



January 07, 2016

NMOCD District II  
Attn. Heather Patterson  
1301 W Grand Ave  
Artesia, NM 88210

SUBJECT: FINAL CLOSURE REPORT FOR INCIDENT 2RP -3382 ILLUSTRATED MAN FEE COM 1H, API# 30-015-41025,  
EDDY COUNTY, NEW MEXICO

Dear Ms. Patterson:

On behalf of COG Operating (COG), Souder Miller & Associates (SMA) is pleased to submit the attached Final Closure Report summarizing the soil remediation of the release located on the Illustrated Man Fee Com 1H in Eddy County, New Mexico. The purpose of the Final Closure Report is to obtain approval from the New Mexico Oil Conservation Division (NMOCD) for closure of the release that occurred on October 12, 2015.

At the request of COG, SMA assessed, delineated and remediated soil affected by the crude oil release associated with the Illustrated Man Fee Com 1H well location. The release was initially reported to NMOCD by COG Operating on October 26, 2015 and was a result of a corrosion hole in the production tank bottom. The table below summarizes information regarding the release. Results of the assessment and delineation follow in the attached report.

Table 1: Release information and Site Ranking					
Name	Illustrated Man Fee Com 1				
Location	Incident Number	API Number	Section, Township, Range		
	2RP - 3382	30-015-41025	SW/NE (UL D)	Section 12	T 25S, R 28E NMPM
Estimated Date of Release	Discovered October 12, 2015				
Date Reported to NMOCD	October 26, 2015				
Reported by	Amanda Trujillo Davis , COG Operating LLC				
Land Owner	Federal				
Reported To	NM Oil Conservation Division (NMOCD)				
Source of Release	Corrosion Hole in the Tank				
Released Material	Produced Oil				
Released Volume	40 bbls Crude Oil				
Recovered Volume	35 bbls Crude Oil				
Net Release	5 bbls Crude Oil				
Nearest Waterway	Pecos River is ~0.90 miles east of the location.				

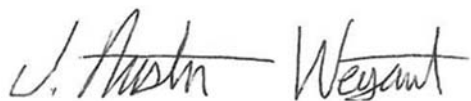


Depth to Groundwater	Estimated to be 43ft
Nearest Domestic Water Source	Greater than 1,000 feet
NMOCD Ranking	20
SMA Response Dates	Initial: November 3, 2015 Mitigation Activities: November 24, 2015
Subcontractors	Hungry Horse
Disposal Facility	Lea Land, LLC
Estimated Yd <sup>3</sup> Contaminated Soil Excavated and Disposed	35

A copy of the C-141 Initial is located in Appendix B. For questions or comments pertaining to the release or the attached Request for Closure, please feel free to contact either of us.

Submitted by:

SOUDER, MILLER & ASSOCIATES



Austin Weyant  
Project Scientist

Reviewed by:



Cynthia Gray, CHMM  
Senior Scientist



Souder, Miller & Associates ♦ 201 S. Halagueno ♦ Carlsbad, NM 88221  
(575) 689-7040

# SOIL REMEDIATION FINAL CLOSURE REPORT FOR INCIDENT 2RP-3382

## COG OPERATING LLC

ILLUSTRATED MAN FEE COM 1H

API# 30-015-41025

UL D SECTION 12, T25S R28E, NMPM

EDDY COUNTY, NM



Prepared for:  
COG Operating LLC  
2407 Pecos Ave  
Artesia, NM 88210

Prepared by:  
Souder, Miller & Associates  
201 S. Halagueno  
Carlsbad, NM 88221  
575-689-7040

January 7, 2016  
SMA Reference  
5B23978 BG9



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Table 1: Release Information and Site Ranking  
Table 2: Summary of Laboratory Analyses

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## **1.0 Introduction**

On behalf of COG Operating LLC (COG), SMA has prepared this report that describes the assessment, initial delineation and mitigation of a release associated with the Illustrated Man Fee COM 1H release site. The site is located in Unit D Section 12, T 25S, R 28 E NMPM, Eddy County, New Mexico, on federal land administered by the Bureau of Land Management (BLM). Figure 1 shows the vicinity and location of the site.

## **2.0 Site Ranking and Land Jurisdiction Introduction**

The release site is located approximately 0.9 miles (> 1,000 feet) west of Pecos River, on federal land under BLM jurisdiction with an elevation of approximately 2,940 feet above sea level. After evaluation of the site using aerial photography and topographic maps, depth to groundwater is estimated to be less than 50 feet below ground surface (bgs). Figure 2 depicts the site details, well pad and sample locations.

SMA searched the New Mexico State Engineer's Office online water well database for water wells in the vicinity of the release. No well is located within a 1000 foot radius of the site. The physical location of this release is within the jurisdiction of NMOCD.

This release location has been assigned a NMOCD ranking of 20 under NMOCD "Guidelines for Remediation" which requires a soil remediation standard of 10 parts per million (ppm) benzene, 50 ppm combined benzene, toluene, ethyl-benzene, and total xylenes (BTEX), and 100 ppm total petroleum hydrocarbons (TPH). Table 1 illustrates site ranking rationale.

## **3.0 Assessment and Initial Results**

On November 2, 2015, after receiving 811 clearance, SMA field personnel assessed the release site utilizing a gas powered auger, a Photo Ionization Detector (PID), and a mobile chlorides titration kit. The affected area was found to be 150 feet long and 20 feet wide. Delineation samples were taken to depths of three feet bgs. Using field screening, samples at two locations were found to have higher than background levels of chloride. For additional information on the initial soil results and site assessment, please refer to the NMOCD approved work plan (Soil Remediation Work Plan for Incident 2RP-3382.) Sample locations are noted on Figure 2 "Site Details and Sample Location Map". All samples were collected and processed according to NMOCD soil sampling procedures. The samples were sent under chain-of-custody protocols to Hall Environmental Analysis Laboratory for analysis for Benzene and Total BTEX using EPA Method 8021B, DRO and GRO by EPA Method 8015D, and total Chlorides using EPA Method 300.0.

## **4.0 Soil Remediation Summary**

SMA began the excavation of affected soils on 11/24/15, with approval from area utilities owners via 811 and NMOCD. SMA continuously guided the excavation activities by collecting composite soil samples for field screening with a mobile chlorides titration unit (EPA 4500) and a calibrated PID. Delineation was performed to a depth of 3 feet bgs to define the plume limits by NMOCD standards. Excavation occurred to a depth of eight inches bgs on east and north of tank battery, a depth sufficient to remove the contaminated soil. Also south from the tank battery the well pad area was scraped three inches bgs to remove contaminated soil. Discrete final closure samples were collected within the excavation. Approximately 35 cubic yards of hydrocarbon contaminated soil was removed and replaced with clean backfill material sufficient to bring the contours to

surface grade. The contaminated soil was transported for proper disposal at Lea Land, near Carlsbad, NM.

## **5.0 Conclusions and Recommendations**

NMOCD Guidelines for Remediation of Leaks, Spills, and Releases have established the following action levels for contaminants of concern with a site ranking of 20: 10 ppm (mg/kg) Benzene, 50 ppm total BTEX, and 100 ppm TPH. The release consisted of produced and associated petroleum found during the initial assessment and delineation.

All closure confirmation samples were taken as discrete samples to ensure that the contaminated soil was removed.

Soil sample location are illustrated in Figure 2. A summary of the laboratory analyses is included in Table 2. Laboratory reports are included in Appendix A.

## **6.0 Closure and Limitations**

Closure standards have been achieved for the crude oil release 2RP-3382 on the Illustrated Man Fee COM #001H well pad.

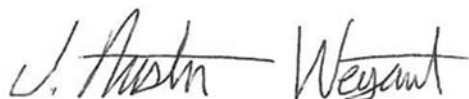
The scope of our services consisted of the performance of a preliminary spill assessment, verification of release stabilization, regulatory liaison, and preparation of this Remediation Work Plan. All work has been performed in accordance with generally accepted professional environmental consulting practices for oil and gas releases in the Permian Basin in New Mexico.

If there are any questions regarding this report, please contact either Austin Weyant at 575-689-7040 or Cindy Gray at 505-325-7535.

Submitted by:

Reviewed by:

SOUDER, MILLER & ASSOCIATES



Austin Weyant  
Project Scientist



Cynthia Gray, CHMM  
Senior Scientist

**Figures:**

Figure 1: Vicinity Map

Figure 2: Site Details and Sample Locations Map

**Tables:**

Table 1: Release Information and Site Ranking

Table 2: Summary of Laboratory Analyses

**Appendices:**

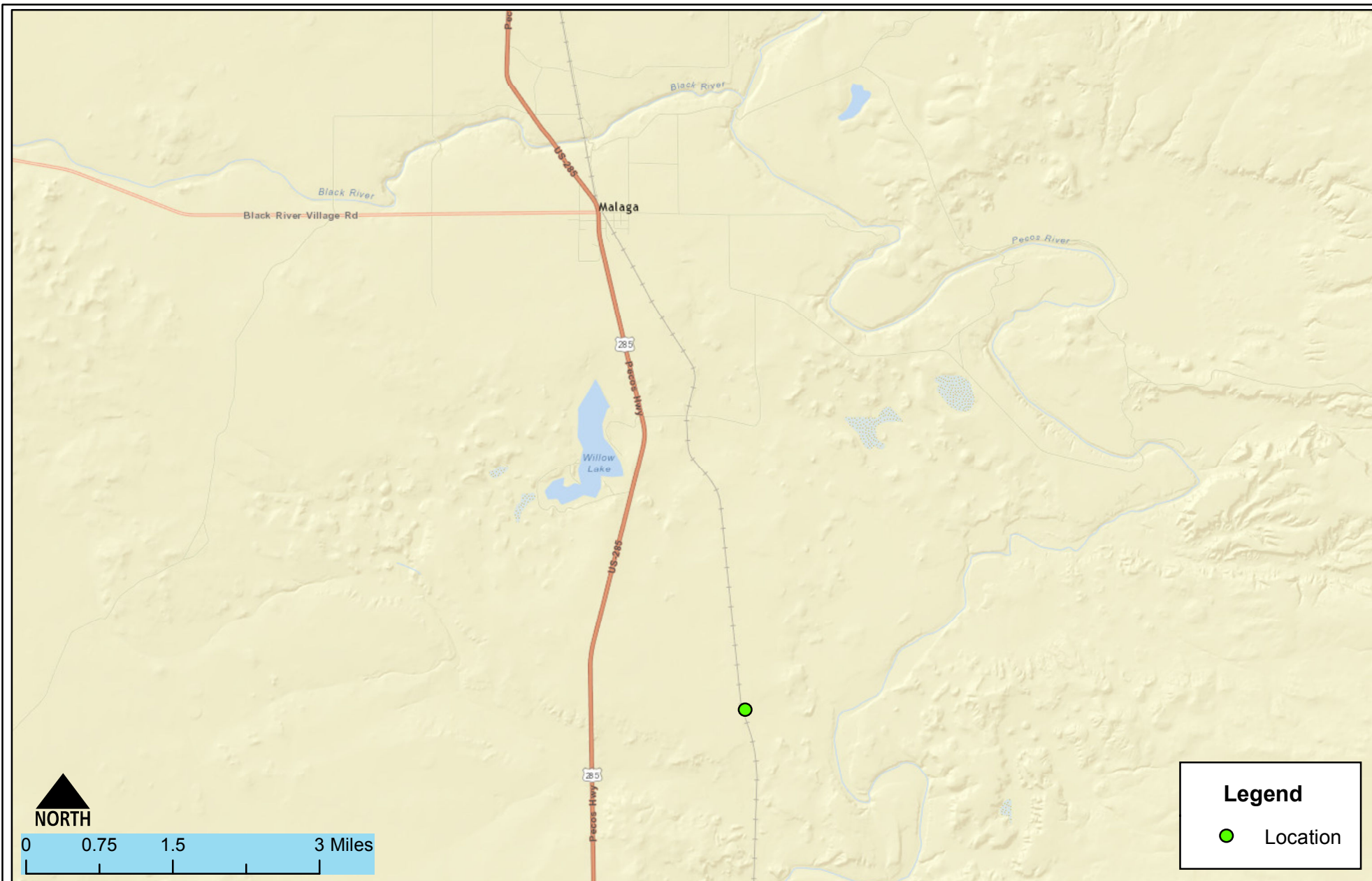
Appendix A: Laboratory Analytical Reports

Appendix B: Form C141 Final

# FIGURE 1

## VICINITY MAP





Vicinity Map  
COG- Illustrated Man Fee Com #1H  
Malaga, New Mexico

Figure 1

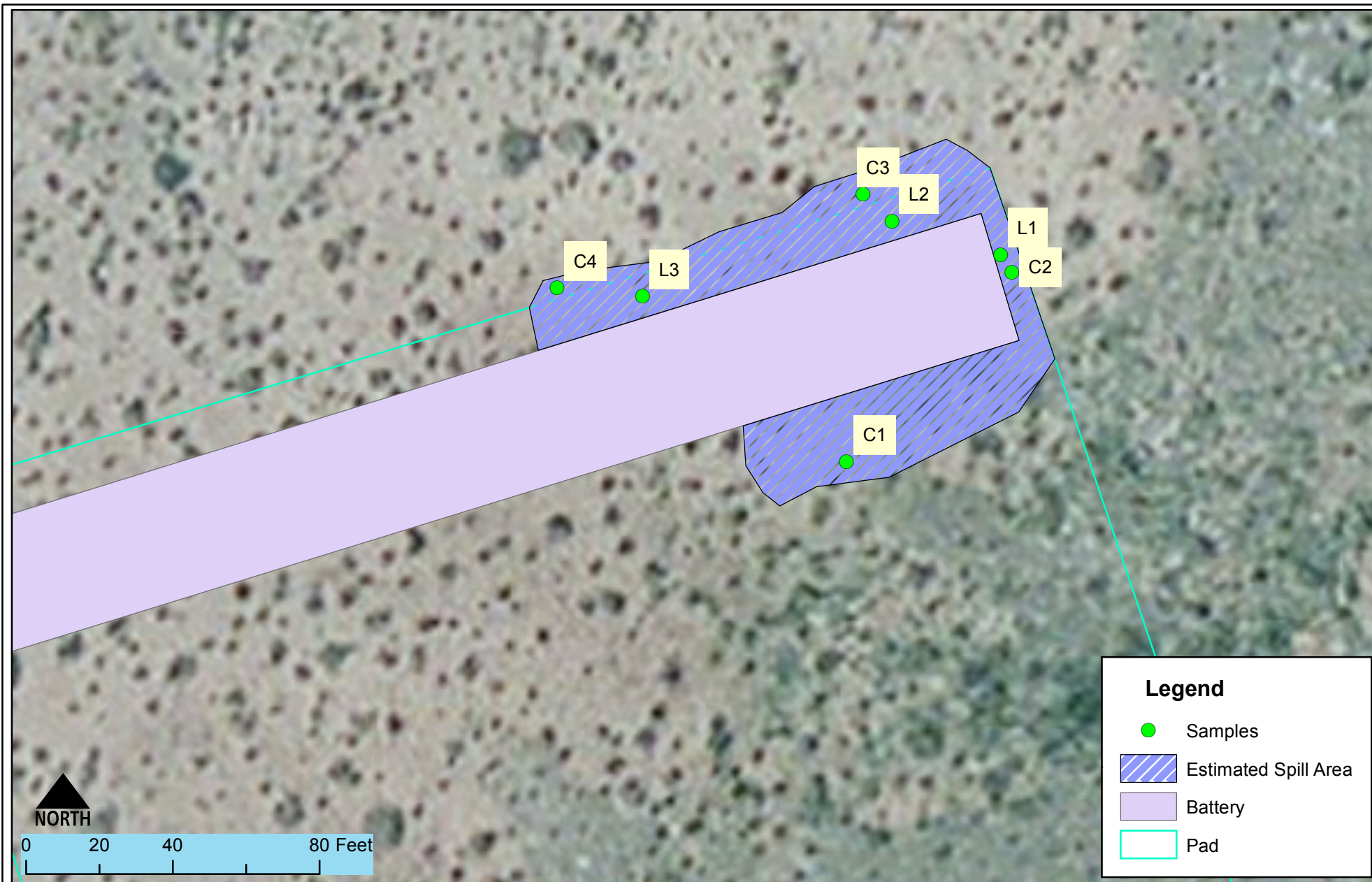
Date Saved: 11/17/2015	Revisions			Drawn	Lucas Middleton
	By: _____	Date: _____	Descr: _____	Checked	_____
	By: _____	Date: _____	Descr: _____	Approved	_____
	Copyright 2015 Souder, Miller & Associates - All Rights Reserved				



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# FIGURE 2

## SITE DETAILS AND SAMPLE LOCATIONS MAP



Site Detail and Sample Locations  
COG-Illustrated Man Fee Com #1H  
Malaga, New Mexico

Figure 2

Date Saved:  
11/18/2015

By:	Date:	Revisions	Descr:
By:	Date:		Descr:

Copyright 2015 Souder, Miller & Associates - All Rights Reserved

Drawn	Lucas Middleton
Checked	
Approved	



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# TABLE 1

## RELEASE INFORMATION AND SITE RANKING

Table 1: Release information and Site Ranking					
Name	Illustrated Man Fee Com 1				
Location	Incident Number	API Number	Section, Township, Range		
	2RP -3382	30-015-41025	N/S (UL D)	Section 12	T 25S, R 28E NMPM
Estimated Date of Release	Discovered October 12, 2015				
Date Reported to NMOCD	October 26, 2015				
Reported by	Amanda Trujillo Davis , COG Operating LLC				
Land Owner	Federal				
Reported To	NM Oil Conservation Division (NMOCD)				
Source of Release	Battery/Surface Facilities				
Released Material	Oil				
Released Volume	40 bbls Oil				
Recovered Volume	39 bbls Oil				
Net Release	1 bbl Oil				
Nearest Waterway	Pecos River is ~0.90 miles east of the location.				
Depth to Groundwater	Estimated to be 43ft				
Nearest Domestic Water Source	Greater than 1000ft				
NMOCD Ranking	20				
SMA Response Dates	Initial: November 3, 2015 Mitigation Activities: November 24, 2015				
Subcontractors	Hungry Horse				
Disposal Facility	Lea Land, LLC				
Estimated Yd <sup>3</sup> Contaminated Soil Excavated and Disposed	35				

# TABLE 2

## SUMMARY OF LABORATORY ANALYSES

**Table 2: Summary of Laboratory Analyses**

Analytical Report- 1511281 1601183	Sample Number on Figure 2 Map	Sample Date	Depth	BTEX ppm	Benzene mg/Kg	GRO mg/Kg	DRO mg/Kg	Cl- mg/Kg
1511281-001	BG1	11/3/2015	6"	BDL	BDL	BDL	BDL	BDL
1511281-002	C1	11/3/2015	Surface	32.2	0.61	320	22,000	N/A
1511281-003	C2	11/3/2015	Surface	BDL	BDL	BDL	BDL	N/A
1511281-004	C3	11/3/2015	Surface	BDL	BDL	BDL	BDL	1,200
1511281-005	C4	11/3/2015	Surface	BDL	BDL	BDL	BDL	3,800
1511281-006	L1-3	11/3/2015	3'	9.5	BDL	290	3,200	N/A
1511281-007	L2-3	11/3/2015	3'	BDL	BDL	12	320	N/A
1511281-008	L3-2	11/3/2015	2'	BDL	BDL	BDL	BDL	N/A
1511281-009	L4-1	11/3/2015	1'	BDL	BDL	BDL	BDL	N/A
1601183-001	C3-1	1/5/2015	1'	N/A	N/A	N/A	N/A	BDL
1601183-002	C4-1	1/5/2015	1'	N/A	N/A	N/A	N/A	520

# APPENDIX A

## LABORATORY ANALYTICAL REPORTS





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

January 11, 2016

Austin Weyant  
Souder, Miller & Associates  
201 S Halagueno  
Carlsbad, NM 88221  
TEL: (575) 689-7040  
FAX

RE: Illustrated Man Fee Com

OrderNo.: 1601183

Dear Austin Weyant:

Hall Environmental Analysis Laboratory received 2 sample(s) on 1/7/2016 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1601183**

Date Reported: **1/11/2016**

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** IL-C3-1

**Project:** Illustrated Man Fee Com

**Collection Date:** 1/5/2016 10:00:00 AM

**Lab ID:** 1601183-001

**Matrix:** SOIL

**Received Date:** 1/7/2016 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LGT</b>
Chloride	ND	30		mg/Kg	20	1/7/2016 9:32:26 PM	23106

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 1 of 3
	D	Sample Diluted Due to Matrix	E	Value above quantitation range	
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	% Recovery outside of range due to dilution or matrix			

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1601183**

Date Reported: **1/11/2016**

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** IL-C4-1

**Project:** Illustrated Man Fee Com

**Collection Date:** 1/5/2016 10:00:00 AM

**Lab ID:** 1601183-002

**Matrix:** SOIL

**Received Date:** 1/7/2016 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>LGT</b>	
Chloride	520	30		mg/Kg	20	1/7/2016 9:44:51 PM	23106

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 2 of 3
	D	Sample Diluted Due to Matrix	E	Value above quantitation range	
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	% Recovery outside of range due to dilution or matrix			

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1601183

11-Jan-16

Client: Souder, Miller &amp; Associates

Project: Illustrated Man Fee Com

Sample ID	MB-23106		SampType:	MBLK		TestCode:	EPA Method 300.0: Anions				
Client ID:	PBS		Batch ID:	23106		RunNo:	31326				
Prep Date:	1/7/2016		Analysis Date:	1/7/2016		SeqNo:	959120		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloride	ND	1.5									

Sample ID	LCS-23106		SampType: LCS		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSS		Batch ID: 23106		RunNo: 31326					
Prep Date:	1/7/2016		Analysis Date: 1/7/2016		SeqNo: 959121		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  
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

# Sample Log-In Check List

Client Name: SMA-CARLSBAD

Work Order Number: 1601183

RcptNo: 1

Received by/date:

*SA*

01/07/14

Logged By:

Lindsay Mangin

1/7/2016 10:00:00 AM

*Lindsay Mangin*

Completed By:

Lindsay Mangin

1/7/2016 12:57:49 PM

*Lindsay Mangin*

Reviewed By:

*AG*

01/07/14

## Chain of Custody

1. Custody seals intact on sample bottles?

Yes ☐

No ☐

Not Present ☒

2. Is Chain of Custody complete?

Yes ☒

No ☐

Not Present ☐

3. How was the sample delivered?

Courier

## Log In

4. Was an attempt made to cool the samples?

Yes ☒

No ☐

NA ☐

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

Yes ☒

No ☐

NA ☐

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

Yes ☒

No ☐

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

Yes ☒

No ☐

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

Yes ☒

No ☐

9. Was preservative added to bottles?

Yes ☐

No ☒

NA ☐

10. VOA vials have zero headspace?

Yes ☐

No ☐

No VOA Vials ☒

11. Were any sample containers received broken?

Yes ☐

No ☒

12. Does paperwork match bottle labels?

(Note discrepancies on chain of custody)

Yes ☒

No ☐

13. Are matrices correctly identified on Chain of Custody?

Yes ☒

No ☐

14. Is it clear what analyses were requested?

Yes ☒

No ☐

15. Were all holding times able to be met?

(If no, notify customer for authorization.)

Yes ☒

No ☐

# of preserved  
bottles checked  
for pH:

(&lt;2 or &gt;12 unless noted)

Adjusted?

Checked by:

## Special Handling (if applicable)

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

Yes ☐

No ☐

NA ☒

Person Notified:

Date:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

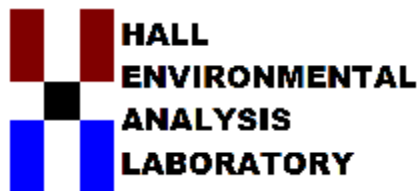
Client Instructions:

17. Additional remarks:

## 18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.7	Good	Yes			





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

November 12, 2015

Austin Weyant  
Souder, Miller & Associates  
201 S Halagueno  
Carlsbad, NM 88221  
TEL: (575) 689-7040  
FAX

RE: Illustrated Man

OrderNo.: 1511281

Dear Austin Weyant:

Hall Environmental Analysis Laboratory received 9 sample(s) on 11/4/2015 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](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

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

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1511281

Date Reported: 11/12/2015

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** BG1 6"

**Project:** Illustrated Man

**Collection Date:** 11/3/2015 11:06:00 AM

**Lab ID:** 1511281-001

**Matrix:** SOIL

**Received Date:** 11/4/2015 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LGT</b>
Chloride	ND	30		mg/Kg	20	11/10/2015 1:24:56 PM	22269
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>KJH</b>
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	11/10/2015 4:05:02 PM	22220
Surr: DNOP	127	70-130		%REC	1	11/10/2015 4:05:02 PM	22220
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/10/2015 11:01:59 PM	22241
Surr: BFB	86.0	75.4-113		%REC	1	11/10/2015 11:01:59 PM	22241
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Methyl tert-butyl ether (MTBE)	ND	0.099		mg/Kg	1	11/10/2015 11:01:59 PM	22241
Benzene	ND	0.050		mg/Kg	1	11/10/2015 11:01:59 PM	22241
Toluene	ND	0.050		mg/Kg	1	11/10/2015 11:01:59 PM	22241
Ethylbenzene	ND	0.050		mg/Kg	1	11/10/2015 11:01:59 PM	22241
Xylenes, Total	ND	0.099		mg/Kg	1	11/10/2015 11:01:59 PM	22241
Surr: 4-Bromofluorobenzene	108	80-120		%REC	1	11/10/2015 11:01:59 PM	22241

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

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



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1511281

Date Reported: 11/12/2015

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** C1

**Project:** Illustrated Man

**Collection Date:** 11/3/2015 9:54:00 AM

**Lab ID:** 1511281-002

**Matrix:** SOIL

**Received Date:** 11/4/2015 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>					Analyst: <b>KJH</b>		
Diesel Range Organics (DRO)	22000	990		mg/Kg	100	11/10/2015 4:26:19 PM	22220
Surr: DNOP	0	70-130	S	%REC	100	11/10/2015 4:26:19 PM	22220
<b>EPA METHOD 8015D: GASOLINE RANGE</b>					Analyst: <b>NSB</b>		
Gasoline Range Organics (GRO)	320	47		mg/Kg	10	11/10/2015 11:25:06 PM	22241
Surr: BFB	161	75.4-113	S	%REC	10	11/10/2015 11:25:06 PM	22241
<b>EPA METHOD 8021B: VOLATILES</b>					Analyst: <b>NSB</b>		
Methyl tert-butyl ether (MTBE)	ND	0.95		mg/Kg	10	11/10/2015 11:25:06 PM	22241
Benzene	0.61	0.47		mg/Kg	10	11/10/2015 11:25:06 PM	22241
Toluene	8.8	0.47		mg/Kg	10	11/10/2015 11:25:06 PM	22241
Ethylbenzene	2.8	0.47		mg/Kg	10	11/10/2015 11:25:06 PM	22241
Xylenes, Total	20	0.95		mg/Kg	10	11/10/2015 11:25:06 PM	22241
Surr: 4-Bromofluorobenzene	128	80-120	S	%REC	10	11/10/2015 11:25:06 PM	22241

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

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

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1511281

Date Reported: 11/12/2015

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** C2

**Project:** Illustrated Man

**Collection Date:** 11/3/2015 10:15:00 AM

**Lab ID:** 1511281-003

**Matrix:** SOIL

**Received Date:** 11/4/2015 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>KJH</b>
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	11/11/2015 12:00:34 PM	22220
Surr: DNOP	95.3	70-130		%REC	1	11/11/2015 12:00:34 PM	22220
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/11/2015 12:58:02 AM	22241
Surr: BFB	86.4	75.4-113		%REC	1	11/11/2015 12:58:02 AM	22241
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Methyl tert-butyl ether (MTBE)	ND	0.097		mg/Kg	1	11/11/2015 12:58:02 AM	22241
Benzene	ND	0.048		mg/Kg	1	11/11/2015 12:58:02 AM	22241
Toluene	ND	0.048		mg/Kg	1	11/11/2015 12:58:02 AM	22241
Ethylbenzene	ND	0.048		mg/Kg	1	11/11/2015 12:58:02 AM	22241
Xylenes, Total	ND	0.097		mg/Kg	1	11/11/2015 12:58:02 AM	22241
Surr: 4-Bromofluorobenzene	109	80-120		%REC	1	11/11/2015 12:58:02 AM	22241

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

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

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1511281

Date Reported: 11/12/2015

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** C3

**Project:** Illustrated Man

**Collection Date:** 11/3/2015 10:18:00 AM

**Lab ID:** 1511281-004

**Matrix:** SOIL

**Received Date:** 11/4/2015 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LGT</b>
Chloride	1200	75		mg/Kg	50	11/11/2015 3:23:48 PM	22269
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>KJH</b>
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	11/11/2015 12:42:11 PM	22220
Surr: DNOP	92.2	70-130		%REC	1	11/11/2015 12:42:11 PM	22220
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/11/2015 1:21:17 AM	22241
Surr: BFB	86.1	75.4-113		%REC	1	11/11/2015 1:21:17 AM	22241
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Methyl tert-butyl ether (MTBE)	ND	0.097		mg/Kg	1	11/11/2015 1:21:17 AM	22241
Benzene	ND	0.049		mg/Kg	1	11/11/2015 1:21:17 AM	22241
Toluene	ND	0.049		mg/Kg	1	11/11/2015 1:21:17 AM	22241
Ethylbenzene	ND	0.049		mg/Kg	1	11/11/2015 1:21:17 AM	22241
Xylenes, Total	ND	0.097		mg/Kg	1	11/11/2015 1:21:17 AM	22241
Surr: 4-Bromofluorobenzene	108	80-120		%REC	1	11/11/2015 1:21:17 AM	22241

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

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

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1511281

Date Reported: 11/12/2015

CLIENT: Souder, Miller &amp; Associates

Client Sample ID: C4

Project: Illustrated Man

Collection Date: 11/3/2015 10:48:00 AM

Lab ID: 1511281-005

Matrix: SOIL

Received Date: 11/4/2015 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LGT</b>
Chloride	3800	150		mg/Kg	100	11/11/2015 3:36:13 PM	22269
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>KJH</b>
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	11/10/2015 5:30:21 PM	22220
Surr: DNOP	95.9	70-130		%REC	1	11/10/2015 5:30:21 PM	22220
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/11/2015 1:44:32 AM	22241
Surr: BFB	86.5	75.4-113		%REC	1	11/11/2015 1:44:32 AM	22241
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Methyl tert-butyl ether (MTBE)	ND	0.096		mg/Kg	1	11/11/2015 1:44:32 AM	22241
Benzene	ND	0.048		mg/Kg	1	11/11/2015 1:44:32 AM	22241
Toluene	ND	0.048		mg/Kg	1	11/11/2015 1:44:32 AM	22241
Ethylbenzene	ND	0.048		mg/Kg	1	11/11/2015 1:44:32 AM	22241
Xylenes, Total	ND	0.096		mg/Kg	1	11/11/2015 1:44:32 AM	22241
Surr: 4-Bromofluorobenzene	108	80-120		%REC	1	11/11/2015 1:44:32 AM	22241

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

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

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1511281

Date Reported: 11/12/2015

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** L1-3'

**Project:** Illustrated Man

**Collection Date:** 11/3/2015 10:00:00 AM

**Lab ID:** 1511281-006

**Matrix:** SOIL

**Received Date:** 11/4/2015 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>KJH</b>
Diesel Range Organics (DRO)	3200	99		mg/Kg	10	11/10/2015 5:51:35 PM	22220
Surr: DNOP	0	70-130	S	%REC	10	11/10/2015 5:51:35 PM	22220
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	290	24		mg/Kg	5	11/11/2015 2:07:45 AM	22241
Surr: BFB	287	75.4-113	S	%REC	5	11/11/2015 2:07:45 AM	22241
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Methyl tert-butyl ether (MTBE)	ND	0.48		mg/Kg	5	11/11/2015 2:07:45 AM	22241
Benzene	ND	0.12		mg/Kg	5	11/11/2015 2:07:45 AM	22241
Toluene	1.6	0.24		mg/Kg	5	11/11/2015 2:07:45 AM	22241
Ethylbenzene	1.0	0.24		mg/Kg	5	11/11/2015 2:07:45 AM	22241
Xylenes, Total	6.9	0.48		mg/Kg	5	11/11/2015 2:07:45 AM	22241
Surr: 4-Bromofluorobenzene	140	80-120	S	%REC	5	11/11/2015 2:07:45 AM	22241

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

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

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1511281

Date Reported: 11/12/2015

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** L2-3'

**Project:** Illustrated Man

**Collection Date:** 11/3/2015 10:31:00 AM

**Lab ID:** 1511281-007

**Matrix:** SOIL

**Received Date:** 11/4/2015 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>KJH</b>
Diesel Range Organics (DRO)	320	9.4		mg/Kg	1	11/10/2015 6:12:57 PM	22220
Surr: DNOP	98.4	70-130		%REC	1	11/10/2015 6:12:57 PM	22220
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	12	5.0		mg/Kg	1	11/11/2015 2:31:00 AM	22241
Surr: BFB	149	75.4-113	S	%REC	1	11/11/2015 2:31:00 AM	22241
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Methyl tert-butyl ether (MTBE)	ND	0.10		mg/Kg	1	11/11/2015 2:31:00 AM	22241
Benzene	ND	0.050		mg/Kg	1	11/11/2015 2:31:00 AM	22241
Toluene	ND	0.050		mg/Kg	1	11/11/2015 2:31:00 AM	22241
Ethylbenzene	ND	0.050		mg/Kg	1	11/11/2015 2:31:00 AM	22241
Xylenes, Total	ND	0.10		mg/Kg	1	11/11/2015 2:31:00 AM	22241
Surr: 4-Bromofluorobenzene	121	80-120	S	%REC	1	11/11/2015 2:31:00 AM	22241

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

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

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1511281

Date Reported: 11/12/2015

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** L3-2'

**Project:** Illustrated Man

**Collection Date:** 11/3/2015 10:38:00 AM

**Lab ID:** 1511281-008

**Matrix:** SOIL

**Received Date:** 11/4/2015 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>KJH</b>
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	11/10/2015 6:34:14 PM	22220
Surr: DNOP	96.9	70-130		%REC	1	11/10/2015 6:34:14 PM	22220
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	11/11/2015 2:54:18 AM	22241
Surr: BFB	86.4	75.4-113		%REC	1	11/11/2015 2:54:18 AM	22241
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Methyl tert-butyl ether (MTBE)	ND	0.093		mg/Kg	1	11/11/2015 2:54:18 AM	22241
Benzene	ND	0.046		mg/Kg	1	11/11/2015 2:54:18 AM	22241
Toluene	ND	0.046		mg/Kg	1	11/11/2015 2:54:18 AM	22241
Ethylbenzene	ND	0.046		mg/Kg	1	11/11/2015 2:54:18 AM	22241
Xylenes, Total	ND	0.093		mg/Kg	1	11/11/2015 2:54:18 AM	22241
Surr: 4-Bromofluorobenzene	111	80-120		%REC	1	11/11/2015 2:54:18 AM	22241

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

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

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1511281

Date Reported: 11/12/2015

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** L4-1'

**Project:** Illustrated Man

**Collection Date:** 11/3/2015 10:48:00 AM

**Lab ID:** 1511281-009

**Matrix:** SOIL

**Received Date:** 11/4/2015 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>KJH</b>
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	11/10/2015 6:55:38 PM	22220
Surr: DNOP	95.4	70-130		%REC	1	11/10/2015 6:55:38 PM	22220
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/11/2015 3:17:27 AM	22241
Surr: BFB	86.6	75.4-113		%REC	1	11/11/2015 3:17:27 AM	22241
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Methyl tert-butyl ether (MTBE)	ND	0.094		mg/Kg	1	11/11/2015 3:17:27 AM	22241
Benzene	ND	0.047		mg/Kg	1	11/11/2015 3:17:27 AM	22241
Toluene	ND	0.047		mg/Kg	1	11/11/2015 3:17:27 AM	22241
Ethylbenzene	ND	0.047		mg/Kg	1	11/11/2015 3:17:27 AM	22241
Xylenes, Total	ND	0.094		mg/Kg	1	11/11/2015 3:17:27 AM	22241
Surr: 4-Bromofluorobenzene	109	80-120		%REC	1	11/11/2015 3:17:27 AM	22241

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

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



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1511281

12-Nov-15

Client: Souder, Miller &amp; Associates

Project: Illustrated Man

Sample ID	MB-22269		SampType:	MBLK		TestCode:	EPA Method 300.0: Anions				
Client ID:	PBS		Batch ID:	22269		RunNo:	30148				
Prep Date:	11/10/2015		Analysis Date:	11/10/2015		SeqNo:	918734		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloride	ND	1.5									

Sample ID	LCS-22269		SampType: LCS		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSS		Batch ID: 22269		RunNo: 30148					
Prep Date:	11/10/2015		Analysis Date: 11/10/2015		SeqNo: 918735		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.7	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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1511281

12-Nov-15

Client: Souder, Miller &amp; Associates

Project: Illustrated Man

Sample ID	MB-22220		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS		Batch ID: 22220		RunNo: 30124					
Prep Date:	11/6/2015		Analysis Date: 11/10/2015		SeqNo: 917919		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		117	70	130			

Sample ID	LCS-22220		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 22220		RunNo: 30124					
Prep Date:	11/6/2015		Analysis Date: 11/10/2015		SeqNo: 917920		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	63	10	50.00	0	126	57.4	139			
Surr: DNOP	7.4		5.000		147	70	130			S

### 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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1511281

12-Nov-15

Client: Souder, Miller &amp; Associates

Project: Illustrated Man

Sample ID	MB-22241		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBS		Batch ID: 22241		RunNo: 30136					
Prep Date:	11/9/2015		Analysis Date: 11/10/2015		SeqNo: 918420		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	860		1000		85.6	75.4	113			

Sample ID	LCS-22241		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSS		Batch ID: 22241		RunNo: 30136					
Prep Date:	11/9/2015		Analysis Date: 11/10/2015		SeqNo: 918421		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	101	79.6	122			
Surr: BFB	930		1000		92.7	75.4	113			

### 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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1511281

12-Nov-15

Client: Souder, Miller &amp; Associates

Project: Illustrated Man

Sample ID	MB-22241		SampType: MBLK		TestCode: EPA Method 8021B: Volatiles					
Client ID:	PBS		Batch ID: 22241		RunNo: 30136					
Prep Date:	11/9/2015		Analysis Date: 11/10/2015		SeqNo: 918501		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	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000		109	80	120			

Sample ID	LCS-22241		SampType: LCS		TestCode: EPA Method 8021B: Volatiles					
Client ID:	LCSS		Batch ID: 22241		RunNo: 30136					
Prep Date:	11/9/2015		Analysis Date: 11/10/2015		SeqNo: 918502		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	0.93	0.10	1.000	0	93.2	67.2	121			
Benzene	0.99	0.050	1.000	0	99.0	80	120			
Toluene	0.98	0.050	1.000	0	98.1	80	120			
Ethylbenzene	1.0	0.050	1.000	0	101	80	120			
Xylenes, Total	3.0	0.10	3.000	0	101	80	120			
Surr: 4-Bromofluorobenzene	1.2		1.000		115	80	120			

### Qualifiers:

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

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit



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: SMA-CARLSBAD

Work Order Number: 1511281

RcptNo: 1

Received by/date:

AT

11/04/15

Logged By: Lindsay Mangin

11/4/2015 12:15:00 PM

*Lindsay Mangin*

Completed By: Lindsay Mangin

11/6/2015 1:14:53 PM

*Lindsay Mangin*

Reviewed By:

KS

11/07/15

### Chain of Custody

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

### Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐
- # of preserved bottles checked for pH:   
(<2 or >12 unless noted)   
Adjusted?   
Checked by:

### Special Handling (if applicable)

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

Person Notified:

Date:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

### 18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.4	Good	Not Present			



# APPENDIX B

## FORM C141 FINAL

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

State of New Mexico  
Energy Minerals and Natural Resources

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

Form C-141  
Revised August 8, 2011

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

## Release Notification and Corrective Action

### OPERATOR

☐ Initial Report ☒ Final Report

Name of Company: COG Operating LLC	Contact: Robert McNeill	
Address: 600 West Illinois Avenue, Midland TX 79701	Telephone No. 432-230-0077	
Facility Name: ILLUSTRATED MAN FEE COM #001H	Facility Type: Battery	
Surface Owner: Fee	Mineral Owner:	API No. 30-015-41025

### LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	12	25S	28E	170'	North	900'	West	Eddy

Latitude 32.1515999 Longitude -104.0465775

### NATURE OF RELEASE

Type of Release: Oil	Volume of Release: 40 bbls Oil	Volume Recovered: 35 bbls Oil
Source of Release: Hole in tank	Date and Hour of Occurrence: 10/12/2015 10:00 am	Date and Hour of Discovery: 10/12/2015 10:00 am
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Mike Bratcher – NMOCD	
By Whom? Amanda Trujillo Davis	Date and Hour: Wed 10/14/2015 4:25 PM	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.\*


Describe Cause of Problem and Remedial Action Taken.\*

This release was caused by a hole in the bottom of the production tank. Vacuum trucks were dispatched to recover standing fluid.

Describe Area Affected and Cleanup Action Taken.\*

This release occurred within a lined containment; however impacted areas appeared on the outside of the containment. This release was addressed per the approved workplan and under the guidance of NMOCD and the BLM.

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

Signature: 	<b><u>OIL CONSERVATION DIVISION</u></b>	
Printed Name: Amanda Trujillo Davis	Approved by Environmental Specialist:	
Title: Senior Environmental Coordinator	Approval Date:	Expiration Date:
E-mail Address: <a href="mailto:atrujillo@concho.com">atrujillo@concho.com</a>	Conditions of Approval:	Attached <input type="checkbox"/>
Date: December 29, 2015 Phone: 575-748-6940		

\* Attach Additional Sheets If Necessary