Form C-141
Page 6

State of New Mexico
Oil Conservation Division

Incident ID	nAB1831040549
District RP	2RP-5038
Facility ID	----------
Application ID	

Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: ***Each of the following items must be included in the closure report.***

☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☒ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: _____Melodie Sanjari_____ Title: _____HES Professional_____

Signature: *Melodie Sanjari* Date: __5/25/2023_____

email: __msanjari@marathonoil.com_____ Telephone: _____575-988-8753_____

OCD Only

Received by: _____ Date: _____

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: Brittany Hall Date: 9/12/2023

Printed Name: Brittany Hall Title: Environmental Specialist

Closure Report originally submitted via email to Division (Maria Pruett) and BLM (Shelly Tucker) staff. Resubmission requested by the division.

Souder, Miller & Associates♦201 S. Halagueno St.♦Carlsbad, NM 88220
(575) 689-8801

November 30, 2018

#5E27499-BG16

NMOCD District 2
Mr. Bradford Billings
811 S. First St.
Artesia, New Mexico 88210

SUBJECT: Remediation Closure Report for the Jitterbug Federal #2 Release (2RP-5038), Malaga, Eddy County, New Mexico

Dear Mr. Billings:

On behalf of Marathon Oil Permian LLC (Marathon), Souder, Miller & Associates (SMA) has prepared this Remediation Closure Report that describes the remediation of a release of liquids related to oil and gas production activities at the Jitterbug Federal #2 site. The site is in Unit H, Section 24, Township 24S, Range 28E, Eddy County, New Mexico, on Federal land. Figure 1 illustrates the vicinity and site location on an USGS 7.5 minute quadrangle map.

Table 1 summarizes release information and Closure Criteria.

Table 1: Release Information and Closure Criteria			
Name	Jitterbug Federal #2	Company	Marathon Oil Permian LLC
API Number	30-015-37491	Location	32.204052 -104.035914
Incident Number	2RP-5038		
Date of Release	October 20, 2018	Date Reported to NMOCD	October 21, 2018
Land Owner	Federal	Reported To	NMOCD, BLM
Source of Release	Illegal dumping from a vac truck.		
Released Volume	Unknown	Released Material	40 bbls water
Recovered Volume	40 bbls	Net Release	Unknown
NMOCD Closure Criteria	51-100 feet to groundwater		
SMA Response Dates	October 25, 2018		

1.0 Background

On October 20, 2018, a release was discovered at the Jitterbug Federal #2 site when an operator observed illegal dumping from a vac truck. Initial response activities were conducted by Marathon, and included immediately dispatching a vac truck, which recovered approximately 40 barrels of fluid. Figure 1 illustrates the vicinity and site location, Figure 3 illustrates the release location. The C-141 form is included in Appendix A.

2.0 Site Information and Closure Criteria

The Jitterbug Federal #2 is located approximately 2.5 miles southeast of Malaga, New Mexico on Federal (BLM) land at an elevation of approximately 2,976 feet above mean sea level (amsl).

Based upon water well data (Appendix B) and proximity to the Pecos River, depth to groundwater in the area is estimated to be between 51-100 feet below grade surface (bgs). There are no known water sources within ½-mile of the location, according to the New Mexico Office of the State Engineer (NMOSE) online water well database (https://gis.ose.state.nm.us/gisapps/ose_pod_locations/; accessed 11/20/2018), but those just outside the half mile radius indicate groundwater greater than 50 feet bgs. The nearest significant watercourse is the Pecos River, located approximately 2,800 feet to the east. Figure 2 illustrates the site with 200 and 300-foot radii to indicate that it does not lie within a sensitive area as described in 19.15.29.12.C(4) NMAC.

Based on the information presented herein, the applicable NMOCD Closure Criteria for this site is for a groundwater depth of between 51-100 feet bgs. The site has been restored to meet the standards of Table I of 19.15.29.12 NMAC.

Table 2 demonstrates the Closure Criteria applicable to this location. Pertinent well data is attached in Appendix B.

3.0 Release Characterization and Remediation Activities

On October 25, 2018, SMA personnel arrived on site in response to the release associated with Jitterbug Federal #2. SMA performed site delineation activities by collecting soil samples around the release site and throughout the visibly stained area. Soil samples were field-screened for chloride using an electrical conductivity (EC) meter.

A total of ten (10) sample locations (L1-L4 and SW1-SW6) were investigated using a hand-auger, to depths up to two (2) feet bgs. A minimum of two samples were collected at each sampling location and field-screened using the methods above. A total of twelve (12) samples were collected for laboratory analysis for total chloride using EPA Method 300.0; benzene, toluene, ethylbenzene and total xylenes (BTEX) using EPA Method 8021B; and motor, diesel and gasoline range organics (MRO, DRO, and GRO) by EPA Method 8015D.

The party responsible for the illegal dumping indicated the substance released was fresh water. Sampling results support this claim. As summarized in Table 3, results indicated that no further action is required. Figure 3 shows the sample locations. Laboratory reports are included in Appendix D.

4.0 Scope and Limitations

The scope of our services included: assessment sampling; verifying release stabilization; regulatory liaison; remediation; and preparing 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

Ashley Maxwell
Project Scientist

Reviewed by:

Shawna Chubbuck
Senior Scientist

ATTACHMENTS:

Figures:

Figure 1: Vicinity and Well Head Protection Map
Figure 2: Surface Water Radius Map
Figure 3: Site and Sample Location Map

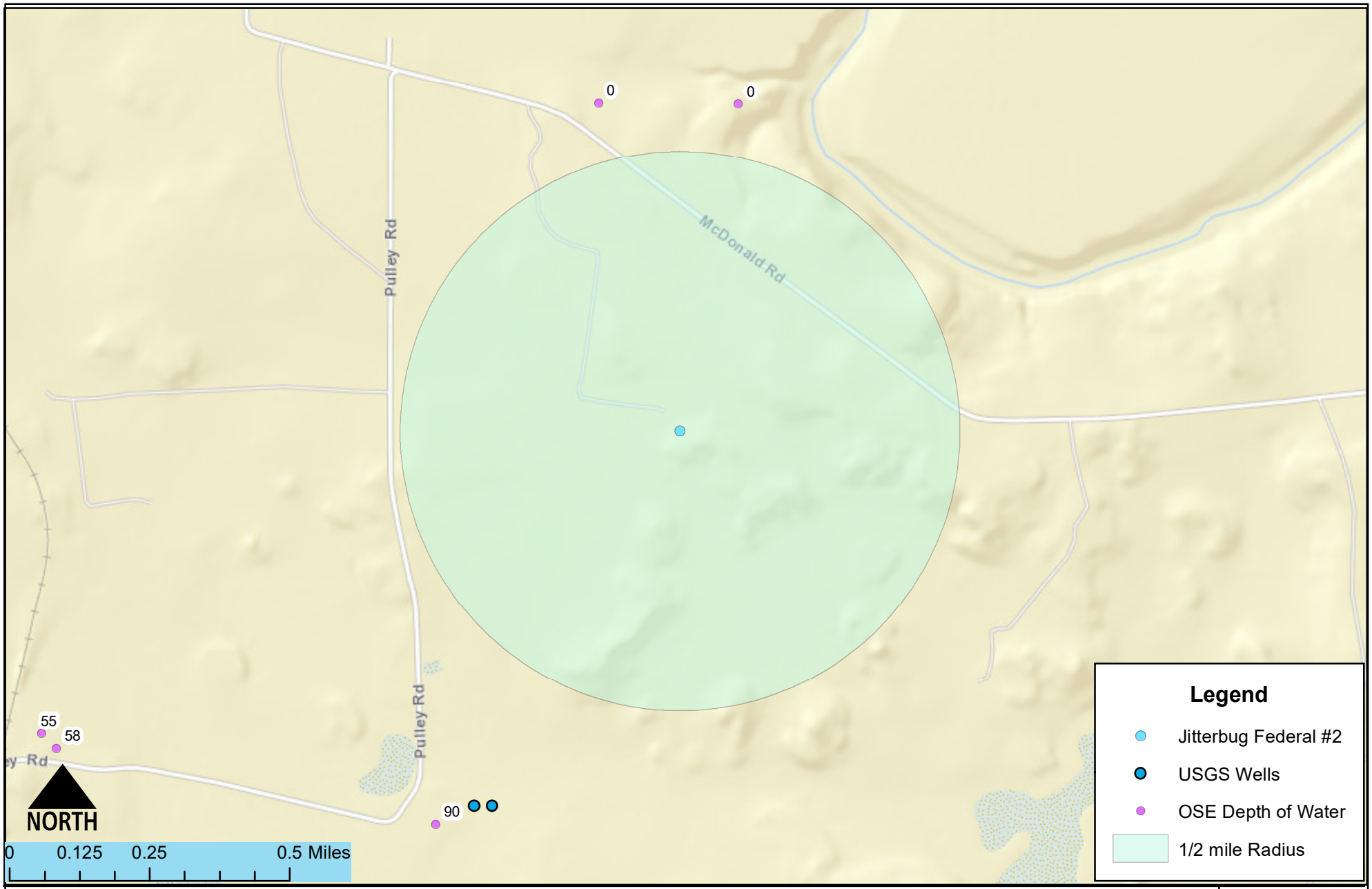
Tables:

Table 2: NMOCD Closure Criteria Justification
Table 3: Summary of Sample Results

Appendices:

Appendix A: Form C141
Appendix B: NMOSE Wells Report
Appendix C: Field Notes
Appendix D: Laboratory Analytical Reports

FIGURES



Vicinity and Well Head Protection Map
Jitterbug Federal #2 - Marathon
S 24-T24S-R28E, New Mexico

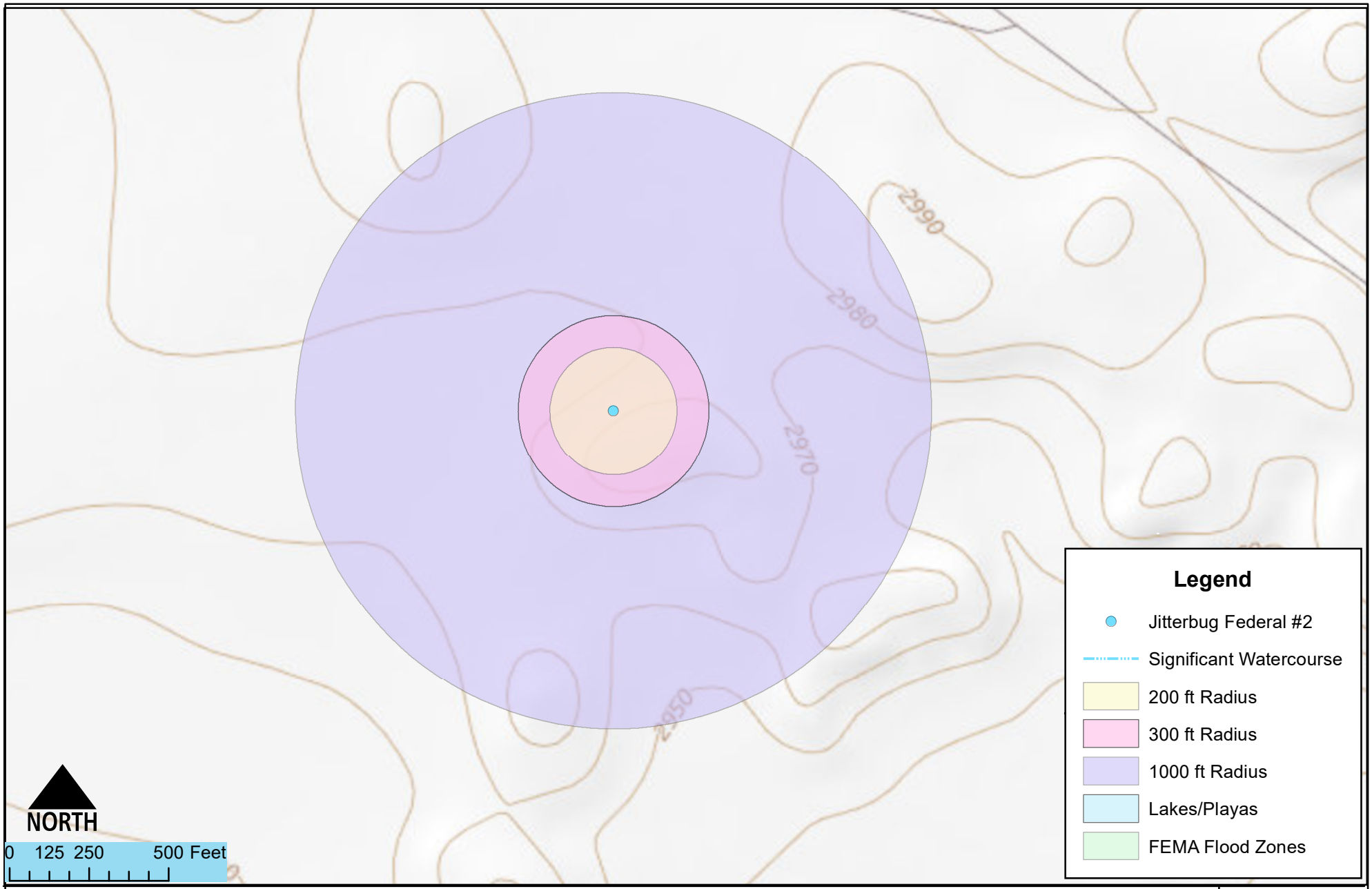
Figure 1

Date Saved: 11/30/2018

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

Drawn Heather Patterson
Checked
Approved

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



Surface Water Radius Map
Jitterbug Federal #2 - Marathon
S 24-T24S-R28E, New Mexico

Figure 2

Date Saved: 11/30/2018

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

Drawn Heather Patterson
Checked
Approved

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Site and Sample Location Map
Jitterbug Federal #2 - Marathon
S 24-T24S-R28E, New Mexico

Figure 3

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

Date Saved: 11/30/2018

Drawn Heather Patterson
Checked
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TABLES

Table 2:
NMOCD Closure Criteria

Marathon Oil Permian LLC
Jitterbug Federal #2 (2RP-5038)

Site Information (19.15.29.11.A(2, 3, and 4) NMAC)		Source/Notes
Depth to Groundwater (feet bgs)	>100	NMOSE
Hortizontal Distance From All Water Sources Within 1/2 Mile (ft)	0	7.5 minute quadrangle map
Hortizontal Distance to Nearest Significant Watercourse (ft)	2,800	7.5 minute quadrangle map

Closure Criteria (19.15.29.12.B(4) and Table 1 NMAC)						
Depth to Groundwater		**Closure Criteria (units in mg/kg)**				
		Chloride *numerical limit or background, whichever is greater	**TPH**	**GRO + DRO**	**BTEX**	**Benzene**
< 50' BGS		600	100		50	10
51' to 100'		10000	2500	1000	50	10
>100'		20000	2500	1000	50	10
Surface Water	**yes or no**	**if yes, then**				
<300' from continuously flowing watercourse or other significant watercourse?	No	600	100		50	10
<200' from lakebed, sinkhole or playa lake?	No					
Water Well or Water Source						
<500 feet from spring or a private, domestic fresh water well used by less than 5 households for domestic or stock watering purposes?	No					
<1000' from fresh water well or spring?	No					
Human and Other Areas						
<300' from an occupied permanent residence, school, hospital, institution or church?	No					
within incorporated municipal boundaries or within a defined municipal fresh water well field?	No					
<100' from wetland?	No					
within area overlying a subsurface mine	No					
within an unstable area?	No					
within a 100-year floodplain?	No					

Table 3:
Summary of Sample Results

Marathon Oil Permian, LLC
Jitterbug Fed #2 (2RP-5038)

Sample Number on Figure 2	Sample Date	Depth (feet bgs)	Proposed Action	BTEX mg/Kg	Benzene mg/Kg	GRO mg/Kg	DRO mg/Kg	MRO mg/Kg	**Total TPH** mg/Kg	Cl- Laboratory mg/Kg
NMOCD Closure Criteria				50 mg/Kg	10 mg/Kg	1000			2500	10000*
L1	10/25/2018	1	in-situ	--	--	--	--	--	--	68
L2	10/25/2018	1	in-situ	--	--	--	--	--	--	62
	10/25/2018	2	in-situ	<0.23	<0.024	<4.9	<10	<50	<65	64
L3	10/25/2018	1	in-situ	<0.23	<0.025	<4.9	<9.8	<49	<64	220
L4	10/25/2018	1	in-situ	--	--	--	--	--	--	280
	10/25/2018	2	in-situ	<0.23	<0.023	<4.6	<9.6	<48	<63	200
SW1	10/25/2018	0-1	in-situ	--	--	--	--	--	--	330
SW2	10/25/2018	0-1	in-situ	--	--	--	--	--	--	45
SW3	10/25/2018	0-1	in-situ	--	--	--	--	--	--	<30
SW4	10/25/2018	0-1	in-situ	--	--	--	--	--	--	<30
SW5	10/25/2018	0-1	in-situ	--	--	--	--	--	--	150
SW6	10/25/2018	0-1	in-situ	--	--	--	--	--	--	300

"--" = Not Analyzed

* 600 mg/Kg minimum top 4' as per 19.15.29.12

APPENDIX A
FORM C141

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 Department

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

NM Oil Conservation Div.
Dist. II - Artesia
Received
11/02/2018

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party	OGRID
Contact Name	Contact Telephone
Contact email	Incident # *(assigned by OCD)*
Contact mailing address	

Location of Release Source

Latitude _____ Longitude _____
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	Site Type
Date Release Discovered	API# *(if applicable)*

Unit Letter	Section	Township	Range	County

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☐ Private (*Name:* _____)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)
Cause of Release		

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? ☐ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release?
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?	

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

☐ The source of the release has been stopped.
☐ The impacted area has been secured to protect human health and the environment.
☐ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
☐ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

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

Printed Name: _____ Title: _____

Signature: Callie Karrigan _____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: Amalia Barrantes _____ Date: _____

Incident ID	nAB1831040549
District RP	2RP-5038
Facility ID	----------
Application ID	pAB1831040139

Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	51-100 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: ***Each of the following items must be included in the report.***

☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
☒ Field data
☒ Data table of soil contaminant concentration data
☒ Depth to water determination
☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
☒ Boring or excavation logs
☒ Photographs including date and GIS information
☒ Topographic/Aerial maps
☒ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

State of New Mexico
Oil Conservation Division

Incident ID	nAB1831040549
District RP	2RP-5038
Facility ID	----------
Application ID	pAB1831040139

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

Printed Name: __Callie Karrigan_____ Title: _____HES Professional_____

Signature:_____*Callie Karrigan* _____ Date: ___12/3/2018_____

email: ___cnkarrigan@marathonoil.com_____ Telephone: ___575-297-0956_____

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	nAB1831040549
District RP	2RP-5038
Facility ID	----------
Application ID	pAB1831040139

Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: *Each of the following items must be included in the closure report.*

☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☒ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: _____Callie Karrigan_____ Title: _____HES Professional_____

Signature: Callie Karrigan _____ Date: __12/3/18_____

email: __cnkarrigan@marathonoil.com_____ Telephone: _____575-297-0956_____

OCD Only

Received by: _____ Date: _____

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____
__

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	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
C 00354	C	CUB	ED		4	4	13	24S	28E	591005	3564367*	916	2739		
C 00353	C	CUB	ED		3	4	13	24S	28E	590603	3564367*	942	2726		
C 04026 POD1		CUB	ED	3	2	1	25	24S	28E	590148	3562290	1371	190	90	100
C 00750		CUB	ED	1	2	4	13	24S	28E	590898	3564871*	1410	110		
C 00349	C	CUB	ED		1	3	18	24S	29E	591401	3564773*	1418	2734		

Average Depth to Water: **90 feet**

Minimum Depth: **90 feet**

Maximum Depth: **90 feet**

Record Count: 5

UTMNAD83 Radius Search (in meters):

Easting (X): 590862.69 **Northing (Y):** 3563461.11 **Radius:** 1608

***UTM location was derived from PLSS - see Help**

APPENDIX C

FIELD NOTES & PHOTO DOCUMENTATION

SMA Field Screening

Location Name: Jitterbug Fed # 2

Date: 10/25/18

Sample Name:	Collection Time:	EC (mS)	Temp (°C)	PID Reading /PF	Soil Color	Primary Soil Type	Moisture Level	Other Remarks/Notes:
L1-1	1125	.179	17.0	—	~~Light~~ Dark Tan ~~Brown~~ Gray Olive Yellow Red	Gravel Rock ~~Sand~~ Silt Clay	Dry ~~Moist~~ Wet	
L2-1	1129	.112	17.0	—	~~Light~~ Dark Tan ~~Brown~~ Gray Olive Yellow Red	Gravel Rock ~~Sand~~ Silt Clay	Dry ~~Moist~~ Wet	
L3-1	1132	.198	17.0	—	~~Light~~ Dark Tan ~~Brown~~ Gray Olive Yellow Red	Gravel Rock ~~Sand~~ Silt Clay	Dry ~~Moist~~ Wet	
L4-1	1135	.732	16.8	—	~~Light~~ Dark Tan ~~Brown~~ Gray Olive Yellow Red	Gravel Rock ~~Sand~~ Silt Clay	Dry ~~Moist~~ Wet	
L4-2	12:46	.682	19.9	—	~~Light~~ Dark ~~Tan~~ ~~Brown~~ Gray Olive Yellow Red	Gravel Rock ~~Sand~~ Silt Clay	Dry ~~Moist~~ Wet	
SW1	1140	.281	16.4	—	~~Light~~ Dark Tan ~~Brown~~ Gray Olive Yellow Red	Gravel Rock ~~Sand~~ Silt Clay	Dry ~~Moist~~ Wet	
SW2	1145	.419	20.1	—	~~Light~~ Dark Tan ~~Brown~~ Gray Olive Yellow Red	Gravel Rock ~~Sand~~ Silt Clay	Dry ~~Moist~~ Wet	
SW3	1148	.323	20.1	—	~~Light~~ Dark Tan ~~Brown~~ Gray Olive Yellow Red	Gravel Rock ~~Sand~~ Silt Clay	Dry ~~Moist~~ Wet	
SW4	1153	.064	19.9	—	~~Light~~ Dark Tan ~~Brown~~ Gray Olive Yellow Red	Gravel Rock ~~Sand~~ Silt Clay	Dry ~~Moist~~ Wet	

ASMA Field Screening

Location Name: Jitterbug Fed #2

Date: 10/25/18

Page: 2/2

Sample Name:	Collection Time:	EC (mS)	Temp (°C)	PID Reading /PF	Soil Color	Primary Soil Type	Moisture Level	Other Remarks/Notes:
Sw 5	1158	.198	19.9	—	~~Light~~ Dark Tan ~~Brown~~ Gray Olive Yellow Red	Gravel Rock ~~Sand~~ Silt Clay	Dry ~~Moist~~ Wet	
Sw 6	1202	.265	19.8	—	~~Light~~ Dark ~~Tan~~ Brown Gray Olive Yellow Red	Gravel Rock ~~Sand~~ Silt Clay	Dry ~~Moist~~ Wet	
					Light Dark Tan Brown Gray Olive Yellow Red	Gravel Rock Sand Silt Clay	Dry Moist Wet	
					Light Dark Tan Brown Gray Olive Yellow Red	Gravel Rock Sand Silt Clay	Dry Moist Wet	
					Light Dark Tan Brown Gray Olive Yellow Red	Gravel Rock Sand Silt Clay	Dry Moist Wet	
					Light Dark Tan Brown Gray Olive Yellow Red	Gravel Rock Sand Silt Clay	Dry Moist Wet	
					Light Dark Tan Brown Gray Olive Yellow Red	Gravel Rock Sand Silt Clay	Dry Moist Wet	
					Light Dark Tan Brown Gray Olive Yellow Red	Gravel Rock Sand Silt Clay	Dry Moist Wet	
					Light Dark Tan Brown Gray Olive Yellow Red	Gravel Rock Sand Silt Clay	Dry Moist Wet	

Photo Log

Photo Taken October 25, 2018

Facing South

32.203810°, -104.036164°

Photo Taken October 25, 2018

Facing West

32.203697°, -104.036084°

APPENDIX D

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

November 02, 2018

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

RE: Jitterbug 2 OrderNo.: 1810E23

Dear Austin Weyant:

Hall Environmental Analysis Laboratory received 5 sample(s) on 10/27/2018 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 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,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1810E23**
Date Reported: **11/2/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L1-1
Project: Jitterbug 2
Collection Date: 10/25/2018 11:25:00 AM
Lab ID: 1810E23-001 **Matrix:** SOIL **Received Date:** 10/27/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	68	30		mg/Kg	20	10/29/2018 11:14:34 PM	41251

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 Quanitative 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

Analytical Report
Lab Order **1810E23**
Date Reported: **11/2/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L2-1
Project: Jitterbug 2
Collection Date: 10/25/2018 11:29:00 AM
Lab ID: 1810E23-002 **Matrix:** SOIL **Received Date:** 10/27/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	62	30		mg/Kg	20	10/29/2018 11:26:58 PM	41251

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 Quanitative 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

Analytical Report
Lab Order **1810E23**
Date Reported: **11/2/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L3-1
Project: Jitterbug 2
Collection Date: 10/25/2018 11:32:00 AM
Lab ID: 1810E23-003 **Matrix:** SOIL **Received Date:** 10/27/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	220	30		mg/Kg	20	10/31/2018 3:31:24 PM	41286
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	10/31/2018 10:43:58 PM	41260
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/31/2018 10:43:58 PM	41260
Surr: DNOP	107	50.6-138		%Rec	1	10/31/2018 10:43:58 PM	41260
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	10/30/2018 2:38:55 PM	41230
Surr: BFB	88.6	73.8-119		%Rec	1	10/30/2018 2:38:55 PM	41230
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	10/30/2018 2:38:55 PM	41230
Toluene	ND	0.049		mg/Kg	1	10/30/2018 2:38:55 PM	41230
Ethylbenzene	ND	0.049		mg/Kg	1	10/30/2018 2:38:55 PM	41230
Xylenes, Total	ND	0.098		mg/Kg	1	10/30/2018 2:38:55 PM	41230
Surr: 4-Bromofluorobenzene	89.6	80-120		%Rec	1	10/30/2018 2:38:55 PM	41230

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 Quanitative 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

Analytical Report
Lab Order **1810E23**
Date Reported: **11/2/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L4-1
Project: Jitterbug 2
Collection Date: 10/25/2018 11:35:00 AM
Lab ID: 1810E23-004 **Matrix:** SOIL **Received Date:** 10/27/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	280	30		mg/Kg	20	10/31/2018 4:33:27 PM	41286

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 Quanitative 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

Analytical Report
Lab Order **1810E23**
Date Reported: **11/2/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L4-2
Project: Jitterbug 2
Collection Date: 10/25/2018 12:46:00 PM
Lab ID: 1810E23-005 **Matrix:** SOIL **Received Date:** 10/27/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	200	30		mg/Kg	20	10/31/2018 4:45:51 PM	41286
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	10/31/2018 11:08:07 PM	41260
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	10/31/2018 11:08:07 PM	41260
Surr: DNOP	115	50.6-138		%Rec	1	10/31/2018 11:08:07 PM	41260
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	10/30/2018 4:36:01 PM	41230
Surr: BFB	88.2	73.8-119		%Rec	1	10/30/2018 4:36:01 PM	41230
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.023		mg/Kg	1	10/30/2018 4:36:01 PM	41230
Toluene	ND	0.046		mg/Kg	1	10/30/2018 4:36:01 PM	41230
Ethylbenzene	ND	0.046		mg/Kg	1	10/30/2018 4:36:01 PM	41230
Xylenes, Total	ND	0.091		mg/Kg	1	10/30/2018 4:36:01 PM	41230
Surr: 4-Bromofluorobenzene	88.6	80-120		%Rec	1	10/30/2018 4:36:01 PM	41230

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 Quanitative 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#: **1810E23**

02-Nov-18

Client: Souder, Miller & Associates

Project: Jitterbug 2

Sample ID	**MB-41251**	SampType:	**mblk**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**41251**	RunNo:	**55249**					
Prep Date:	**10/29/2018**	Analysis Date:	**10/29/2018**	SeqNo:	**1837346**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	**LCS-41251**	SampType:	**lcs**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**41251**	RunNo:	**55249**					
Prep Date:	**10/29/2018**	Analysis Date:	**10/29/2018**	SeqNo:	**1837347**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.9	90	110			

Sample ID	**MB-41286**	SampType:	**mblk**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**41286**	RunNo:	**55292**					
Prep Date:	**10/31/2018**	Analysis Date:	**10/31/2018**	SeqNo:	**1840690**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	**LCS-41286**	SampType:	**lcs**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**41286**	RunNo:	**55292**					
Prep Date:	**10/31/2018**	Analysis Date:	**10/31/2018**	SeqNo:	**1840691**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	96.8	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 Quanitative 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#: **1810E23**
02-Nov-18

Client: Souder, Miller & Associates
Project: Jitterbug 2

Sample ID	**LCS-41260**	SampType:	**LCS**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**LCSS**	Batch ID:	**41260**		RunNo:	**55289**				
Prep Date:	**10/30/2018**	Analysis Date:	**10/31/2018**		SeqNo:	**1840122**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	10	50.00	0	89.8	70	130			
Surr: DNOP	4.9		5.000		97.7	50.6	138			

Sample ID	**MB-41260**	SampType:	**MBLK**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**PBS**	Batch ID:	**41260**		RunNo:	**55289**				
Prep Date:	**10/30/2018**	Analysis Date:	**10/31/2018**		SeqNo:	**1840123**	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	9.7		10.00		97.0	50.6	138			

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 Quanitative 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#: **1810E23**
02-Nov-18

Client: Souder, Miller & Associates
Project: Jitterbug 2

Sample ID	**MB-41230**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBS**	Batch ID:	**41230**	RunNo:	**55262**					
Prep Date:	**10/29/2018**	Analysis Date:	**10/30/2018**	SeqNo:	**1838832**	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	900		1000		90.3	73.8	119			

Sample ID	**LCS-41230**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSS**	Batch ID:	**41230**	RunNo:	**55262**					
Prep Date:	**10/29/2018**	Analysis Date:	**10/30/2018**	SeqNo:	**1838833**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	28	5.0	25.00	0	113	80.1	123			
Surr: BFB	1100		1000		109	73.8	119			

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 Quanitative 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#: **1810E23**
02-Nov-18

Client: Souder, Miller & Associates
Project: Jitterbug 2

Sample ID	**MB-41230**	SampType:	**MBLK**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**PBS**	Batch ID:	**41230**	RunNo:	**55262**					
Prep Date:	**10/29/2018**	Analysis Date:	**10/30/2018**	SeqNo:	**1838861**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.92		1.000		91.9	80	120			

Sample ID	**LCS-41230**	SampType:	**LCS**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**LCSS**	Batch ID:	**41230**	RunNo:	**55262**					
Prep Date:	**10/29/2018**	Analysis Date:	**10/30/2018**	SeqNo:	**1838862**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.88	0.025	1.000	0	88.0	77.3	128			
Toluene	0.94	0.050	1.000	0	94.0	79.2	125			
Ethylbenzene	0.95	0.050	1.000	0	94.6	80.7	127			
Xylenes, Total	2.9	0.10	3.000	0	95.2	81.6	129			
Surr: 4-Bromofluorobenzene	0.93		1.000		93.3	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
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S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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: 1810E23 RcptNo: 1

Received By: Anne Thorne 10/27/2018 9:10:00 AM Anne Thorne

Completed By: Isaiah Ortiz 10/29/2018 11:53:00 AM I Ortiz

Reviewed By: IO 10/29/18

LB: DAD 10/29/18

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? (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: DAD 10/29/18

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	2.1	Good	Yes			

Chain-of-Custody Record

Client: SMA-Carlsbad

Mailing Address:

Phone #:

email or Fax#:

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☐ Standard ☑ Rush 5 day

Project Name: Jitterbug #2

Project #:

Project Manager: Austin Weyant

Sampler: CA

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 2.1

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 1810E23	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
10/25/18	11:25	Soil	L1-1	4oz		-001							X			
	11:29		L2-1			-002							X			
	11:32		L3-1			-003	X	X					X			
	11:35		L4-1			-004							X			
	12:46		L4-2			-005	X	X					X			

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
					10/26/18	1900
Date: 10/26/18	Time: 1900	Relinquished by:	Received by:	Via:	Date 10/27/18	Time 0910

Remarks: Marathon Oil

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 notated on the analytical report.

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

November 07, 2018

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

RE: Jitterbug OrderNo.: 1811091

Dear Austin Weyant:

Hall Environmental Analysis Laboratory received 8 sample(s) on 11/2/2018 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 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,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1811091**
Date Reported: **11/7/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L2-2
Project: Jitterbug
Collection Date: 10/25/2018 11:30:00 AM
Lab ID: 1811091-001 **Matrix:** SOIL **Received Date:** 11/2/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	64	30		mg/Kg	20	11/6/2018 3:26:11 PM	41381
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	11/6/2018 1:34:27 PM	41368
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/6/2018 1:34:27 PM	41368
Surr: DNOP	85.0	50.6-138		%Rec	1	11/6/2018 1:34:27 PM	41368
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/6/2018 10:23:59 PM	41357
Surr: BFB	92.9	73.8-119		%Rec	1	11/6/2018 10:23:59 PM	41357
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	11/6/2018 10:23:59 PM	41357
Toluene	ND	0.049		mg/Kg	1	11/6/2018 10:23:59 PM	41357
Ethylbenzene	ND	0.049		mg/Kg	1	11/6/2018 10:23:59 PM	41357
Xylenes, Total	ND	0.097		mg/Kg	1	11/6/2018 10:23:59 PM	41357
Surr: 4-Bromofluorobenzene	103	80-120		%Rec	1	11/6/2018 10:23:59 PM	41357

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 Quanitative 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

Analytical Report
Lab Order **1811091**
Date Reported: **11/7/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: L4-2
Project: Jitterbug
Collection Date: 10/25/2018 12:46:00 PM
Lab ID: 1811091-002 **Matrix:** SOIL **Received Date:** 11/2/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	210	30		mg/Kg	20	11/6/2018 3:38:36 PM	41381
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	11/6/2018 1:58:58 PM	41368
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	11/6/2018 1:58:58 PM	41368
Surr: DNOP	88.7	50.6-138		%Rec	1	11/6/2018 1:58:58 PM	41368
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/6/2018 10:46:29 PM	41357
Surr: BFB	95.6	73.8-119		%Rec	1	11/6/2018 10:46:29 PM	41357
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	11/6/2018 10:46:29 PM	41357
Toluene	ND	0.048		mg/Kg	1	11/6/2018 10:46:29 PM	41357
Ethylbenzene	ND	0.048		mg/Kg	1	11/6/2018 10:46:29 PM	41357
Xylenes, Total	ND	0.096		mg/Kg	1	11/6/2018 10:46:29 PM	41357
Surr: 4-Bromofluorobenzene	107	80-120		%Rec	1	11/6/2018 10:46:29 PM	41357

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 Quanitative 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

Analytical Report
Lab Order **1811091**
Date Reported: **11/7/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW 1
Project: Jitterbug
Collection Date: 10/25/2018 11:40:00 AM
Lab ID: 1811091-003 **Matrix:** SOIL **Received Date:** 11/2/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	330	30		mg/Kg	20	11/6/2018 3:51:00 PM	41381

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 Quanitative 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

Analytical Report
Lab Order **1811091**
Date Reported: **11/7/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW 2
Project: Jitterbug
Collection Date: 10/25/2018 11:45:00 AM
Lab ID: 1811091-004 **Matrix:** SOIL **Received Date:** 11/2/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	45	30		mg/Kg	20	11/6/2018 4:03:25 PM	41381

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 Quanitative 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

Analytical Report
Lab Order **1811091**
Date Reported: **11/7/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW 3
Project: Jitterbug
Collection Date: 10/25/2018 11:48:00 AM
Lab ID: 1811091-005 **Matrix:** SOIL **Received Date:** 11/2/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	30		mg/Kg	20	11/6/2018 7:28:57 PM	41391

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 Quanitative 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

Analytical Report
Lab Order **1811091**
Date Reported: **11/7/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW 4
Project: Jitterbug
Collection Date: 10/25/2018 11:53:00 AM
Lab ID: 1811091-006 **Matrix:** SOIL **Received Date:** 11/2/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	30		mg/Kg	20	11/6/2018 7:41:22 PM	41391

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 Quanitative 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

Analytical Report
Lab Order **1811091**
Date Reported: **11/7/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW 5
Project: Jitterbug
Collection Date: 10/25/2018 11:58:00 AM
Lab ID: 1811091-007 **Matrix:** SOIL **Received Date:** 11/2/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	150	30		mg/Kg	20	11/6/2018 7:53:47 PM	41391

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 Quanitative 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

Analytical Report
Lab Order **1811091**
Date Reported: **11/7/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller & Associates
Client Sample ID: SW 6
Project: Jitterbug
Collection Date: 10/25/2018 12:02:00 PM
Lab ID: 1811091-008 **Matrix:** SOIL **Received Date:** 11/2/2018 9:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	300	30		mg/Kg	20	11/6/2018 8:06:11 PM	41391

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 Quanitative 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#: **1811091**

07-Nov-18

Client: Souder, Miller & Associates

Project: Jitterbug

Sample ID	**MB-41381**	SampType:	**MBLK**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**41381**	RunNo:	**55430**					
Prep Date:	**11/6/2018**	Analysis Date:	**11/6/2018**	SeqNo:	**1846319**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	**LCS-41381**	SampType:	**LCS**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**41381**	RunNo:	**55430**					
Prep Date:	**11/6/2018**	Analysis Date:	**11/6/2018**	SeqNo:	**1846320**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.7	90	110			

Sample ID	**MB-41391**	SampType:	**MBLK**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**41391**	RunNo:	**55434**					
Prep Date:	**11/6/2018**	Analysis Date:	**11/6/2018**	SeqNo:	**1846468**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	**LCS-41391**	SampType:	**LCS**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**41391**	RunNo:	**55434**					
Prep Date:	**11/6/2018**	Analysis Date:	**11/6/2018**	SeqNo:	**1846469**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.4	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 Quanitative 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#: **1811091**

07-Nov-18

Client: Souder, Miller & Associates

Project: Jitterbug

Sample ID	**LCS-41368**	SampType:	**LCS**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**LCSS**	Batch ID:	**41368**		RunNo:	**55425**				
Prep Date:	**11/5/2018**	Analysis Date:	**11/6/2018**		SeqNo:	**1844297**	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	95.6	70	130			
Surr: DNOP	4.2		5.000		84.1	50.6	138			

Sample ID	**MB-41368**	SampType:	**MBLK**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**PBS**	Batch ID:	**41368**		RunNo:	**55425**				
Prep Date:	**11/5/2018**	Analysis Date:	**11/6/2018**		SeqNo:	**1844298**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		105	50.6	138			

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 Quanitative 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#: **1811091**

07-Nov-18

Client: Souder, Miller & Associates

Project: Jitterbug

Sample ID	**MB-41357**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBS**	Batch ID:	**41357**	RunNo:	**55429**					
Prep Date:	**11/5/2018**	Analysis Date:	**11/6/2018**	SeqNo:	**1845135**	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	920		1000		92.1	73.8	119			

Sample ID	**LCS-41357**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSS**	Batch ID:	**41357**	RunNo:	**55429**					
Prep Date:	**11/5/2018**	Analysis Date:	**11/6/2018**	SeqNo:	**1845136**	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	80.1	123			
Surr: BFB	1100		1000		110	73.8	119			

Sample ID	**MB-41367**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBS**	Batch ID:	**41367**	RunNo:	**55429**					
Prep Date:	**11/5/2018**	Analysis Date:	**11/6/2018**	SeqNo:	**1845147**	Units:	**%Rec**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	940		1000		94.0	73.8	119			

Sample ID	**LCS-41367**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSS**	Batch ID:	**41367**	RunNo:	**55429**					
Prep Date:	**11/5/2018**	Analysis Date:	**11/6/2018**	SeqNo:	**1845148**	Units:	**%Rec**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1100		1000		112	73.8	119			

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 Quanitative 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#: **1811091**

07-Nov-18

Client: Souder, Miller & Associates

Project: Jitterbug

Sample ID	**MB-41357**	SampType:	**MBLK**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**PBS**	Batch ID:	**41357**	RunNo:	**55429**					
Prep Date:	**11/5/2018**	Analysis Date:	**11/6/2018**	SeqNo:	**1845160**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.99		1.000		99.0	80	120			

Sample ID	**LCS-41357**	SampType:	**LCS**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**LCSS**	Batch ID:	**41357**	RunNo:	**55429**					
Prep Date:	**11/5/2018**	Analysis Date:	**11/6/2018**	SeqNo:	**1845161**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.97	0.025	1.000	0	97.3	80	120			
Toluene	0.99	0.050	1.000	0	98.6	80	120			
Ethylbenzene	0.98	0.050	1.000	0	97.5	80	120			
Xylenes, Total	2.9	0.10	3.000	0	96.8	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		102	80	120			

Sample ID	**MB-41367**	SampType:	**MBLK**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**PBS**	Batch ID:	**41367**	RunNo:	**55429**					
Prep Date:	**11/5/2018**	Analysis Date:	**11/6/2018**	SeqNo:	**1845184**	Units:	**%Rec**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.1		1.000		109	80	120			

Sample ID	**LCS-41367**	SampType:	**LCS**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**LCSS**	Batch ID:	**41367**	RunNo:	**55429**					
Prep Date:	**11/5/2018**	Analysis Date:	**11/6/2018**	SeqNo:	**1845185**	Units:	**%Rec**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.1		1.000		106	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 Quanitative 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

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: 1811091 RcptNo: 1

Received By: Victoria Zellar 11/2/2018 9:10:00 AM Victoria Zellar

Completed By: Erin Melendrez 11/2/2018 11:24:11 AM

Reviewed By: JAB 11/02/18

LB. DAD 11/02/18

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? (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: DAD 11/02/18

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	3.4	Good	Yes			
2	2.1	Good	Yes			

Chain-of-Custody Record

Client: SMA

Mailing Address: Carlsbad

Phone #:

email or Fax#:

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☐ Standard ☒ Rush 5 day

Project Name: Jitterbug

Project #:

Project Manager: Austin Weyant

Sampler: LA

On Ice: ☒ Yes ☐ No

# of Coolers: 2

Cooler Temp(including CF): 3.4,2.1

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 1811091	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
10/25/18	1130	Soil	L2-2	4oz		-001	X	X					X			
	1246		L4-2			-002	X	X					X			
	1140		SW1			-003							X			
	1145		SW2			-004							X			
	1148		SW3			-005							X			
	1153		SW4			-006							X			
	1158		SW5			-007							X			
	1202		SW6			-008							X			

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
					11/1/18	1430
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
				Courier	11/2/18	9:10

Remarks: Maramen Oil

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

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 220414

CONDITIONS

Operator: MARATHON OIL PERMIAN LLC 990 Town & Country Blvd. Houston, TX 77024	OGRID: 372098
	Action Number: 220414
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
bhall	Closure approved. Site will need to meet the requirements of 19.15.29.13 NMAC.	9/12/2023