



November 18, 2016

#5B25425

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

SUBJECT: Final Closure Report for Incident 2RP-3822 Brainard #008, API 30-015-10453, Unit O, Section 34-Township 18S-Range 29E NMPM, Eddy County, New Mexico

Dear Ms. Patterson:

On behalf of Remnant Oil Operating, LLC (Remnant), Souder Miller & Associates (SMA) is pleased to submit a Final Closure Report for the release (Incident 2RP-3822) at the Brainard #008 in Eddy County, New Mexico. The purpose of the Final Report is to obtain approval from the New Mexico Oil Conservation Division (NMOCD) for the closure of the release that occurred on Bureau of Land Management property on August 2, 2016.

SMA responded at the request of Remnant to assess the release of oil and water as a result of overspray from a relief valve associated with the Brainard #008 location. The release was initially reported to NMOCD by Remnant on August 8, 2016. The table below summarizes information regarding the release. Results of the assessment and delineation follow in the attached document.

Table 1: Release information and Site Ranking					
Name	Brainard #008				
Location	Incident Number	API Number	Section, Township, Range		
	2RP-3822	30-015-10453	SW/SE (O Unit )	Section 34	T18S, R29E NMPM
Estimated Date of Release	August 2, 2016				
Date Reported to NMOCD	August 8, 2016				
Reported by	Carie Stoker				
Land Owner	Bureau of Land Management				
Reported To	NM Oil Conservation Division (NMOCD)				
Source of Release	Relief Valve				
Released Material	Oil and Water				
Released Volume	10 bbls				
Recovered Volume	0 bbls				
Net Release	10 bbls				
Nearest Waterway	15 miles West of the location				

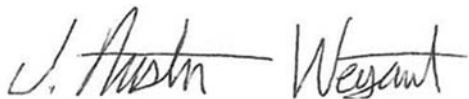
Depth to Groundwater	Estimated to be 220 feet below ground surface
Nearest Domestic Water Source	Greater than 1,000 feet
NMOCD Ranking	0
SMA Response Dates	9/12/2016 and 10/20/2016
Subcontractors	
Disposal Facility	None required

Attached is a copy of the C-141 final located in Appendix B. For questions or comments pertaining to the release or the attached Closure Report please feel free to contact either of us.

Submitted by:

Reviewed by:

SOUDER, MILLER & ASSOCIATES



Austin Weyant  
Project Scientist



Shawna Chubbuck  
Senior Scientist



Souder, Miller & Associates ♦ 201 S. Halagueno St. ♦ Carlsbad, NM 88220  
(575) 689-7040

**FINAL CLOSURE FOR INCIDENT 2RP-3822**  
**REMNANT OIL OPERATING, LLC**  
**BRAINARD #008**

**UL O, SECTION 34, T18S R29E, NMPM**  
**EDDY COUNTY, NM**  
**NOVEMBER 18, 2016**



**Submitted To:**  
Remnant Oil Operating, LLC  
P.O. Box 5375  
Midland, TX 79704  
(432) 644-7659

**Submitted By:**  
Souder, Miller & Associates  
201 S. Halagueno  
Carlsbad, NM 88221  
(575) 689-7040

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Table 3: Summary of Laboratory Analyses

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Appendix B: Form C141 Final

## **1.0 Introduction**

On behalf of Remnant, Souder, Miller & Associates (SMA) has prepared this report that describes the assessment, and subsequent mitigation of as a result of overspray from a relief valve associated with the Brainard #008. The site is located in Section 34, Township 18S, Range 29E NMPM, Eddy County, New Mexico, on federal land administered by the Bureau Land Management. Figure 1 illustrates the vicinity and location of the site. Remnant tasked SMA to sample the release location.

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

The release site is located approximately 15.6 miles east of the Pecos River, with an elevation of approximately 3,416 feet above sea level. After evaluation of the site using aerial photography and topographic maps, depth to groundwater is estimated to be 221 feet below ground surface (bgs).

SMA searched the New Mexico State Engineer's Office online water well database for water wells in the vicinity of the release. One well is located within a one-mile radius of the site, approximately 1200 feet to the southwest. Figure 1 depicts the site vicinity and Figure 2 shows the site itself. The physical location of this release is within the jurisdiction of NMOCD.

## **3.0 Assessment and Initial Results**

On September 12, 2016 after receiving 811 clearance, SMA field personnel assessed the release area. The potentially affected area was determined to be approximately 60 feet long and 10 feet wide. Samples were collected to depths of 0.5 feet bgs. Specific sample locations for all samples are depicted on Figure 2 (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 analyses including Total Chlorides using EPA Method 300.0, BTEX EPA Method 8021, and TPH EPA Method 8015.

On October 20, 2016 after receiving 811 clearance, SMA field personnel reassessed the release area. Samples were collected to depths of one foot bgs. Specific sample locations for all samples are depicted on Figure 2 (Sample Location Map). All samples were collected and processed per NMOCD soil sampling procedures. The samples were sent under chain-of-custody protocols to Hall Environmental Analysis Laboratory for analysis for Total Chlorides using EPA Method 300.0.

## **4.0 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 0: 10 ppm (mg/kg) Benzene, 50 ppm total BTEX, and 5,000 ppm TPH. The release consisted of oil and water as a result of overspray from a relief valve.

Laboratory analytical results for all samples collected were below NMOCD closure standards for Benzene, BTEX, and TPH. No further remedial activities are recommended. A summary of laboratory analytical results is included in Table 3. Laboratory reports are included in Appendix A.

Photo documentation is available by request.

## **5.0 Closure and Limitations**

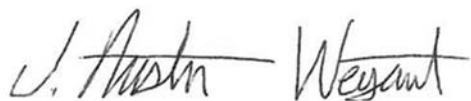
The scope of SMA services consisted of the performance of confirmatory spill and spill closure sampling, regulatory liaison, and preparation of this Closure Report. All work has been performed in accordance with generally accepted professional environmental consulting practices for oil and gas releases 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



Shawna Chubbuck  
Senior Scientist

### **Figures:**

Figure 1: Vicinity Map

Figure 2: Site and Sample Map

### **Tables:**

Table 1: Release Information and Site Ranking

Table 2: Summary of Field Screening Results

Table 3: Summary of Laboratory Analyses

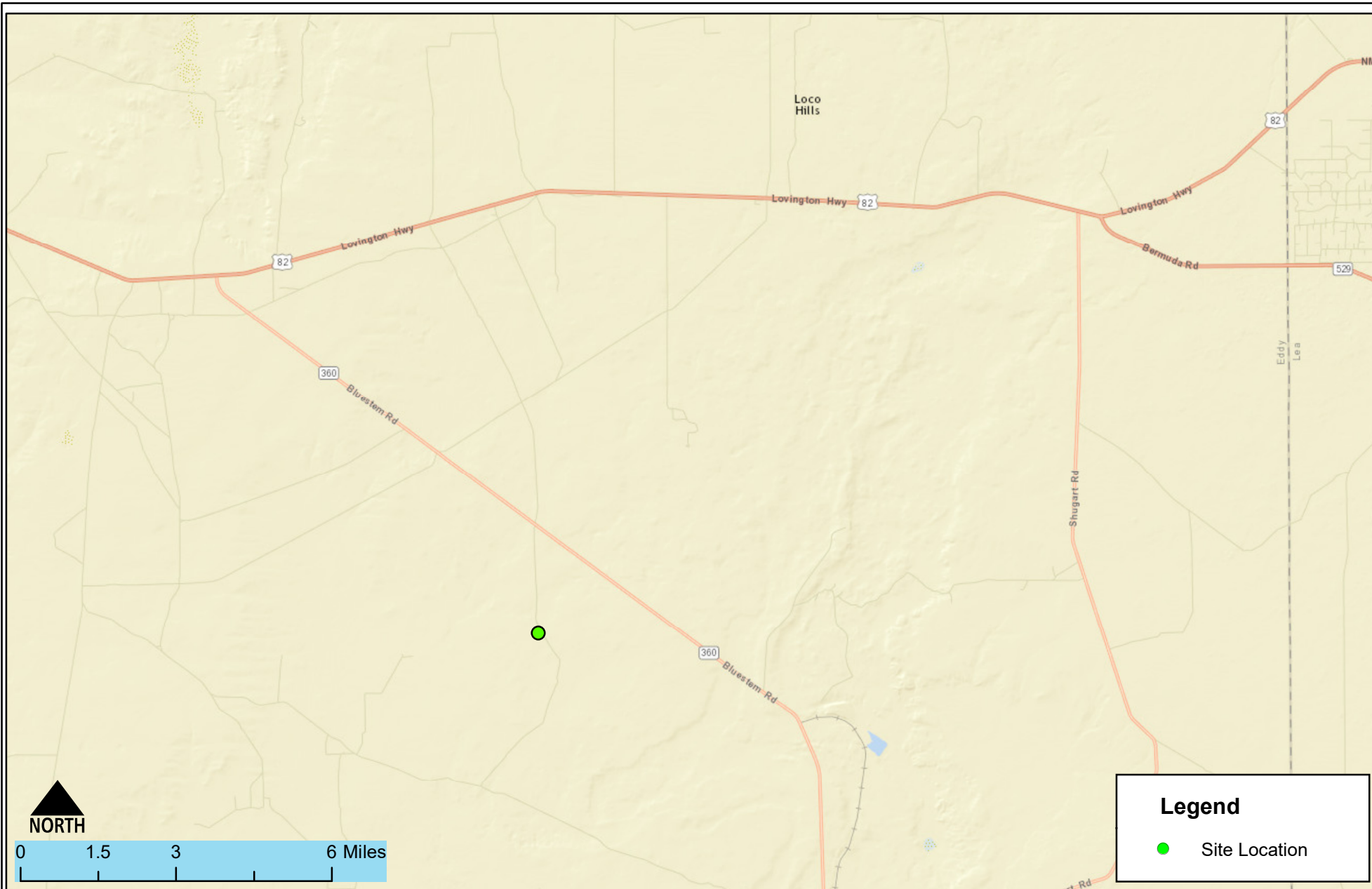
### **Appendices:**

Appendix A: Laboratory Analytical Reports

Appendix B: Form C141 Final

# FIGURE 1 VICINITY MAP





Vicinity Map  
Brainard #8 - Remnant Oil  
Loco Hills, New Mexico

Figure 1

Date Saved:  
10/26/2016

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

Copyright 2015 Souder, Miller & Associates - All Rights Reserved

Drawn	Lucas Middleton
Checked	
Approved	



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# FIGURE 2

## SITE AND SAMPLE MAP



**Legend**

- Sample Locations
- Estimated Spill Area

Site and Sample Map  
Brainard #8 - Remanant  
Loco Hills, New Mexico

Figure 2

Date Saved: 11/9/2016	Revisions		
	By: _____	Date: _____	Descr: _____
	By: _____	Date: _____	Descr: _____
Copyright 2015 Souder, Miller & Associates - All Rights Reserved			

Drawn	Lucas Middleton
Checked	_____
Approved	_____



201 South Halaguena Street Carlsbad, New Mexico 88221  
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# TABLE 1

## RELEASE INFORMATION AND SITE RANKING

Table 1: Release information and Site Ranking					
Name	Brainard #008				
Location	Incident Number	API Number	Section, Township, Range		
	2RP-3822	30-015-10453	SW/SE (O Unit )	Section 34	T18S, R29E NMPM
Estimated Date of Release	August 2, 2016				
Date Reported to NMOCD	August 8, 2016				
Reported by	Carie Stoker				
Land Owner	Bureau of Land Management				
Reported To	NM Oil Conservation Division (NMOCD)				
Source of Release	Relief Valve				
Released Material	Oil and Water				
Released Volume	10 bbls				
Recovered Volume	0 bbls				
Net Release	10 bbls				
Nearest Waterway	15 miles West of the location				
Depth to Groundwater	Estimated to be 220 feet below ground surface				
Nearest Domestic Water	Greater than 1,000 feet				
NMOCD Ranking	0				
SMA Response Dates	9/12/2016 and 10/20/2016				
Subcontractors					
Disposal Facility	None required				
Estimated Yd <sup>3</sup>					



# TABLE 2

## SUMMARY OF FIELD SCREENING RESULTS

**TABLE 2: FIELD SCREENING RESULTS SUMMARY**

Date	Time	Field Screening Reference	Sample Depth (Feet BGS)	PID Reading	Chlorides Results	Lab Sample Collected Y/N
9/12/2016	9:00	L1-0.5	0.5'	-	-	Y
9/12/2016	9:00	L2-0.5	0.5'	-	-	Y
9/12/2016	9:00	L3-0.5	0.5'	-	-	Y
10/20/2016	8:00	L1-1	1'	-	0.22	Y
10/20/2016	8:00	L2-1	1'	-	0.40	Y
10/20/2016	8:00	L3-1	1'	-	0.37	Y

# TABLE 3

## SUMMARY OF LABORATORY ANALYSES



**TABLE 3: SUMMARY OF LABORATORY ANALYSES**

Analytical Report- 1609D28, 1611166	Sample Number on Figure 2 Map	Sample Date	Depth	BTEX ppm	Benzene mg/Kg	GRO mg/Kg	DRO mg/Kg	Cl- mg/Kg
NMOCD Site Ranking: 0				50 ppm	10 ppm	5,000 ppm		
1609D28-001	L1-0.5	9/12/2016	0.5'	<0.095	<0.024	-	-	<30
1609D28-002	L2-0.5	9/12/2016	0.5'	<0.095	<0.024	<4.8	14	880
1609D28-003	L3-0.5	9/12/2016	0.5'	<0.097	<0.024	-	-	750
1611166-001	L1-1	10/20/2016	1'	-	-	-	-	250
1611166-002	L2-1	10/20/2016	1'	-	-	-	-	320
1611166-003	L3-1	10/20/2016	1'	-	-	-	-	310

# 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)

October 03, 2016

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

RE: Brainard #8

OrderNo.: 1609D28

Dear Austin Weyant:

Hall Environmental Analysis Laboratory received 3 sample(s) on 9/23/2016 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 1609D28

Date Reported: 10/3/2016

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** L1-05

**Project:** Brainard #8

**Collection Date:** 9/12/2016 9:00:00 AM

**Lab ID:** 1609D28-001

**Matrix:** SOIL

**Received Date:** 9/23/2016 9:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LGT</b>
Chloride	ND	30		mg/Kg	20	9/29/2016 4:03:45 PM	27802
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Methyl tert-butyl ether (MTBE)	ND	0.095		mg/Kg	1	9/26/2016 11:11:25 AM	27678
Benzene	ND	0.024		mg/Kg	1	9/26/2016 11:11:25 AM	27678
Toluene	ND	0.047		mg/Kg	1	9/26/2016 11:11:25 AM	27678
Ethylbenzene	ND	0.047		mg/Kg	1	9/26/2016 11:11:25 AM	27678
Xylenes, Total	ND	0.095		mg/Kg	1	9/26/2016 11:11:25 AM	27678
Surr: 4-Bromofluorobenzene	94.1	80-120		%Rec	1	9/26/2016 11:11:25 AM	27678

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	W	Sample container temperature is out of limit as specified

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1609D28

Date Reported: 10/3/2016

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** L2-05

**Project:** Brainard #8

**Collection Date:** 9/12/2016 9:00:00 AM

**Lab ID:** 1609D28-002

**Matrix:** SOIL

**Received Date:** 9/23/2016 9:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LGT</b>
Chloride	880	30		mg/Kg	20	9/29/2016 5:05:48 PM	27802
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	14	9.2		mg/Kg	1	9/27/2016 7:52:15 PM	27685
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	9/27/2016 7:52:15 PM	27685
Surr: DNOP	92.2	70-130		%Rec	1	9/27/2016 7:52:15 PM	27685
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	9/26/2016 11:34:53 AM	27678
Surr: BFB	79.2	68.3-144		%Rec	1	9/26/2016 11:34:53 AM	27678
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Methyl tert-butyl ether (MTBE)	ND	0.095		mg/Kg	1	9/26/2016 11:34:53 AM	27678
Benzene	ND	0.024		mg/Kg	1	9/26/2016 11:34:53 AM	27678
Toluene	ND	0.048		mg/Kg	1	9/26/2016 11:34:53 AM	27678
Ethylbenzene	ND	0.048		mg/Kg	1	9/26/2016 11:34:53 AM	27678
Xylenes, Total	ND	0.095		mg/Kg	1	9/26/2016 11:34:53 AM	27678
Surr: 4-Bromofluorobenzene	92.5	80-120		%Rec	1	9/26/2016 11:34:53 AM	27678

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	W	Sample container temperature is out of limit as specified

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1609D28**

Date Reported: **10/3/2016**

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** L3-05

**Project:** Brainard #8

**Collection Date:** 9/12/2016 9:00:00 AM

**Lab ID:** 1609D28-003

**Matrix:** SOIL

**Received Date:** 9/23/2016 9:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LGT</b>
Chloride	750	30		mg/Kg	20	9/29/2016 5:18:12 PM	27802
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Methyl tert-butyl ether (MTBE)	ND	0.097		mg/Kg	1	9/26/2016 11:58:27 AM	27678
Benzene	ND	0.024		mg/Kg	1	9/26/2016 11:58:27 AM	27678
Toluene	ND	0.048		mg/Kg	1	9/26/2016 11:58:27 AM	27678
Ethylbenzene	ND	0.048		mg/Kg	1	9/26/2016 11:58:27 AM	27678
Xylenes, Total	ND	0.097		mg/Kg	1	9/26/2016 11:58:27 AM	27678
Surr: 4-Bromofluorobenzene	92.2	80-120		%Rec	1	9/26/2016 11:58:27 AM	27678

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	W	Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1609D28

03-Oct-16

Client: Souder, Miller &amp; Associates

Project: Brainard #8

Sample ID	MB-27802		SampType: MBLK		TestCode: EPA Method 300.0: Anions					
Client ID:	PBS		Batch ID: 27802		RunNo: 37592					
Prep Date:	9/29/2016		Analysis Date: 9/29/2016		SeqNo: 1170045		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-27802		SampType: LCS		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSS		Batch ID: 27802		RunNo: 37592					
Prep Date:	9/29/2016		Analysis Date: 9/29/2016		SeqNo: 1170046		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.0	90	110			

### Qualifiers:

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

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



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1609D28

03-Oct-16

Client: Souder, Miller &amp; Associates

Project: Brainard #8

Sample ID	LCS-27685		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 27685		RunNo: 37494					
Prep Date:	9/26/2016		Analysis Date: 9/27/2016		SeqNo: 1166208		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	50.00	0	96.7	62.6	124			
Surr: DNOP	4.5		5.000		90.9	70	130			

Sample ID	MB-27685		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS		Batch ID: 27685		RunNo: 37494					
Prep Date:	9/26/2016		Analysis Date: 9/27/2016		SeqNo: 1166209		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	9.0		10.00		90.1	70	130			

Sample ID	MB-27738		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS		Batch ID: 27738		RunNo: 37494					
Prep Date:	9/27/2016		Analysis Date: 9/28/2016		SeqNo: 1167146		Units: %Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.7		10.00		87.1	70	130			

Sample ID	LCS-27738		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 27738		RunNo: 37494					
Prep Date:	9/27/2016		Analysis Date: 9/28/2016		SeqNo: 1167147		Units: %Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.6		5.000		91.2	70	130			

### Qualifiers:

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

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1609D28

03-Oct-16

Client: Souder, Miller &amp; Associates

Project: Brainard #8

Sample ID	MB-27678		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBS		Batch ID: 27678		RunNo: 37478					
Prep Date:	9/23/2016		Analysis Date: 9/26/2016		SeqNo: 1165408		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	760		1000		76.3	68.3	144			

Sample ID	LCS-27678		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSS		Batch ID: 27678		RunNo: 37478					
Prep Date:	9/23/2016		Analysis Date: 9/26/2016		SeqNo: 1165409		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	105	74.6	123			
Surr: BFB	860		1000		86.0	68.3	144			

### Qualifiers:

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

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1609D28

03-Oct-16

Client: Souder, Miller &amp; Associates

Project: Brainard #8

Sample ID	MB-27678		SampType: MBLK		TestCode: EPA Method 8021B: Volatiles					
Client ID:	PBS		Batch ID: 27678		RunNo: 37478					
Prep Date:	9/23/2016		Analysis Date: 9/26/2016		SeqNo: 1165424		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		89.5	80	120			

Sample ID	LCS-27678		SampType: LCS		TestCode: EPA Method 8021B: Volatiles					
Client ID:	LCSS		Batch ID: 27678		RunNo: 37478					
Prep Date:	9/23/2016		Analysis Date: 9/26/2016		SeqNo: 1165425		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	0.86	0.10	1.000	0	85.7	61	143			
Benzene	0.91	0.025	1.000	0	90.7	75.3	123			
Toluene	0.94	0.050	1.000	0	93.5	80	124			
Ethylbenzene	0.95	0.050	1.000	0	94.7	82.8	121			
Xylenes, Total	2.8	0.10	3.000	0	93.5	83.9	122			
Surr: 4-Bromofluorobenzene	0.97		1.000		97.3	80	120			

### Qualifiers:

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



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: 1609D28

RcptNo: 1

Received by/date: AS 09/23/16

Logged By: Michelle Garcia 9/23/2016 9:20:00 AM *Michelle Garcia*

Completed By: Michelle Garcia 9/23/2016 10:35:13 AM *Michelle Garcia*

Reviewed By: *my/AS 09/23/16*

### Chain of Custody

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

### Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? 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:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	_____		
Client Instructions:	_____		

17. Additional remarks:

### 18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.4	Good	Yes			



# HALL ENVIRONMENTAL ANALYSIS LABORATORY

**www.hallenvironmental.com**

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

Chain-of-Custody Record						
Client: SMA		<input checked="" type="checkbox"/> Standard <input type="checkbox"/> Rush Project Name: BRAZNAID #8				
Mailing Address: 201 S HAWTHORNS		Project #:				
Phone #:		Project Manager: ASION				
email or Fax#:		Sampler: / SAW				
QA/QC Package:		On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				
<input type="checkbox"/> Standard <input type="checkbox"/> Level 4 (Full Validation)		Sample Temperature: 4.40C				
Accreditation:						
<input type="checkbox"/> NELAP <input type="checkbox"/> Other						
<input type="checkbox"/> EDD (Type)						
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.
9/12	9:00	SOIL	L1-0.5	40# 1		116091D28
9/12	9:00	SOIL	L2-0.5	40# 1		001
9/12	9:00	SOIL	L3-0.5	40# 1		002
9/12	9:00					003
Date:	Time:	Relinquished by:	Received by: Date Time			
22/16	0800		Amr/Amr 09/23/16 09:20			
Date:	Time:	Relinquished by:	Received by: Date Time			

Any sub-contracted data will be clearly notated on the analytical report. This serves as notice of this possibility. Any sub-contracted data may be subcontracted to other accredited laboratories. Any sub-contracted data will be clearly notated on the analytical report. Any sub-contracted data may be subcontracted to other accredited laboratories. Any sub-contracted data will be clearly notated on the analytical report.



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November 08, 2016

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

RE: Brainard 8

OrderNo.: 1611166

Dear Austin Weyant:

Hall Environmental Analysis Laboratory received 3 sample(s) on 11/1/2016 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

**Analytical Report**Lab Order: **1611166**Date Reported: **11/8/2016****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Souder, Miller & Associates  
**Project:** Brainard 8**Lab Order:** 1611166**Lab ID:** 1611166-001**Collection Date:** 10/20/2016 8:00:00 AM**Client Sample ID:** L1-1**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LGT</b>
Chloride	250	30		mg/Kg	20	11/4/2016 12:12:40 PM	28485

**Lab ID:** 1611166-002**Collection Date:** 10/20/2016 8:00:00 AM**Client Sample ID:** L2-1**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LGT</b>
Chloride	320	30		mg/Kg	20	11/4/2016 1:14:44 PM	28485

**Lab ID:** 1611166-003**Collection Date:** 10/20/2016 8:00:00 AM**Client Sample ID:** L3-1**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LGT</b>
Chloride	310	30		mg/Kg	20	11/4/2016 1:27:09 PM	28485

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	W	Sample container temperature is out of limit as specified



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1611166

08-Nov-16

Client: Souder, Miller &amp; Associates

Project: Brainard 8

Sample ID	MB-28485		SampType:	MBLK		TestCode:	EPA Method 300.0: Anions				
Client ID:	PBS		Batch ID:	28485		RunNo:	38480				
Prep Date:	11/4/2016		Analysis Date:	11/4/2016		SeqNo:	1201762		Units:	mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloride	ND	1.5									

Sample ID	LCS-28485		SampType: LCS		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSS		Batch ID: 28485		RunNo: 38480					
Prep Date:	11/4/2016		Analysis Date: 11/4/2016		SeqNo: 1201763		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.3	90	110			

### Qualifiers:

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

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



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## Sample Log-In Check List

Client Name: SMA-CARLSBAD

Work Order Number: 1611166

RcptNo: 1

Received by/date:

Logged By: Ashley Gallegos

Completed By: Ashley Gallegos

Reviewed By:

11/01/16 10:00:00 AM

11/2/2016 9:50:44 PM

### 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 ☒

# of preserved  
bottles checked  
for pH:

12. Does paperwork match bottle labels?

Yes ☒

No ☐

(<2 or >12 unless noted)

(Note discrepancies on chain of custody)

13. Are matrices correctly identified on Chain of Custody?

Yes ☒

No ☐

Adjusted?

14. Is it clear what analyses were requested?

Yes ☒

No ☐

Checked by:

15. Were all holding times able to be met?

Yes ☒

No ☐

(If no, notify customer for authorization.)

### Special Handling (if applicable)

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

Yes ☐

No ☐

NA ☒

Person Notified:

Date:

By Whom:

Via:

eMail

Phone

Fax

In Person

Regarding:

Client Instructions:

17. Additional remarks:

### 18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.1	Good	Yes			

☐ Standard ☐ Rush

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<input type="checkbox"/> Standard <input type="checkbox"/> Rush	
Project Name: <b>Brainard 8</b>	
Project #:	
Project Manager: Austin Weyant	
Sampler: <b>LCM</b> On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Sample Temperature: <b>4.10C</b>	HEAL No. <b>116111666</b> <b>-001</b> <b>-002</b> <b>-003</b> <b>-004</b>
Date <b>4/6 8:00</b>	Matrix <b>Soil</b>
Time <b>8:00</b>	Sample Request ID <b>L1-1</b> <del><b>L1-1</b></del> <b>L2-1</b> <del><b>L2-1</b></del> <b>L3-1</b> <del><b>L3-1</b></del>
Container Type and # <b>402</b>	Preservative Type <b>LCM</b>
Received by: <b>am/Ann</b>	Date <b>11/01/16</b>
Relinquished by: <b>am/Ann</b>	Date <b>11/01/16</b>

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

# APPENDIX B

## FORM C141 FINAL