



June 27, 2018

#5E27122-BG3

NMOCD District II  
Mike Bratcher  
1301 W Grand Ave  
Artesia, NM 88210

SUBJECT: SOIL REMEDIATION CLOSURE REPORT FOR THE CYPRESS FEE 23 27 9 No. 002H (2RP-4705-0) , EDDY COUNTY, NEW MEXICO

Dear Mr. Bratcher:

On behalf of Marathon Oil Company (Marathon), Souder, Miller & Associates (SMA) has prepared this CLOSURE REPORT that describes the assessment, delineation and remediation for a release associated with the Cypress Fee 23 27 9 No. 002H (“Cypress Fee No. 2”) . The site is in UNIT L, SECTION 9, TOWNSHIP 23S, RANGE 27E, NMPM, Eddy County, New Mexico, on private land. Figure 1 illustrates the vicinity and location of the site. Table 1 summarizes information regarding the release.

<b>Table 1: Release information and Site Ranking</b>	
Name	Cypress Fee 23 27 9 No. 002H
Company	Marathon Oil Company
Incident Number	2RP-4705-0
API Number	30-015-44374
Location	32.31677158N, -104.20183140W
Estimated Date of Release	4/1/2018
Date Reported to NMOCD	4/1/2018
Land Owner	Private
Reported To	NMOCD District II
Source of Release	Transfer Pump
Released Material	Produced Water
Released Volume	15 bbls
Recovered Volume	8 bbls
Net Release	7 bbls
Nearest Waterway	0.8 miles Northwest of Cass Draw
Depth to Groundwater	Estimated to be greater than 100 feet
Nearest Domestic Water Source	Greater than 1,000 feet
NMOCD Ranking	0
SMA Response Dates	5/22/2018, 6/13/2018

## **1.0 Background**

On April 1, 2018, A centerline bottle washout on the water transfer pump at the Cypress Fee No. 2 Facility caused approximately 15 bbl. of produced water to be released around the water transfer pump and a Poseidon tank that has since been removed. A vacuum truck was mobilized and recovered standing fluids and a surficial scrape was completed.

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

The release site is located approximately 7.32 miles South of Carlsbad, with an elevation of approximately 3,159 feet above sea level. SMA searched the New Mexico State Engineer's Office (NMOSE) online water well database for water wells in the vicinity of the release. Two wells were used to determine the depth to groundwater at this location. Wells C04044 and C00195 show that after elevation correction was performed using topographic maps and aerial photography, the estimated depth to groundwater is between 114 and 161 feet bgs.

Recommended Remediation Action Levels (RRALs) are determined by the site ranking according to the NMOCD *Guidelines for Remediation of Leaks, Spills, and Releases* (1993). Below in Table 2 are the remediation standards and the site ranking for this location. Justification for this site ranking is found in Figure 1 and Appendix B.

Table 2.

<b>Soil Remediation Standards</b>	<b>0 to 9</b>	<b>10 to 19</b>	<b>&gt;19</b>
<b>Benzene</b>	<b>10 PPM</b>	<b>10 PPM</b>	<b>10 PPM</b>
<b>BTEX</b>	<b>50 PPM</b>	<b>50 PPM</b>	<b>50 PPM</b>
<b>TPH</b>	<b>5000 PPM</b>	<b>1000 PPM</b>	<b>100 PPM</b>

<b>Depth to Groundwater</b>	<b>NMOCD Numeric Rank</b>
< 50 BGS = 20	
50' to 99' = 10	
>100' = 0	0
<b>Distance to Nearest Surface Water</b>	<b>NMOCD Numeric Rank</b>
< 200' = 20	
200' - 1000' = 10	
>1000' = 0	0
<b>Well Head Protection</b>	<b>NMOCD Numeric Rank</b>
<1000' (or <200' domestic) = 20	
> 1000' = 0	0
<b>Total Site Ranking</b>	<b>0</b>

## **3.0 Release Characterization**

On May 22, 2018, SMA field personnel assessed the release area. The site had previously been scraped by Marathon Oil. Five sample locations (L1-L5) were established by SMA in and around the vicinity of the release to characterize and delineate the release. Samples were collected to a depth of

0.5 feet, with the exception of L2 which was able to be advanced to 1 foot. 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 MRO, DRO, and GRO by EPA Method 8015D, BTEX by EPA Method 8021, and Chlorides by Method 300. Sample locations are depicted on Figure 2. All laboratory results are summarized in Table 3. Laboratory reports are included in Appendix C.

Laboratory results indicated high concentration of chlorides at locations L1 (to 0.5 foot) and L3 (surface only), and elevated TPH at the surface of location L5.

#### **4.0 Soil Remediation**

On June 13, 2018, after approval from area utilities via 811, SMA field personnel returned to the location with a backhoe service to guide the excavation of soils. Sample locations L1 and L5 were advanced to 1 foot bgs and confirmation samples were collected, as well four sidewall soil samples (SW1-SW4). All other locations were left at the previously-excavated depth of 0.5-foot bgs.

The samples were sent under chain-of-custody protocols to Hall for analysis for MRO, DRO, and GRO by EPA Method 8015D, and Chlorides by Method 300. All closure samples are within NMOCD's recommended remediation action levels (RRAL's). No further action is recommended at this location.

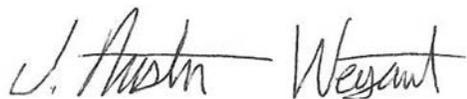
#### **5.0 Scope and Limitations**

The scope of our services consisted of the performance of assessment sampling, verification of release stabilization, 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 575-689-8801 or Shawna Chubbuck at 505-325-7535.

Submitted by:

SOUDER, MILLER & ASSOCIATES



Austin Weyant  
Project Scientist

Reviewed by:



Shawna Chubbuck  
Senior Scientist

**ATTACHMENTS:**

**Figures:**

Figure 1: Vicinity and Well Head Protection Map

Figure 2: Site and Sample Location Map

**Tables:**

Table 3: Summary of Sample Results

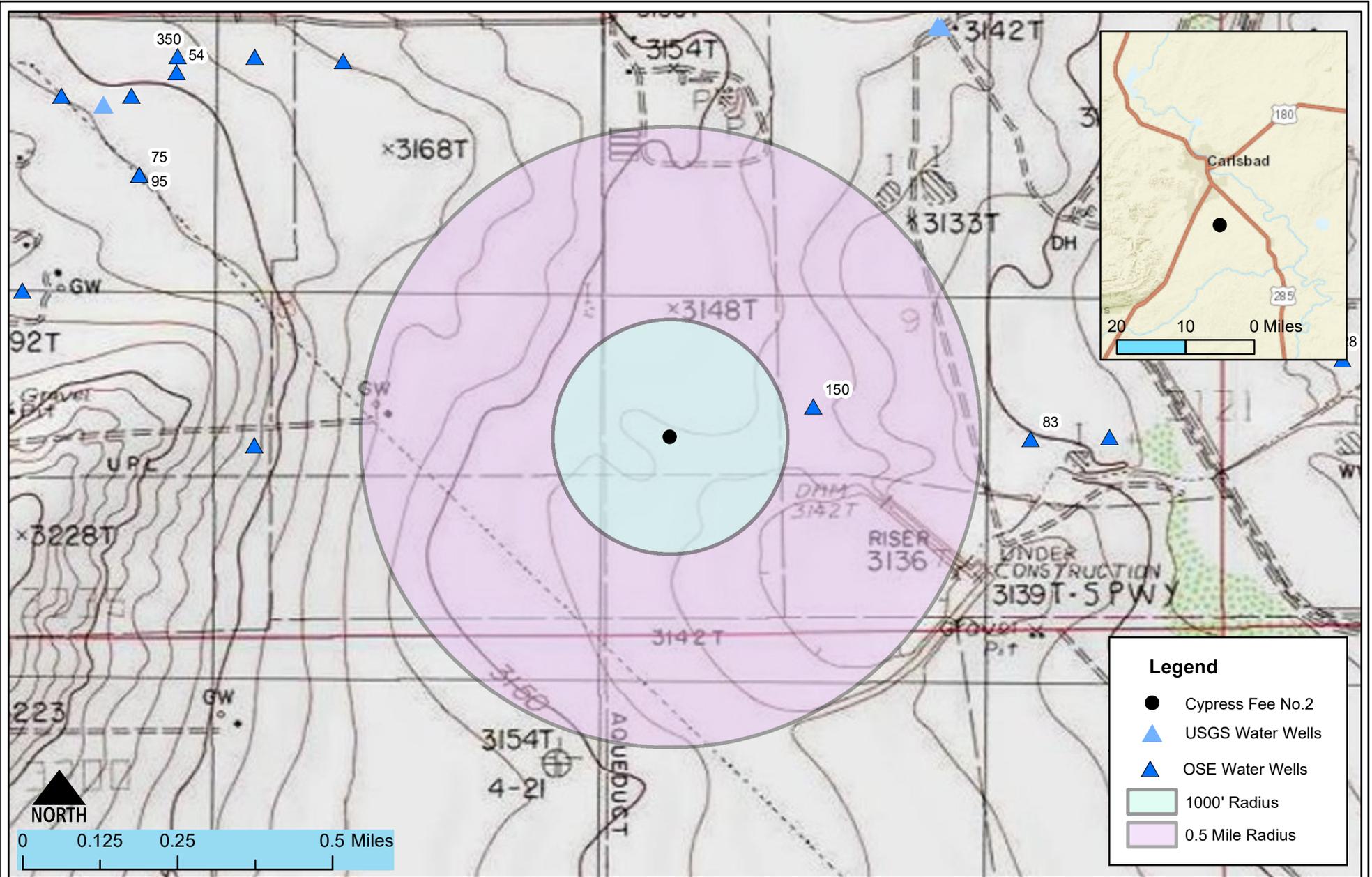
**Appendices:**

Appendix A: Form C141 Initial and Final

Appendix B: NMOSE Wells Report

Appendix C: Laboratory Analytical Reports

**FIGURE 1**  
**VICINITY AND NMOSE**  
**DATA MAP**



OSE & USGS Vicinity & Well Head Protection Map  
 Cypress Fee No. 2 - Marathon Oil  
 Eddy County, New Mexico

Figure 1

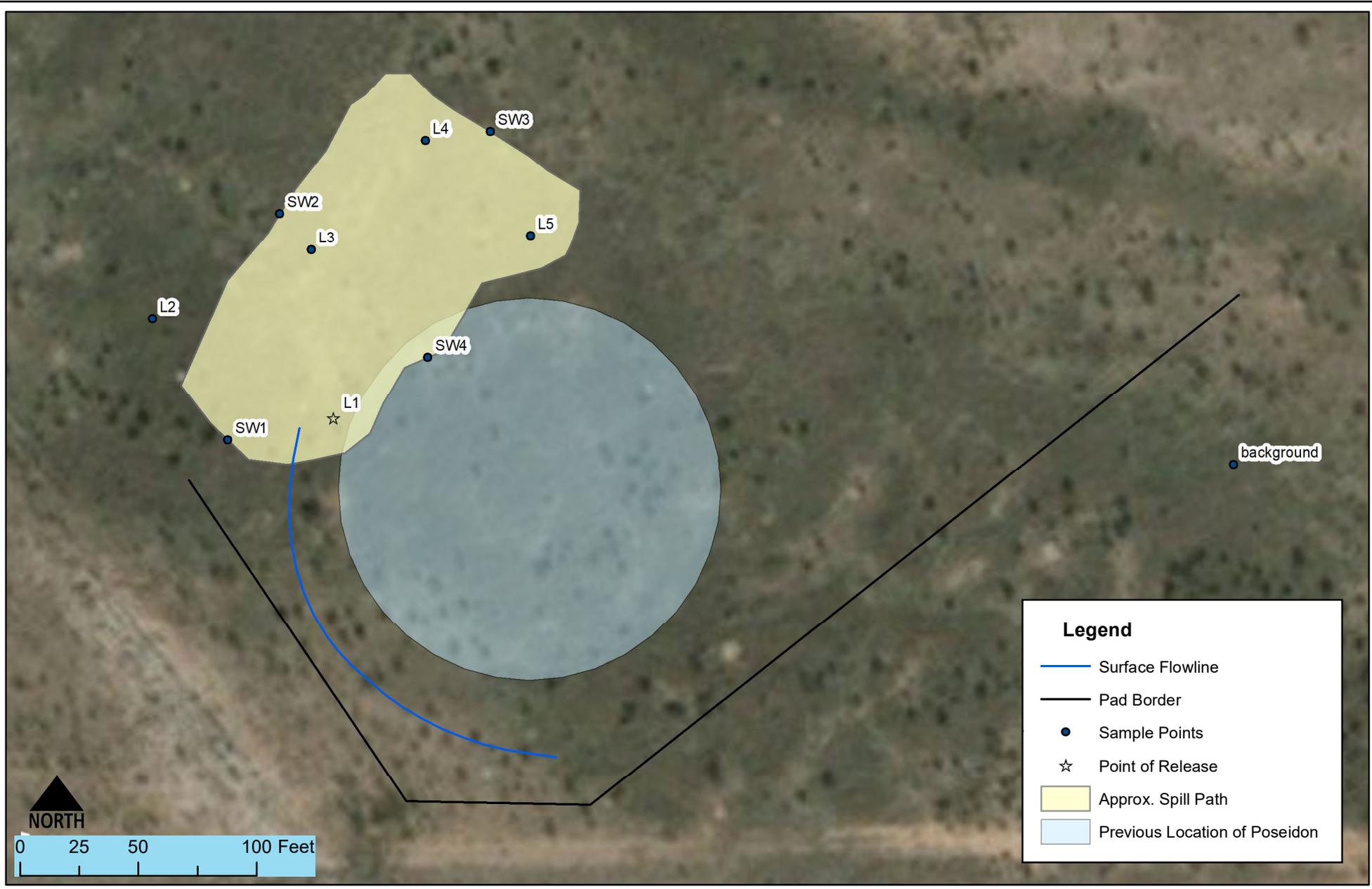
Date Saved: 6/19/2018	By: _____	Date: _____	Revisions	Descr: _____
	By: _____	Date: _____		Descr: _____
Copyright 2015 Souder, Miller & Associates - All Rights Reserved				

Drawn	<u>Melodie Sanjari</u>
Checked	_____
Approved	_____



201 South Halaguena Street  
 Carlsbad, New Mexico 88221  
 (575) 689-7040  
 www.soudermiller.com  
 Serving the Southwest & Rocky Mountains

**FIGURE 2**  
**SITE AND SAMPLE**  
**LOCATION MAP**



Site & Sample Location Map  
 Cypress Fee No. 2 - Marathon Oil  
 Eddy County, New Mexico

Figure 2

Date Saved: 6/27/2018	By: _____	Date: _____	Revisions	Descr: _____
	By: _____	Date: _____		Descr: _____
Copyright 2015 Souder, Miller & Associates - All Rights Reserved				

Drawn	<u>Melodie Sanjari</u>
Checked	_____
Approved	_____



201 South Halaguena Street  
 Carlsbad, New Mexico 88221  
 (575) 689-7040  
 www.soudermiller.com  
 Serving the Southwest & Rocky Mountains

**TABLE 3**  
**SUMMARY SAMPLE RESULTS**



**APPENDIX A**  
**FORM C141 INITIAL AND 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

Form C-141  
Revised April 3, 2017

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

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 Marathon Oil Permian LLC	Contact Callie Karrigan
Address 5555 San Felipe Street, Houston, Texas 77056	Telephone No. 405-202-1028 (cell) 575-297-0956 (office)
Facility Name: Cypress Fee 23 27 9 No. 002H	Facility Type Oil and gas production facilities

Surface: Owner: Fee	Mineral: Owner: Fee	API No. : 30-015-44374
---------------------	---------------------	------------------------

**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
L	9	23S	27E	1664	South	549	West	Eddy

Latitude 32.31677158N Longitude -104.20183140W

**NATURE OF RELEASE**

Type of Release: produced water	Volume of Release: 15 barrels	Volume Recovered: 8 bbls
Source of Release: transfer pump	Date and Hour of Occurrence 04/01/2018 unknown	Date and Hour of Discovery 04/01/2018 08:00 am
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Crystal Weaver and Mike Bratcher – Eddy County	
By Whom? Callie Karrigan	Date and Hour 04/02/2018 07:28 am	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.\*  
Not applicable.

Describe Cause of Problem and Remedial Action Taken.\*

Operator reported a centerline bottle washout on the water transfer pump at the Cypress Fee 23 27 9 No. 002H facility. Approximately 15 bbls of produced water was released onsite around the parameter of the water transfer pump.

Describe Area Affected and Cleanup Action Taken.\*

A vac truck recovered standing fluids. Saturated soil material was removed and disposed at R360. Samples will be collected for lab analysis.

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.

<i>Callie Karrigan</i> Signature:	<b><u>OIL CONSERVATION DIVISION</u></b>	
Printed Name: Callie Karrigan	Approved by Environmental Specialist:	
Title: HES Environmental Professional	Approval Date:	Expiration Date:
E-mail Address: cnkarrigan@marathonoil.com	Conditions of Approval:	
Date: 4/12/2018 Phone: 405-202-1028(cell) 575-297-0956 (office)	Attached <input type="checkbox"/>	

\* Attach Additional Sheets If Necessary

**APPENDIX B**  
**NMOSE WELLS REPORT**



# New Mexico Office of the State Engineer

## Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

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

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

(NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
<a href="#">C 04044 POD1</a>		CUB	ED	3	2	3	09	23S	27E	575504	3575907	381	290	150	140
<a href="#">C 00195</a>		CUB	ED	4	1	4	09	23S	27E	576069	3575827*	938	128	83	45
<a href="#">C 00420</a>	C	CUB	ED		4	2	09	23S	27E	576370	3576337*	1339	2151		
<a href="#">C 00323</a>		C	ED		4	4	05	23S	27E	574750	3577122*	1348	200		
<a href="#">C 02711</a>		C	ED		4	4	05	23S	27E	574750	3577122*	1348	170	75	95
<a href="#">C 03020</a>		C	ED		4	4	05	23S	27E	574750	3577122*	1348	176	135	41
<a href="#">C 03799 POD1</a>		C	ED	1	3	3	04	23S	27E	574981	3577170	1350	200	51	149
<a href="#">C 00109 CLW203096</a>	O		ED	1	3	3	04	23S	27E	575051	3577226*	1400	260		
<a href="#">C 03056</a>		C	ED	1	3	3	04	23S	27E	575051	3577226*	1400	60	31	29
<a href="#">C 01071</a>		C	ED			1	08	23S	27E	573751	3576499*	1534	279	95	184
<a href="#">C 02191</a>		C	ED			1	08	23S	27E	573751	3576499*	1534	252	75	177
<a href="#">C 03653 POD1</a>		C	ED	2	4	4	05	23S	27E	574757	3577331	1549	220	180	40
<a href="#">C 03892 POD1</a>		C	ED	1	2	1	08	23S	27E	573846	3576764	1590	148	54	94
<a href="#">C 00068 CLW193190</a>	O		ED	3	3	1	10	23S	27E	576673	3576241*	1596	175		
<a href="#">C 02710</a>		C	ED			4	05	23S	27E	574550	3577318*	1599	200	72	128

Average Depth to Water: **91 feet**

Minimum Depth: **31 feet**

Maximum Depth: **180 feet**

**Record Count: 15**

**UTMNAD83 Radius Search (in meters):**

**Easting (X):** 575131

**Northing (Y):** 3575828

**Radius:** 1600

\*UTM location was derived from PLSS - see Help

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.

APPENDIX C  
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)

June 06, 2018

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

RE: Cypress

OrderNo.: 1805E14

Dear Austin Weyant:

Hall Environmental Analysis Laboratory received 12 sample(s) on 5/25/2018 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 #NM0901

Sincerely,

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

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1805E14

Date Reported: 6/6/2018

CLIENT: Souder, Miller & Associates

Client Sample ID: L1-Surface

Project: Cypress

Collection Date: 5/22/2018 11:30:00 AM

Lab ID: 1805E14-001

Matrix: SOIL

Received Date: 5/25/2018 9:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	36000	1500		mg/Kg	1E	5/31/2018 7:32:16 PM	38393
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	74	10		mg/Kg	1	5/30/2018 4:14:11 PM	38367
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/30/2018 4:14:11 PM	38367
Surr: DNOP	98.8	70-130		%Rec	1	5/30/2018 4:14:11 PM	38367
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/30/2018 1:12:19 AM	38338
Surr: BFB	93.3	15-316		%Rec	1	5/30/2018 1:12:19 AM	38338
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Methyl tert-butyl ether (MTBE)	ND	0.098		mg/Kg	1	5/30/2018 1:12:19 AM	38338
Benzene	ND	0.025		mg/Kg	1	5/30/2018 1:12:19 AM	38338
Toluene	ND	0.049		mg/Kg	1	5/30/2018 1:12:19 AM	38338
Ethylbenzene	ND	0.049		mg/Kg	1	5/30/2018 1:12:19 AM	38338
Xylenes, Total	ND	0.098		mg/Kg	1	5/30/2018 1:12:19 AM	38338
Surr: 4-Bromofluorobenzene	99.6	80-120		%Rec	1	5/30/2018 1:12:19 AM	38338

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

Qualifiers:		
*	Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E Value above quantitation range
H	Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P Sample pH Not In Range
PQL	Practical Quantitative Limit	RL Reporting 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 1805E14

Date Reported: 6/6/2018

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** L1-0.5'

**Project:** Cypress

**Collection Date:** 5/22/2018 11:36:00 AM

**Lab ID:** 1805E14-002

**Matrix:** SOIL

**Received Date:** 5/25/2018 9:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	10000	750		mg/Kg	500	5/31/2018 7:44:41 PM	38393

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
	PQL Practical Quantitative Limit	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 1805E14

Date Reported: 6/6/2018

CLIENT: Souder, Miller & Associates

Client Sample ID: L2-Surface

Project: Cypress

Collection Date: 5/22/2018 11:48:00 AM

Lab ID: 1805E14-003

Matrix: SOIL

Received Date: 5/25/2018 9:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	210	30		mg/Kg	20	5/31/2018 2:50:32 AM	38393
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	23	10		mg/Kg	1	5/30/2018 5:27:15 PM	38367
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/30/2018 5:27:15 PM	38367
Surr: DNOP	91.9	70-130		%Rec	1	5/30/2018 5:27:15 PM	38367
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/30/2018 1:35:36 AM	38338
Surr: BFB	90.7	15-316		%Rec	1	5/30/2018 1:35:36 AM	38338
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Methyl tert-butyl ether (MTBE)	ND	0.095		mg/Kg	1	5/30/2018 1:35:36 AM	38338
Benzene	ND	0.024		mg/Kg	1	5/30/2018 1:35:36 AM	38338
Toluene	ND	0.048		mg/Kg	1	5/30/2018 1:35:36 AM	38338
Ethylbenzene	ND	0.048		mg/Kg	1	5/30/2018 1:35:36 AM	38338
Xylenes, Total	ND	0.095		mg/Kg	1	5/30/2018 1:35:36 AM	38338
Surr: 4-Bromofluorobenzene	98.6	80-120		%Rec	1	5/30/2018 1:35:36 AM	38338

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

Qualifiers:		
*	Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E Value above quantitation range
H	Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P Sample pH Not In Range
PQL	Practical Quantitative Limit	RL Reporting 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 1805E14

Date Reported: 6/6/2018

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** L2-0.5

**Project:** Cypress

**Collection Date:** 5/22/2018 12:00:00 PM

**Lab ID:** 1805E14-004

**Matrix:** SOIL

**Received Date:** 5/25/2018 9:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	100	30		mg/Kg	20	5/31/2018 3:02:57 AM	38393

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
	PQL Practical Quantitative Limit	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 1805E14

Date Reported: 6/6/2018

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** L2-1'

**Project:** Cypress

**Collection Date:** 5/22/2018 12:15:00 PM

**Lab ID:** 1805E14-005

**Matrix:** SOIL

**Received Date:** 5/25/2018 9:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	120	30		mg/Kg	20	5/31/2018 3:15:22 AM	38393

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
	PQL	Practical Quantitative Limit	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 1805E14

Date Reported: 6/6/2018

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** L3-Surface

**Project:** Cypress

**Collection Date:** 5/22/2018 12:32:00 PM

**Lab ID:** 1805E14-006

**Matrix:** SOIL

**Received Date:** 5/25/2018 9:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	8500	300		mg/Kg	200	5/31/2018 7:57:06 PM	38393
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	90	10		mg/Kg	1	5/30/2018 5:51:31 PM	38367
Motor Oil Range Organics (MRO)	63	50		mg/Kg	1	5/30/2018 5:51:31 PM	38367
Surr: DNOP	112	70-130		%Rec	1	5/30/2018 5:51:31 PM	38367
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/30/2018 1:59:06 AM	38338
Surr: BFB	89.9	15-316		%Rec	1	5/30/2018 1:59:06 AM	38338
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Methyl tert-butyl ether (MTBE)	ND	0.098		mg/Kg	1	5/30/2018 1:59:06 AM	38338
Benzene	ND	0.025		mg/Kg	1	5/30/2018 1:59:06 AM	38338
Toluene	ND	0.049		mg/Kg	1	5/30/2018 1:59:06 AM	38338
Ethylbenzene	ND	0.049		mg/Kg	1	5/30/2018 1:59:06 AM	38338
Xylenes, Total	ND	0.098		mg/Kg	1	5/30/2018 1:59:06 AM	38338
Surr: 4-Bromofluorobenzene	99.9	80-120		%Rec	1	5/30/2018 1:59:06 AM	38338

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
	PQL Practical Quantitative Limit	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 1805E14

Date Reported: 6/6/2018

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** L3-0.5'

**Project:** Cypress

**Collection Date:** 5/22/2018 12:47:00 PM

**Lab ID:** 1805E14-007

**Matrix:** SOIL

**Received Date:** 5/25/2018 9:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	70	30		mg/Kg	20	5/31/2018 3:40:11 AM	38393

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
	PQL Practical Quantitative Limit	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 1805E14

Date Reported: 6/6/2018

CLIENT: Souder, Miller & Associates

Client Sample ID: L4-Surface

Project: Cypress

Collection Date: 5/22/2018 12:58:00 PM

Lab ID: 1805E14-008

Matrix: SOIL

Received Date: 5/25/2018 9:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	2900	150		mg/Kg	100	5/31/2018 8:09:30 PM	38393
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	130	10		mg/Kg	1	5/30/2018 6:15:56 PM	38367
Motor Oil Range Organics (MRO)	91	50		mg/Kg	1	5/30/2018 6:15:56 PM	38367
Surr: DNOP	99.7	70-130		%Rec	1	5/30/2018 6:15:56 PM	38367
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	5/30/2018 2:22:40 AM	38338
Surr: BFB	90.3	15-316		%Rec	1	5/30/2018 2:22:40 AM	38338
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Methyl tert-butyl ether (MTBE)	ND	0.092		mg/Kg	1	5/30/2018 2:22:40 AM	38338
Benzene	ND	0.023		mg/Kg	1	5/30/2018 2:22:40 AM	38338
Toluene	ND	0.046		mg/Kg	1	5/30/2018 2:22:40 AM	38338
Ethylbenzene	ND	0.046		mg/Kg	1	5/30/2018 2:22:40 AM	38338
Xylenes, Total	ND	0.092		mg/Kg	1	5/30/2018 2:22:40 AM	38338
Surr: 4-Bromofluorobenzene	98.3	80-120		%Rec	1	5/30/2018 2:22:40 AM	38338

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

Qualifiers:		
*	Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E Value above quantitation range
H	Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P Sample pH Not In Range
PQL	Practical Quantitative Limit	RL Reporting 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 1805E14

Date Reported: 6/6/2018

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** L4-0.5'

**Project:** Cypress

**Collection Date:** 5/22/2018 1:07:00 PM

**Lab ID:** 1805E14-009

**Matrix:** SOIL

**Received Date:** 5/25/2018 9:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	100	30		mg/Kg	20	5/31/2018 4:29:48 AM	38393

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
	PQL	Practical Quantitative Limit	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 1805E14

Date Reported: 6/6/2018

CLIENT: Souder, Miller & Associates

Client Sample ID: L5-Surface

Project: Cypress

Collection Date: 5/22/2018 1:14:00 PM

Lab ID: 1805E14-010

Matrix: SOIL

Received Date: 5/25/2018 9:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	2400	75		mg/Kg	50	6/1/2018 11:54:23 AM	38393
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	2400	99		mg/Kg	10	5/31/2018 8:57:28 AM	38367
Motor Oil Range Organics (MRO)	3900	490		mg/Kg	10	5/31/2018 8:57:28 AM	38367
Surr: DNOP	0	70-130	S	%Rec	10	5/31/2018 8:57:28 AM	38367
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	5/30/2018 2:46:03 AM	38338
Surr: BFB	88.9	15-316		%Rec	1	5/30/2018 2:46:03 AM	38338
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Methyl tert-butyl ether (MTBE)	ND	0.091		mg/Kg	1	5/30/2018 2:46:03 AM	38338
Benzene	ND	0.023		mg/Kg	1	5/30/2018 2:46:03 AM	38338
Toluene	ND	0.046		mg/Kg	1	5/30/2018 2:46:03 AM	38338
Ethylbenzene	ND	0.046		mg/Kg	1	5/30/2018 2:46:03 AM	38338
Xylenes, Total	ND	0.091		mg/Kg	1	5/30/2018 2:46:03 AM	38338
Surr: 4-Bromofluorobenzene	96.6	80-120		%Rec	1	5/30/2018 2:46:03 AM	38338

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

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quantitative Limit	RL	Reporting 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 1805E14

Date Reported: 6/6/2018

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** L5-0.5'

**Project:** Cypress

**Collection Date:** 5/22/2018 1:21:00 PM

**Lab ID:** 1805E14-011

**Matrix:** SOIL

**Received Date:** 5/25/2018 9:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	290	30		mg/Kg	20	5/31/2018 4:54:38 AM	38393

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
	PQL Practical Quantitative Limit	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 1805E14

Date Reported: 6/6/2018

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** Background

**Project:** Cypress

**Collection Date:** 5/22/2018 1:47:00 PM

**Lab ID:** 1805E14-012

**Matrix:** SOIL

**Received Date:** 5/25/2018 9:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>MRA</b>
Chloride	ND	30		mg/Kg	20	5/31/2018 5:07:02 AM	38393

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
	PQL	Practical Quantitative Limit	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#: 1805E14

06-Jun-18

**Client:** Souder, Miller & Associates

**Project:** Cypress

Sample ID	<b>MB-38393</b>	SampType:	<b>mblk</b>	TestCode:	<b>EPA Method 300.0: Anions</b>					
Client ID:	<b>PBS</b>	Batch ID:	<b>38393</b>	RunNo:	<b>51601</b>					
Prep Date:	<b>5/30/2018</b>	Analysis Date:	<b>5/31/2018</b>	SeqNo:	<b>1683711</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	<b>LCS-38393</b>	SampType:	<b>lcs</b>	TestCode:	<b>EPA Method 300.0: Anions</b>					
Client ID:	<b>LCSS</b>	Batch ID:	<b>38393</b>	RunNo:	<b>51601</b>					
Prep Date:	<b>5/30/2018</b>	Analysis Date:	<b>5/31/2018</b>	SeqNo:	<b>1683712</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.5	90	110			

**Qualifiers:**

- |   |   |
|---|---|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| PQL Practical Quantitative Limit                        | RL Reporting 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#: 1805E14

06-Jun-18

**Client:** Souder, Miller & Associates

**Project:** Cypress

Sample ID <b>LCS-38367</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>38367</b>		RunNo: <b>51593</b>							
Prep Date: <b>5/29/2018</b>	Analysis Date: <b>5/30/2018</b>		SeqNo: <b>1682090</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	53	10	50.00	0	105	70	130			
Surr: DNOP	4.6		5.000		91.8	70	130			

Sample ID <b>MB-38367</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>PBS</b>	Batch ID: <b>38367</b>		RunNo: <b>51593</b>							
Prep Date: <b>5/29/2018</b>	Analysis Date: <b>5/30/2018</b>		SeqNo: <b>1682091</b>		Units: <b>mg/Kg</b>					
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	9.9		10.00		99.4	70	130			

Sample ID <b>1805E14-001AMS</b>	SampType: <b>MS</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>L1-Surface</b>	Batch ID: <b>38367</b>		RunNo: <b>51593</b>							
Prep Date: <b>5/29/2018</b>	Analysis Date: <b>5/30/2018</b>		SeqNo: <b>1682961</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	100	9.8	49.16	74.04	58.0	62	120			S
Surr: DNOP	4.9		4.916		99.7	70	130			

Sample ID <b>1805E14-001AMSD</b>	SampType: <b>MSD</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>L1-Surface</b>	Batch ID: <b>38367</b>		RunNo: <b>51593</b>							
Prep Date: <b>5/29/2018</b>	Analysis Date: <b>5/30/2018</b>		SeqNo: <b>1682962</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	100	10	50.10	74.04	61.3	62	120	2.10	20	S
Surr: DNOP	5.1		5.010		101	70	130	0	0	

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1805E14

06-Jun-18

**Client:** Souder, Miller & Associates

**Project:** Cypress

Sample ID <b>MB-38338</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>PBS</b>	Batch ID: <b>38338</b>		RunNo: <b>51580</b>							
Prep Date: <b>5/25/2018</b>	Analysis Date: <b>5/29/2018</b>		SeqNo: <b>1681351</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	950		1000		95.1	15	316			

Sample ID <b>LCS-38338</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>38338</b>		RunNo: <b>51580</b>							
Prep Date: <b>5/25/2018</b>	Analysis Date: <b>5/29/2018</b>		SeqNo: <b>1681352</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	29	5.0	25.00	0	114	75.9	131			
Surr: BFB	1100		1000		112	15	316			

Sample ID <b>1805E14-001AMS</b>	SampType: <b>MS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>L1-Surface</b>	Batch ID: <b>38338</b>		RunNo: <b>51580</b>							
Prep Date: <b>5/25/2018</b>	Analysis Date: <b>5/29/2018</b>		SeqNo: <b>1681354</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	4.8	23.76	0	104	77.8	128			
Surr: BFB	980		950.6		103	15	316			

Sample ID <b>1805E14-001AMSD</b>	SampType: <b>MSD</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>L1-Surface</b>	Batch ID: <b>38338</b>		RunNo: <b>51580</b>							
Prep Date: <b>5/25/2018</b>	Analysis Date: <b>5/29/2018</b>		SeqNo: <b>1681355</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	4.8	24.02	0	112	77.8	128	7.93	20	
Surr: BFB	990		960.6		103	15	316	0	0	

Sample ID <b>MB-38366</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>PBS</b>	Batch ID: <b>38366</b>		RunNo: <b>51603</b>							
Prep Date: <b>5/29/2018</b>	Analysis Date: <b>5/30/2018</b>		SeqNo: <b>1682799</b>		Units: <b>%Rec</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	930		1000		92.9	15	316			

Sample ID <b>LCS-38366</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>38366</b>		RunNo: <b>51603</b>							
Prep Date: <b>5/29/2018</b>	Analysis Date: <b>5/30/2018</b>		SeqNo: <b>1682800</b>		Units: <b>%Rec</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1100		1000		106	15	316			

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1805E14

06-Jun-18

**Client:** Souder, Miller & Associates

**Project:** Cypress

Sample ID <b>MB-38338</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>38338</b>		RunNo: <b>51580</b>							
Prep Date: <b>5/25/2018</b>	Analysis Date: <b>5/29/2018</b>		SeqNo: <b>1681394</b>		Units: <b>mg/Kg</b>					
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	1.0		1.000		105	80	120			

Sample ID <b>LCS-38338</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>38338</b>		RunNo: <b>51580</b>							
Prep Date: <b>5/25/2018</b>	Analysis Date: <b>5/29/2018</b>		SeqNo: <b>1681396</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	0.96	0.10	1.000	0	95.7	70.1	121			
Benzene	0.91	0.025	1.000	0	91.3	77.3	128			
Toluene	0.94	0.050	1.000	0	93.6	79.2	125			
Ethylbenzene	0.93	0.050	1.000	0	93.2	80.7	127			
Xylenes, Total	2.8	0.10	3.000	0	94.5	81.6	129			
Surr: 4-Bromofluorobenzene	1.1		1.000		106	80	120			

Sample ID <b>1805E14-003AMS</b>	SampType: <b>MS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>L2-Surface</b>	Batch ID: <b>38338</b>		RunNo: <b>51580</b>							
Prep Date: <b>5/25/2018</b>	Analysis Date: <b>5/29/2018</b>		SeqNo: <b>1681401</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	0.83	0.093	0.9320	0	88.7	56.9	130			
Benzene	0.81	0.023	0.9320	0	87.4	68.5	133			
Toluene	0.86	0.047	0.9320	0	92.7	75	130			
Ethylbenzene	0.87	0.047	0.9320	0	93.7	79.4	128			
Xylenes, Total	2.6	0.093	2.796	0	94.6	77.3	131			
Surr: 4-Bromofluorobenzene	0.99		0.9320		106	80	120			

Sample ID <b>1805E14-003AMSD</b>	SampType: <b>MSD</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>L2-Surface</b>	Batch ID: <b>38338</b>		RunNo: <b>51580</b>							
Prep Date: <b>5/25/2018</b>	Analysis Date: <b>5/29/2018</b>		SeqNo: <b>1681402</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	0.86	0.092	0.9217	0	93.5	56.9	130	4.21	20	
Benzene	0.80	0.023	0.9217	0	86.7	68.5	133	1.89	20	
Toluene	0.84	0.046	0.9217	0	91.7	75	130	2.22	20	
Ethylbenzene	0.85	0.046	0.9217	0	92.1	79.4	128	2.82	20	

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1805E14

06-Jun-18

**Client:** Souder, Miller & Associates

**Project:** Cypress

Sample ID	<b>1805E14-003AMSD</b>	SampType:	<b>MSD</b>	TestCode:	<b>EPA Method 8021B: Volatiles</b>					
Client ID:	<b>L2-Surface</b>	Batch ID:	<b>38338</b>	RunNo:	<b>51580</b>					
Prep Date:	<b>5/25/2018</b>	Analysis Date:	<b>5/29/2018</b>	SeqNo:	<b>1681402</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Xylenes, Total	2.6	0.092	2.765	0	94.7	77.3	131	1.03	20	
Surr: 4-Bromofluorobenzene	0.98		0.9217		106	80	120	0	0	

Sample ID	<b>MB-38366</b>	SampType:	<b>MBLK</b>	TestCode:	<b>EPA Method 8021B: Volatiles</b>					
Client ID:	<b>PBS</b>	Batch ID:	<b>38366</b>	RunNo:	<b>51603</b>					
Prep Date:	<b>5/29/2018</b>	Analysis Date:	<b>5/30/2018</b>	SeqNo:	<b>1682840</b>	Units:	<b>%Rec</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.0		1.000		102	80	120			

Sample ID	<b>LCS-38366</b>	SampType:	<b>LCS</b>	TestCode:	<b>EPA Method 8021B: Volatiles</b>					
Client ID:	<b>LCSS</b>	Batch ID:	<b>38366</b>	RunNo:	<b>51603</b>					
Prep Date:	<b>5/29/2018</b>	Analysis Date:	<b>5/30/2018</b>	SeqNo:	<b>1682841</b>	Units:	<b>%Rec</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.1		1.000		109	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                                    |
| PQL Practical Quantitative Limit                        | RL Reporting Detection Limit                                |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

**Sample Log-In Check List**

Client Name: SMA-CARLSBAD

Work Order Number: 1805E14

RcptNo: 1

Received By: Isaiah Ortiz 5/25/2018 9:15:00 AM

*IO*

Completed By: Ashley Gallegos 5/25/2018 9:44:17 AM

*AG*

Reviewed By: *SB 05/25/18*

Labeled by: *AG 05/25/18*

**Chain of Custody**

1. Is Chain of Custody complete? Yes  No  Not Present

2. How was the sample delivered? Courier

**Log In**

3. Was an attempt made to cool the samples? Yes  No  NA

4. Were all samples received at a temperature of >0° C to 6.0°C Yes  No  NA

5. Sample(s) in proper container(s)? Yes  No

6. Sufficient sample volume for indicated test(s)? Yes  No

7. Are samples (except VOA and ONG) properly preserved? Yes  No

8. Was preservative added to bottles? Yes  No  NA

9. VOA vials have zero headspace? Yes  No  No VOA Vials

10. Were any sample containers received broken? Yes  No

11. Does paperwork match bottle labels? Yes  No

(Note discrepancies on chain of custody)

12. Are matrices correctly identified on Chain of Custody? Yes  No

13. Is it clear what analyses were requested? Yes  No

14. Were all holding times able to be met? Yes  No

(If no, notify customer for authorization.)

# of preserved bottles checked for pH: *12*  
 (12 or >12 unless noted)  
 Adjusted?  
 Checked by: *AG 05/25/18*

**Special Handling (if applicable)**

15. 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: \_\_\_\_\_

16. Additional remarks:

**17. Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.9	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)

June 22, 2018

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

RE: Cypress 2H

OrderNo.: 1806A46

Dear Austin Weyant:

Hall Environmental Analysis Laboratory received 6 sample(s) on 6/15/2018 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 #NM0901

Sincerely,

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

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1806A46

Date Reported: 6/22/2018

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** L1-1

**Project:** Cypress 2H

**Collection Date:** 6/13/2018 9:15:00 AM

**Lab ID:** 1806A46-001

**Matrix:** SOIL

**Received Date:** 6/15/2018 9:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>smb</b>
Chloride	35	30		mg/Kg	20	6/21/2018 2:21:44 PM	38815
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	6/20/2018 5:05:44 PM	38767
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	6/20/2018 5:05:44 PM	38767
Surr: DNOP	105	70-130		%Rec	1	6/20/2018 5:05:44 PM	38767
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	6/20/2018 2:01:21 PM	38762
Surr: BFB	80.7	15-316		%Rec	1	6/20/2018 2:01:21 PM	38762

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 9
	D Sample Diluted Due to Matrix	E Value above quantitation range	
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits	
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range	
	PQL Practical Quantitative Limit	RL Reporting 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 1806A46

Date Reported: 6/22/2018

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** SW1

**Project:** Cypress 2H

**Collection Date:** 6/13/2018 9:20:00 AM

**Lab ID:** 1806A46-002

**Matrix:** SOIL

**Received Date:** 6/15/2018 9:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>smb</b>
Chloride	40	30		mg/Kg	20	6/21/2018 2:34:08 PM	38815
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	6/20/2018 5:27:47 PM	38767
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	6/20/2018 5:27:47 PM	38767
Surr: DNOP	109	70-130		%Rec	1	6/20/2018 5:27:47 PM	38767
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	6/20/2018 3:11:56 PM	38762
Surr: BFB	83.6	15-316		%Rec	1	6/20/2018 3:11:56 PM	38762

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
	PQL	Practical Quantitative Limit	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 1806A46

Date Reported: 6/22/2018

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** SW2

**Project:** Cypress 2H

**Collection Date:** 6/13/2018 9:25:00 AM

**Lab ID:** 1806A46-003

**Matrix:** SOIL

**Received Date:** 6/15/2018 9:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>smb</b>
Chloride	190	30		mg/Kg	20	6/21/2018 2:46:32 PM	38815
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	6/20/2018 5:50:06 PM	38767
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	6/20/2018 5:50:06 PM	38767
Surr: DNOP	94.7	70-130		%Rec	1	6/20/2018 5:50:06 PM	38767
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	6/20/2018 3:35:34 PM	38762
Surr: BFB	81.8	15-316		%Rec	1	6/20/2018 3:35:34 PM	38762

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
	PQL	Practical Quantitative Limit	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 1806A46

Date Reported: 6/22/2018

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** SW3

**Project:** Cypress 2H

**Collection Date:** 6/13/2018 9:30:00 AM

**Lab ID:** 1806A46-004

**Matrix:** SOIL

**Received Date:** 6/15/2018 9:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>smb</b>
Chloride	47	30		mg/Kg	20	6/21/2018 2:58:56 PM	38815
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	6/20/2018 6:12:23 PM	38767
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	6/20/2018 6:12:23 PM	38767
Surr: DNOP	111	70-130		%Rec	1	6/20/2018 6:12:23 PM	38767
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	6/20/2018 6:21:00 PM	38762
Surr: BFB	80.5	15-316		%Rec	1	6/20/2018 6:21:00 PM	38762

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 4 of 9
	D Sample Diluted Due to Matrix	E Value above quantitation range	
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits	
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range	
	PQL Practical Quantitative Limit	RL Reporting 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 1806A46

Date Reported: 6/22/2018

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** SW4

**Project:** Cypress 2H

**Collection Date:** 6/13/2018 9:35:00 AM

**Lab ID:** 1806A46-005

**Matrix:** SOIL

**Received Date:** 6/15/2018 9:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>smb</b>
Chloride	83	30		mg/Kg	20	6/21/2018 3:11:20 PM	38815
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	6/20/2018 6:34:50 PM	38767
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	6/20/2018 6:34:50 PM	38767
Surr: DNOP	94.2	70-130		%Rec	1	6/20/2018 6:34:50 PM	38767
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	6/20/2018 6:44:36 PM	38762
Surr: BFB	83.3	15-316		%Rec	1	6/20/2018 6:44:36 PM	38762

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
	PQL Practical Quantitative Limit	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 1806A46

Date Reported: 6/22/2018

**CLIENT:** Souder, Miller & Associates

**Client Sample ID:** L5-1

**Project:** Cypress 2H

**Collection Date:** 6/13/2018 9:50:00 AM

**Lab ID:** 1806A46-006

**Matrix:** SOIL

**Received Date:** 6/15/2018 9:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	6/20/2018 6:57:09 PM	38767
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	6/20/2018 6:57:09 PM	38767
Surr: DNOP	107	70-130		%Rec	1	6/20/2018 6:57:09 PM	38767
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	6/20/2018 7:08:10 PM	38762
Surr: BFB	79.4	15-316		%Rec	1	6/20/2018 7:08:10 PM	38762

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	Page 6 of 9
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range	
	PQL Practical Quantitative Limit	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#: 1806A46

22-Jun-18

**Client:** Souder, Miller & Associates

**Project:** Cypress 2H

Sample ID	<b>MB-38815</b>	SampType:	<b>mblk</b>	TestCode:	<b>EPA Method 300.0: Anions</b>					
Client ID:	<b>PBS</b>	Batch ID:	<b>38815</b>	RunNo:	<b>52139</b>					
Prep Date:	<b>6/21/2018</b>	Analysis Date:	<b>6/21/2018</b>	SeqNo:	<b>1708541</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	<b>LCS-38815</b>	SampType:	<b>lcs</b>	TestCode:	<b>EPA Method 300.0: Anions</b>					
Client ID:	<b>LCSS</b>	Batch ID:	<b>38815</b>	RunNo:	<b>52139</b>					
Prep Date:	<b>6/21/2018</b>	Analysis Date:	<b>6/21/2018</b>	SeqNo:	<b>1708542</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.5	90	110			

**Qualifiers:**

- |   |   |
|---|---|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| PQL Practical Quantitative Limit                        | RL Reporting 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#: 1806A46

22-Jun-18

**Client:** Souder, Miller & Associates

**Project:** Cypress 2H

Sample ID	<b>LCS-38767</b>	SampType:	<b>LCS</b>	TestCode:	<b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID:	<b>LCSS</b>	Batch ID:	<b>38767</b>	RunNo:	<b>52095</b>					
Prep Date:	<b>6/19/2018</b>	Analysis Date:	<b>6/20/2018</b>	SeqNo:	<b>1705232</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	50.00	0	95.7	70	130			
Surr: DNOP	4.8		5.000		95.2	70	130			

Sample ID	<b>MB-38767</b>	SampType:	<b>MBLK</b>	TestCode:	<b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID:	<b>PBS</b>	Batch ID:	<b>38767</b>	RunNo:	<b>52095</b>					
Prep Date:	<b>6/19/2018</b>	Analysis Date:	<b>6/20/2018</b>	SeqNo:	<b>1705233</b>	Units:	<b>mg/Kg</b>			
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	9.8		10.00		98.0	70	130			

**Qualifiers:**

- |   |   |
|---|---|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank           |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                            |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits                |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                                    |
| PQL Practical Quantitative Limit                        | RL Reporting 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#: 1806A46

22-Jun-18

**Client:** Souder, Miller & Associates

**Project:** Cypress 2H

Sample ID <b>MB-38762</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>PBS</b>	Batch ID: <b>38762</b>		RunNo: <b>52104</b>							
Prep Date: <b>6/19/2018</b>	Analysis Date: <b>6/20/2018</b>		SeqNo: <b>1705919</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	820		1000		81.8	15	316			

Sample ID <b>LCS-38762</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>38762</b>		RunNo: <b>52104</b>							
Prep Date: <b>6/19/2018</b>	Analysis Date: <b>6/20/2018</b>		SeqNo: <b>1705920</b>		Units: <b>mg/Kg</b>					
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	75.9	131			
Surr: BFB	900		1000		90.2	15	316			

Sample ID <b>1806A46-001AMS</b>	SampType: <b>MS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>L1-1</b>	Batch ID: <b>38762</b>		RunNo: <b>52104</b>							
Prep Date: <b>6/19/2018</b>	Analysis Date: <b>6/20/2018</b>		SeqNo: <b>1705924</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	5.0	24.80	0	107	77.8	128			
Surr: BFB	930		992.1		94.2	15	316			

Sample ID <b>1806A46-001AMSD</b>	SampType: <b>MSD</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>L1-1</b>	Batch ID: <b>38762</b>		RunNo: <b>52104</b>							
Prep Date: <b>6/19/2018</b>	Analysis Date: <b>6/20/2018</b>		SeqNo: <b>1705925</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	29	4.9	24.39	0	117	77.8	128	7.29	20	
Surr: BFB	950		975.6		97.2	15	316	0	0	

**Qualifiers:**

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

**Sample Log-In Check List**

Client Name: SMA-CARLSBAD

Work Order Number: 1806A46

RcptNo: 1

Received By: Erin Melendrez 6/15/2018 9:00:00 AM

Completed By: Michelle Garcia 6/18/2018 9:06:18 AM

Reviewed By: *SO*

*Labeled by SB 06/18/18*

*UUG*

*Michelle Garcia*

**Chain of Custody**

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

**Log In**

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

# of preserved bottles checked for pH:  
 (<2 or >12 unless noted)  
 Adjusted?  
 Checked by: *SB 06/18/18*

**Special Handling (if applicable)**

15. 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: \_\_\_\_\_

16. Additional remarks:

**17. Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.9	Good	Yes			

# Chain-of-Custody Record

Client: SMA Turn-Around Time: 5 day turn  
 Standard  Rush  
 Project Name: Cypress 2H

Mailing Address: \_\_\_\_\_  
 Phone #: \_\_\_\_\_  
 email or Fax#: \_\_\_\_\_  
 Project #: \_\_\_\_\_

QA/QC Package:  Level 4 (Full Validation)  
 Standard  Other  
 Accreditation:  NELAP  Other  
 EDD (Type) \_\_\_\_\_  
 Project Manager: Andy Weigant  
 Sampler: Heather Patterson  
 On Ice:  Yes  No  
 Sample Temperature: 5.9

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.
6/13/18	9:15	Soil	L1-1	4oz		1806A46
}	9:20	}	SW1	}		001
	9:25		SW2			002
}	9:30	}	SW3	}		003
	9:35		SW4			004
}	9:50	}	LS-1			005

Date: 6/14/18 Time: 1900 Relinquished by: Heather Patterson  
 Date: 6/14/18 Time: 1900 Relinquished by: SPK  
 Received by: SPK Date: 6/14/18 Time: 1900  
 Received by: SPK Date: 6/15/18 Time: 1900



**HALL ENVIRONMENTAL ANALYSIS LABORATORY**  
 www.hallenvironmental.com  
 4901 Hawkins NE - Albuquerque, NM 87109  
 Tel. 505-345-3975 Fax 505-345-4107

Analysis Request	
BTEX + MTBE + TMB's (8021)	
BTEX + MTBE + TPH (Gas only)	X
TPH 8015B (GRO / DRO / MRO)	X
TPH (Method 418.1)	
EDB (Method 504.1)	
PAH's (8310 or 8270 SIMS)	
RCRA 8 Metals	X
Anions (Cl, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub> )	X
8081 Pesticides / 8082 PCB's	
8260B (VOA)	
8270 (Semi-VOA)	
Air Bubbles (Y or N)	

Remarks: Marathon

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