

## Skelly Unit #247

## CLOSURE REQUEST

API No. 30-015-28788

Unit Letter N, Section 21, Township 17 South, Range 31 East

NMOCD Case #: 2R-4222

## August 7, 2017

#### Prepared by:

Michael Alves
Environmental Department
Diversified Field Service, Inc.
206 W Snyder
Hobbs, NM 88240
Phone: (575)964-8394

Fax: (575)393-8396

LINN ENERGY 08/07/2017

Mike Bratcher Environmental Specialist NM Oil Conservation District – Division 2 811 S First St Artesia, NM 88210

RE: Linn Skelly Unit #247 Closure Request

> UL/N, Section 21, T17S, R31E API No. 30-015-26788

NMOCD Case #: 2R-4222

NMOCD Score: 0

Mr. Bratcher,

Linn Energy (Linn) has retained Diversified Field Service, Inc. (DFSI) to address environmental issues for the site detailed herein.

The site is located south of Loco Hills, NM, in Eddy County. The spill resulted from a separated injection line, releasing 400 barrels of produced water, with 350 barrels recovered. An initial C-141 was submitted to NMOCD on May 18, 2017 and approved on May 23, 2017 (Appendix I). The impacted area is on the road, with very little in the pasture area.

#### **Site Assessment and Delineation**

On May 18, 2017, DFSI personnel were on site to remove contaminated soil and obtain samples within the leak area (Appendix II). Five samples were obtained and field sampled for chloride levels, as well as BTEX (Figure 1). The BTEX samples were screened using a Mini Rae Photoionization Detector (PID). Field samples were submitted for analysis at Hall Environmental of Albuquerque, NM (Appendix III).

DFSI has conducted a groundwater study of the area and has determined, according to the New Mexico Office of the State Engineer, there is no known groundwater beneath this site. Therefore, no eminent danger of groundwater impact or threat to life is anticipated (Appendix IV). LINN ENERGY 08/07/2017

#### Conclusion

Due to the location of the release being within an active and traveled road and with overhead lines located directly above, DFSI, on behalf of Linn Energy, requests deferment of remediation activities until site abandonment and respectfully requests the closure of the regulatory file for this site with the submission of the Final C-141 (Appendix V).

Please feel free to contact myself with any questions concerning this closure request.

Sincerely,

Michael Alves

Medal Slix

Environmental Operations Foreman | Diversified Field Service, Inc.

206 West Snyder | Hobbs, NM 88240

Office: (575)964-8394 | Mobile: (575)631-3364

Fax: (575)964-8396 | Email: Malves@diversifiedfsi.com

CC: Shelly Tucker, BLM

Figures: Site Diagram

Appendices: Initial C-141

Site Photos

Laboratory Analysis Groundwater Study

Final C-141

Site Map PID Lab Cl-GRO DRO MRO B Depth Cl- PID Lab Cl-GRO DRO MRO B PID Lab Cl-GRO DRO MRO B Depth Cl-SS 15K+ 15K+ 191.6 6594 245 12 250.4 1220 31.8 282 4.7 10' 15' 1552 14.4 660 15.9 53.6 1162 45.4 1800 ND 850 ND ND ND ND ND ND 10' 157.3 ND ND ND ND ND 6.5 12.7 15' 2424 21.2 20' 4012 55.7 25' 47 ND ND ND ND 3504 70.8 Depth Cl- PID Lab Cl-GRO DRO MRO B SS 4927 24 PID Lab CI-GRO DRO MRO B 7586 69.2 SS 1108 1490 265 631 8.7 335 10' 119 15' ND ND ND ND ND ND ND 10' 125 ND ND ND ND ND ND 109 SP5 SP4 SP3 Legend Sample Points Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, **Produced Water** (5474 sq ft) USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS **User Community** Linn Skelly Unit #247 Unit Letter N, Sec. 21, T17S, R31E **Eddy County, NM** API#: 30-015-28788 0 30 60 120 180 240 Environmental Services NMOCD Case #: 2R-4222

# Appendix I

INITIAL C-141

#### NM OIL CONSERVATION

ARTESIA DISTRICT

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

MAY **2 3** 2017 State of New Mexico

**Energy Minerals and Natural Resources** 

Form C-14 Revised August 8, 201

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

RECEPTION Copy to appropriate District Office i accordance with 19.15.29 NMAC

Release Notification and Corrective Action **OPERATOR** Final Repo Name of Company LINN Operating, Inc. **Contact Aaron Hickert** Address 2130 W Bender Blvd Hobbs, NM 88240 Telephone No. 432-363-9496 Facility Name Skelly Unit #247 Facility Type Oil Well Surface Owner Federal Mineral Owner Federal API No. 30-015-28788 LOCATION OF RELEASE North/South Line East/West Line Unit Letter Section Township Range Feet from the Feet from the County 175 31E 1110 South 2515 West Eddy Latitude 32.81638 Longitude -103.87608 NATURE OF RELEASE Type of Release Produced Water Volume of Release 400 Bbl Volume Recovered 350 Bbl Source of Release Injection Pipeline Date and Hour of Occurrence Date and Hour of Discovery 5/17/2017 10:30 PM 5/17/2017 10:30 PM Was Immediate Notice Given? If YES, To Whom? ☑ Yes □ No □ Not Required M Bratcher-NMOCD, S Tucker-BLM By Whom? M Burton-Diversified Date and Hour 5/18/2017 at 9:00am Was a Watercourse Reached? If YES, Volume Impacting the Watercourse. ☐ Yes ⊠ No If a Watercourse was Impacted, Describe Fully.\* Describe Cause of Problem and Remedial Action Taken.\* Injection line parted near the header at an underground fitting causing the spill. Third party contacted Linn operator about spill, operator responded, found spill, shut in line at injection header, and called out a Vac truck to recover standing PW. Describe Area Affected and Cleanup Action Taken.\* Operator responded, found spill, and called out a Vac truck to recover standing PW. Spill traveled down lease road and pooled in a low area on road with very little getting into pasture. Delineation and initial cleanup in progress with sampling to occur afterwards. Pending results of sampling a work plan will be developed and final remediation to follow after approvals. 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 OIL CONSERVATION DIVISION Signature: Approved by Environmental Specialist Printed Name: Aaron Hickert Title: Sr. EH&S Representative Approval Date: **Conditions of Approv** E-mail Address: ahickert@linnenergy.com Attached X

> New forms can be found in the New Mexico State Website in forms: http://www.emnrd.state.nm.us/

Phone: 432-363-9496

Attach Additional Sheets If Necessary

OCD/forms.html

# Appendix II

**SITE PHOTOS** 

# Skelly Unit #247



Site prior



Collecting sample by hand auger



Site prior



Excavating contaminated soil

# Appendix III

## **LABORATORY ANALYSIS**



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

June 02, 2017

Michael Burton Diversified Field Services, Inc 315 S. Leech St Hobbs, NM 88240

TEL: (575) 964-8394

FAX

RE: Skelly Unit 247 OrderNo.: 1705C76

#### Dear Michael Burton:

Hall Environmental Analysis Laboratory received 5 sample(s) on 5/24/2017 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 <a href="www.hallenvironmental.com">www.hallenvironmental.com</a> 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,

Andy Freeman

Laboratory Manager

andel

4901 Hawkins NE

Albuquerque, NM 87109

Lab Order **1705C76**Date Reported: **6/2/2017** 

#### Hall Environmental Analysis Laboratory, Inc.

 Project:
 Skelly Unit 247
 Collection Date: 5/18/2017 11:21:00 AM

 Lab ID:
 1705C76-001
 Matrix: SOIL
 Received Date: 5/24/2017 9:55:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analyst	: MRA
Chloride	3900	150	mg/Kg	100	5/30/2017 8:06:21 PM	32004
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANIC	S			Analyst	:: TOM
Diesel Range Organics (DRO)	56	9.3	mg/Kg	1	5/26/2017 1:23:08 PM	31966
Motor Oil Range Organics (MRO)	47	47	mg/Kg	1	5/26/2017 1:23:08 PM	31966
Surr: DNOP	94.4	70-130	%Rec	1	5/26/2017 1:23:08 PM	31966
EPA METHOD 8015D: GASOLINE RAM	NGE				Analyst	:: NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	5/26/2017 9:46:00 PM	31961
Surr: BFB	100	54-150	%Rec	1	5/26/2017 9:46:00 PM	31961
EPA METHOD 8021B: VOLATILES					Analyst	:: NSB
Benzene	ND	0.025	mg/Kg	1	5/26/2017 9:46:00 PM	31961
Toluene	ND	0.049	mg/Kg	1	5/26/2017 9:46:00 PM	31961
Ethylbenzene	ND	0.049	mg/Kg	1	5/26/2017 9:46:00 PM	31961
Xylenes, Total	ND	0.099	mg/Kg	1	5/26/2017 9:46:00 PM	31961
Surr: 4-Bromofluorobenzene	118	66.6-132	%Rec	1	5/26/2017 9:46:00 PM	31961

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

#### **Qualifiers:** Value exceeds Maximum Contaminant Level. Analyte detected in the associated Method Blank D Sample Diluted Due to Matrix Е Value above quantitation range Analyte detected below quantitation limits Page 1 of 9 Н Holding times for preparation or analysis exceeded J ND Not Detected at the Reporting Limit P Sample pH Not In Range R RPD outside accepted recovery limits RL Reporting Detection Limit % Recovery outside of range due to dilution or matrix Sample container temperature is out of limit as specified

Lab Order **1705C76**Date Reported: 6/2/2017

### Hall Environmental Analysis Laboratory, Inc.

 Project:
 Skelly Unit 247
 Collection Date: 5/18/2017 12:11:00 PM

 Lab ID:
 1705C76-002
 Matrix: SOIL
 Received Date: 5/24/2017 9:55:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analyst	MRA
Chloride	1800	75	mg/Kg	50	5/30/2017 8:18:45 PM	32004
EPA METHOD 8015M/D: DIESEL RANG	SE ORGANIC	S			Analyst	: TOM
Diesel Range Organics (DRO)	15	9.5	mg/Kg	1	5/26/2017 1:45:08 PM	31966
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	5/26/2017 1:45:08 PM	31966
Surr: DNOP	91.7	70-130	%Rec	1	5/26/2017 1:45:08 PM	31966
EPA METHOD 8015D: GASOLINE RAN	GE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	5/26/2017 10:10:10 PM	31961
Surr: BFB	101	54-150	%Rec	1	5/26/2017 10:10:10 PM	31961
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.024	mg/Kg	1	5/26/2017 10:10:10 PM	31961
Toluene	ND	0.048	mg/Kg	1	5/26/2017 10:10:10 PM	31961
Ethylbenzene	ND	0.048	mg/Kg	1	5/26/2017 10:10:10 PM	31961
Xylenes, Total	ND	0.095	mg/Kg	1	5/26/2017 10:10:10 PM	31961
Surr: 4-Bromofluorobenzene	119	66.6-132	%Rec	1	5/26/2017 10:10:10 PM	31961

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 2 of 9
	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

## Lab Order **1705C76**Date Reported: **6/2/2017**

#### Hall Environmental Analysis Laboratory, Inc.

 Project:
 Skelly Unit 247
 Collection Date: 5/18/2017 12:26:00 PM

 Lab ID:
 1705C76-003
 Matrix: SOIL
 Received Date: 5/24/2017 9:55:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analyst	MRA
Chloride	890	30	mg/Kg	20	5/30/2017 11:00:22 AM	32013
EPA METHOD 8015M/D: DIESEL RANG	E ORGANIC	S			Analyst	: TOM
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	5/26/2017 2:07:18 PM	31966
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	5/26/2017 2:07:18 PM	31966
Surr: DNOP	95.2	70-130	%Rec	1	5/26/2017 2:07:18 PM	31966
EPA METHOD 8015D: GASOLINE RAN	GE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	5/26/2017 10:34:19 PM	31961
Surr: BFB	99.2	54-150	%Rec	1	5/26/2017 10:34:19 PM	31961
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.023	mg/Kg	1	5/26/2017 10:34:19 PM	31961
Toluene	ND	0.047	mg/Kg	1	5/26/2017 10:34:19 PM	31961
Ethylbenzene	ND	0.047	mg/Kg	1	5/26/2017 10:34:19 PM	31961
Xylenes, Total	ND	0.093	mg/Kg	1	5/26/2017 10:34:19 PM	31961
Surr: 4-Bromofluorobenzene	116	66.6-132	%Rec	1	5/26/2017 10:34:19 PM	31961

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

#### **Qualifiers:** Value exceeds Maximum Contaminant Level. Analyte detected in the associated Method Blank D Sample Diluted Due to Matrix Е Value above quantitation range Analyte detected below quantitation limits Page 3 of 9 Н Holding times for preparation or analysis exceeded J ND Not Detected at the Reporting Limit P Sample pH Not In Range R RPD outside accepted recovery limits RL Reporting Detection Limit % Recovery outside of range due to dilution or matrix Sample container temperature is out of limit as specified

## Lab Order **1705C76**Date Reported: **6/2/2017**

### Hall Environmental Analysis Laboratory, Inc.

 Project:
 Skelly Unit 247
 Collection Date: 5/18/2017 3:43:00 PM

 Lab ID:
 1705C76-004
 Matrix: SOIL
 Received Date: 5/24/2017 9:55:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analyst	MRA
Chloride	ND	30	mg/Kg	20	5/30/2017 11:37:36 AM	32013
EPA METHOD 8015M/D: DIESEL RANG	SE ORGANICS	3			Analyst	TOM
Diesel Range Organics (DRO)	ND	9.6	mg/Kg	1	5/26/2017 2:29:21 PM	31966
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	5/26/2017 2:29:21 PM	31966
Surr: DNOP	91.5	70-130	%Rec	1	5/26/2017 2:29:21 PM	31966
EPA METHOD 8015D: GASOLINE RAN	IGE				Analyst	NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	5/26/2017 10:58:29 PM	31961
Surr: BFB	102	54-150	%Rec	1	5/26/2017 10:58:29 PM	31961
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Benzene	ND	0.025	mg/Kg	1	5/26/2017 10:58:29 PM	31961
Toluene	ND	0.049	mg/Kg	1	5/26/2017 10:58:29 PM	31961
Ethylbenzene	ND	0.049	mg/Kg	1	5/26/2017 10:58:29 PM	31961
Xylenes, Total	ND	0.099	mg/Kg	1	5/26/2017 10:58:29 PM	31961
Surr: 4-Bromofluorobenzene	120	66.6-132	%Rec	1	5/26/2017 10:58:29 PM	31961

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 4 of 9
	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

Lab Order **1705C76**Date Reported: 6/2/2017

#### Hall Environmental Analysis Laboratory, Inc.

**Project:** Skelly Unit 247
 Collection Date: 5/18/2017 3:12:00 PM

 **Lab ID:** 1705C76-005
 Matrix: SOIL
 Received Date: 5/24/2017 9:55:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS					Analyst	: MRA
Chloride	65	30	mg/Kg	20	5/30/2017 11:50:00 AM	32013
EPA METHOD 8015M/D: DIESEL RANG	E ORGANIC	S			Analyst	: ТОМ
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	5/26/2017 2:51:32 PM	31966
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	5/26/2017 2:51:32 PM	31966
Surr: DNOP	81.8	70-130	%Rec	1	5/26/2017 2:51:32 PM	31966
EPA METHOD 8015D: GASOLINE RAN	GE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	5/26/2017 11:22:41 PM	31961
Surr: BFB	98.8	54-150	%Rec	1	5/26/2017 11:22:41 PM	31961
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.024	mg/Kg	1	5/26/2017 11:22:41 PM	31961
Toluene	ND	0.049	mg/Kg	1	5/26/2017 11:22:41 PM	31961
Ethylbenzene	ND	0.049	mg/Kg	1	5/26/2017 11:22:41 PM	31961
Xylenes, Total	ND	0.097	mg/Kg	1	5/26/2017 11:22:41 PM	31961
Surr: 4-Bromofluorobenzene	117	66.6-132	%Rec	1	5/26/2017 11:22:41 PM	31961

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 5 of 9
	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

#### Hall Environmental Analysis Laboratory, Inc.

WO#: **1705C76** 

02-Jun-17

**Client:** Diversified Field Services, Inc

**Project:** Skelly Unit 247

Sample ID MB-32004 SampType: MBLK TestCode: EPA Method 300.0: Anions

Client ID: PBS Batch ID: 32004 RunNo: 43101

Prep Date: 5/26/2017 Analysis Date: 5/26/2017 SeqNo: 1356954 Units: mg/Kg

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Chloride ND 1.5

Sample ID LCS-32004 SampType: LCS TestCode: EPA Method 300.0: Anions

Client ID: LCSS Batch ID: 32004 RunNo: 43101

Prep Date: 5/26/2017 Analysis Date: 5/26/2017 SeqNo: 1356955 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-32013 SampType: MBLK TestCode: EPA Method 300.0: Anions

Client ID: PBS Batch ID: 32013 RunNo: 43126

Prep Date: 5/30/2017 Analysis Date: 5/30/2017 SeqNo: 1358362 Units: mg/Kg

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Chloride ND 1.5

Sample ID LCS-32013 SampType: LCS TestCode: EPA Method 300.0: Anions

Client ID: LCSS Batch ID: 32013 RunNo: 43126

Prep Date: 5/30/2017 Analysis Date: 5/30/2017 SeqNo: 1358363 Units: mg/Kg

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Chloride 14 1.5 15.00 0 93.1 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

Page 6 of 9

### Hall Environmental Analysis Laboratory, Inc.

WO#: 1705C76

02-Jun-17

**Client:** Diversified Field Services, Inc

**Project:** Skelly Unit 247

Sample ID MB-31966 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: **PBS** Batch ID: 31966 RunNo: 43088

Analysis Date: 5/26/2017 Prep Date: 5/25/2017 SeqNo: 1356611 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 10.00 91.4 70 9.1 130

Sample ID LCS-31966 SampType: LCS TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID: LCSS RunNo: 43088 Batch ID: 31966

4.0

Analysis Date: 5/26/2017 Prep Date: 5/25/2017 SeqNo: 1356913 Units: mg/Kg

5.000

Analyte SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Diesel Range Organics (DRO) 40 10 80.2 73.2 50.00 114

80.9

70

130

#### Qualifiers:

Surr: DNOP

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Η 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 В Analyte detected in the associated Method Blank

Е Value above quantitation range

J Analyte detected below quantitation limits

Page 7 of 9

P Sample pH Not In Range

RL Reporting Detection Limit

Sample container temperature is out of limit as specified

#### Hall Environmental Analysis Laboratory, Inc.

WO#: 1705C76

02-Jun-17

**Client:** Diversified Field Services, Inc

**Project:** Skelly Unit 247

Sample ID LCS-31961 SampType: LCS TestCode: EPA Method 8015D: Gasoline Range

LCSS Client ID: Batch ID: 31961 RunNo: 43104

SeqNo: 1356844 Prep Date: 5/25/2017 Analysis Date: 5/26/2017 Units: mg/Kg

Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual

Gasoline Range Organics (GRO) 26 5.0 25.00 0 104 76.4 125 Surr: BFB 1100 1000 114 54 150

Sample ID MB-31961 SampType: MBLK TestCode: EPA Method 8015D: Gasoline Range

Client ID: PBS Batch ID: 31961 RunNo: 43104

Prep Date: 5/25/2017 Analysis Date: 5/26/2017 SeqNo: 1356845 Units: mg/Kg

Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual

Gasoline Range Organics (GRO) ND 5.0

1000 1000 101 Surr: BFB 54 150

#### Qualifiers:

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Η 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
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified

Page 8 of 9

#### Hall Environmental Analysis Laboratory, Inc.

WO#: **1705C76** 

02-Jun-17

Client: Diversified Field Services, Inc

**Project:** Skelly Unit 247

Sample ID LCS-31961 SampType: LCS TestCode: EPA Method 8021B: Volatiles LCSS Client ID: Batch ID: 31961 RunNo: 43104 SeqNo: 1356872 Prep Date: 5/25/2017 Analysis Date: 5/26/2017 Units: mg/Kg Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Benzene 0.025 1.000 0 106 80 120 1.1 Toluene 0.050 1.000 0 106 80 120 1.1 Ethylbenzene 0.050 1.000 0 106 80 120 1.1 Xylenes, Total 3.2 0.10 3.000 0 108 80 120 Surr: 4-Bromofluorobenzene 1.2 1.000 125 66.6 132

Sample ID MB-31961 SampType: MBLK				TestCode: EPA Method 8021B: Volatiles							
Client ID: PBS	PBS Batch ID: 31961				RunNo: 4						
Prep Date: 5/25/2017 Analysis Date: 5/26/2017				SeqNo: <b>1356873</b> Units: n			Units: mg/K	ng/Kg			
Analyte Result PQL SPK value S		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 1.2 1.000			117	66.6	132						

#### 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

Reporting Detection Limit

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL

W Sample container temperature is out of limit as specified

Page 9 of 9



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

**DIVERSIFIED FIELD SE** Client Name: Work Order Number: 1705C76 RcptNo: 1 Received By: Erin Melendrez 5/24/2017 9:55:00 AM Completed By: **Ashley Gallegos** 5/24/2017 4:26:33 PM 05/25/17 SOR Reviewed By: Chain of Custody Yes 🗌 No 🗆 Not Present 1. Custody seals intact on sample bottles? 2. Is Chain of Custody complete? Yes 🗸 No 🗔 Not Present 3. How was the sample delivered? Courier Log In No 🗌 NA 🗌 4. Was an attempt made to cool the samples? Yes 🗸 5. Were all samples received at a temperature of >0° C to 6.0°C NA  $\square$ Yes 🗌 Approved by client. 6. Sample(s) in proper container(s)? Yes 🗹 No 🗀 Yes 🗸 No [ 7. Sufficient sample volume for indicated test(s)? 8. Are samples (except VOA and ONG) properly preserved? Yes 🗸 No I I No 🔽 NA  $\square$ 9. Was preservative added to bottles? Yes 🗀 10.VOA vials have zero headspace? Yes  $\square$ No 🗌 No VOA Vials 🔽 Yes 🗀 11. Were any sample containers received broken? No 🗸 # of preserved bottles checked Yes 🔽 No 🗀 12. Does paperwork match bottle labels? for pH: (<2 or >12 unless noted) (Note discrepancies on chain of custody) Adjusted? 13. Are matrices correctly identified on Chain of Custody? Yes 🔽 No 🗆 14. Is it clear what analyses were requested? Yes No No 🗆 Checked by: 15. Were all holding times able to be met? Yes 🔽 (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: Michael Burton 5/24/2017 Date By Whom: Ashley Gallegos Via: 🗌 eMail 🗸 Phone 🦳 Fax 🦳 In Person Regarding: High temp Client Instructions: Proceed with analysis 17. Additional remarks: 18. Cooler Information Cooler No | Temp °C | Condition | Seal Intact | Seal No | Seal Date 7.5 Good Yes

'AL ORY	(N to Y) selddu8 riA	5/24/17
HALL ENVIRONMENTAL ANALYSIS LABORATORY www.hallenvironmental.com kins NE - Albuquerque, NM 87109 345-3975 Fax 505-345-4107 Analysis Request		approved Per Michael 05/24 ALLENINGSFIED
ENVIRONME YSIS LABOR/ environmental.com Albuquerque, NM 87109 Fax 505-345-4107 nalysis Request	(AOV-imeS) 07S8	E 20 -
NIM NIM 45-4		1000
S LABOI S LABOI mental.com erque, NM 87 505-345-4107 Request	8081 Pesticides / 8082 PCB's	- 5 £ 5
IALL ENVIRON NALYSIS LAB www.hallenvironmental.com ns NE - Albuquerque, NM 8 5-3975 Fax 505-345-41 Analysis Request	Anions (F.CMO <sub>3</sub> ,NO <sub>2</sub> ,PO <sub>4</sub> ,SO <sub>4</sub> )	Remarks: Terry approved Per N. EMAIL ALL CANGESIFIED
A Ab A A A A A A A A A A A A A A A A A	RCRA 8 Metals	7 2
HALL ANAL ANAL Www.hall www.hall 4901 Hawkins NE - Tel. 505-345-3975	(SMIS 07S8 to 01£8) a'HA9	
AN www kins I 45-3	(1.405 bortheM) BG3	0,0
ANAI ANW.ha www.ha Hawkins NE 505-345-3975	(1.814 (Method 418.1)	- de 17
1901 Tel. 5	TPH 8015B (GRO / DRO / MRO)	₩ 5.8.
4	BTEX + MTBE + TMB's (8021)  (Gas only)	Remarks: Temy  EMAIL
	(1608) 4,8VI + 38IV + X3I8	2 2
Rush No.7#247	1.5°C   -002   -005   -	\$\langle \text{Time} \\ \sigma \text{Date} \text{Time} \\ \text{Date} \text{Time} \\ \text{Date} \text{Time} \\ \text{DATE} \\
	BULTON BULTON SAH LAS A Yes A Yes Type Type	
Tum-Around Time:  Alstandard Project Name:  Project #:	Project Manager.  NICHHEL BULT Sampler: ELISHH On Ice: A Yes Sample Temperature: Type and # Type  Type and # Type	Received by:
Client: DNEQSIFIED  Mailing Address: BLE TO BYST  Phone #: $AOBSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS$	#:    Cother   Cother	Received by:  (2) 24 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Chain-of-C Client: DNEUSIFI Mailing Address: ALL	OA/OC Package: OA/OC	S-23-13 0600 Date: Time:

# Appendix IV

**GROUNDWATER STUDY** 



## New Mexico Office of the State Engineer Water Column/Average Depth to Water

(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest) (NAD83 UTM in meters)

No records found.

PLSS Search:

Section(s): 15, 16, 17, 20, 21, Township: 17S Range: 31E

22, 27, 28, 29

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

WATER COLUMN/ AVERAGE 8/3/17 4:44 PM DEPTH TO WATER

# Appendix V

FINAL C-141

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

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

Form C-141

Revised August 8, 2011

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

			Rele	ease Notific	catio	n and Co	orrective A	ction	1			
						OPERA'	ΓOR		☐ Initi	al Report	⊠ F	inal Repor
		Linn Energy				Contact: Aaron Hickert						
		der, Hobbs,	NM 8824	10		Telephone No. 432-363-9496 Facility Type: Oil Well						
Facility Na	me: Skelly	Unit #24/				Facility Typ	e: Oil Well					
Surface Ow	mer: Fede	ral		Mineral C	Owner:	Federal			API No	. 30-015-28	788	
				LOCA	ATIO	N OF REI	LEASE					
Unit Letter N	Section 21	Township 17S	Range 31E	Feet from the	1	South Line outh	Feet from 2515		West Line 'est	County Eddy		
				Latitude: 3	2.8163	8 Longitude	e: -103.87608					
				NAT	TURE	OF REL						
Type of Rele							Release: 400 bb			Recovered: 3		
Source of Re	nease: inje	ction Pipeline				05/17/2017		ce		Hour of Disc 7 10:30 PM	overy	
Was Immedi	ate Notice (			=		If YES, To	Whom?					
				No Not Ro	equired	[	er – NMOCD, Sh					
By Whom? Was a Water		n (Diversified	)			4	lour: 05/18/2017 plume Impacting					
was a water	course Reac		Yes 🛚	No		II TES, VO	nume impacting	ine wat	ercourse.			
		pacted, Descr em and Reme										
pasture.				·								
On May 18, and field san	2017, DFS npled for ch	nloride levels	ere on sit , as well a	en. e to remove con is BTEX. The B Iall Environmen	TEX sa	mples were s	screened using a					
regulations all public health should their o	I operators or the environment in a ment. In a	are required to onment. The ave failed to a ddition, NMO	report an acceptanc dequately CD accept	is true and comp d/or file certain re e of a C-141 repo investigate and re tance of a C-141	elease no ort by the emediate	otifications and NMOCD mage contamination	nd perform correct arked as "Final R on that pose a thr	ctive acti leport" d eat to gr	ons for rele oes not reli ound water	ases which n eve the opera , surface wate	nay enda itor of lia er, humai	inger ability in health
Signature: /	Son		M				OIL CON			DIVISIO	Ŋ	
Printed Name	: Aaron Hic	kert				Approved by	Environmental S	pecialist	•			
Title: Sr EH&	S Represen	tative				Approval Date	<b>0</b> :		Expiration I	Date:		
E-mail Addre	ss: ahickert	@linnenergy.	com			Conditions of	Approval:			Attached		
	07/2017 ional Shee	Phone: 432-3 ts If Necessa										