	29264

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

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Analytical Report

Lab Order 1612928

Date Reported: 12/27/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG Resources

Project: Tenneco SWD System

Lab ID: 1612928-017

Matrix: SOIL

Client Sample ID: E4-4'

Collection Date: 12/14/2016 11:28:00 AM

Received Date: 12/16/2016 9:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	12/21/2016 1:20:01 AM	29317
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	12/22/2016 9:03:38 PM	29270
Surr: DNOP	87.9	70-130		%Rec	1	12/22/2016 9:03:38 PM	29270
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/22/2016 12:30:33 AM	29264
Surr: BFB	92.0	68.3-144		%Rec	1	12/22/2016 12:30:33 AM	29264
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/22/2016 12:30:33 AM	29264
Toluene	ND	0.049		mg/Kg	1	12/22/2016 12:30:33 AM	29264
Ethylbenzene	ND	0.049		mg/Kg	1	12/22/2016 12:30:33 AM	29264
Xylenes, Total	ND	0.097		mg/Kg	1	12/22/2016 12:30:33 AM	29264
Surr: 4-Bromofluorobenzene	99.2	80-120		%Rec	1	12/22/2016 12:30:33 AM	29264

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

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Analytical Report
Lab Order 1612928
Date Reported: 12/27/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG Resources
Project: Tenneco SWD System
Lab ID: 1612928-018

Matrix: SOIL

Client Sample ID: E4-5.25'
Collection Date: 12/14/2016 11:40:00 AM
Received Date: 12/16/2016 9:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	12/21/2016 1:32:26 AM	29317
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	12/22/2016 9:26:51 PM	29270
Surr: DNOP	83.6	70-130		%Rec	1	12/22/2016 9:26:51 PM	29270
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/22/2016 12:54:00 AM	29264
Surr: BFB	90.4	68.3-144		%Rec	1	12/22/2016 12:54:00 AM	29264
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	12/22/2016 12:54:00 AM	29264
Toluene	ND	0.049		mg/Kg	1	12/22/2016 12:54:00 AM	29264
Ethylbenzene	ND	0.049		mg/Kg	1	12/22/2016 12:54:00 AM	29264
Xylenes, Total	ND	0.098		mg/Kg	1	12/22/2016 12:54:00 AM	29264
Surr: 4-Bromofluorobenzene	98.1	80-120		%Rec	1	12/22/2016 12:54:00 AM	29264

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1612928

27-Dec-16

Client: EOG Resources
Project: Tenneco SWD System

Sample ID	MB-29304	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID:	29304	RunNo:	39553					
Prep Date:	12/20/2016	Analysis Date:	12/20/2016	SeqNo:	1238673	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	MB-29317	SampType:	mblk	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID:	29317	RunNo:	39558					
Prep Date:	12/20/2016	Analysis Date:	12/20/2016	SeqNo:	1238865	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-29317	SampType:	lcs	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSS	Batch ID:	29317	RunNo:	39558					
Prep Date:	12/20/2016	Analysis Date:	12/20/2016	SeqNo:	1238866	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.3	90	110			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1612928

27-Dec-16

Client: EOG Resources
Project: Tenneco SWD System

Sample ID	MB-29270	SampType:	MBLK	TestCode:	EPA Method 8016M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	29270	RunNo:	39590					
Prep Date:	12/19/2016	Analysis Date:	12/22/2016	SeqNo:	1240365	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Surr: DNOP	8.7		10.00		86.6	70	130			

Sample ID	LCS-29270	SampType:	LCS	TestCode:	EPA Method 8016M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	29270	RunNo:	39590					
Prep Date:	12/19/2016	Analysis Date:	12/22/2016	SeqNo:	1240399	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	10	60.00	0	85.4	63.8	116			
Surr: DNOP	3.8		5.000		77.0	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1612928

27-Dec-16

Client: EOG Resources
Project: Tenneco SWD System

Project: [REDACTED]										
Sample ID	MB-29264	SampType: MBLK			TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID: 29264			RunNo: 39561					
Prep Date:	12/19/2016	Analysis Date: 12/21/2016			SeqNo: 1239411		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	890		1000		88.7	68.3	144			

Surr: BFB		980		1000						
Sample ID	LCS-29264	SampType: LCS			TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID: 29264			RunNo: 39561					
Prep Date:	12/19/2016	Analysis Date: 12/21/2016			SeqNo: 1239412		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	5.0	25.00	0	106	74.6	123			
Surr: BFB	980		1000		97.8	68.3	144			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1612928

27-Dec-16

Client: EOG Resources
Project: Tenneco SWD System

Sample ID	MB-29264	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBS	Batch ID:	29264	RunNo:	39561					
Prep Date:	12/19/2016	Analysis Date:	12/21/2016	SeqNo:	1239454	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.97		1.000		97.5	80	120			

Sample ID	LCS-29264	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSS	Batch ID:	29264	RunNo:	39561					
Prep Date:	12/19/2016	Analysis Date:	12/21/2016	SeqNo:	1239455	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	108	75.2	115			
Toluene	1.0	0.050	1.000	0	101	80.7	112			
Ethylbenzene	1.0	0.050	1.000	0	99.6	78.9	117			
Xylenes, Total	3.0	0.10	3.000	0	100	79.2	115			
Surr: 4-Bromofluorobenzene	1.0		1.000		104	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

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Hall Environmental Analysts Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: EOG/Yates

Work Order Number: 1612928

ReplNo: 1

Received by/date:

Logged By: Ashley Gallegos

12/16/2016 9:05:00 AM

Completed By: Ashley Gallegos

12/16/2016 2:57:13 PM

Reviewed By:

Chain of Custody

1. Custody seals intact on sample bottles?
2. Is Chain of Custody complete?
3. How was the sample delivered?

Yes ☐ No ☐ Not Present ☒
Yes ☒ No ☐ Not Present ☐
Courier

Log In

4. Was an attempt made to cool the samples?
5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ?
6. Sample(s) in proper container(s)?
7. Sufficient sample volume for indicated test(s)?
8. Are samples (except VOA and ONG) properly preserved?
9. Was preservative added to bottles?

Yes ☒ No ☐ NA ☐
Yes ☒ No ☐ NA ☐
Yes ☒ No ☐
Yes ☒ No ☐
Yes ☒ No ☐
Yes ☐ No ☒ NA ☐

10. VOA vials have zero headspace?

Yes ☐ No ☐ No VOA Vials ☒
Yes ☐ No ☒

11. Were any sample containers received broken?

Yes ☐ No ☒

12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody)

Yes ☒ No ☐

13. Are matrices correctly identified on Chain of Custody?

Yes ☒ No ☐

14. Is it clear what analyses were requested?

Yes ☒ No ☐

15. Were all holding times able to be met?
(If no, notify customer for authorization.)

Yes ☒ No ☐

of preserved
bottles checked
for pH:

(<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (If applicable)

16. Was client notified of all discrepancies with this order?

Yes ☐ No ☐ NA ☒

Person Notified:

Date

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.5	Good	Yes			



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

December 29, 2016

Chase Settle
EOG Resources
105 South Fourth Street
Artesia, NM 88210
TEL: (575) 748-4111
FAX

RE: Tenneco SWD System

OrderNo.: 1612933

Dear Chase Settle:

Hall Environmental Analysis Laboratory received 4 sample(s) on 12/16/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman".

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report

Lab Order 1612933

Date Reported: 12/29/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG Resources

Client Sample ID: WB1-1'

Project: Tenneco SWD System

Collection Date: 12/14/2016 12:46:00 PM

Lab ID: 1612933-001

Matrix: SOIL

Received Date: 12/16/2016 9:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	2000	75		mg/Kg	50	12/27/2016 5:26:28 PM	29334
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: AG
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/20/2016 7:44:45 PM	29278
Surr: BFB	89.5	70-130		%Rec	1	12/20/2016 7:44:45 PM	29278
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/21/2016 10:19:56 PM	29282
Surr: DNOP	96.8	70-130		%Rec	1	12/21/2016 10:19:56 PM	29282
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: AG
Benzene	ND	0.025		mg/Kg	1	12/20/2016 7:44:45 PM	29278
Toluene	ND	0.049		mg/Kg	1	12/20/2016 7:44:45 PM	29278
Ethylbenzene	ND	0.049		mg/Kg	1	12/20/2016 7:44:45 PM	29278
Xylenes, Total	ND	0.099		mg/Kg	1	12/20/2016 7:44:45 PM	29278
Surr: 1,2-Dichloroethane-d4	98.0	70-130		%Rec	1	12/20/2016 7:44:45 PM	29278
Surr: 4-Bromofluorobenzene	96.8	70-130		%Rec	1	12/20/2016 7:44:45 PM	29278
Surr: Dibromofluoromethane	106	70-130		%Rec	1	12/20/2016 7:44:45 PM	29278
Surr: Toluene-d8	102	70-130		%Rec	1	12/20/2016 7:44:45 PM	29278

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Page 1 of 8

Analytical Report

Lab Order 1612933

Date Reported: 12/29/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG Resources

Client Sample ID: WB2-1'

Project: Tenneco SWD System

Collection Date: 12/14/2016 12:49:00 PM

Lab ID: 1612933-002

Matrix: SOIL

Received Date: 12/16/2016 9:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	5100	150		mg/Kg	100	12/28/2016 11:39:30 AM	29334
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: AG
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/20/2016 8:13:17 PM	29278
Surr: BFB	86.4	70-130		%Rec	1	12/20/2016 8:13:17 PM	29278
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	12/21/2016 10:43:15 PM	29282
Surr: DNOP	111	70-130		%Rec	1	12/21/2016 10:43:15 PM	29282
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: AG
Benzene	ND	0.024		mg/Kg	1	12/20/2016 8:13:17 PM	29278
Toluene	ND	0.047		mg/Kg	1	12/20/2016 8:13:17 PM	29278
Ethylbenzene	ND	0.047		mg/Kg	1	12/20/2016 8:13:17 PM	29278
Xylenes, Total	ND	0.094		mg/Kg	1	12/20/2016 8:13:17 PM	29278
Surr: 1,2-Dichloroethane-d4	102	70-130		%Rec	1	12/20/2016 8:13:17 PM	29278
Surr: 4-Bromofluorobenzene	86.3	70-130		%Rec	1	12/20/2016 8:13:17 PM	29278
Surr: Dibromofluoromethane	109	70-130		%Rec	1	12/20/2016 8:13:17 PM	29278
Surr: Toluene-d8	101	70-130		%Rec	1	12/20/2016 8:13:17 PM	29278

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

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Analytical Report

Lab Order 1612933

Date Reported: 12/29/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG Resources

Client Sample ID: WB3-1'

Project: Tenneco SWD System

Collection Date: 12/14/2016 12:51:00 PM

Lab ID: 1612933-003

Matrix: SOIL

Received Date: 12/16/2016 9:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	3500	150		mg/Kg	100	12/28/2016 11:51:53 AM	29334
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: AG
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/20/2016 8:41:48 PM	29278
Surr: BFB	88.4	70-130		%Rec	1	12/20/2016 8:41:48 PM	29278
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	11	9.8		mg/Kg	1	12/21/2016 11:06:23 PM	29282
Surr: DNOP	110	70-130		%Rec	1	12/21/2016 11:06:23 PM	29282
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: AG
Benzene	ND	0.024		mg/Kg	1	12/20/2016 8:41:48 PM	29278
Toluene	ND	0.048		mg/Kg	1	12/20/2016 8:41:48 PM	29278
Ethylbenzene	ND	0.048		mg/Kg	1	12/20/2016 8:41:48 PM	29278
Xylenes, Total	ND	0.097		mg/Kg	1	12/20/2016 8:41:48 PM	29278
Surr: 1,2-Dichloroethane-d4	101	70-130		%Rec	1	12/20/2016 8:41:48 PM	29278
Surr: 4-Bromofluorobenzene	91.7	70-130		%Rec	1	12/20/2016 8:41:48 PM	29278
Surr: Dibromofluoromethane	109	70-130		%Rec	1	12/20/2016 8:41:48 PM	29278
Surr: Toluene-d8	102	70-130		%Rec	1	12/20/2016 8:41:48 PM	29278

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

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Analytical Report

Lab Order 1612933

Date Reported: 12/29/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG Resources

Client Sample ID: WB4-1'

Project: Tenneco SWD System

Collection Date: 12/14/2016 12:53:00 PM

Lab ID: 1612933-004

Matrix: SOIL

Received Date: 12/16/2016 9:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	2200	75		mg/Kg	50	12/27/2016 6:03:41 PM	29334
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: AG
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/21/2016 2:51:35 AM	29278
Surr: BFB	90.8	70-130		%Rec	1	12/21/2016 2:51:35 AM	29278
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	12/21/2016 11:29:40 PM	29282
Surr: DNOP	108	70-130		%Rec	1	12/21/2016 11:29:40 PM	29282
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: AG
Benzene	ND	0.024		mg/Kg	1	12/21/2016 2:51:35 AM	29278
Toluene	ND	0.047		mg/Kg	1	12/21/2016 2:51:35 AM	29278
Ethylbenzene	ND	0.047		mg/Kg	1	12/21/2016 2:51:35 AM	29278
Xylenes, Total	ND	0.094		mg/Kg	1	12/21/2016 2:51:35 AM	29278
Surr: 1,2-Dichloroethane-d4	101	70-130		%Rec	1	12/21/2016 2:51:35 AM	29278
Surr: 4-Bromofluorobenzene	93.4	70-130		%Rec	1	12/21/2016 2:51:35 AM	29278
Surr: Dibromofluoromethane	104	70-130		%Rec	1	12/21/2016 2:51:35 AM	29278
Surr: Toluene-d8	102	70-130		%Rec	1	12/21/2016 2:51:35 AM	29278

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Page 4 of 8

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1612933

29-Dec-16

Client: EOG Resources
Project: Tenneco SWD System

Project: Remedial SW 2016										
Sample ID	MB-29334	SampType: mblk			TestCode: EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID: 29334			RunNo: 39630					
Prep Date:	12/21/2016	Analysis Date: 12/22/2016			SeqNo: 1241440		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID		LCS-29334		SampType: lcs		TestCode: EPA Method 300.0: Anions				
Client ID:		LCSS		Batch ID: 29334		RunNo: 39630				
Prep Date:		12/21/2016		Analysis Date: 12/22/2016		SeqNo: 1241441		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.9	90	110			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1612933

29-Dec-16

Client: EOG Resources
Project: Tenneco SWD System

Sample ID	LCS-29282	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	29282	RunNo:	39576					
Prep Date:	12/19/2016	Analysis Date:	12/21/2016	SeqNo:	1239546	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	53	10	50.00	0	107	63.8	116			
Surr: DNOP	5.4		5.000		107	70	130			

Sun. DNOP										
Sample ID	MB-29282	SampType: MBLK			TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID: 29282			RunNo: 39576					
Prep Date:	12/19/2016	Analysis Date: 12/21/2016			SeqNo: 1239547		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Surr: DNOP	11		10.00		110	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1612933

29-Dec-16

Client: EOG Resources
Project: Tenneco SWD System

Sample ID	lcs-29278	SampType:	LCS	TestCode:	EPA Method 8260B: Volatiles Short List					
Client ID:	LCSS	Batch ID:	29278	RunNo:	39538					
Prep Date:	12/19/2016	Analysis Date:	12/20/2016	SeqNo:	1238550	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.95	0.025	1.000	0	94.6	70	130			
Toluene	0.92	0.050	1.000	0	92.2	70	130			
Ethylbenzene	0.93	0.050	1.000	0	93.0	70	130			
Xylenes, Total	3.2	0.10	3.000	0	108	70	130			
Surr: 1,2-Dichloroethane-d4	0.51		0.5000		102	70	130			
Surr: 4-Bromofluorobenzene	0.47		0.5000		93.8	70	130			
Surr: Dibromofluoromethane	0.55		0.5000		109	70	130			
Surr: Toluene-d8	0.50		0.5000		99.6	70	130			

Sample ID	mb-29278	SampType:	MBLK	TestCode:	EPA Method 8260B: Volatiles Short List					
Client ID:	PBS	Batch ID:	29278	RunNo:	39538					
Prep Date:	12/19/2016	Analysis Date:	12/20/2016	SeqNo:	1238551	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 1,2-Dichloroethane-d4	0.48		0.5000		95.8	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		97.9	70	130			
Surr: Dibromofluoromethane	0.53		0.5000		105	70	130			
Surr: Toluene-d8	0.52		0.5000		103	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1612933

29-Dec-16

Client: EOG Resources
Project: Tenneco SWD System

Sample ID		Ics-29278		SampType: LCS		TestCode: EPA Method 8015D Mod: Gasoline Range				
Client ID:		LCSS		Batch ID: 29278		RunNo: 39538				
Prep Date:		12/19/2016		Analysis Date: 12/20/2016		SeqNo: 1238582		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	99.2	62.9	123			
Surr: BFB	450		500.0		89.1	70	130			

Surr: BFB		450		500.0		90.6		70		130	
Sample ID mb-29278		SampType: MBLK		TestCode: EPA Method 8015D Mod: Gasoline Range							
Client ID: PBS		Batch ID: 29278		RunNo: 39538							
Prep Date: 12/19/2016		Analysis Date: 12/20/2016		SeqNo: 1238585		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Range Organics (GRO)	ND	5.0									
Surr: BFB	450		500.0		90.6	70	130				

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: EOG/Yates

Work Order Number: 1812933

RcptNo: 1

Received by/date:

AG

12/16/16

Logged By: Ashley Gallegos

12/16/2016 9:05:00 AM

Completed By: Ashley Gallegos

12/16/2016 3:13:17 PM

Reviewed By:

AG

12/19/16

Chain of Custody

1. Custody seals intact on sample bottles?
2. Is Chain of Custody complete?
3. How was the sample delivered?

Yes ☐ No ☐ Not Present ☒
Yes ☒ No ☐ Not Present ☐
Courier

Log In

4. Was an attempt made to cool the samples?
5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ?
6. Sample(s) in proper container(s)?
7. Sufficient sample volume for indicated test(s)?
8. Are samples (except VOA and ONG) properly preserved?
9. Was preservative added to bottles?
10. VOA vials have zero headspace?
11. Were any sample containers received broken?
12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody)
13. Are matrices correctly identified on Chain of Custody?
14. Is it clear what analyses were requested?
15. Were all holding times able to be met?
(If no, notify customer for authorization.)

Yes ☒ No ☐ NA ☐
Yes ☒ No ☐ NA ☐
Yes ☒ No ☐
Yes ☒ No ☐
Yes ☒ No ☐
Yes ☐ No ☒ NA ☐
Yes ☐ No ☐ No VOA Vials ☒
Yes ☐ No ☒
Yes ☒ No ☐
Yes ☒ No ☐
Yes ☒ No ☐
Yes ☒ No ☐

of preserved
bottles checked
for pH:
(<2 or >12 unless noted)
Adjusted? _____
Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order?

Yes ☐ No ☐ NA ☒

Person Notified:

Date:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.5	Good	Yes			



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

December 28, 2016

Chase Settle
EOG Resources
105 South Fourth Street
Artesia, NM 88210
TEL: (575) 748-4111
FAX

RE: Tenneco SWD System

OrderNo.: 1612936

Dear Chase Settle:

Hall Environmental Analysis Laboratory received 11 sample(s) on 12/16/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a horizontal line.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report

Lab Order 1612936

Date Reported: 12/28/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG Resources

Client Sample ID: EB1-1'

Project: Tenneco SWD System

Collection Date: 12/14/2016 12:11:00 PM

Lab ID: 1612936-001

Matrix: SOIL

Received Date: 12/16/2016 9:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	12/22/2016 7:43:53 PM	29334
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: AG
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/21/2016 3:20:01 AM	29278
Surr: BFB	88.4	70-130		%Rec	1	12/21/2016 3:20:01 AM	29278
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	12/21/2016 11:52:52 PM	29282
Surr: DNOP	103	70-130		%Rec	1	12/21/2016 11:52:52 PM	29282
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: AG
Benzene	ND	0.024		mg/Kg	1	12/21/2016 3:20:01 AM	29278
Toluene	ND	0.048		mg/Kg	1	12/21/2016 3:20:01 AM	29278
Ethylbenzene	ND	0.048		mg/Kg	1	12/21/2016 3:20:01 AM	29278
Xylenes, Total	ND	0.096		mg/Kg	1	12/21/2016 3:20:01 AM	29278
Surr: 1,2-Dichloroethane-d4	98.2	70-130		%Rec	1	12/21/2016 3:20:01 AM	29278
Surr: 4-Bromofluorobenzene	93.4	70-130		%Rec	1	12/21/2016 3:20:01 AM	29278
Surr: Dibromofluoromethane	105	70-130		%Rec	1	12/21/2016 3:20:01 AM	29278
Surr: Toluene-d8	102	70-130		%Rec	1	12/21/2016 3:20:01 AM	29278

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

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Analytical Report
Lab Order 1612936
Date Reported: 12/28/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG Resources
Project: Tenneco SWD System
Lab ID: 1612936-002

Matrix: SOIL

Client Sample ID: EB1-5'
Collection Date: 12/14/2016 12:13:00 PM
Received Date: 12/16/2016 9:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	12/22/2016 8:21:06 PM	29334
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: AG
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/21/2016 3:48:25 AM	29278
Surr: BFB	94.0	70-130		%Rec	1	12/21/2016 3:48:25 AM	29278
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	12/22/2016 12:16:16 AM	29282
Surr: DNOP	98.3	70-130		%Rec	1	12/22/2016 12:16:16 AM	29282
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: AG
Benzene	ND	0.025		mg/Kg	1	12/21/2016 3:48:25 AM	29278
Toluene	ND	0.049		mg/Kg	1	12/21/2016 3:48:25 AM	29278
Ethylbenzene	ND	0.049		mg/Kg	1	12/21/2016 3:48:25 AM	29278
Xylenes, Total	ND	0.098		mg/Kg	1	12/21/2016 3:48:25 AM	29278
Surr: 1,2-Dichloroethane-d4	97.8	70-130		%Rec	1	12/21/2016 3:48:25 AM	29278
Surr: 4-Bromofluorobenzene	97.9	70-130		%Rec	1	12/21/2016 3:48:25 AM	29278
Surr: Dibromofluoromethane	104	70-130		%Rec	1	12/21/2016 3:48:25 AM	29278
Surr: Toluene-d8	107	70-130		%Rec	1	12/21/2016 3:48:25 AM	29278

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

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Analytical Report

Lab Order 1612936

Date Reported: 12/28/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG Resources

Client Sample ID: EB2-1'

Project: Tenneco SWD System

Collection Date: 12/14/2016 12:15:00 PM

Lab ID: 1612936-003

Matrix: SOIL

Received Date: 12/16/2016 9:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	12/22/2016 8:33:31 PM	29334
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: AG
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/21/2016 4:16:50 AM	29278
Surr: BFB	91.6	70-130		%Rec	1	12/21/2016 4:16:50 AM	29278
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/22/2016 12:39:30 AM	29282
Surr: DNOP	107	70-130		%Rec	1	12/22/2016 12:39:30 AM	29282
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: AG
Benzene	ND	0.025		mg/Kg	1	12/21/2016 4:16:50 AM	29278
Toluene	ND	0.049		mg/Kg	1	12/21/2016 4:16:50 AM	29278
Ethylbenzene	ND	0.049		mg/Kg	1	12/21/2016 4:16:50 AM	29278
Xylenes, Total	ND	0.099		mg/Kg	1	12/21/2016 4:16:50 AM	29278
Surr: 1,2-Dichloroethane-d4	99.9	70-130		%Rec	1	12/21/2016 4:16:50 AM	29278
Surr: 4-Bromofluorobenzene	91.0	70-130		%Rec	1	12/21/2016 4:16:50 AM	29278
Surr: Dibromofluoromethane	102	70-130		%Rec	1	12/21/2016 4:16:50 AM	29278
Surr: Toluene-d8	104	70-130		%Rec	1	12/21/2016 4:16:50 AM	29278

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

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Analytical Report

Lab Order 1612936

Date Reported: 12/28/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG Resources

Client Sample ID: EB2-5'

Project: Tenneco SWD System

Collection Date: 12/14/2016 12:17:00 PM

Lab ID: 1612936-004

Matrix: SOIL

Received Date: 12/16/2016 9:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	12/22/2016 8:45:56 PM	29334
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: AG
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/21/2016 4:45:12 AM	29278
Surr: BFB	90.3	70-130		%Rec	1	12/21/2016 4:45:12 AM	29278
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	12/22/2016 1:03:00 AM	29282
Surr: DNOP	91.1	70-130		%Rec	1	12/22/2016 1:03:00 AM	29282
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: AG
Benzene	ND	0.025		mg/Kg	1	12/21/2016 4:45:12 AM	29278
Toluene	ND	0.049		mg/Kg	1	12/21/2016 4:45:12 AM	29278
Ethylbenzene	ND	0.049		mg/Kg	1	12/21/2016 4:45:12 AM	29278
Xylenes, Total	ND	0.099		mg/Kg	1	12/21/2016 4:45:12 AM	29278
Surr: 1,2-Dichloroethane-d4	99.8	70-130		%Rec	1	12/21/2016 4:45:12 AM	29278
Surr: 4-Bromofluorobenzene	93.8	70-130		%Rec	1	12/21/2016 4:45:12 AM	29278
Surr: Dibromofluoromethane	101	70-130		%Rec	1	12/21/2016 4:45:12 AM	29278
Surr: Toluene-d8	103	70-130		%Rec	1	12/21/2016 4:45:12 AM	29278

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

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Analytical Report

Lab Order 1612936

Date Reported: 12/28/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG Resources

Client Sample ID: EB3-5'

Project: Tenneco SWD System

Collection Date: 12/14/2016 12:21:00 PM

Lab ID: 1612936-005

Matrix: SOIL

Received Date: 12/16/2016 9:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	3900	300		mg/Kg	200	12/27/2016 6:16:06 PM	29334
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: AG
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/21/2016 5:13:33 AM	29278
Surr: BFB	91.8	70-130		%Rec	1	12/21/2016 5:13:33 AM	29278
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	12/22/2016 1:26:09 AM	29282
Surr: DNOP	94.4	70-130		%Rec	1	12/22/2016 1:26:09 AM	29282
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: AG
Benzene	ND	0.024		mg/Kg	1	12/21/2016 5:13:33 AM	29278
Toluene	ND	0.049		mg/Kg	1	12/21/2016 5:13:33 AM	29278
Ethylbenzene	ND	0.049		mg/Kg	1	12/21/2016 5:13:33 AM	29278
Xylenes, Total	ND	0.097		mg/Kg	1	12/21/2016 5:13:33 AM	29278
Surr: 1,2-Dichloroethane-d4	99.7	70-130		%Rec	1	12/21/2016 5:13:33 AM	29278
Surr: 4-Bromofluorobenzene	98.5	70-130		%Rec	1	12/21/2016 5:13:33 AM	29278
Surr: Dibromofluoromethane	107	70-130		%Rec	1	12/21/2016 5:13:33 AM	29278
Surr: Toluene-d8	107	70-130		%Rec	1	12/21/2016 5:13:33 AM	29278

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

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Analytical Report

Lab Order 1612936

Date Reported: 12/28/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG Resources

Client Sample ID: EB3-10'

Project: Tenneco SWD System

Collection Date: 12/14/2016 12:23:00 PM

Lab ID: 1612936-006

Matrix: SOIL

Received Date: 12/16/2016 9:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	4200	300		mg/Kg	200	12/27/2016 6:53:19 PM	29334
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: AG
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/21/2016 5:41:54 AM	29278
Surr: BFB	91.2	70-130		%Rec	1	12/21/2016 5:41:54 AM	29278
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	12/22/2016 1:49:25 AM	29282
Surr: DNOP	92.1	70-130		%Rec	1	12/22/2016 1:49:25 AM	29282
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: AG
Benzene	ND	0.024		mg/Kg	1	12/21/2016 5:41:54 AM	29278
Toluene	ND	0.048		mg/Kg	1	12/21/2016 5:41:54 AM	29278
Ethylbenzene	ND	0.048		mg/Kg	1	12/21/2016 5:41:54 AM	29278
Xylenes, Total	ND	0.097		mg/Kg	1	12/21/2016 5:41:54 AM	29278
Surr: 1,2-Dichloroethane-d4	103	70-130		%Rec	1	12/21/2016 5:41:54 AM	29278
Surr: 4-Bromofluorobenzene	95.2	70-130		%Rec	1	12/21/2016 5:41:54 AM	29278
Surr: Dibromofluoromethane	105	70-130		%Rec	1	12/21/2016 5:41:54 AM	29278
Surr: Toluene-d8	104	70-130		%Rec	1	12/21/2016 5:41:54 AM	29278

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

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Analytical Report

Lab Order 1612936

Date Reported: 12/28/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG Resources

Client Sample ID: EB4-5'

Project: Tenneco SWD System

Collection Date: 12/14/2016 12:27:00 PM

Lab ID: 1612936-007

Matrix: SOIL

Received Date: 12/16/2016 9:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	4300	150		mg/Kg	100	12/27/2016 7:05:44 PM	29334
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: AG
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/21/2016 6:10:14 AM	29278
Surr: BFB	89.8	70-130		%Rec	1	12/21/2016 6:10:14 AM	29278
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	12/22/2016 2:12:33 AM	29282
Surr: DNOP	94.0	70-130		%Rec	1	12/22/2016 2:12:33 AM	29282
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: AG
Benzene	ND	0.023		mg/Kg	1	12/21/2016 6:10:14 AM	29278
Toluene	ND	0.047		mg/Kg	1	12/21/2016 6:10:14 AM	29278
Ethylbenzene	ND	0.047		mg/Kg	1	12/21/2016 6:10:14 AM	29278
Xylenes, Total	ND	0.093		mg/Kg	1	12/21/2016 6:10:14 AM	29278
Surr: 1,2-Dichloroethane-d4	99.4	70-130		%Rec	1	12/21/2016 6:10:14 AM	29278
Surr: 4-Bromofluorobenzene	92.6	70-130		%Rec	1	12/21/2016 6:10:14 AM	29278
Surr: Dibromofluoromethane	102	70-130		%Rec	1	12/21/2016 6:10:14 AM	29278
Surr: Toluene-d8	105	70-130		%Rec	1	12/21/2016 6:10:14 AM	29278

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

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Analytical Report
Lab Order 1612936
Date Reported: 12/28/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG Resources
Project: Tenneco SWD System
Lab ID: 1612936-008

Matrix: SOIL

Client Sample ID: EB4-10'
Collection Date: 12/14/2016 12:29:00 PM
Received Date: 12/16/2016 9:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	3900	150		mg/Kg	100	12/27/2016 7:18:08 PM	29334
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: AG
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	12/21/2016 11:05:34 AM	29278
Surr: BFB	82.6	70-130		%Rec	1	12/21/2016 11:05:34 AM	29278
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	12/23/2016 5:58:02 AM	29308
Surr: DNOP	99.3	70-130		%Rec	1	12/23/2016 5:58:02 AM	29308
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: AG
Benzene	ND	0.025		mg/Kg	1	12/21/2016 11:05:34 AM	29278
Toluene	ND	0.050		mg/Kg	1	12/21/2016 11:05:34 AM	29278
Ethylbenzene	ND	0.050		mg/Kg	1	12/21/2016 11:05:34 AM	29278
Xylenes, Total	ND	0.10		mg/Kg	1	12/21/2016 11:05:34 AM	29278
Surr: 1,2-Dichloroethane-d4	102	70-130		%Rec	1	12/21/2016 11:05:34 AM	29278
Surr: 4-Bromofluorobenzene	90.7	70-130		%Rec	1	12/21/2016 11:05:34 AM	29278
Surr: Dibromofluoromethane	115	70-130		%Rec	1	12/21/2016 11:05:34 AM	29278
Surr: Toluene-d8	101	70-130		%Rec	1	12/21/2016 11:05:34 AM	29278

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E Value above quantitation range
H	Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P Sample pH Not In Range
R	RPD outside accepted recovery limits	RL Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Analytical Report
Lab Order 1612936
Date Reported: 12/28/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG Resources
Project: Tenneco SWD System
Lab ID: 1612936-009
Matrix: SOIL
Client Sample ID: EB5-1'
Collection Date: 12/14/2016 12:31:00 PM
Received Date: 12/16/2016 9:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	12/22/2016 10:12:47 PM	29334
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: AG
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/21/2016 11:34:24 AM	29278
Surr: BFB	83.8	70-130		%Rec	1	12/21/2016 11:34:24 AM	29278
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	12/23/2016 7:07:43 AM	29308
Surr: DNOP	93.3	70-130		%Rec	1	12/23/2016 7:07:43 AM	29308
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: AG
Benzene	ND	0.024		mg/Kg	1	12/21/2016 11:34:24 AM	29278
Toluene	ND	0.048		mg/Kg	1	12/21/2016 11:34:24 AM	29278
Ethylbenzene	ND	0.048		mg/Kg	1	12/21/2016 11:34:24 AM	29278
Xylenes, Total	ND	0.096		mg/Kg	1	12/21/2016 11:34:24 AM	29278
Surr: 1,2-Dichloroethane-d4	99.9	70-130		%Rec	1	12/21/2016 11:34:24 AM	29278
Surr: 4-Bromofluorobenzene	91.8	70-130		%Rec	1	12/21/2016 11:34:24 AM	29278
Surr: Dibromofluoromethane	118	70-130		%Rec	1	12/21/2016 11:34:24 AM	29278
Surr: Toluene-d8	99.9	70-130		%Rec	1	12/21/2016 11:34:24 AM	29278

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Analytical Report

Lab Order 1612936

Date Reported: 12/28/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG Resources

Project: Tenneco SWD System

Lab ID: 1612936-010

Matrix: SOIL

Client Sample ID: EB5-5'

Collection Date: 12/14/2016 12:33:00 PM

Received Date: 12/16/2016 9:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	12/22/2016 10:25:12 PM	29334
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: AG
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/21/2016 12:03:14 PM	29278
Surr: BFB	83.8	70-130		%Rec	1	12/21/2016 12:03:14 PM	29278
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	12/23/2016 7:31:00 AM	29308
Surr: DNOP	114	70-130		%Rec	1	12/23/2016 7:31:00 AM	29308
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: AG
Benzene	ND	0.024		mg/Kg	1	12/21/2016 12:03:14 PM	29278
Toluene	ND	0.047		mg/Kg	1	12/21/2016 12:03:14 PM	29278
Ethylbenzene	ND	0.047		mg/Kg	1	12/21/2016 12:03:14 PM	29278
Xylenes, Total	ND	0.094		mg/Kg	1	12/21/2016 12:03:14 PM	29278
Surr: 1,2-Dichloroethane-d4	102	70-130		%Rec	1	12/21/2016 12:03:14 PM	29278
Surr: 4-Bromofluorobenzene	93.5	70-130		%Rec	1	12/21/2016 12:03:14 PM	29278
Surr: Dibromofluoromethane	118	70-130		%Rec	1	12/21/2016 12:03:14 PM	29278
Surr: Toluene-d8	103	70-130		%Rec	1	12/21/2016 12:03:14 PM	29278

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Page 10 of 15

Analytical Report

Lab Order 1612936

Date Reported: 12/28/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG Resources

Client Sample ID: EB5-10'

Project: Tenneco SWD System

Collection Date: 12/14/2016 12:36:00 PM

Lab ID: 1612936-011

Matrix: SOIL

Received Date: 12/16/2016 9:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	12/22/2016 10:37:37 PM	29334
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: AG
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/21/2016 12:31:56 PM	29278
Surr: BFB	83.3	70-130		%Rec	1	12/21/2016 12:31:56 PM	29278
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	12/23/2016 7:54:13 AM	29308
Surr: DNOP	109	70-130		%Rec	1	12/23/2016 7:54:13 AM	29308
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: AG
Benzene	ND	0.024		mg/Kg	1	12/21/2016 12:31:56 PM	29278
Toluene	ND	0.049		mg/Kg	1	12/21/2016 12:31:56 PM	29278
Ethylbenzene	ND	0.049		mg/Kg	1	12/21/2016 12:31:56 PM	29278
Xylenes, Total	ND	0.097		mg/Kg	1	12/21/2016 12:31:56 PM	29278
Surr: 1,2-Dichloroethane-d4	105	70-130		%Rec	1	12/21/2016 12:31:56 PM	29278
Surr: 4-Bromofluorobenzene	91.1	70-130		%Rec	1	12/21/2016 12:31:56 PM	29278
Surr: Dibromofluoromethane	113	70-130		%Rec	1	12/21/2016 12:31:56 PM	29278
Surr: Toluene-d8	102	70-130		%Rec	1	12/21/2016 12:31:56 PM	29278

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1612936

28-Dec-16

Client: EOG Resources
Project: Tenneco SWD System

Sample ID	MB-29334	SampType:	mbk	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID:	29334	RunNo:	39630					
Prep Date:	12/21/2016	Analysis Date:	12/22/2016	SeqNo:	1241440	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-29334	SampType:	lcs	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSS	Batch ID:	29334	RunNo:	39630					
Prep Date:	12/21/2016	Analysis Date:	12/22/2016	SeqNo:	1241441	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.9	90	110			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1612936

28-Dec-16

Client: EOG Resources
Project: Tenneco SWD System

Sample ID	LCS-29282	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	29282	RunNo:	39576					
Prep Date:	12/19/2016	Analysis Date:	12/21/2016	SeqNo:	1239546	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	53	10	50.00	0	107	63.8	116			
Surr: DNOP	5.4		5.000		107	70	130			

Sample ID	MB-29282	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	29282	RunNo:	39576					
Prep Date:	12/19/2016	Analysis Date:	12/21/2016	SeqNo:	1239547	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Surr: DNOP	11		10.00		110	70	130			

Sample ID	LCS-29308	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	29308	RunNo:	39590					
Prep Date:	12/20/2016	Analysis Date:	12/22/2016	SeqNo:	1240933	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	10	50.00	0	94.9	63.8	116			
Surr: DNOP	4.4		5.000		88.5	70	130			

Sample ID	MB-29308	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	29308	RunNo:	39590					
Prep Date:	12/20/2016	Analysis Date:	12/22/2016	SeqNo:	1240934	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Surr: DNOP	9.2		10.00		92.4	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1612936

28-Dec-16

Client: EOG Resources
Project: Tenneco SWD System

Sample ID	lcs-29278	SampType:	LCS	TestCode:	EPA Method 8260B: Volatiles Short List					
Client ID:	LCSS	Batch ID:	29278	RunNo:	39538					
Prep Date:	12/19/2016	Analysis Date:	12/20/2016	SeqNo:	1238550	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.95	0.025	1.000	0	94.6	70	130			
Toluene	0.92	0.050	1.000	0	92.2	70	130			
Ethylbenzene	0.93	0.050	1.000	0	93.0	70	130			
Xylenes, Total	3.2	0.10	3.000	0	108	70	130			
Surr: 1,2-Dichloroethane-d4	0.51		0.5000		102	70	130			
Surr: 4-Bromofluorobenzene	0.47		0.5000		93.8	70	130			
Surr: Dibromofluoromethane	0.55		0.5000		109	70	130			
Surr: Toluene-d8	0.50		0.5000		99.6	70	130			

Sample ID	mb-29278	SampType:	MBLK	TestCode:	EPA Method 8260B: Volatiles Short List					
Client ID:	PBS	Batch ID:	29278	RunNo:	39538					
Prep Date:	12/19/2016	Analysis Date:	12/20/2016	SeqNo:	1238551	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 1,2-Dichloroethane-d4	0.48		0.5000		95.8	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		97.9	70	130			
Surr: Dibromofluoromethane	0.53		0.5000		105	70	130			
Surr: Toluene-d8	0.52		0.5000		103	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1612936

28-Dec-16

Client: EOG Resources
Project: Tenneco SWD System

Sample ID	lcs-29278	SampType:	LCS	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	LCSS	Batch ID:	29278	RunNo:	39538					
Prep Date:	12/19/2016	Analysis Date:	12/20/2016	SeqNo:	1238582	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	99.2	62.9	123			
Surr: BFB	450		500.0		89.1	70	130			

Surr: BFB		450		500.0		90.6		70		130	
Sample ID mb-29278		SampType: MBLK		TestCode: EPA Method 8015D Mod: Gasoline Range							
Client ID: PBS		Batch ID: 29278		RunNo: 39538							
Prep Date: 12/19/2016		Analysis Date: 12/20/2016		SeqNo: 1238585		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Range Organics (GRO)	ND	5.0									
Surr: BFB	450		500.0		90.6	70	130				

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: EOG/Yates

Work Order Number: 1812938

ReptNo: 1

Received by/date:

AG

12/16/16

Logged By:

Ashley Gallegos

12/16/2016 9:05:00 AM

Completed By:

Ashley Gallegos

12/16/2016 3:43:19 PM

Reviewed By:

AG

12/19/16

Chain of Custody

1. Custody seals intact on sample bottles?

Yes ☐

No ☐

Not Present ☒

2. Is Chain of Custody complete?

Yes ☒

No ☐

Not Present ☐

3. How was the sample delivered?

Courier

Log In

4. Was an attempt made to cool the samples?

Yes ☒

No ☐

NA ☐

5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ?

Yes ☒

No ☐

NA ☐

6. Sample(s) in proper container(s)?

Yes ☒

No ☐

7. Sufficient sample volume for indicated test(s)?

Yes ☒

No ☐

8. Are samples (except VOA and ONG) properly preserved?

Yes ☒

No ☐

9. Was preservative added to bottles?

Yes ☐

No ☒

NA ☐

10. VOA vials have zero headspace?

Yes ☐

No ☐

No VOA Vials ☒

11. Were any sample containers received broken?

Yes ☐

No ☒

of preserved bottles checked for pH:

(<2 or >12 unless noted)

12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody)

Yes ☒

No ☐

Adjusted? _____

13. Are matrices correctly identified on Chain of Custody?

Yes ☒

No ☐

14. Is it clear what analyses were requested?

Yes ☒

No ☐

15. Were all holding times able to be met?

Yes ☒

No ☐

Checked by: _____

(If no, notify customer for authorization.)

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order?

Yes ☐

No ☐

NA ☒

Person Notified:

Date

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.5	Good	Yes			



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

January 20, 2017

Chase Settle
EOG Resources
105 South Fourth Street
Artesia, NM 88210
TEL: (575) 748-4111
FAX

RE: Tenneco SWD System

OrderNo.: 1701495

Dear Chase Settle:

Hall Environmental Analysis Laboratory received 32 sample(s) on 1/12/2017 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman'.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report

Lab Order: 1701495

Date Reported: 1/20/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG Resources
Project: Tenneco SWD System

Lab Order: 1701495

Lab ID: 1701495-001

Collection Date: 1/4/2017 9:52:00 AM

Client Sample ID: T1-10.5'

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							
Chloride	4200	150		mg/Kg	100	1/16/2017 7:29:02 PM	29684

Analyst: LGT

Lab ID: 1701495-002

Collection Date: 1/4/2017 10:02:00 AM

Client Sample ID: T1-12.5'

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							
Chloride	2800	150		mg/Kg	100	1/16/2017 7:41:27 PM	29684

Analyst: LGT

Lab ID: 1701495-003

Collection Date: 1/4/2017 10:18:00 AM

Client Sample ID: T1-14.5'

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							
Chloride	2700	150		mg/Kg	100	1/16/2017 8:18:41 PM	29684

Analyst: LGT

Lab ID: 1701495-004

Collection Date: 1/4/2017 10:34:00 AM

Client Sample ID: T1-15.5'

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							
Chloride	3400	150		mg/Kg	100	1/16/2017 8:31:06 PM	29693

Analyst: LGT

Lab ID: 1701495-005

Collection Date: 1/4/2017 11:24:00 AM

Client Sample ID: WB1-2'

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							
Chloride	ND	30		mg/Kg	20	1/14/2017 3:37:31 PM	29693

Analyst: LGT

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	Page 1 of 8
	D Sample Diluted Due to Matrix	E Value above quantitation range	
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits	
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range	
	R RPD outside accepted recovery limits	RL Reporting Detection Limit	
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified	

Analytical Report

Lab Order: 1701495

Date Reported: 1/20/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG Resources
Project: Tenneco SWD System

Lab Order: 1701495

Lab ID: 1701495-006 Collection Date: 1/4/2017 11:51:00 AM
Client Sample ID: WB1-F Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	ND	30		mg/Kg	20	1/14/2017 4:14:45 PM	29693

Lab ID: 1701495-007 Collection Date: 1/4/2017 11:55:00 AM
Client Sample ID: WB1-F+1' Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	ND	30		mg/Kg	20	1/14/2017 4:27:10 PM	29693

Lab ID: 1701495-008 Collection Date: 1/4/2017 11:32:00 AM
Client Sample ID: WB2-2' Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	ND	30		mg/Kg	20	1/14/2017 5:04:24 PM	29693

Lab ID: 1701495-009 Collection Date: 1/4/2017 11:58:00 AM
Client Sample ID: WB2-F Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	ND	30		mg/Kg	20	1/14/2017 5:16:49 PM	29693

Lab ID: 1701495-010 Collection Date: 1/4/2017 12:00:00 PM
Client Sample ID: WB2-F+1' Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	30	30		mg/Kg	20	1/14/2017 5:29:14 PM	29693

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	
	D Sample Diluted Due to Matrix	E Value above quantitation range	
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits	Page 2 of 8
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range	
	R RPD outside accepted recovery limits	RL Reporting Detection Limit	
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified	

Analytical Report

Lab Order: 1701495

Date Reported: 1/20/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG Resources
Project: Tenneco SWD System

Lab Order: 1701495

Lab ID: 1701495-011

Collection Date: 1/4/2017 11:39:00 AM

Client Sample ID: WB3-2'

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	ND	30		mg/Kg	20	1/14/2017 5:41:38 PM	29693

Lab ID: 1701495-012

Collection Date: 1/4/2017 12:05:00 PM

Client Sample ID: WB3-F

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	ND	30		mg/Kg	20	1/14/2017 5:54:03 PM	29693

Lab ID: 1701495-013

Collection Date: 1/4/2017 12:08:00 PM

Client Sample ID: WB3-F+1'

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	ND	30		mg/Kg	20	1/14/2017 6:06:27 PM	29693

Lab ID: 1701495-014

Collection Date: 1/4/2017 11:44:00 AM

Client Sample ID: WB4-2'

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	ND	30		mg/Kg	20	1/14/2017 6:18:52 PM	29693

Lab ID: 1701495-015

Collection Date: 1/4/2017 12:11:00 PM

Client Sample ID: WB4-F

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	ND	30		mg/Kg	20	1/14/2017 6:31:17 PM	29693

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	
	D Sample Diluted Due to Matrix	E Value above quantitation range	
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits	Page 3 of 8
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range	
	R RPD outside accepted recovery limits	RL Reporting Detection Limit	
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified	

Analytical Report

Lab Order: 1701495

Date Reported: 1/20/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG Resources
Project: Tenneco SWD System

Lab Order: 1701495

Lab ID: 1701495-016

Collection Date: 1/4/2017 12:13:00 PM

Client Sample ID: WB4-F+1'

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	ND	30		mg/Kg	20	1/14/2017 6:43:42 PM	29693

Lab ID: 1701495-017

Collection Date: 1/4/2017 12:19:00 PM

Client Sample ID: EB3-F

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	370	30		mg/Kg	20	1/14/2017 6:56:07 PM	29693

Lab ID: 1701495-018

Collection Date: 1/4/2017 12:21:00 PM

Client Sample ID: EB3-F+3'

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	ND	30		mg/Kg	20	1/14/2017 7:33:20 PM	29693

Lab ID: 1701495-019

Collection Date: 1/4/2017 12:24:00 PM

Client Sample ID: EB3-F+6'

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	120	30		mg/Kg	20	1/14/2017 7:45:45 PM	29693

Lab ID: 1701495-020

Collection Date: 1/4/2017 12:26:00 PM

Client Sample ID: EB3-F+9'

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	ND	30		mg/Kg	20	1/14/2017 7:58:09 PM	29693

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	
	D Sample Diluted Due to Matrix	E Value above quantitation range	
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits	Page 4 of 8
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range	
	R RPD outside accepted recovery limits	RL Reporting Detection Limit	
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified	

Analytical Report

Lab Order: 1701495

Date Reported: 1/20/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG Resources
Project: Tenneco SWD System

Lab Order: 1701495

Lab ID: 1701495-021

Collection Date: 1/4/2017 12:29:00 PM

Client Sample ID: EB3-F+12'

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							
Chloride	ND	30		mg/Kg	20	1/14/2017 8:10:34 PM	29693

Analyst: LGT

Lab ID: 1701495-022

Collection Date: 1/4/2017 12:31:00 PM

Client Sample ID: EB4-F

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							
Chloride	ND	30		mg/Kg	20	1/16/2017 9:08:19 PM	29694

Analyst: LGT

Lab ID: 1701495-023

Collection Date: 1/4/2017 12:33:00 PM

Client Sample ID: EB4-F+3'

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							
Chloride	ND	30		mg/Kg	20	1/16/2017 9:45:32 PM	29694

Analyst: LGT

Lab ID: 1701495-024

Collection Date: 1/4/2017 12:37:00 PM

Client Sample ID: EB4-F+6'

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							
Chloride	ND	30		mg/Kg	20	1/16/2017 9:57:57 PM	29694

Analyst: LGT

Lab ID: 1701495-025

Collection Date: 1/4/2017 12:39:00 PM

Client Sample ID: EB4-F+9'

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							
Chloride	ND	30		mg/Kg	20	1/16/2017 10:10:21 PM	29694

Analyst: LGT

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	
	D Sample Diluted Due to Matrix	E Value above quantitation range	
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits	Page 5 of 8
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range	
	R RPD outside accepted recovery limits	RL Reporting Detection Limit	
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified	

Analytical Report

Lab Order: 1701495

Date Reported: 1/20/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG Resources
Project: Tenneco SWD System

Lab Order: 1701495

Lab ID: 1701495-026

Collection Date: 1/4/2017 12:40:00 PM

Client Sample ID: EB4-F+12'

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	ND	30		mg/Kg	20	1/16/2017 10:47:35 PM	29694

Lab ID: 1701495-027

Collection Date: 1/4/2017 12:44:00 PM

Client Sample ID: SB-F

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	ND	30		mg/Kg	20	1/16/2017 11:00:00 PM	29694

Lab ID: 1701495-028

Collection Date: 1/10/2017 12:23:00 PM

Client Sample ID: T2-10.5'

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	4300	300		mg/Kg	200	1/17/2017 6:40:04 PM	29694

Lab ID: 1701495-029

Collection Date: 1/10/2017 12:32:00 PM

Client Sample ID: T2-12.5'

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	5400	300		mg/Kg	200	1/17/2017 6:52:28 PM	29694

Lab ID: 1701495-030

Collection Date: 1/10/2017 12:43:00 PM

Client Sample ID: T2-14.5'

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	3800	150		mg/Kg	100	1/18/2017 11:18:09 PM	29694

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	
	D Sample Diluted Due to Matrix	E Value above quantitation range	
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits	Page 6 of 8
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range	
	R RPD outside accepted recovery limits	RL Reporting Detection Limit	
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified	

Analytical Report
Lab Order: 1701495
Date Reported: 1/20/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT:	EOG Resources	Lab Order:	1701495
Project:	Tenneco SWD System		
Lab ID:	1701495-031	Collection Date:	1/10/2017 1:09:00 PM
Client Sample ID:	E3-14.5'	Matrix:	SOIL
Analyses	Result	PQL Qual Units	DF Date Analyzed Batch ID
EPA METHOD 300.0: ANIONS			Analyst: LGT
Chloride	3100	150 mg/Kg	100 1/18/2017 11:30:33 PM 29694
Lab ID:	1701495-032	Collection Date:	1/10/2017 1:26:00 PM
Client Sample ID:	E-16.5'	Matrix:	SOIL
Analyses	Result	PQL Qual Units	DF Date Analyzed Batch ID
EPA METHOD 300.0: ANIONS			Analyst: LGT
Chloride	3700	150 mg/Kg	100 1/18/2017 11:42:58 PM 29694

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	
	D Sample Diluted Due to Matrix	E Value above quantitation range	
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits	Page 7 of 8
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range	
	R RPD outside accepted recovery limits	RL Reporting Detection Limit	
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified	

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701495

20-Jan-17

Client: EOG Resources
Project: Tenneco SWD System

Sample ID	MB-29684	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID:	29684	RunNo:	40017					
Prep Date:	1/13/2017	Analysis Date:	1/13/2017	SeqNo:	1254178	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-29684	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSS	Batch ID:	29684	RunNo:	40017					
Prep Date:	1/13/2017	Analysis Date:	1/13/2017	SeqNo:	1254179	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	97.8	90	110			

Sample ID	MB-29693	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID:	29693	RunNo:	40019					
Prep Date:	1/13/2017	Analysis Date:	1/14/2017	SeqNo:	1254254	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-29693	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSS	Batch ID:	29693	RunNo:	40019					
Prep Date:	1/13/2017	Analysis Date:	1/14/2017	SeqNo:	1254255	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	96.5	90	110			

Sample ID	MB-29694	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID:	29694	RunNo:	40057					
Prep Date:	1/13/2017	Analysis Date:	1/16/2017	SeqNo:	1255401	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-29694	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSS	Batch ID:	29694	RunNo:	40057					
Prep Date:	1/13/2017	Analysis Date:	1/16/2017	SeqNo:	1255402	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	97.3	90	110			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: EOG/Yates

Work Order Number: 1701495

RcptNo: 1

Received by/date:

RE 01/12/17

Logged By: Ashley Gallegos

1/12/2017 9:35:00 AM

Completed By: Ashley Gallegos

1/12/2017 12:48:08 PM

Reviewed By:

01/12/17

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Was an attempt made to cool the samples? Yes ☐ No ☒ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0° C? Yes ☐ No ☒ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐

of preserved bottles checked for pH: _____
(<2 or >12 unless noted)
Adjusted? _____
Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:	_____	Date:	_____
By Whom:	_____	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	_____		
Client Instructions:	_____		

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	13.3	Good	Yes			

Chain-of-Custody Record

Client: EOG Y Resources, Inc.

Mailing Address:

105 South 4th Street Artesia, NM 88210

Phone #: 575-703-6537

email or Fax#: Chase Settle@eogresources.com

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation:

☐ NELAP ☐ Other☐ EDD (Type)

Project Manager:

Chase Settle

PO # 205.0750

Sampler: Chase Settle

On Ice: ☒ Yes ☐ No

Sample Temperature: 13.3

HEAL No. 170495

Preservative Type

Container Type and #

1 - 4oz.

None

1 - 4oz.

None

1 - 4oz.

None

1 - 4oz.

None

1 - 4oz.

None

1 - 4oz.

None

1 - 4oz.

None

1 - 4oz.

None

1 - 4oz.

None

1 - 4oz.

None

1 - 4oz.

None

1 - 4oz.

None

1 - 4oz.

None

1 - 4oz.

None

1 - 4oz.

None

Relinquished by:

Date: 1-11-17

Time: 9:30

Relinquished by:

Date:

Time:

Received by:

Date: 01/12/17

Time: 0935

Received by:

Date:

Time:

Remarks: Results needed by 1/19/2017.

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.



www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + TMBs (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO ₂ , NO ₃ , PO ₄ , SO ₄)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Air Bubbles (Y or N)
1/12/2017	12:08P	Soil	WB3-F+1'	1 - 4oz.	None	-013								X				
1/12/2017	11:44A	Soil	WB4-2'	1 - 4oz.	None	-014								X				
1/12/2017	12:11P	Soil	WB4-F	1 - 4oz.	None	-015								X				
1/12/2017	12:13P	Soil	WB4-F+1'	1 - 4oz.	None	-016								X				
1/12/2017	12:19P	Soil	EB3-F	1 - 4oz.	None	-017								X				
1/12/2017	12:21P	Soil	EB3-F+3'	1 - 4oz.	None	-018								X				
1/12/2017	12:24P	Soil	EB3-F+6'	1 - 4oz.	None	-019								X				
1/12/2017	12:26P	Soil	EB3-F+9'	1 - 4oz.	None	-020								X				
1/12/2017	12:29P	Soil	EB3-F+12'	1 - 4oz.	None	-021								X				
1/12/2017	12:31P	Soil	EB4-F	1 - 4oz.	None	-022								X				
1/12/2017	12:33P	Soil	EB4-F+3'	1 - 4oz.	None	-023								X				
1/12/2017	12:37P	Soil	EB4-F+6'	1 - 4oz.	None	-024								X				



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

March 21, 2017

CHASE SETTLE

EOG Y RESOURCES, INC

105 SOUTH 4TH STREET

ARTESIA, NM 88210

RE: TENNECO SWD SYSTEM

Enclosed are the results of analyses for samples received by the laboratory on 03/20/17 9:15.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Coley D. Keene". The signature is fluid and cursive, with the first and last names being more prominent.

Celey D. Keene

Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

EOG Y RESOURCES, INC
CHASE SETTLE
105 SOUTH 4TH STREET
ARTESIA NM, 88210
Fax To: (575) 748-4131

Received:	03/20/2017	Sampling Date:	03/17/2017
Reported:	03/21/2017	Sampling Type:	Soil
Project Name:	TENNECO SWD SYSTEM	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: C1 - 20' (H700714-01)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	944	16.0	03/21/2017	ND	416	104	400	0.00	

Sample ID: C1 - 25' (H700714-02)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	240	16.0	03/21/2017	ND	416	104	400	0.00	

Sample ID: C1 - 30' (H700714-03)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	03/21/2017	ND	416	104	400	0.00	

Sample ID: C1 - 35' (H700714-04)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	03/21/2017	ND	416	104	400	0.00	

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager



Report Format: ☒ Standard ☐ TRRP ☐ NPDES

ORDER#

Relinquished by:

Temperature Upon Receipt 18.6 °C



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

March 21, 2017

CHASE SETTLE

EOG Y RESOURCES, INC

105 SOUTH 4TH STREET

ARTESIA, NM 88210

RE: TENNECO SWD SYSTEM

Enclosed are the results of analyses for samples received by the laboratory on 03/20/17 9:15.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene".

Celey D. Keene

Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

EOG Y RESOURCES, INC
CHASE SETTLE
105 SOUTH 4TH STREET
ARTESIA NM, 88210
Fax To: (575) 748-4131

Received: 03/20/2017
Reported: 03/21/2017
Project Name: TENNECO SWD SYSTEM
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 03/17/2017
Sampling Type: Soil
Sampling Condition: ** (See Notes)
Sample Received By: Tamara Oldaker

Sample ID: C2 - 20' (H700710-01)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2240	16.0	03/21/2017	ND	416	104	400	3.77	

Sample ID: C2 - 25' (H700710-02)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2080	16.0	03/21/2017	ND	416	104	400	3.77	

Sample ID: C2 - 30' (H700710-03)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1500	16.0	03/21/2017	ND	416	104	400	3.77	

Sample ID: C2 - 35' (H700710-04)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1540	16.0	03/21/2017	ND	416	104	400	3.77	

* = Accredited Analyte

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

EOG Y RESOURCES, INC
CHASE SETTLE
105 SOUTH 4TH STREET
ARTESIA NM, 88210
Fax To: (575) 748-4131

Received: 03/20/2017
Reported: 03/21/2017
Project Name: TENNECO SWD SYSTEM
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 03/17/2017
Sampling Type: Soil
Sampling Condition: ** (See Notes)
Sample Received By: Tamara Oldaker

Sample ID: C2 - 40' (H700710-05)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1400	16.0	03/21/2017	ND	416	104	400	3.77	

Sample ID: C2 - 45' (H700710-06)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	03/21/2017	ND	416	104	400	3.77	

Sample ID: C2 - 50' (H700710-07)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	03/21/2017	ND	416	104	400	3.77	

Sample ID: C2 - 55' (H700710-08)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	03/21/2017	ND	416	104	400	3.77	

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories

*=Accredited Analyte

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A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager



ARDINAL LABORATORIES
101 East Marland, Hobbs, NM 88240

(505) 393-2326 FAX (505) 393-2476

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Chase Settle

Project Name:

Tenneco SWD System

Page 5 of 5

Compac (505) 393-2321 EOG Y Resources, Inc.

Project #:

Company Address: 105 South 4th Street

Project Loc:

Time SUD System

City/State/Zip: Artesia, NM 88210

PO #: 205-0750

Telephone No: 575-748-4171

Fax No: 575-748-4131

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature:

e-mail:

Chase Settle@geogresources.com

(lab use only)					
ORDER #:					
LAB # (lab use only) H700710					
FIELD CODE		Beginning Depth	Ending Depth	Date Sampled	Time Sampled
1	A2-20'			3-17-17	1:00 PM
2	A2-25'			3-17-17	1:11 PM
3	A2-30'			3-17-17	1:20 PM
4	A2-35'			3-17-17	1:30 PM
5	A2-40'			3-17-17	1:41 PM
6	A2-45'			3-17-17	1:57 PM
7	A2-50'			3-17-17	3:15 PM
8	A2-55'			3-17-17	3:39 PM
Special Instructions:					
Relinquished by: [Signature] Date: 3-20-17 Time: 4:10 PM Received by: [Signature] Date: 3-20-17 Time: 9:15 AM					
Relinquished by: [Signature] Date: [Blank] Time: [Blank] Received by: [Signature] Date: [Blank] Time: [Blank]					
Relinquished by: [Signature] Date: [Blank] Time: [Blank] Received by: [Signature] Date: [Blank] Time: [Blank]					
Temperature Upon Receipt: 18.6 °C					
Laboratory Comments: Sample Containers Initialed? <input checked="" type="checkbox"/> VOCs Free of Headspace? <input checked="" type="checkbox"/> Labels on container(s) <input checked="" type="checkbox"/> Custody seals on container(s) <input checked="" type="checkbox"/> Custody seals on cooler(s) <input checked="" type="checkbox"/> Sample Hand Delivered by Sampler/Client Rep.? <input checked="" type="checkbox"/> by Courier? UPS DHL FedEx Lone Star Temperature Upon Receipt: 18.6 °C					
Preservation & # of Containers					
Matrix					
TPH: 418.1 8015M 8015B					
TPH: TX 1005 TX 1008					
Callons (Ca, Mg, Na, K)					
Anions (Cl, SO ₄ , Alkalinity)					
SAR / ESP / CEC					
Metals: As Ag Ba Cd Cr Pb Hg So					
Volatiles					
Semivolatiles					
BTX 8021B/5030 or BTX 8260					
RCL					
N.O.R.M.					
Chlorides					
SAR					
RUSH TAT (Pre-Schedule) 24, 40, 72 hrs					
Standard TAT					



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

March 21, 2017

CHASE SETTLE

EOG Y RESOURCES, INC

105 SOUTH 4TH STREET

ARTESIA, NM 88210

RE: TENNECO SWD SYSTEM

Enclosed are the results of analyses for samples received by the laboratory on 03/20/17 9:15.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is fluid and cursive, with the first name "Celey" being more prominent.

Celey D. Keene

Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

EOG Y RESOURCES, INC
CHASE SETTLE
105 SOUTH 4TH STREET
ARTESIA NM, 88210
Fax To: (575) 748-4131

Received: 03/20/2017
Reported: 03/21/2017
Project Name: TENNECO SWD SYSTEM
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 03/17/2017
Sampling Type: Soil
Sampling Condition: ** (See Notes)
Sample Received By: Tamara Oldaker

Sample ID: C3 - 20' (H700709-01)

Chloride, SM4500Cl-B		mg/kg Analyzed By: AC							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1560	16.0	03/21/2017	ND	416	104	400	3.77	

Sample ID: C3 - 25' (H700709-02)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	400	16.0	03/21/2017	ND	416	104	400	3.77	

Sample ID: C3 - 30' (H700709-03)

Chloride, SM4500Cl-B			mg/kg Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	208	16.0	03/21/2017	ND	416	104	400	3.77	

Sample ID: C3 - 35' (H700709-04)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1380	16.0	03/21/2017	ND	416	104	400	3.77	

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*=Accredited Analyte

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Caley D. Keene, Lab Director/Quality Manager



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Analytical Results For:

EOG Y RESOURCES, INC
CHASE SETTLE
105 SOUTH 4TH STREET
ARTESIA NM, 88210
Fax To: (575) 748-4131

Received:	03/20/2017	Sampling Date:	03/17/2017
Reported:	03/21/2017	Sampling Type:	Soil
Project Name:	TENNECO SWD SYSTEM	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: C3 - 40' (H700709-05)

Chloride, SM4500Cl-B		Analyzed By: AC							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	03/21/2017	ND	416	104	400	3.77	

Sample ID: C3 - 45' (H700709-06)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	03/21/2017	ND	416	104	400	3.77	

Sample ID: C3 - 50' (H700709-07)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	03/21/2017	ND	416	104	400	3.77	

Cardinal Laboratories

* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500CI-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories

*=Accredited Analyte

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A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager



ARDINAL LABORATORIES
101 East Marland, Hobbs, NM 88240

(505) 393-2326 FAX (505) 393-2476

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Chase Settle

Company Address: 105 South 4th Street

City/State/Zip: Artesia, NM 88210

Telephone No: 575-748-4171

Fax No: 575-748-4131

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: *[Signature]*

e-mail:

Chase.Settle@eoqresources.com

Project Name: *Trace SUD System*

Project Loc: *Trace SUD System*

PO #: 205-0750

(lab use only)

ORDER #:

LAB # (lab use only)

FIELD CODE

Beginning Depth

Ending Depth

Date Sampled

Time Sampled

Field Filtered

Total #. of Containers

Ice

HNO₃

HCl

H₂SO₄

NaOH

Na₂S₂O₃

None

Other (Specify)

DW=Drinking Water SL=Sludge

GW=Groundwater S=Soil/Solid

NP=Non-Potable Specify Other

TPH: 418.1 8015M **8015B**

TPH: TX 1005 TX 1006

Callons (Ca, Mg, Na, K)

Anions (Cl, SO₄, Alkalinity)

SAR / ESP / CEC

Metals: As Ag Ba Cd Cr Pb Hg Se

Volatiles

Semivolatiles

BTEX 8021B 5030 or BTEX 8260

RCI

N.O.R.M.

Chlorides

SAR

RUSH TAT (Pre-Schedule) 24, 40, 72 hrs

Standard TAT

Preservation & # of Containers

Matrix

Analyze For:

TCLP:

TOTAL:

Special Instructions:

Relinquished by:

Date

Time

Received by:

Time

Date

Time

Relinquished by:

Date

Time

Received by:

Time

Date

Time

Relinquished by:

Date

Time

Received by:

Time

Date

Time

Laboratory Comments:
Sample Containers Intact? ☒
VOCs Free of Headspace? ☒
Labels on container(s) ☒
Custody seals on container(s) ☒
Sample Hand Delivered by Sampler/Client Rep.? ☒
by Courier? ☒ UPS ☒ DHL ☒ FedEx ☒ Lone Star

Temperature Upon Receipt:

18.6 °C #45

Appendix E

Form C-141 Initial

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources
NM OIL CONSERVATION
ARTESIA DISTRICT
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.
DEC 08 2016

Release Notification and Corrective Action

RECEIVED

NAB1035557047

OPERATOR		<input checked="" type="checkbox"/> Initial Report	<input type="checkbox"/> Final Report
Name of Company EOG Y Resources, Inc. <i>85575</i>		Contact Chase Settle	
Address 104 S. 4 th Street, Artesia, NM 88210		Telephone No. 575-748-4171	
Facility Name Tenneco SWD System (Vince BGH #1)		Facility Type Pipeline	
Surface Owner Fee	Mineral Owner Fee	API No. <i>30-026-37104</i>	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
N	30	09S	35E					Lea

Latitude 32.65552 Longitude -104.49193

NATURE OF RELEASE

Type of Release Produced Water	Volume of Release 440 B/PW	Volume Recovered 0 B/PW
Source of Release 10" Poly Line	Date and Hour of Occurrence 11/30/2016; 3:30 p.m.	Date and Hour of Discovery 11/30/2016; 3:30 p.m.
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Kristen Lynch	
By Whom? Bob Asher	Date and Hour 12/1/2016; 6:35 a.m.	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. N/A	



If a Watercourse was Impacted, Describe Fully.*
N/A

Describe Cause of Problem and Remedial Action Taken.*

There was a failure of a 10" poly transfer line that caused the release.

Describe Area Affected and Cleanup Action Taken.* The release impacted an approximate area of 212' X 27' along the pipeline ROW. An excavator and roustabout crew were dispatched to repair the transfer line and excavate impacted soils. Impacted soils will be excavated and hauled to a NMOC approved facility. Vertical and horizontal delineation samples will be taken and analysis ran for TPH & BTEX (chlorides for documentation). If initial analytical results for TPH & BTEX are under RRAL's (site ranking is 0) a Final Report, C-141 will be submitted to the OCD requesting closure. If the analytical results are above the RRAL's a work plan will be submitted to the OCD. Depth to Ground Water: >100' (approximately 130', Section 30, T09S-R35E, per Trend Map), Wellhead Protection Area: No, Distance to Surface Water Body: >1000', SITE RANKING IS 0.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOC rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOC marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOC acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: 	OIL CONSERVATION DIVISION	
Printed Name: Chase Settle	Approved by Environmental Specialist: 	
Title: NM Adv. Environmental Representative	Approval Date: <i>12/20/16</i>	Expiration Date: <i>N/A</i>
E-mail Address: Chase.Settle@eogresources.com	Conditions of Approval:	Attached: <input checked="" type="checkbox"/>
Date: 12/8/2016	Phone: 575-748-4171	

Site Ranking to be determined After Delineation
HRP
IRP-4530

Appendix F

Form C-141 Final

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised April 3, 2017

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company EOG Y Resources, Inc.	Contact Chase Settle
Address 104 S. 4 th Street, Artesia, NM 88210	Telephone No. 575-748-1471
Facility Name Tenneco SWD System (Vince BGH #1)	Facility Type Pipeline

Surface Owner Fee	Mineral Owner Fee	API No. 30-025-37104
----------------------	----------------------	-------------------------

LOCATION OF RELEASE

Unit Letter N	Section 30	Township 09S	Range 35E	Feet from the	North/South Line	Feet from the	East/West Line	County Lea
------------------	---------------	-----------------	--------------	---------------	------------------	---------------	----------------	---------------

Latitude 33.50109 Longitude -103.40025 NAD83

NATURE OF RELEASE


Type of Release Produced Water	Volume of Release 440 B/PW	Volume Recovered 0 B/PW
Source of Release 10" Poly Line	Date and Hour of Occurrence 11/30/2016; 3:30 p.m.	Date and Hour of Discovery 11/30/2016; 3:30 p.m.
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Kristen Lynch	
By Whom? Bob Asher	Date and Hour 12/1/2016; 6:35 a.m.	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*
N/A

Describe Cause of Problem and Remedial Action Taken.*
There was a failure of a 10" poly transfer line that caused the release.

Describe Area Affected and Cleanup Action Taken.* The release impacted an approximate area of 212' X 27' along the pipeline ROW. An excavator and roustabout crew were dispatched to repair the transfer line and excavate impacted soils. Impacted soils will be excavated and hauled to a NMOCD approved facility. Vertical and horizontal delineation samples will be taken and analysis ran for TPH & BTEX (chlorides for documentation). If initial analytical results for TPH & BTEX are under RRAL's (site ranking is 0) a Final Report, C-141 will be submitted to the OCD requesting closure. If the analytical results are above the RRAL's a work plan will be submitted to the OCD. **Depth to Ground Water: >100' (approximately 130', Section 30, T09S-R35E, per NMOSE), Wellhead Protection Area: No, Distance to Surface Water Body: >1000', SITE RANKING IS 0. Based on completion of the NMOCD approved work plan (May 18, 2017), EOG Y Resources, Inc. requests closure.**

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: 	<u>OIL CONSERVATION DIVISION</u>		
Printed Name: Chase Settle	Approved by Environmental Specialist:		
Title: Safety & Environmental Representative II	Approval Date:	Expiration Date:	
E-mail Address: Chase.Settle@eogresources.com	Conditions of Approval:		Attached <input type="checkbox"/>
Date: November 2, 2017	Phone: 575-748-1471		

Attach Additional Sheets If Necessary

From: [Yu, Olivia, EMNRD](#)
To: [Chase Settle](#)
Subject: Automatic reply: Tenneco SWD System (Vince BGH #1) Closure Report 1RP-4530
Date: Thursday, November 2, 2017 2:40:48 PM

****External email. Use caution.****

I will be out of the office from November 2-13.

Tenneco SWD System (Vince BGH #1)
Closure Report
#nAB1635557047



August 28, 2022

Appendix D

Current C-141 Closure

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural
Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	nAB1635557047
District RP	1RP-4530
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party EOG Resources, Inc.	OGRID 7377
Contact Name Chase Settle	Contact Telephone 575-748-1471
Contact email Chase_Settle@eogresources.com	Incident # (assigned by OCD) nAB1635557047
Contact mailing address 104 S. 4th Street, Artesia, NM 88210	

Location of Release Source

Latitude 33.50109 Longitude -103.40025
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Tenneco SWD System (Vince BGH #1)	Site Type Pipeline
Date Release Discovered 11/30/2016	API# (if applicable) 30-025-37104

Unit Letter	Section	Township	Range	County
N	30	9S	35E	Lea

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☒ Private (Name: Kinsolving Ranch)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 440	Volume Recovered (bbls) 0
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release Please refer to the original C-141 for details of 1RP-4530.

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Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release? Volume released was greater than 25 barrels.
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Yes, to Kristen Lynch, by Bob Asher through email on 12/1/2016.	

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why: 	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Chase Settle</u>	Title: <u>Rep Safety & Environmental Sr</u>
Signature: <u>Chase Settle</u>	Date: <u>08/28/2022</u>
email: <u>Chase_Settle@eogresources.com</u>	Telephone: <u>575-748-1471</u>
<u>OCD Only</u> Received by: _____ Date: _____	

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Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: *Each of the following items must be included in the closure report.*

- ☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- ☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- ☒ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Chase Settle Title: Rep Safety & Environmental Sr
Signature: Chase Settle Date: 08/28/2022
email: Chase_Settle@eogresources.com Telephone: 575-748-1471

OCD Only

Received by: _____ Date: _____

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: Brittany Hall Date: 11/2/2022
Printed Name: Brittany Hall Title: Environmental Specialist

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 139404

CONDITIONS

Operator: EOG RESOURCES INC P.O. Box 2267 Midland, TX 79702	OGRID: 7377
	Action Number: 139404
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
bhall	None	11/2/2022