

**Devon Energy
Spud 16 State 8H**

**Section 16, Township 23S, Range 29E
Eddy County, New Mexico**

**CLOSURE REPORT
NAB1909135211
2RP-5323**

30-015-40038

April 7, 2020



**Prepared for:
Devon Energy Production Company
6488 Seven Rivers Highway
By:**

**Safety & Environmental Solutions, Inc.
703 East Clinton Street
Hobbs, New Mexico 88240
(575) 397-0510**

I. Company Contacts

Representative	Company	Telephone	E-mail
Tom Bynum	Devon Energy Corporation	580-748-1613	Tom.Bynum@devn.com
Bob Allen	SESI	575-397-0510	ballen@sesi-nm.com

II. Background

Safety and Environmental Solutions, Inc., hereinafter referred to as (SESI) was engaged by Devon Energy Corporation to assess and remediate a spill area at the Spud 16 State 8H.

According to the C-141, the cause of release was a broken site glass on the heater treater. The affected area measured approximately 125' x 30' and all fluids remained on location.

III. Surface and Ground Water

There is no record of depth to groundwater in the immediate vicinity of the site location. Further research of the New Mexico Office of the State Engineer records indicates the average depth to groundwater for the area to be 31' bgs.

IV. Characterization

As noted in the Workplan approval email sent by Robert Hamlet of NMOCD via email on 10/2/2019, the target levels for closure criteria are 600mg/kg for chlorides, 100 mg/kg for TPH, 50 mg/kg for BTEX, and 10 mg/kg for Benzene.

V. Work Performed

Based on the recommendation of NMOCD-approved workplan, SESI performed the remediation by removing all contaminated material and disposing of the material in an OCD-approved landfill. Approximately, 700 yds³ of material were removed and the excavated area was backfilled with approximately the same amount of backfill. Twenty-two confirmation samples were obtained and sent to the lab for testing for backfill was completed. The results of the sampling are captured in the table below:

Sample ID	Chloride	DRO	MRO	GRO	Benzene	Toluene	Ethyl benzene	Total Xylenes
SP1 @ W WALL	350	ND	ND	ND	ND	ND	ND	ND
SP2 @ N WALL	340	ND	ND	ND	ND	ND	ND	ND
SP3 @ BTM 1'	350	ND	ND	ND	ND	ND	ND	ND
SP4 @ S WALL	150	ND	ND	ND	ND	ND	ND	ND
SP5 @ BTM 1'	160	ND	ND	ND	ND	ND	ND	ND
SP6 @ N WALL	160	ND	ND	ND	ND	ND	ND	ND
SP7 @ S WALL	71	ND	ND	ND	ND	ND	ND	ND
SP8 @ N WALL	400	ND	ND	ND	ND	ND	ND	ND
SP9 @ BTM 1'	400	ND	ND	ND	ND	ND	ND	ND
SP10 @ BTM 1'	400	ND	ND	ND	ND	ND	ND	ND
SP11 @ BTM 1'	340	ND	ND	ND	ND	ND	ND	ND
SP12 @ N WALL	330	ND	ND	ND	ND	ND	ND	ND
SP13 @ BTM 1.5'	150	24	ND	ND	ND	ND	ND	ND
SP14 @ S WALL	160	11	ND	ND	ND	ND	ND	ND
SP15 @ N WALL	330	ND	ND	ND	ND	ND	ND	ND
SP16 @ BTM 1.5'	160	14	ND	ND	ND	ND	ND	ND
SP17 @ S WALL	150	ND	ND	ND	ND	ND	ND	ND
SP18 @ N WALL	150	12	ND	ND	ND	ND	ND	ND
SP19 @ BTM 1'	100	ND	ND	ND	ND	ND	ND	ND
SP20 @ S WALL	69	ND	ND	ND	ND	ND	ND	ND
SP21 @ BTM 1'	400	ND	ND	ND	ND	ND	ND	ND
SP22 @ BTM 1'	340	ND	ND	ND	ND	ND	ND	ND

VI. Conclusion

Due to all confirmation samples meeting the closure criteria established in the approved workplan, SESI, on behalf of Devon, recommends no further remediation activities.

Therefore, SESI respectfully submits this closure report as evidence that the closure criteria have been met and also requests closure approval.

VII. Supporting Documentation for Closure

C-141, page 6 for closure
 Closure map with confirmation samples
 Photos of excavation prior to backfill
 Laboratory Analysis

Incident ID	
District RP	
Facility ID	
Application ID	

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: _____ Title: _____

Signature: Tom Bynum Date: _____

email: _____ Telephone: _____

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: _____ Date: _____

Printed Name: _____ Title: _____

Devon, Spud 16 State 8H

DEV-19-002
Eddy County, NM
NAB1909135211
2RP-5323

Legend

- Excavation area 1
- Excavation area 2 (blue)
- Pipeline
- Confirmation samples

SP21 @ BTM 1'
SP22 @ BTM 1'
SP2 @ N WALL
SP1 @ W WALL
SP3 @ BTM 1'
SP4 @ S WALL
SP6 @ N WALL
SP5 @ BTM 1'
SP10 @ BTM 1'
SP7 @ S WALL
SP8 @ N WALL
SP12 @ N WALL
SP9 @ BTM 1'
SP11 @ BTM 1'
SP14 @ S WALL
SP15 @ N WALL
SP16 @ BTM 1.5'
SP13 @ BTM 1.5'
SP17 @ S WALL
SP18 @ N WALL
SP19 @ BTM 1'
SP20 @ S WALL











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

March 02, 2020

Bob Allen
Safety & Environmental Solutions
PO Box 1613
Hobbs, NM 88241
TEL: (575) 397-0510
FAX: (575) 393-4388

RE: Devon Spud 16 State 8H 2RP 5323

OrderNo.: 2002981

Dear Bob Allen:

Hall Environmental Analysis Laboratory received 22 sample(s) on 2/22/2020 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 #NM0901

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report

Lab Order 2002981

Date Reported: 3/2/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety & Environmental Solutions

Client Sample ID: SP-1 West Wall

Project: Devon Spud 16 State 8H 2RP 5323

Collection Date: 2/18/2020 9:50:00 AM

Lab ID: 2002981-001

Matrix: SOIL

Received Date: 2/22/2020 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	350	60		mg/Kg	20	2/28/2020 2:56:26 PM	50753
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	2/26/2020 5:50:49 PM	50643
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	2/26/2020 5:50:49 PM	50643
Surr: DNOP	140	55.1-146		%Rec	1	2/26/2020 5:50:49 PM	50643
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/27/2020 11:51:16 PM	50631
Surr: BFB	83.0	66.6-105		%Rec	1	2/27/2020 11:51:16 PM	50631
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.098		mg/Kg	1	2/27/2020 11:51:16 PM	50631
Benzene	ND	0.025		mg/Kg	1	2/27/2020 11:51:16 PM	50631
Toluene	ND	0.049		mg/Kg	1	2/27/2020 11:51:16 PM	50631
Ethylbenzene	ND	0.049		mg/Kg	1	2/27/2020 11:51:16 PM	50631
Xylenes, Total	ND	0.098		mg/Kg	1	2/27/2020 11:51:16 PM	50631
Surr: 4-Bromofluorobenzene	92.6	80-120		%Rec	1	2/27/2020 11:51:16 PM	50631

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
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 2002981

Date Reported: 3/2/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety & Environmental Solutions

Client Sample ID: SP-2 North Wall

Project: Devon Spud 16 State 8H 2RP 5323

Collection Date: 2/18/2020 9:55:00 AM

Lab ID: 2002981-002

Matrix: SOIL

Received Date: 2/22/2020 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	340	59		mg/Kg	20	2/28/2020 3:08:47 PM	50753
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	2/26/2020 6:12:46 PM	50643
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	2/26/2020 6:12:46 PM	50643
Surr: DNOP	111	55.1-146		%Rec	1	2/26/2020 6:12:46 PM	50643
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	2/28/2020 12:14:34 AM	50631
Surr: BFB	81.6	66.6-105		%Rec	1	2/28/2020 12:14:34 AM	50631
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.096		mg/Kg	1	2/28/2020 12:14:34 AM	50631
Benzene	ND	0.024		mg/Kg	1	2/28/2020 12:14:34 AM	50631
Toluene	ND	0.048		mg/Kg	1	2/28/2020 12:14:34 AM	50631
Ethylbenzene	ND	0.048		mg/Kg	1	2/28/2020 12:14:34 AM	50631
Xylenes, Total	ND	0.096		mg/Kg	1	2/28/2020 12:14:34 AM	50631
Surr: 4-Bromofluorobenzene	89.7	80-120		%Rec	1	2/28/2020 12:14:34 AM	50631

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
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 2002981

Date Reported: 3/2/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety & Environmental Solutions

Client Sample ID: SP-3 Bottom 1ft

Project: Devon Spud 16 State 8H 2RP 5323

Collection Date: 2/18/2020 10:10:00 AM

Lab ID: 2002981-003

Matrix: SOIL

Received Date: 2/22/2020 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	350	60		mg/Kg	20	2/28/2020 3:45:50 PM	50753
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	2/26/2020 6:34:38 PM	50643
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	2/26/2020 6:34:38 PM	50643
Surr: DNOP	136	55.1-146		%Rec	1	2/26/2020 6:34:38 PM	50643
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	2/28/2020 12:37:52 AM	50631
Surr: BFB	82.5	66.6-105		%Rec	1	2/28/2020 12:37:52 AM	50631
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.023		mg/Kg	1	2/28/2020 12:37:52 AM	50631
Toluene	ND	0.046		mg/Kg	1	2/28/2020 12:37:52 AM	50631
Ethylbenzene	ND	0.046		mg/Kg	1	2/28/2020 12:37:52 AM	50631
Xylenes, Total	ND	0.093		mg/Kg	1	2/28/2020 12:37:52 AM	50631
Surr: 4-Bromofluorobenzene	91.7	80-120		%Rec	1	2/28/2020 12:37:52 AM	50631

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
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 2002981

Date Reported: 3/2/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety & Environmental Solutions

Client Sample ID: SP-4 South Wall

Project: Devon Spud 16 State 8H 2RP 5323

Collection Date: 2/19/2020 1:00:00 PM

Lab ID: 2002981-004

Matrix: SOIL

Received Date: 2/22/2020 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	150	60		mg/Kg	20	2/28/2020 3:58:11 PM	50753
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	8.5		mg/Kg	1	2/26/2020 6:56:35 PM	50643
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	2/26/2020 6:56:35 PM	50643
Surr: DNOP	152	55.1-146	S	%Rec	1	2/26/2020 6:56:35 PM	50643
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	2/28/2020 1:47:46 AM	50631
Surr: BFB	79.5	66.6-105		%Rec	1	2/28/2020 1:47:46 AM	50631
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	2/28/2020 1:47:46 AM	50631
Toluene	ND	0.048		mg/Kg	1	2/28/2020 1:47:46 AM	50631
Ethylbenzene	ND	0.048		mg/Kg	1	2/28/2020 1:47:46 AM	50631
Xylenes, Total	ND	0.097		mg/Kg	1	2/28/2020 1:47:46 AM	50631
Surr: 4-Bromofluorobenzene	88.1	80-120		%Rec	1	2/28/2020 1:47:46 AM	50631

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
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 2002981

Date Reported: 3/2/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety & Environmental Solutions

Client Sample ID: SP-5 Bottom 1ft

Project: Devon Spud 16 State 8H 2RP 5323

Collection Date: 2/19/2020 12:30:00 PM

Lab ID: 2002981-005

Matrix: SOIL

Received Date: 2/22/2020 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	160	60		mg/Kg	20	2/28/2020 4:10:32 PM	50753
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	8.7		mg/Kg	1	2/26/2020 8:02:00 PM	50643
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	2/26/2020 8:02:00 PM	50643
Surr: DNOP	130	55.1-146		%Rec	1	2/26/2020 8:02:00 PM	50643
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	2/28/2020 2:11:00 AM	50631
Surr: BFB	82.4	66.6-105		%Rec	1	2/28/2020 2:11:00 AM	50631
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.023		mg/Kg	1	2/28/2020 2:11:00 AM	50631
Toluene	ND	0.046		mg/Kg	1	2/28/2020 2:11:00 AM	50631
Ethylbenzene	ND	0.046		mg/Kg	1	2/28/2020 2:11:00 AM	50631
Xylenes, Total	ND	0.093		mg/Kg	1	2/28/2020 2:11:00 AM	50631
Surr: 4-Bromofluorobenzene	92.2	80-120		%Rec	1	2/28/2020 2:11:00 AM	50631

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
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 2002981

Date Reported: 3/2/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety & Environmental Solutions

Client Sample ID: SP-6 North Wall

Project: Devon Spud 16 State 8H 2RP 5323

Collection Date: 2/19/2020 11:25:00 AM

Lab ID: 2002981-006

Matrix: SOIL

Received Date: 2/22/2020 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	160	60		mg/Kg	20	2/28/2020 4:22:53 PM	50753
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	2/26/2020 8:23:56 PM	50643
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	2/26/2020 8:23:56 PM	50643
Surr: DNOP	125	55.1-146		%Rec	1	2/26/2020 8:23:56 PM	50643
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	2/28/2020 2:34:12 AM	50631
Surr: BFB	78.3	66.6-105		%Rec	1	2/28/2020 2:34:12 AM	50631
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	2/28/2020 2:34:12 AM	50631
Toluene	ND	0.047		mg/Kg	1	2/28/2020 2:34:12 AM	50631
Ethylbenzene	ND	0.047		mg/Kg	1	2/28/2020 2:34:12 AM	50631
Xylenes, Total	ND	0.095		mg/Kg	1	2/28/2020 2:34:12 AM	50631
Surr: 4-Bromofluorobenzene	87.8	80-120		%Rec	1	2/28/2020 2:34:12 AM	50631

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
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 2002981

Date Reported: 3/2/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety & Environmental Solutions

Client Sample ID: SP-7 South Wall

Project: Devon Spud 16 State 8H 2RP 5323

Collection Date: 2/19/2020 11:15:00 AM

Lab ID: 2002981-007

Matrix: SOIL

Received Date: 2/22/2020 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	71	60		mg/Kg	20	2/28/2020 4:35:14 PM	50753
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	2/26/2020 8:45:49 PM	50643
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	2/26/2020 8:45:49 PM	50643
Surr: DNOP	112	55.1-146		%Rec	1	2/26/2020 8:45:49 PM	50643
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	2/28/2020 2:57:26 AM	50631
Surr: BFB	80.6	66.6-105		%Rec	1	2/28/2020 2:57:26 AM	50631
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	2/28/2020 2:57:26 AM	50631
Toluene	ND	0.048		mg/Kg	1	2/28/2020 2:57:26 AM	50631
Ethylbenzene	ND	0.048		mg/Kg	1	2/28/2020 2:57:26 AM	50631
Xylenes, Total	ND	0.096		mg/Kg	1	2/28/2020 2:57:26 AM	50631
Surr: 4-Bromofluorobenzene	90.6	80-120		%Rec	1	2/28/2020 2:57:26 AM	50631

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
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 2002981

Date Reported: 3/2/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety & Environmental Solutions

Client Sample ID: SP-8 North Wall

Project: Devon Spud 16 State 8H 2RP 5323

Collection Date: 2/19/2020 11:00:00 AM

Lab ID: 2002981-008

Matrix: SOIL

Received Date: 2/22/2020 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	400	60		mg/Kg	20	2/28/2020 4:47:35 PM	50753
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	2/26/2020 9:07:42 PM	50643
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	2/26/2020 9:07:42 PM	50643
Surr: DNOP	116	55.1-146		%Rec	1	2/26/2020 9:07:42 PM	50643
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	2/28/2020 3:20:38 AM	50631
Surr: BFB	80.7	66.6-105		%Rec	1	2/28/2020 3:20:38 AM	50631
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	2/28/2020 3:20:38 AM	50631
Toluene	ND	0.047		mg/Kg	1	2/28/2020 3:20:38 AM	50631
Ethylbenzene	ND	0.047		mg/Kg	1	2/28/2020 3:20:38 AM	50631
Xylenes, Total	ND	0.094		mg/Kg	1	2/28/2020 3:20:38 AM	50631
Surr: 4-Bromofluorobenzene	88.4	80-120		%Rec	1	2/28/2020 3:20:38 AM	50631

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
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 2002981

Date Reported: 3/2/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety & Environmental Solutions

Client Sample ID: SP-9 Bottom 1ft

Project: Devon Spud 16 State 8H 2RP 5323

Collection Date: 2/19/2020 10:45:00 AM

Lab ID: 2002981-009

Matrix: SOIL

Received Date: 2/22/2020 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	400	60		mg/Kg	20	2/28/2020 4:59:56 PM	50753
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	2/26/2020 9:29:24 PM	50643
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	2/26/2020 9:29:24 PM	50643
Surr: DNOP	126	55.1-146		%Rec	1	2/26/2020 9:29:24 PM	50643
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/28/2020 3:43:51 AM	50631
Surr: BFB	79.3	66.6-105		%Rec	1	2/28/2020 3:43:51 AM	50631
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	2/28/2020 3:43:51 AM	50631
Toluene	ND	0.049		mg/Kg	1	2/28/2020 3:43:51 AM	50631
Ethylbenzene	ND	0.049		mg/Kg	1	2/28/2020 3:43:51 AM	50631
Xylenes, Total	ND	0.099		mg/Kg	1	2/28/2020 3:43:51 AM	50631
Surr: 4-Bromofluorobenzene	89.0	80-120		%Rec	1	2/28/2020 3:43:51 AM	50631

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
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 2002981

Date Reported: 3/2/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety & Environmental Solutions

Client Sample ID: SP-10 Bottom 1ft

Project: Devon Spud 16 State 8H 2RP 5323

Collection Date: 2/19/2020 10:30:00 AM

Lab ID: 2002981-010

Matrix: SOIL

Received Date: 2/22/2020 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	400	60		mg/Kg	20	2/28/2020 7:28:08 PM	50769
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	2/26/2020 9:51:27 PM	50643
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	2/26/2020 9:51:27 PM	50643
Surr: DNOP	132	55.1-146		%Rec	1	2/26/2020 9:51:27 PM	50643
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	2/28/2020 4:07:00 AM	50631
Surr: BFB	80.7	66.6-105		%Rec	1	2/28/2020 4:07:00 AM	50631
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.023		mg/Kg	1	2/28/2020 4:07:00 AM	50631
Toluene	ND	0.047		mg/Kg	1	2/28/2020 4:07:00 AM	50631
Ethylbenzene	ND	0.047		mg/Kg	1	2/28/2020 4:07:00 AM	50631
Xylenes, Total	ND	0.093		mg/Kg	1	2/28/2020 4:07:00 AM	50631
Surr: 4-Bromofluorobenzene	89.9	80-120		%Rec	1	2/28/2020 4:07:00 AM	50631

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
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 2002981

Date Reported: 3/2/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety & Environmental Solutions

Client Sample ID: SP-11 Bottom 1 ft

Project: Devon Spud 16 State 8H 2RP 5323

Collection Date: 2/19/2020 10:20:00 AM

Lab ID: 2002981-011

Matrix: SOIL

Received Date: 2/22/2020 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	340	60		mg/Kg	20	2/28/2020 8:05:11 PM	50769
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	2/26/2020 10:13:10 PM	50643
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	2/26/2020 10:13:10 PM	50643
Surr: DNOP	94.5	55.1-146		%Rec	1	2/26/2020 10:13:10 PM	50643
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/28/2020 4:30:13 AM	50631
Surr: BFB	80.8	66.6-105		%Rec	1	2/28/2020 4:30:13 AM	50631
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	2/28/2020 4:30:13 AM	50631
Toluene	ND	0.049		mg/Kg	1	2/28/2020 4:30:13 AM	50631
Ethylbenzene	ND	0.049		mg/Kg	1	2/28/2020 4:30:13 AM	50631
Xylenes, Total	ND	0.098		mg/Kg	1	2/28/2020 4:30:13 AM	50631
Surr: 4-Bromofluorobenzene	90.1	80-120		%Rec	1	2/28/2020 4:30:13 AM	50631

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
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 2002981

Date Reported: 3/2/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety & Environmental Solutions

Client Sample ID: SP-12 North Wall

Project: Devon Spud 16 State 8H 2RP 5323

Collection Date: 2/20/2020 10:50:00 AM

Lab ID: 2002981-012

Matrix: SOIL

Received Date: 2/22/2020 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	330	60		mg/Kg	20	2/28/2020 9:06:57 PM	50769
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	2/26/2020 10:34:55 PM	50643
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	2/26/2020 10:34:55 PM	50643
Surr: DNOP	97.9	55.1-146		%Rec	1	2/26/2020 10:34:55 PM	50643
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	2/28/2020 4:53:22 AM	50631
Surr: BFB	80.3	66.6-105		%Rec	1	2/28/2020 4:53:22 AM	50631
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	2/28/2020 4:53:22 AM	50631
Toluene	ND	0.048		mg/Kg	1	2/28/2020 4:53:22 AM	50631
Ethylbenzene	ND	0.048		mg/Kg	1	2/28/2020 4:53:22 AM	50631
Xylenes, Total	ND	0.097		mg/Kg	1	2/28/2020 4:53:22 AM	50631
Surr: 4-Bromofluorobenzene	89.4	80-120		%Rec	1	2/28/2020 4:53:22 AM	50631

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
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 2002981

Date Reported: 3/2/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety & Environmental Solutions

Client Sample ID: SP-13 Bottom 1.5ft

Project: Devon Spud 16 State 8H 2RP 5323

Collection Date: 2/19/2020 10:10:00 AM

Lab ID: 2002981-013

Matrix: SOIL

Received Date: 2/22/2020 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	150	60		mg/Kg	20	2/28/2020 9:19:17 PM	50769
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	24	9.1		mg/Kg	1	2/26/2020 10:56:45 PM	50643
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	2/26/2020 10:56:45 PM	50643
Surr: DNOP	127	55.1-146		%Rec	1	2/26/2020 10:56:45 PM	50643
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	2/28/2020 5:16:36 AM	50631
Surr: BFB	78.3	66.6-105		%Rec	1	2/28/2020 5:16:36 AM	50631
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.023		mg/Kg	1	2/28/2020 5:16:36 AM	50631
Toluene	ND	0.047		mg/Kg	1	2/28/2020 5:16:36 AM	50631
Ethylbenzene	ND	0.047		mg/Kg	1	2/28/2020 5:16:36 AM	50631
Xylenes, Total	ND	0.094		mg/Kg	1	2/28/2020 5:16:36 AM	50631
Surr: 4-Bromofluorobenzene	87.4	80-120		%Rec	1	2/28/2020 5:16:36 AM	50631

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
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 2002981

Date Reported: 3/2/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety & Environmental Solutions

Client Sample ID: SP-14 South Wall

Project: Devon Spud 16 State 8H 2RP 5323

Collection Date: 2/20/2020 10:35:00 AM

Lab ID: 2002981-014

Matrix: SOIL

Received Date: 2/22/2020 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	160	60		mg/Kg	20	2/28/2020 9:31:38 PM	50769
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	2/25/2020 3:52:35 PM	50636
Surr: BFB	99.0	70-130		%Rec	1	2/25/2020 3:52:35 PM	50636
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	11	9.7		mg/Kg	1	2/26/2020 3:59:55 PM	50644
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	2/26/2020 3:59:55 PM	50644
Surr: DNOP	126	55.1-146		%Rec	1	2/26/2020 3:59:55 PM	50644
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.024		mg/Kg	1	2/25/2020 3:52:35 PM	50636
Toluene	ND	0.047		mg/Kg	1	2/25/2020 3:52:35 PM	50636
Ethylbenzene	ND	0.047		mg/Kg	1	2/25/2020 3:52:35 PM	50636
Xylenes, Total	ND	0.094		mg/Kg	1	2/25/2020 3:52:35 PM	50636
Surr: 1,2-Dichloroethane-d4	79.3	70-130		%Rec	1	2/25/2020 3:52:35 PM	50636
Surr: 4-Bromofluorobenzene	104	70-130		%Rec	1	2/25/2020 3:52:35 PM	50636
Surr: Dibromofluoromethane	86.1	70-130		%Rec	1	2/25/2020 3:52:35 PM	50636
Surr: Toluene-d8	98.4	70-130		%Rec	1	2/25/2020 3:52:35 PM	50636

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
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 2002981

Date Reported: 3/2/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety & Environmental Solutions

Client Sample ID: SP-15 North Wall

Project: Devon Spud 16 State 8H 2RP 5323

Collection Date: 2/20/2020 10:15:00 AM

Lab ID: 2002981-015

Matrix: SOIL

Received Date: 2/22/2020 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	330	60		mg/Kg	20	2/28/2020 9:43:59 PM	50769
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	2/25/2020 5:21:17 PM	50636
Surr: BFB	102	70-130		%Rec	1	2/25/2020 5:21:17 PM	50636
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	2/26/2020 5:12:28 PM	50644
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	2/26/2020 5:12:28 PM	50644
Surr: DNOP	94.2	55.1-146		%Rec	1	2/26/2020 5:12:28 PM	50644
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.025		mg/Kg	1	2/25/2020 5:21:17 PM	50636
Toluene	ND	0.050		mg/Kg	1	2/25/2020 5:21:17 PM	50636
Ethylbenzene	ND	0.050		mg/Kg	1	2/25/2020 5:21:17 PM	50636
Xylenes, Total	ND	0.10		mg/Kg	1	2/25/2020 5:21:17 PM	50636
Surr: 1,2-Dichloroethane-d4	82.8	70-130		%Rec	1	2/25/2020 5:21:17 PM	50636
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	2/25/2020 5:21:17 PM	50636
Surr: Dibromofluoromethane	86.6	70-130		%Rec	1	2/25/2020 5:21:17 PM	50636
Surr: Toluene-d8	100	70-130		%Rec	1	2/25/2020 5:21:17 PM	50636

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
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 2002981

Date Reported: 3/2/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety & Environmental Solutions

Client Sample ID: SP-16 Bottom 1.5ft

Project: Devon Spud 16 State 8H 2RP 5323

Collection Date: 2/19/2020 9:55:00 AM

Lab ID: 2002981-016

Matrix: SOIL

Received Date: 2/22/2020 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	160	60		mg/Kg	20	2/28/2020 9:56:19 PM	50769
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	2/25/2020 5:50:44 PM	50636
Surr: BFB	102	70-130		%Rec	1	2/25/2020 5:50:44 PM	50636
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	14	9.3		mg/Kg	1	2/26/2020 5:36:32 PM	50644
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	2/26/2020 5:36:32 PM	50644
Surr: DNOP	139	55.1-146		%Rec	1	2/26/2020 5:36:32 PM	50644
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.023		mg/Kg	1	2/25/2020 5:50:44 PM	50636
Toluene	ND	0.047		mg/Kg	1	2/25/2020 5:50:44 PM	50636
Ethylbenzene	ND	0.047		mg/Kg	1	2/25/2020 5:50:44 PM	50636
Xylenes, Total	ND	0.093		mg/Kg	1	2/25/2020 5:50:44 PM	50636
Surr: 1,2-Dichloroethane-d4	79.9	70-130		%Rec	1	2/25/2020 5:50:44 PM	50636
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	2/25/2020 5:50:44 PM	50636
Surr: Dibromofluoromethane	86.7	70-130		%Rec	1	2/25/2020 5:50:44 PM	50636
Surr: Toluene-d8	96.6	70-130		%Rec	1	2/25/2020 5:50:44 PM	50636

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
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 2002981

Date Reported: 3/2/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety & Environmental Solutions

Client Sample ID: SP-17 South Wall

Project: Devon Spud 16 State 8H 2RP 5323

Collection Date: 2/20/2020 9:50:00 AM

Lab ID: 2002981-017

Matrix: SOIL

Received Date: 2/22/2020 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	150	60		mg/Kg	20	2/28/2020 10:08:40 PM	50769
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/25/2020 6:20:08 PM	50636
Surr: BFB	102	70-130		%Rec	1	2/25/2020 6:20:08 PM	50636
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	2/26/2020 6:00:32 PM	50644
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	2/26/2020 6:00:32 PM	50644
Surr: DNOP	115	55.1-146		%Rec	1	2/26/2020 6:00:32 PM	50644
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.024		mg/Kg	1	2/25/2020 6:20:08 PM	50636
Toluene	ND	0.049		mg/Kg	1	2/25/2020 6:20:08 PM	50636
Ethylbenzene	ND	0.049		mg/Kg	1	2/25/2020 6:20:08 PM	50636
Xylenes, Total	ND	0.098		mg/Kg	1	2/25/2020 6:20:08 PM	50636
Surr: 1,2-Dichloroethane-d4	79.4	70-130		%Rec	1	2/25/2020 6:20:08 PM	50636
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	2/25/2020 6:20:08 PM	50636
Surr: Dibromofluoromethane	82.9	70-130		%Rec	1	2/25/2020 6:20:08 PM	50636
Surr: Toluene-d8	97.1	70-130		%Rec	1	2/25/2020 6:20:08 PM	50636

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
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 2002981

Date Reported: 3/2/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety & Environmental Solutions

Client Sample ID: SP-18 North Wall

Project: Devon Spud 16 State 8H 2RP 5323

Collection Date: 2/20/2020 9:35:00 AM

Lab ID: 2002981-018

Matrix: SOIL

Received Date: 2/22/2020 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	150	60		mg/Kg	20	2/28/2020 10:21:01 PM	50769
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/25/2020 6:49:21 PM	50636
Surr: BFB	100	70-130		%Rec	1	2/25/2020 6:49:21 PM	50636
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	12	10		mg/Kg	1	2/26/2020 6:24:24 PM	50644
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	2/26/2020 6:24:24 PM	50644
Surr: DNOP	107	55.1-146		%Rec	1	2/26/2020 6:24:24 PM	50644
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.025		mg/Kg	1	2/25/2020 6:49:21 PM	50636
Toluene	ND	0.049		mg/Kg	1	2/25/2020 6:49:21 PM	50636
Ethylbenzene	ND	0.049		mg/Kg	1	2/25/2020 6:49:21 PM	50636
Xylenes, Total	ND	0.099		mg/Kg	1	2/25/2020 6:49:21 PM	50636
Surr: 1,2-Dichloroethane-d4	83.6	70-130		%Rec	1	2/25/2020 6:49:21 PM	50636
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	2/25/2020 6:49:21 PM	50636
Surr: Dibromofluoromethane	89.1	70-130		%Rec	1	2/25/2020 6:49:21 PM	50636
Surr: Toluene-d8	98.4	70-130		%Rec	1	2/25/2020 6:49:21 PM	50636

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
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 2002981

Date Reported: 3/2/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety & Environmental Solutions

Client Sample ID: SP-19 Bottom 1ft

Project: Devon Spud 16 State 8H 2RP 5323

Collection Date: 2/19/2020 9:40:00 AM

Lab ID: 2002981-019

Matrix: SOIL

Received Date: 2/22/2020 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	100	60		mg/Kg	20	2/28/2020 10:33:22 PM	50769
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	2/25/2020 7:18:37 PM	50636
Surr: BFB	102	70-130		%Rec	1	2/25/2020 7:18:37 PM	50636
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	2/26/2020 6:48:20 PM	50644
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	2/26/2020 6:48:20 PM	50644
Surr: DNOP	124	55.1-146		%Rec	1	2/26/2020 6:48:20 PM	50644
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.024		mg/Kg	1	2/25/2020 7:18:37 PM	50636
Toluene	ND	0.048		mg/Kg	1	2/25/2020 7:18:37 PM	50636
Ethylbenzene	ND	0.048		mg/Kg	1	2/25/2020 7:18:37 PM	50636
Xylenes, Total	ND	0.095		mg/Kg	1	2/25/2020 7:18:37 PM	50636
Surr: 1,2-Dichloroethane-d4	81.2	70-130		%Rec	1	2/25/2020 7:18:37 PM	50636
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	2/25/2020 7:18:37 PM	50636
Surr: Dibromofluoromethane	87.2	70-130		%Rec	1	2/25/2020 7:18:37 PM	50636
Surr: Toluene-d8	102	70-130		%Rec	1	2/25/2020 7:18:37 PM	50636

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
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 2002981

Date Reported: 3/2/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety & Environmental Solutions

Client Sample ID: SP-20 South Wall

Project: Devon Spud 16 State 8H 2RP 5323

Collection Date: 2/19/2020 9:30:00 AM

Lab ID: 2002981-020

Matrix: SOIL

Received Date: 2/22/2020 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	69	60		mg/Kg	20	2/28/2020 11:10:25 PM	50769
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	2/25/2020 7:47:50 PM	50636
Surr: BFB	101	70-130		%Rec	1	2/25/2020 7:47:50 PM	50636
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	2/26/2020 7:12:11 PM	50644
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	2/26/2020 7:12:11 PM	50644
Surr: DNOP	107	55.1-146		%Rec	1	2/26/2020 7:12:11 PM	50644
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.025		mg/Kg	1	2/25/2020 7:47:50 PM	50636
Toluene	ND	0.050		mg/Kg	1	2/25/2020 7:47:50 PM	50636
Ethylbenzene	ND	0.050		mg/Kg	1	2/25/2020 7:47:50 PM	50636
Xylenes, Total	ND	0.10		mg/Kg	1	2/25/2020 7:47:50 PM	50636
Surr: 1,2-Dichloroethane-d4	83.8	70-130		%Rec	1	2/25/2020 7:47:50 PM	50636
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	2/25/2020 7:47:50 PM	50636
Surr: Dibromofluoromethane	90.7	70-130		%Rec	1	2/25/2020 7:47:50 PM	50636
Surr: Toluene-d8	98.2	70-130		%Rec	1	2/25/2020 7:47:50 PM	50636

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
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 2002981

Date Reported: 3/2/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety & Environmental Solutions

Client Sample ID: SP-21 Bottom 1ft

Project: Devon Spud 16 State 8H 2RP 5323

Collection Date: 2/19/2020 2:10:00 PM

Lab ID: 2002981-021

Matrix: SOIL

Received Date: 2/22/2020 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	400	60		mg/Kg	20	2/28/2020 11:22:47 PM	50769
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/25/2020 8:17:00 PM	50636
Surr: BFB	98.6	70-130		%Rec	1	2/25/2020 8:17:00 PM	50636
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	2/26/2020 8:23:41 PM	50644
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	2/26/2020 8:23:41 PM	50644
Surr: DNOP	123	55.1-146		%Rec	1	2/26/2020 8:23:41 PM	50644
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.025		mg/Kg	1	2/25/2020 8:17:00 PM	50636
Toluene	ND	0.049		mg/Kg	1	2/25/2020 8:17:00 PM	50636
Ethylbenzene	ND	0.049		mg/Kg	1	2/25/2020 8:17:00 PM	50636
Xylenes, Total	ND	0.098		mg/Kg	1	2/25/2020 8:17:00 PM	50636
Surr: 1,2-Dichloroethane-d4	80.2	70-130		%Rec	1	2/25/2020 8:17:00 PM	50636
Surr: 4-Bromofluorobenzene	99.0	70-130		%Rec	1	2/25/2020 8:17:00 PM	50636
Surr: Dibromofluoromethane	88.0	70-130		%Rec	1	2/25/2020 8:17:00 PM	50636
Surr: Toluene-d8	96.5	70-130		%Rec	1	2/25/2020 8:17:00 PM	50636

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
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 2002981

Date Reported: 3/2/2020

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Safety & Environmental Solutions

Client Sample ID: SP-22 Bottom 1ft

Project: Devon Spud 16 State 8H 2RP 5323

Collection Date: 2/19/2020 2:25:00 PM

Lab ID: 2002981-022

Matrix: SOIL

Received Date: 2/22/2020 9:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JMT
Chloride	340	60		mg/Kg	20	2/28/2020 11:35:08 PM	50769
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	2/25/2020 8:46:05 PM	50636
Surr: BFB	101	70-130		%Rec	1	2/25/2020 8:46:05 PM	50636
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: BRM
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	2/26/2020 8:47:19 PM	50644
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	2/26/2020 8:47:19 PM	50644
Surr: DNOP	98.4	55.1-146		%Rec	1	2/26/2020 8:47:19 PM	50644
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	0.025		mg/Kg	1	2/25/2020 8:46:05 PM	50636
Toluene	ND	0.050		mg/Kg	1	2/25/2020 8:46:05 PM	50636
Ethylbenzene	ND	0.050		mg/Kg	1	2/25/2020 8:46:05 PM	50636
Xylenes, Total	ND	0.099		mg/Kg	1	2/25/2020 8:46:05 PM	50636
Surr: 1,2-Dichloroethane-d4	81.3	70-130		%Rec	1	2/25/2020 8:46:05 PM	50636
Surr: 4-Bromofluorobenzene	106	70-130		%Rec	1	2/25/2020 8:46:05 PM	50636
Surr: Dibromofluoromethane	86.5	70-130		%Rec	1	2/25/2020 8:46:05 PM	50636
Surr: Toluene-d8	98.9	70-130		%Rec	1	2/25/2020 8:46:05 PM	50636

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
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2002981

02-Mar-20

Client: Safety & Environmental Solutions**Project:** Devon Spud 16 State 8H 2RP 5323

Sample ID: MB-50753	SampType: mblk	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 50753	RunNo: 66896								
Prep Date: 2/28/2020	Analysis Date: 2/28/2020	SeqNo: 2301962			Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-50753	SampType: lcs	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 50753	RunNo: 66896								
Prep Date: 2/28/2020	Analysis Date: 2/28/2020	SeqNo: 2301963			Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.8	90	110			

Sample ID: MB-50769	SampType: mblk	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 50769	RunNo: 66896								
Prep Date: 2/28/2020	Analysis Date: 2/28/2020	SeqNo: 2302003			Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-50769	SampType: lcs	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 50769	RunNo: 66896								
Prep Date: 2/28/2020	Analysis Date: 2/28/2020	SeqNo: 2302004			Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.5	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
PQL Practical Quantitative Limit
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 Limit

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2002981

02-Mar-20

Client: Safety & Environmental Solutions**Project:** Devon Spud 16 State 8H 2RP 5323

Sample ID: LCS-50681	SampType: LCS				TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID: LCSS	Batch ID: 50681				RunNo: 66803					
Prep Date: 2/26/2020	Analysis Date: 2/26/2020				SeqNo: 2297105	Units: %Rec				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.5		5.000		90.3	55.1	146			

Sample ID: MB-50681	SampType: MBLK				TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID: PBS	Batch ID: 50681				RunNo: 66803					
Prep Date: 2/26/2020	Analysis Date: 2/26/2020				SeqNo: 2297106	Units: %Rec				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.9		10.00		99.1	55.1	146			

Sample ID: LCS-50643	SampType: LCS				TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID: LCSS	Batch ID: 50643				RunNo: 66803					
Prep Date: 2/25/2020	Analysis Date: 2/26/2020				SeqNo: 2297433	Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	55	10	50.00	0	110	70	130			
Surr: DNOP	5.3		5.000		106	55.1	146			

Sample ID: MB-50643	SampType: MBLK				TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID: PBS	Batch ID: 50643				RunNo: 66803					
Prep Date: 2/25/2020	Analysis Date: 2/26/2020				SeqNo: 2297434	Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	12		10.00		120	55.1	146			

Sample ID: 2002981-014AMS	SampType: MS				TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID: SP-14 South Wall	Batch ID: 50644				RunNo: 66811					
Prep Date: 2/25/2020	Analysis Date: 2/26/2020				SeqNo: 2298144	Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	70	8.9	44.64	10.84	133	47.4	136			
Surr: DNOP	5.5		4.464		124	55.1	146			

Sample ID: 2002981-014AMSD	SampType: MSD				TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID: SP-14 South Wall	Batch ID: 50644				RunNo: 66811					
Prep Date: 2/25/2020	Analysis Date: 2/26/2020				SeqNo: 2298145	Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	59	9.5	47.44	10.84	101	47.4	136	18.0	43.4	

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
PQL Practical Quantitative Limit
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 Limit

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2002981

02-Mar-20

Client: Safety & Environmental Solutions**Project:** Devon Spud 16 State 8H 2RP 5323

Sample ID: 2002981-014AMSD	SampType: MSD	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: SP-14 South Wall	Batch ID: 50644	RunNo: 66811								
Prep Date: 2/25/2020	Analysis Date: 2/26/2020	SeqNo: 2298145			Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.2		4.744		88.9	55.1	146	0	0	

Sample ID: LCS-50644	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 50644	RunNo: 66811								
Prep Date: 2/25/2020	Analysis Date: 2/26/2020	SeqNo: 2298163			Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	55	10	50.00	0	110	70	130			
Surr: DNOP	4.9		5.000		98.3	55.1	146			

Sample ID: MB-50644	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batch ID: 50644	RunNo: 66811								
Prep Date: 2/25/2020	Analysis Date: 2/26/2020	SeqNo: 2298164			Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		115	55.1	146			

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
PQL Practical Quantitative Limit
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 Limit

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2002981

02-Mar-20

Client: Safety & Environmental Solutions**Project:** Devon Spud 16 State 8H 2RP 5323

Sample ID: mb-50631	SampType: MBLK	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: PBS	Batch ID: 50631	RunNo: 66878								
Prep Date: 2/24/2020	Analysis Date: 2/27/2020	SeqNo: 2299731			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	820		1000		82.5	66.6	105			

Sample ID: lcs-50631	SampType: LCS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: LCSS	Batch ID: 50631	RunNo: 66878								
Prep Date: 2/24/2020	Analysis Date: 2/27/2020	SeqNo: 2299732			Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	25.00	0	87.6	80	120			
Surr: BFB	940		1000		93.9	66.6	105			

Sample ID: mb-50678	SampType: MBLK	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: PBS	Batch ID: 50678	RunNo: 66892								
Prep Date: 2/25/2020	Analysis Date: 2/28/2020	SeqNo: 2301157			Units: %Rec					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	830		1000		83.4	66.6	105			

Sample ID: lcs-50678	SampType: LCS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: LCSS	Batch ID: 50678	RunNo: 66892								
Prep Date: 2/25/2020	Analysis Date: 2/28/2020	SeqNo: 2301158			Units: %Rec					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	890		1000		88.9	66.6	105			

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
PQL Practical Quantitative Limit
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 Limit

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2002981

02-Mar-20

Client: Safety & Environmental Solutions**Project:** Devon Spud 16 State 8H 2RP 5323

Sample ID: mb-50631	SampType: MBLK	TestCode: EPA Method 8021B: Volatiles								
Client ID: PBS	Batch ID: 50631	RunNo: 66878								
Prep Date: 2/24/2020	Analysis Date: 2/27/2020	SeqNo: 2299780 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	0.10								
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.89		1.000		89.2	80	120			

Sample ID: LCS-50631	SampType: LCS	TestCode: EPA Method 8021B: Volatiles								
Client ID: LCSS	Batch ID: 50631	RunNo: 66878								
Prep Date: 2/24/2020	Analysis Date: 2/27/2020	SeqNo: 2299781 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	0.80	0.10	1.000	0	80.1	20.7	175			
Benzene	0.89	0.025	1.000	0	88.6	80	120			
Toluene	0.93	0.050	1.000	0	93.0	80	120			
Ethylbenzene	0.95	0.050	1.000	0	94.8	80	120			
Xylenes, Total	2.9	0.10	3.000	0	95.5	80	120			
Surr: 4-Bromofluorobenzene	0.93		1.000		93.1	80	120			

Sample ID: mb-50678	SampType: MBLK	TestCode: EPA Method 8021B: Volatiles								
Client ID: PBS	Batch ID: 50678	RunNo: 66892								
Prep Date: 2/25/2020	Analysis Date: 2/28/2020	SeqNo: 2301205 Units: %Rec								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.90		1.000		89.9	80	120			

Sample ID: LCS-50678	SampType: LCS	TestCode: EPA Method 8021B: Volatiles								
Client ID: LCSS	Batch ID: 50678	RunNo: 66892								
Prep Date: 2/25/2020	Analysis Date: 2/28/2020	SeqNo: 2301206 Units: %Rec								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.95		1.000		94.8	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
PQL Practical Quantitative Limit
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 Limit

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2002981

02-Mar-20

Client: Safety & Environmental Solutions**Project:** Devon Spud 16 State 8H 2RP 5323

Sample ID: mb-50636	SampType: MBLK	TestCode: EPA Method 8260B: Volatiles Short List								
Client ID: PBS	Batch ID: 50636	RunNo: 66802								
Prep Date: 2/24/2020	Analysis Date: 2/25/2020	SeqNo: 2297048	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	0.40		0.5000		80.8	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		101	70	130			
Surr: Dibromofluoromethane	0.43		0.5000		85.8	70	130			
Surr: Toluene-d8	0.50		0.5000		99.6	70	130			

Sample ID: lcs-50636	SampType: LCS	TestCode: EPA Method 8260B: Volatiles Short List								
Client ID: LCSS	Batch ID: 50636	RunNo: 66802								
Prep Date: 2/24/2020	Analysis Date: 2/25/2020	SeqNo: 2297050	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.81	0.025	1.000	0	80.9	70	130			
Toluene	0.97	0.050	1.000	0	96.6	70	130			
Surr: 1,2-Dichloroethane-d4	0.41		0.5000		82.7	70	130			
Surr: 4-Bromofluorobenzene	0.51		0.5000		102	70	130			
Surr: Dibromofluoromethane	0.44		0.5000		88.7	70	130			
Surr: Toluene-d8	0.50		0.5000		100	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
PQL Practical Quantitative Limit
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 Limit

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2002981

02-Mar-20

Client: Safety & Environmental Solutions**Project:** Devon Spud 16 State 8H 2RP 5323

Sample ID: mb-50636	SampType: MBLK	TestCode: EPA Method 8015D Mod: Gasoline Range								
Client ID: PBS	Batch ID: 50636	RunNo: 66802								
Prep Date: 2/24/2020	Analysis Date: 2/25/2020	SeqNo: 2297075 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	510		500.0		101	70	130			

Sample ID: lcs-50636	SampType: LCS	TestCode: EPA Method 8015D Mod: Gasoline Range								
Client ID: LCSS	Batch ID: 50636	RunNo: 66802								
Prep Date: 2/24/2020	Analysis Date: 2/25/2020	SeqNo: 2297076 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	96.5	70	130			
Surr: BFB	510		500.0		103	70	130			

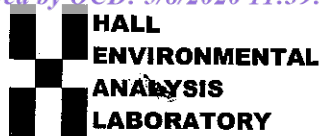
Sample ID: 2002981-014ams	SampType: MS	TestCode: EPA Method 8015D Mod: Gasoline Range								
Client ID: SP-14 South Wall	Batch ID: 50636	RunNo: 66802								
Prep Date: 2/24/2020	Analysis Date: 2/25/2020	SeqNo: 2297078 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	4.9	24.73	0	103	70	130			
Surr: BFB	510		494.6		103	70	130			

Sample ID: 2002981-014amsd	SampType: MSD	TestCode: EPA Method 8015D Mod: Gasoline Range								
Client ID: SP-14 South Wall	Batch ID: 50636	RunNo: 66802								
Prep Date: 2/24/2020	Analysis Date: 2/25/2020	SeqNo: 2297079 Units: mg/Kg								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	4.8	24.11	0	105	70	130	0.263	20	
Surr: BFB	490		482.2		101	70	130	0	0	

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
PQL Practical Quantitative Limit
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 Limit



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: Safety Env Solutions

Work Order Number: 2002981

RcptNo: 1

Received By: Yazmine Garduno

2/22/2020 9:05:00 AM

Yazmine Garduno

Completed By: Yazmine Garduno

2/22/2020 11:13:38 AM

Yazmine Garduno

Reviewed By: JR 2/24/20

Chain of Custody

1. Is Chain of Custody sufficiently complete? Yes ☒ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☒ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☒ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
9. Received at least 1 vial with headspace $<1/4"$ for AQ VOA? Yes ☐ No ☐ NA ☒
10. Were any sample containers received broken? Yes ☐ No ☒
11. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
13. Is it clear what analyses were requested? Yes ☒ No ☐
14. 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: YG 2/24/20

Special Handling (if applicable)

15. 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:			

16. Additional remarks:

17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.8	Good				
2	4.2	Good				

