January 29, 2020

Company:	Marathon Oil Company – Permian
Location:	Urraca 11 SB Federal Com 004H
API:	30-025-41968
PLSS:	Unit D Section 11 T23S R32E
GPS:	32.325500, -103.652603
Incident ID:	NRM1935759505

Background

Wescom, Inc., hereinafter referred to as (Wescom) has prepared this closure request on behalf of **Marathon Oil Company** regarding the release at the ***Urraca 11 SB Federal Com 004H*** **(Site)** located in Unit D, Section 11, Township 23 South and Range 32 East in Lea County, New Mexico. The GPS coordinates are as follows: North 32.325500 and West -103.652603. Surface owner of the site is the Bureau of Land Management.

According to the C-141: A valve was left partially open on a LACT unit causing a release of approximately 32.86 barrels of fluid onto the northern edge of location. A total of 30 barrels of fluid were recovered, leaving approximately 2.86 barrels of fluid unrecovered. The release was contained to the engineered pad, therefore not impacting any undisturbed surface off location.

Surface & Ground Water

The New Mexico Office of the State Engineer records indicates average depth to ground water in the area is 525 feet below ground surface (bgs), as shown in attached figures.

The closest USGS well, located 1.0 miles northwest of the site, listed a last recorded depth to groundwater in 1987 as 196.65 feet. However, the closest site with the most recent well data listed in 2012 via the USGS is located 1.5 miles northwest with a depth to ground water of 487 feet at last recorded measurement. (see attached figures)

No playas, lakes or streams are located within a within a one-mile radius of this site. (see attached figure).

Cave/Karst

According to data from the Bureau of Land Management, this site is located within low karst potential. There were no surface indicators of karst at surface. (see attached figure)

Target Remedial Levels

The target cleanup levels are determined using the NMOCD Closure Criteria (19.15.29.12.B(4) and Table 1 NMAC) including karst guidelines from the Bureau of Land Management. The applicable recommended Remediation Action Levels (RRAL) are 10 parts per million (ppm) Benzene, 50 ppm combined benzene, toluene, ethyl benzene, and total xylenes (BTEX) and, 2,500 ppm Total Petroleum Hydrocarbons (TPH), characterization of vertical and horizontal extent of chloride concentration to a level of 20,000 mg/kg (PPM) is also required.

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**
Based on high karst potential		600	100		50	10
less than 50 ft bgs or no water data within 1/2 mile		600	100		50	10
51 ft to 100 ft		10,000	2,500	1,000	50	10
greater than 100 ft		**20,000**	**2,500**	**1,000**	**50**	**10**
Surface water	**yes or no**	**If yes, then**				
< 300 feet from continuously flowing watercourse or other significant watercourse?	no					
< 200 feet 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 feet from fresh water well or spring?	no					
Human and Other Areas						
< 300 feet 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 feet from wetland?	no					
within area overlying a subsurface mine?	no					
within an unstable area?	no					
within a 100-year floodplain?	no	**20,000**	**2,500**	**1,000**	**50**	**10**

Delineation Activities

Beginning November 14, 2019, Wescom mobilized to the site to characterize the release. Laboratory analysis (see below) shows that further delineation was required at sample locations SP1 through SP7 and SP1-A and SP2-A. Impacted material from the excavation activities was transported to an approved disposal facility.

Table 1. Delineation Soil Characterization Results - November 14, 2019

Sample Description			Petroleum Hydrocarbons			Inorganic
			Volatile		Extractable	
Sample ID	Depth (ft.)	Date	Benzene (mg/kg)	BTEX (total) (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
Closure Criteria			**10**	**50**	**2500**	**20000**
Lab Order: 643413 - Xenco Laboratories						
SP1	0-1	11/14/2019	**13.7**	**343**	**15300**	61.7
SP2	0-1	11/14/2019	**19.9**	**325**	**12300**	544
SP3	0-1	11/14/2019	**1.93**	**59.6**	**6530**	1100
SP4	0-1	11/14/2019	**25.5**	**315**	**14100**	246
SP5	0-1	11/14/2019	**21.8**	**279**	**12600**	732
SP6	0-1	11/14/2019	**30.7**	**305**	**17500**	773
SP7	0-1	11/14/2019	**17.8**	**270**	**20100**	218
SP1-A	3.5	11/14/2019	**99.9**	**630**	**20600**	6.06
SP2-A	3.5	11/14/2019	**96.4**	**581**	**23900**	38.9
SP3-A	3.5	11/14/2019	ND	0.05	ND	929
SP4-A	2	11/14/2019	0.01	0.03	63.9	15.8
SP5-A	2	11/14/2019	0.01	0.07	66	25.9
SP6-A	2	11/14/2019	0.01	0.07	50.8	24.2
SP7-A	2	11/14/2019	0.01	0.04	58.5	37.2

Additional delineation activities guided the excavation of impacted materials until field screens showed they were under applicable RRAL's.

Approximately 42 cubic yards of impacted material have been removed from the excavation. Two main areas of excavation were completed, one on the west edge of the tank battery and one on the north edge of the tank battery. Final dimensions of the west excavation are 37 feet by 23 feet with an average depth of seven feet. The northern excavation was between the flare line and the tank battery and wrapped around the stairway from the battery. Final dimensions of the northern excavation are 16 feet by 46 feet.

A 48-hour sampling notification was originally given on January 20, 2020 via email to NMOCD District II with the NMOCD in Artesia, New Mexico. Laboratory confirmation results taken on January 22, 2020 indicated the need for additional excavation of impacted material. Due to safety concerns, original samples on the west end of spill area were collected on January 15, 2020.

A second 48-hour sampling notification was given on January 26, 2020 via email to NMOCD District II.

On January 29, 2020 final confirmation composite samples were collected from the excavation seen in Table 2 below. All soil confirmation samples were properly packaged, preserved and transported to Hall Environmental Analysis Laboratory, Inc. by chain of custody, and analyzed for TPH (total petroleum hydrocarbons) (Method 8015M), BTEX (Method 8021B), and Chlorides (Method 300.0).

Table 2. Laboratory Confirmation Analysis Results - January 20, 22, and 29, 2020

Sample Description				Petroleum Hydrocarbons			Inorganic
				Volatile		Extractable	
Sample ID	Depth (ft.)	Area	Date	Benzene (mg/kg)	BTEX (total) (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
Closure Criteria				**10**	**50**	**2500**	**20000**
Lab Orders: 2001966 and 2001B49 - Hall Environmental Analysis Laboratory, Inc.							
SP8 EW	0.0-8.0	Wall	1/20/2020	ND	ND	ND	ND
SP8 NW	0.0-8.0	Wall	1/20/2020	ND	ND	ND	ND
SP8 F	5.0	Base	1/20/2020	ND	ND	44	140
SP9 F	2.0	Base	1/20/2020	ND	ND	9.2	230
SP13	7.5	Base	1/20/2020	ND	ND	ND	ND
SPN-S&W-WS Comp	0.0-4.0	Wall	1/22/2020	ND	2.21	408	100
SPN FS Comp (i.e. SPN-E)	3.5	Base	1/22/2020	1.1	67.7	**3130**	140
SPN-E-Comp	6.0	Base	1/29/2020	ND	ND	440	87
SPN FS Comp (i.e. SPN-SW)	4.0	Base	1/22/2020	43	654	**11900**	60
SPN-SW-Comp	6.0	Base	1/29/2020	ND	ND	85	ND
SPN FS NW Comp	8.0	Base	1/22/2020	0.12	3.69	1269	160
NSP E/N Wall Comp	0.0-8.0	Wall	1/22/2020	0.53	42.73	2060	170

NOTE: Samples are confirmation samples. Samples were collected based on 200 square feet, composite samples. Nomenclature for samples take on January 20th are labeled by sample area, direction and excavation area. Samples taken January 22 and 29 are taken from the north excavation. For clarity of lab results, we have combined all confirmation samples into one table. Gray highlighted samples were excavated an additional 2.0 feet or greater. SPN FS Comp at 3.5 feet is the same are as SPN E Comp at 6.0 feet. Additionally, SPN FS Comp at 4.0 feet is the same sample area as SPN-SW-Comp at 6.0 feet.

Request for Closure

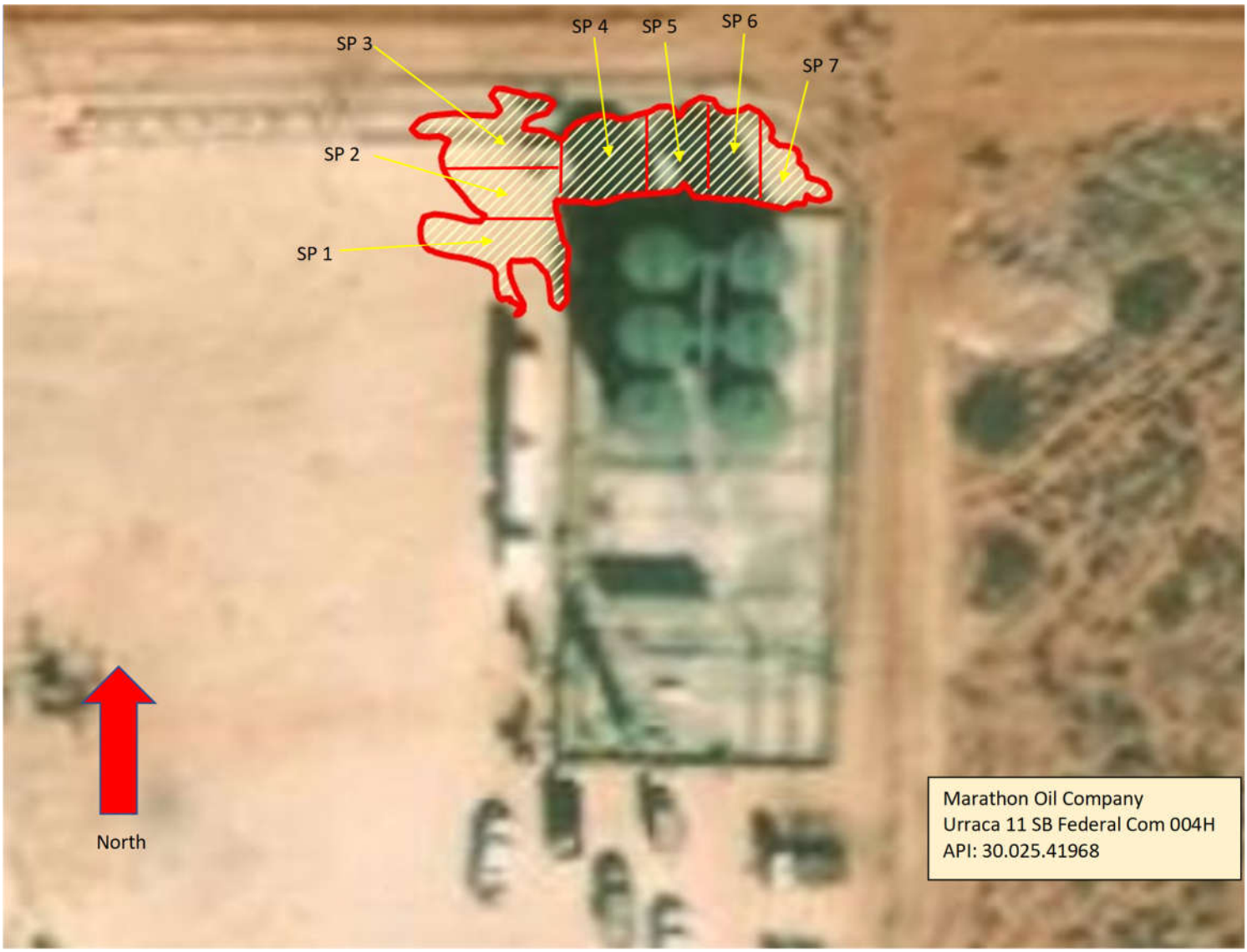
On behalf of Marathon Oil, Wescom requests closure for the release associated with NRM1935759505 and recommends no further action.

Attachments

Impacted Area Map
Delineation Sample Diagram
Confirmation Sample Diagram
FEMA Flood Hazard Map
BLM Cave/Karst Map
NM OSE Water Data
USGS Water Data
Topo map with elevation marker and water features
Site Pictures
Final C-141
Analytical Results

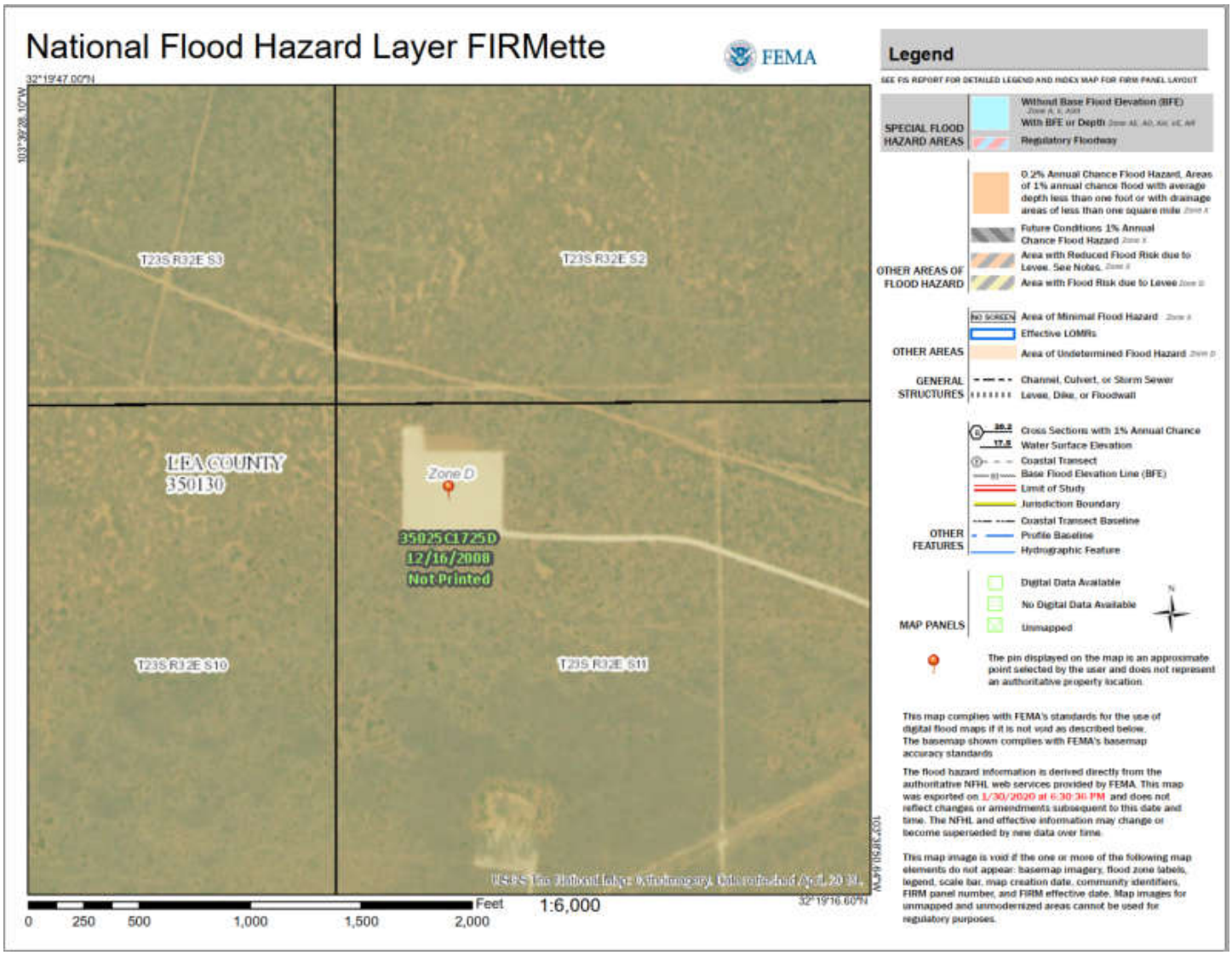
Impacted Area

Initial Delineation Sample Diagram



Confirmation Sample Diagram

FEMA Flood Hazard Map



BLM CAVE/KARST MAP – LOW karst potential

Wells within 1 mile radius of site (NM OSE)

New Mexico Office of the State Engineer - Average Depth to Water

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	Depth Well	Depth Water	Water Column
C 02216		CUB	LE	2	2	4	21	23S	32E	625035	3573261*	585	400	185
C 02349		CUB	ED		2	3	03	23S	32E	625678	3578004*	525		
C 03529 POD1		C	LE	2	4	3	29	23S	32E	622651	3571212	550		
C 03851 POD1		CUB	LE	3	3	4	20	23S	32E	622880	3572660	1392	713	679

Average Depth to Water: **556 feet**

Minimum Depth: **400 feet**

Maximum Depth: **713 feet**

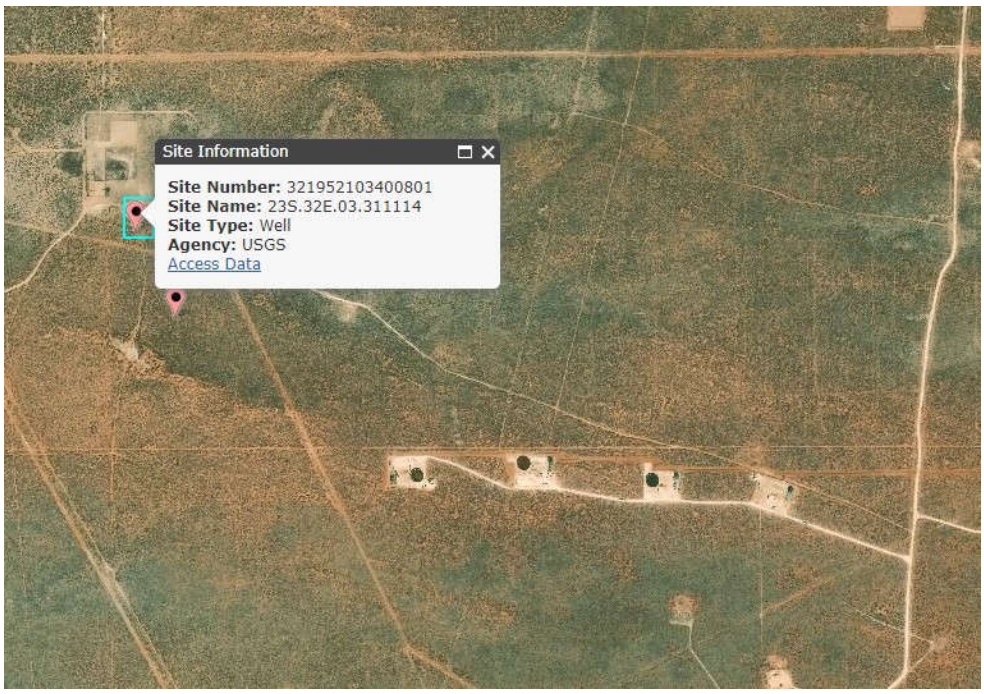
Record Count: 4

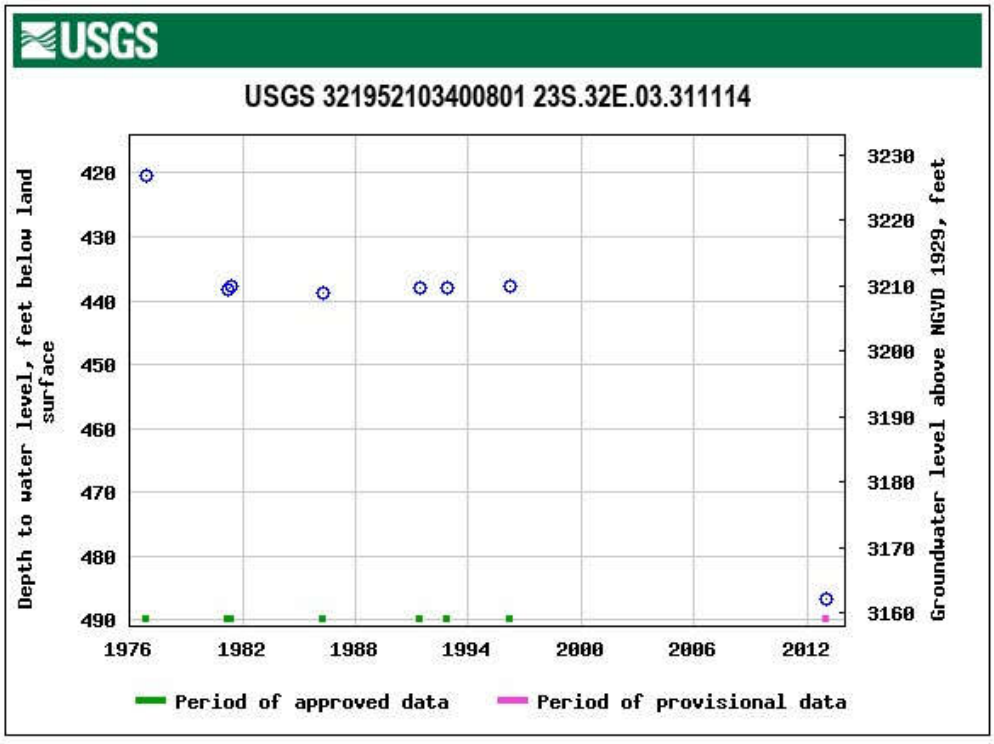
PLSS Search:

Township: 23S **Range:** 32E

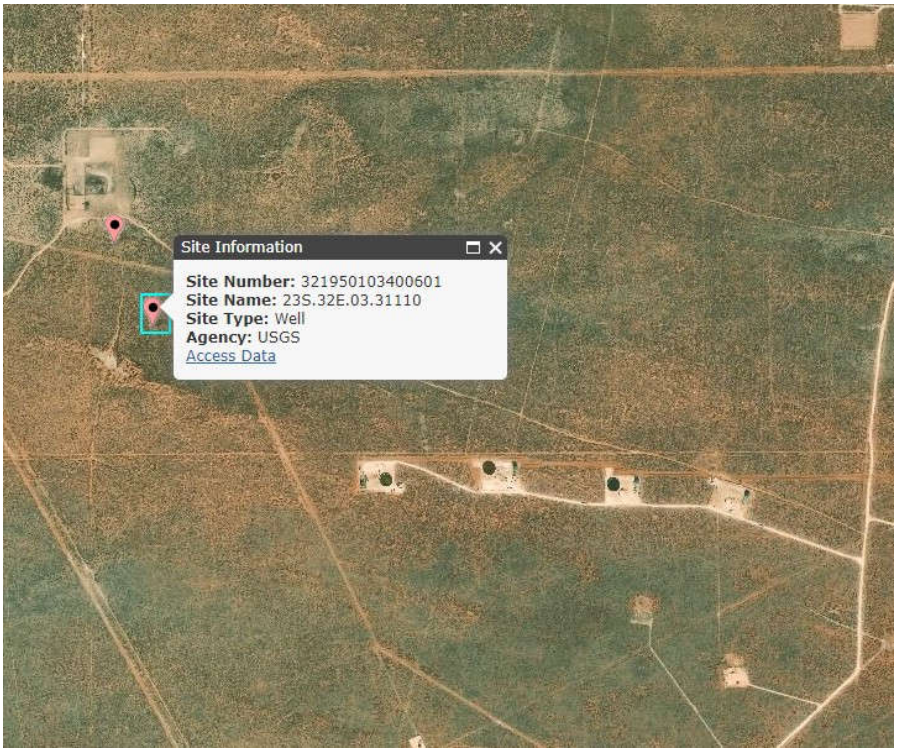
***UTM location was derived from PLSS - see Help**

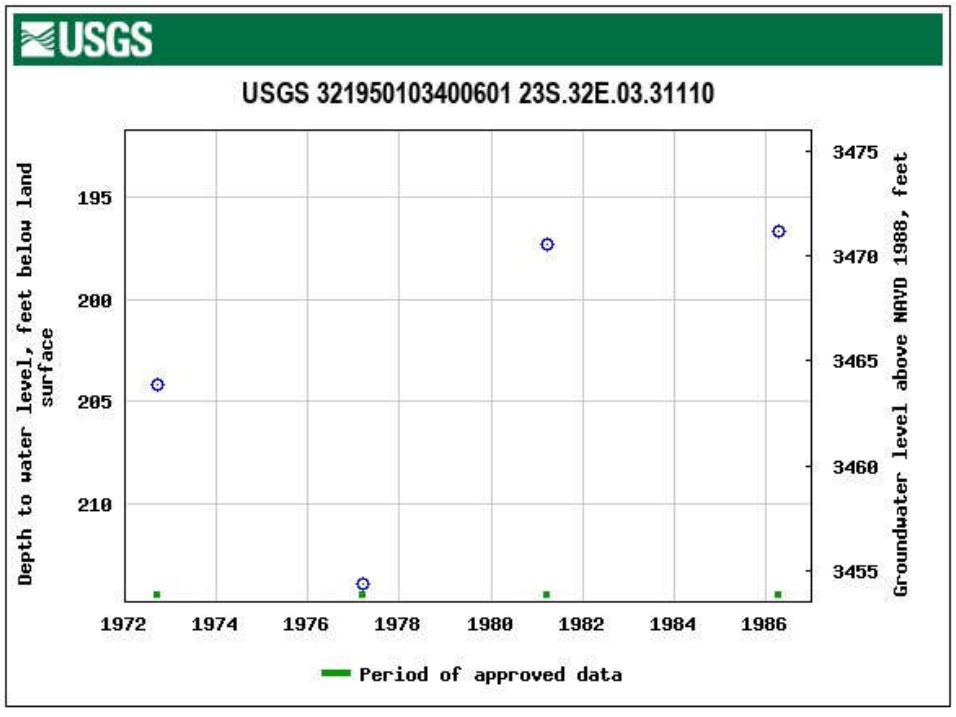
Nearest USGS Wells & Water data



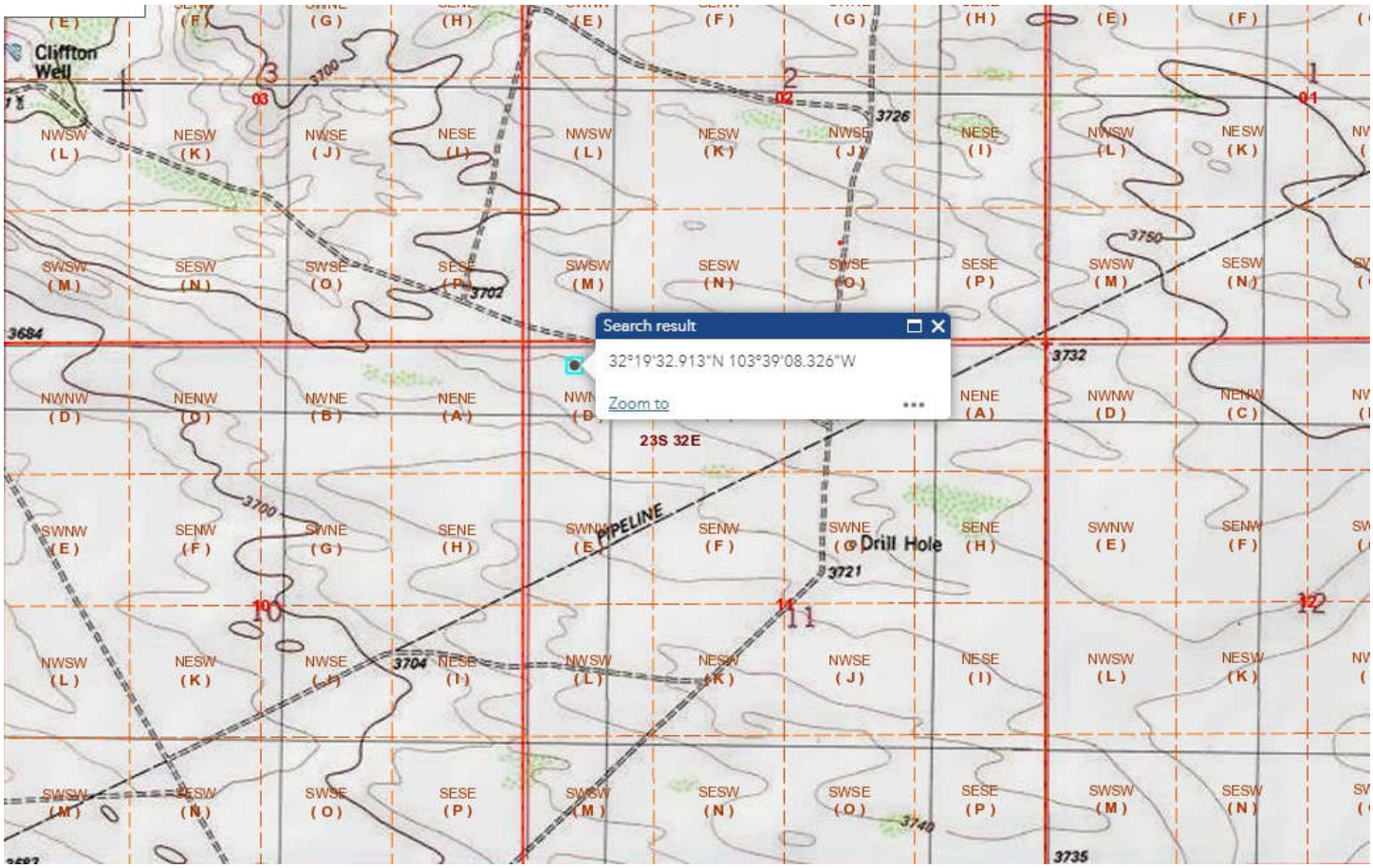


Nearest USGS Wells & Water data





US Topographic map with elevation markers & water features



Site Pictures

Site Information Signage

Original Spill Area – facing west

North excavation – facing south; full extent

North excavation – facing east; full extent

North Excavation – facing southeast; full extent

West Excavation – facing north; full extent

Final Impacted Material pile – facing west

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

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

Incident ID	NRM1935759505
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party Marathon Oil Permian LLC	OGRID 372098
Contact Name Isaac Castro	Contact Telephone 575-988-0561
Contact email icastro@marathonoil.com	Incident # *(assigned by OCD)*
Contact mailing address 4111 S. Tidwell Rd., Carlsbad, NM 88220	

Location of Release Source

Latitude 32.3254852 Longitude -103.6525726
(NAD 83 in decimal degrees to 5 decimal places)

Site Name URRACA 11 SB FEDERAL #004H	Site Type Oil and gas drilling facility
Date Release Discovered 10/28/19	API# *(if applicable)* 30-025-41968

Unit Letter	Section	Township	Range	County
D	11	23S	32E	Lea

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) 32.86 bbls	Volume Recovered (bbls) 30 bbls
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride 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

Operator reported a spill due to a valve being left partially left open on a lact unit. An estimated 32.86 bbls of oil was released to the pad. Initial response was to get a vac truck to recover fluids (recovered 30bbls). All spillage is contained on location.

State of New Mexico
Oil Conservation Division

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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? This was a **major** release as defined by NMAC 19.15.29.7(A) based on volume released (32.86 bbls)

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?
Email notification sent out on 10/28/19 to Jim Griswold, blm_nm_cfo_spill@blm.gov, emnrd-ocd-district1spills@state.nm.us

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: Isaac Castro Title: Environmental Professional

Signature: Isaac Castro Date: 11/6/19

email: icastro@marathonoil.com Telephone: 575-988-0561

OCD Only

Received by: _____ Date: _____

Incident ID	NRM1935759505
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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?	>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

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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: Melodie Sanjari Title: Environmental Professional

Signature: Melodie Sanjari Date: 2/3/2020

email: msanjari@marathonoil.com Telephone: 575-988-8753

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	NRM1935759505
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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: Environmental Professional

Signature: Melodie Sanjari Date: 2/3/2020

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: _____ Date: _____

Printed Name: _____ Title: _____

Certificate of Analysis Summary 643413

Wescom Inc, Carlsbad, NM

Project Name: Urraca II SB Fed Com 4H

Project Id:

Contact: Shelly Tucker

Project Location: Lea County, NM

Date Received in Lab: Fri Nov-15-19 02:35 pm

Report Date: 21-NOV-19

Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	643413-001		643413-002		643413-003		643413-004		643413-005		643413-006	
	Field Id:	SP1		SP2		SP3		SP4		SP5		SP6	
	Depth:	0-1 ft		0-1 ft		0-1 ft		0-1 ft		0-1 ft		0-1 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-14-19 11:30		Nov-14-19 12:00		Nov-14-19 12:45		Nov-14-19 10:21		Nov-14-19 10:49		Nov-14-19 11:10	
BTEX by EPA 8021B SUB: T104704400-19-19	***Extracted:***	Nov-19-19 15:15		Nov-19-19 15:15		Nov-19-19 15:15		Nov-19-19 15:15		Nov-19-19 15:15		Nov-19-19 15:15	
	Analyzed:	Nov-19-19 20:15		Nov-19-19 20:35		Nov-19-19 20:55		Nov-19-19 21:15		Nov-19-19 21:35		Nov-19-19 22:54	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		13.7	0.502	19.9	0.504	1.93	0.497	25.5	0.497	21.8	0.497	30.7	0.498
Toluene		175 D	1.00	132 D	1.01	18.7	0.497	112 D	0.994	79.6 D	0.994	102 D	0.996
Ethylbenzene		35.1	0.502	38.6	0.504	8.40	0.497	41.2	0.497	39.3	0.497	43.2	0.498
m,p-Xylenes		85.3	1.00	99.6	1.01	22.3	0.994	101	0.994	103	0.994	92.4	0.996
o-Xylene		34.1	0.502	35.3	0.504	8.28	0.497	35.0	0.497	35.5	0.497	37.1	0.498
Total Xylenes		119	0.502	135	0.504	30.6	0.497	136	0.497	139	0.497	130	0.498
Total BTEX		343	0.502	325	0.504	59.6	0.497	315	0.497	279	0.497	305	0.498
Inorganic Anions by EPA 300 SUB: T104704400-19-19	***Extracted:***	Nov-20-19 10:50		Nov-20-19 10:50		Nov-20-19 12:10		Nov-20-19 12:10		Nov-20-19 12:10		Nov-20-19 12:10	
	Analyzed:	Nov-20-19 14:19		Nov-20-19 14:25		Nov-20-19 16:46		Nov-20-19 17:06		Nov-20-19 17:12		Nov-20-19 17:19	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		61.7	4.98	544	5.04	1100	4.97	246	4.98	732	5.00	773	4.99
TPH by SW8015 Mod SUB: T104704400-19-19	***Extracted:***	Nov-19-19 15:00		Nov-19-19 15:00		Nov-19-19 15:00		Nov-19-19 15:00		Nov-19-19 15:00		Nov-19-19 15:00	
	Analyzed:	Nov-20-19 08:50		Nov-20-19 09:11		Nov-20-19 04:56		Nov-20-19 13:40		Nov-20-19 14:01		Nov-20-19 14:22	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		4860	249	3770	249	1310	50.0	4400	250	3740	250	4470	249
Diesel Range Organics (DRO)		9410	249	7710	249	4690	50.0	8630	250	8000	250	11700	249
Motor Oil Range Hydrocarbons (MRO)		1010	249	810	249	526	50.0	1070	250	890	250	1310	249
Total TPH		15300	249	12300	249	6530	50.0	14100	250	12600	250	17500	249

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Version: 1.%

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 643413

Wescom Inc, Carlsbad, NM

Project Name: Urraca II SB Fed Com 4H

Project Id:

Contact: Shelly Tucker

Project Location: Lea County, NM

Date Received in Lab: Fri Nov-15-19 02:35 pm

Report Date: 21-NOV-19

Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	643413-007		643413-008		643413-009		643413-010		643413-011		643413-012	
	Field Id:	SP7		SP1-A		SP2-A		SP3-A		SP4-A		SP5-A	
	Depth:	0-1 ft		3.5- ft		3.5- ft		3.5- ft		2- ft		2- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-14-19 09:50		Nov-14-19 16:45		Nov-14-19 16:37		Nov-14-19 16:51		Nov-14-19 14:25		Nov-14-19 14:50	
BTEX by EPA 8021B SUB: T104704400-19-19	***Extracted:***	Nov-19-19 15:15		Nov-19-19 15:15		Nov-19-19 15:15		Nov-19-19 15:15		Nov-19-19 15:15		Nov-19-19 15:15	
	Analyzed:	Nov-19-19 23:15		Nov-19-19 23:35		Nov-19-19 23:55		Nov-20-19 13:34		Nov-20-19 00:35		Nov-20-19 00:55	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		17.8	0.501	99.9 D	2.00	96.4	0.495	<0.00201	0.00201	0.00525	0.00200	0.0120	0.00199
Toluene		72.0 D	1.00	257 D	2.00	226 D	1.98	0.00550	0.00201	0.00990	0.00200	0.0331	0.00199
Ethylbenzene		41.0	0.501	63.7	0.499	64.1	0.495	0.00505	0.00201	0.00721	0.00200	0.00870	0.00199
m,p-Xylenes		99.4	1.00	158	0.998	145	0.990	0.0232	0.00402	0.00491	0.00400	0.00573	0.00398
o-Xylene		39.5	0.501	51.2	0.499	49.1	0.495	0.0168	0.00201	0.00385	0.00200	0.00590	0.00199
Total Xylenes		139	0.501	209	0.499	194	0.495	0.0400	0.00201	0.00876	0.00200	0.0116	0.00199
Total BTEX		270	0.501	630	0.499	581	0.495	0.0506	0.00201	0.0311	0.00200	0.0654	0.00199
Inorganic Anions by EPA 300 SUB: T104704400-19-19	***Extracted:***	Nov-20-19 12:10		Nov-20-19 12:10		Nov-20-19 12:10		Nov-20-19 12:10		Nov-20-19 12:10		Nov-20-19 12:10	
	Analyzed:	Nov-20-19 17:26		Nov-20-19 17:46		Nov-20-19 17:52		Nov-20-19 17:59		Nov-20-19 18:05		Nov-20-19 18:12	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		218	5.03	6.06	5.01	38.9	4.96	929	5.01	15.8	5.01	25.9	4.96
TPH by SW8015 Mod SUB: T104704400-19-19	***Extracted:***	Nov-19-19 15:00		Nov-19-19 15:00		Nov-20-19 11:00		Nov-20-19 11:00		Nov-20-19 11:00		Nov-20-19 11:00	
	Analyzed:	Nov-20-19 14:43		Nov-20-19 15:04		Nov-20-19 14:00		Nov-20-19 14:19		Nov-20-19 13:04		Nov-20-19 14:38	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		4420	250	8670	250	10800	250	<50.0	50.0	<49.9	49.9	<49.9	49.9
Diesel Range Organics (DRO)		14200	250	10900	250	11700	250	<50.0	50.0	63.9	49.9	66.0	49.9
Motor Oil Range Hydrocarbons (MRO)		1450	250	1050	250	1410	250	<50.0	50.0	<49.9	49.9	<49.9	49.9
Total TPH		20100	250	20600	250	23900	250	<50.0	50.0	63.9	49.9	66.0	49.9

Version: 1.%

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 643413

Wescom Inc, Carlsbad, NM

Project Name: Urraca II SB Fed Com 4H

Project Id:

Contact: Shelly Tucker

Project Location: Lea County, NM

Date Received in Lab: Fri Nov-15-19 02:35 pm

Report Date: 21-NOV-19

Project Manager: Jessica Kramer

Analysis Requested									
	Lab Id:	643413-013		643413-014					
	Field Id:	SP6-A		SP7-A					
	Depth:	2- ft		2- ft					
	Matrix:	SOIL		SOIL					
	Sampled:	Nov-14-19 15:30		Nov-14-19 15:45					
BTEX by EPA 8021B SUB: T104704400-19-19	***Extracted:***	Nov-19-19 15:15		Nov-19-19 15:15					
	Analyzed:	Nov-20-19 01:15		Nov-20-19 01:36					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Benzene		0.0108	0.00200	0.00800	0.00201				
Toluene		0.0328	0.00200	0.0127	0.00201				
Ethylbenzene		0.00680	0.00200	0.00442	0.00201				
m,p-Xylenes		0.00807	0.00400	0.00696	0.00402				
o-Xylene		0.00617	0.00200	0.00652	0.00201				
Total Xylenes		0.0142	0.00200	0.0135	0.00201				
Total BTEX		0.0646	0.00200	0.0386	0.00201				
Inorganic Anions by EPA 300 SUB: T104704400-19-19	***Extracted:***	Nov-20-19 12:10		Nov-20-19 12:10					
	Analyzed:	Nov-20-19 18:19		Nov-20-19 18:39					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Chloride		24.2	4.97	37.2	5.00				
TPH by SW8015 Mod SUB: T104704400-19-19	***Extracted:***	Nov-20-19 11:00		Nov-20-19 11:00					
	Analyzed:	Nov-20-19 14:56		Nov-20-19 15:15					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<49.9	49.9	<50.0	50.0				
Diesel Range Organics (DRO)		50.8	49.9	58.5	50.0				
Motor Oil Range Hydrocarbons (MRO)		<49.9	49.9	<50.0	50.0				
Total TPH		50.8	49.9	58.5	50.0				

Jessica Kramer
Project Assistant

Analytical Report 643413

for

Wescom Inc

Project Manager: Shelly Tucker

Urraca II SB Fed Com 4H

21-NOV-19

Collected By: Client

1089 N Canal Street
Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)

21-NOV-19

Project Manager: **Shelly Tucker**
Wescom Inc
505 Caviness St
Carlsbad, NM 88220

Reference: XENCO Report No(s): **643413**
Urraca II SB Fed Com 4H
Project Address: Lea County, NM

Shelly Tucker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 643413. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 643413 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

Sample Cross Reference 643413

Wescom Inc, Carlsbad, NM

Urraca II SB Fed Com 4H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SP1	S	11-14-19 11:30	0 - 1 ft	643413-001
SP2	S	11-14-19 12:00	0 - 1 ft	643413-002
SP3	S	11-14-19 12:45	0 - 1 ft	643413-003
SP4	S	11-14-19 10:21	0 - 1 ft	643413-004
SP5	S	11-14-19 10:49	0 - 1 ft	643413-005
SP6	S	11-14-19 11:10	0 - 1 ft	643413-006
SP7	S	11-14-19 09:50	0 - 1 ft	643413-007
SP1-A	S	11-14-19 16:45	3.5 ft	643413-008
SP2-A	S	11-14-19 16:37	3.5 ft	643413-009
SP3-A	S	11-14-19 16:51	3.5 ft	643413-010
SP4-A	S	11-14-19 14:25	2 ft	643413-011
SP5-A	S	11-14-19 14:50	2 ft	643413-012
SP6-A	S	11-14-19 15:30	2 ft	643413-013
SP7-A	S	11-14-19 15:45	2 ft	643413-014

CASE NARRATIVE

Client Name: Wescom Inc

Project Name: Urraca II SB Fed Com 4H

Project ID:
Work Order Number(s): *643413*

Report Date: *21-NOV-19*
Date Received: *11/15/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3108091 BTEX by EPA 8021B
Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected.
Samples affected are: 643413-001,643413-002,643413-003,643413-004,643413-009,643413-006,643413-007,643413-008,643413-005.
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Due to matrix, the initial run for samples 001-009 was performed at a dilution of 250X.

Batch: LBA-3108110 TPH by SW8015 Mod
Surrogate o-Terphenyl recovered above QC limits Data confirmed by re-analysis. Samples affected are: 7690675-1-BLK.

Certificate of Analytical Results 643413

Wescom Inc, Carlsbad, NM

Urraca II SB Fed Com 4H

Sample Id:	**SP1**	Matrix:	Soil	Date Received:	11.15.19 14.35
Lab Sample Id:	643413-001	Date Collected:	11.14.19 11.30	Sample Depth:	0 - 1 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	11.20.19 10.50	Basis:	Wet Weight
Seq Number:	3108153			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**61.7**	4.98	mg/kg	11.20.19 14.19		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	11.19.19 15.00	Basis:	Wet Weight
Seq Number:	3108110			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	**4860**	249	mg/kg	11.20.19 08.50		5
Diesel Range Organics (DRO)	C10C28DRO	**9410**	249	mg/kg	11.20.19 08.50		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**1010**	249	mg/kg	11.20.19 08.50		5
Total TPH	PHC635	**15300**	249	mg/kg	11.20.19 08.50		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	11.20.19 08.50	
o-Terphenyl	84-15-1	103	%	70-135	11.20.19 08.50	

Certificate of Analytical Results 643413

Wescom Inc, Carlsbad, NM

Urraca II SB Fed Com 4H

Sample Id:	**SP1**	Matrix:	Soil	Date Received:	11.15.19 14.35
Lab Sample Id:	643413-001	Date Collected:	11.14.19 11.30	Sample Depth:	0 - 1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	11.19.19 15.15	Basis:	Wet Weight
Seq Number:	3108091			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**13.7**	0.502	mg/kg	11.19.19 20.15		250
Toluene	108-88-3	**175**	1.00	mg/kg	11.20.19 13.54	D	500
Ethylbenzene	100-41-4	**35.1**	0.502	mg/kg	11.19.19 20.15		250
m,p-Xylenes	179601-23-1	**85.3**	1.00	mg/kg	11.19.19 20.15		250
o-Xylene	95-47-6	**34.1**	0.502	mg/kg	11.19.19 20.15		250
Total Xylenes	1330-20-7	**119**	0.502	mg/kg	11.19.19 20.15		250
Total BTEX		**343**	0.502	mg/kg	11.20.19 13.54		500

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	88	%	70-130	11.19.19 20.15	
4-Bromofluorobenzene	460-00-4	275	%	70-130	11.19.19 20.15	**

Certificate of Analytical Results 643413

Wescom Inc, Carlsbad, NM

Urraca II SB Fed Com 4H

Sample Id:	**SP2**	Matrix:	Soil	Date Received:	11.15.19 14.35
Lab Sample Id:	643413-002	Date Collected:	11.14.19 12.00	Sample Depth:	0 - 1 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	11.20.19 10.50	Basis:	Wet Weight
Seq Number:	3108153			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**544**	5.04	mg/kg	11.20.19 14.25		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	11.19.19 15.00	Basis:	Wet Weight
Seq Number:	3108110			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	**3770**	249	mg/kg	11.20.19 09.11		5
Diesel Range Organics (DRO)	C10C28DRO	**7710**	249	mg/kg	11.20.19 09.11		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**810**	249	mg/kg	11.20.19 09.11		5
Total TPH	PHC635	**12300**	249	mg/kg	11.20.19 09.11		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	11.20.19 09.11	
o-Terphenyl	84-15-1	105	%	70-135	11.20.19 09.11	

Certificate of Analytical Results 643413

Wescom Inc, Carlsbad, NM

Urraca II SB Fed Com 4H

Sample Id:	**SP2**	Matrix:	Soil	Date Received:	11.15.19 14.35
Lab Sample Id:	643413-002	Date Collected:	11.14.19 12.00	Sample Depth:	0 - 1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	11.19.19 15.15	Basis:	Wet Weight
Seq Number:	3108091			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**19.9**	0.504	mg/kg	11.19.19 20.35		250
Toluene	108-88-3	**132**	1.01	mg/kg	11.20.19 14.14	D	500
Ethylbenzene	100-41-4	**38.6**	0.504	mg/kg	11.19.19 20.35		250
m,p-Xylenes	179601-23-1	**99.6**	1.01	mg/kg	11.19.19 20.35		250
o-Xylene	95-47-6	**35.3**	0.504	mg/kg	11.19.19 20.35		250
Total Xylenes	1330-20-7	**135**	0.504	mg/kg	11.19.19 20.35		250
Total BTEX		**325**	0.504	mg/kg	11.20.19 14.14		500

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	100	%	70-130	11.19.19 20.35	
4-Bromofluorobenzene	460-00-4	187	%	70-130	11.19.19 20.35	**

Certificate of Analytical Results 643413

Wescom Inc, Carlsbad, NM

Urraca II SB Fed Com 4H

Sample Id:	**SP3**	Matrix:	Soil	Date Received:	11.15.19 14.35
Lab Sample Id:	643413-003	Date Collected:	11.14.19 12.45	Sample Depth:	0 - 1 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	11.20.19 12.10	Basis:	Wet Weight
Seq Number:	3108158			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1100**	4.97	mg/kg	11.20.19 16.46		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	11.19.19 15.00	Basis:	Wet Weight
Seq Number:	3108110			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	**1310**	50.0	mg/kg	11.20.19 04.56		1
Diesel Range Organics (DRO)	C10C28DRO	**4690**	50.0	mg/kg	11.20.19 04.56		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**526**	50.0	mg/kg	11.20.19 04.56		1
Total TPH	PHC635	**6530**	50.0	mg/kg	11.20.19 04.56		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	129	%	70-135	11.20.19 04.56	
o-Terphenyl	84-15-1	122	%	70-135	11.20.19 04.56	

Certificate of Analytical Results 643413

Wescom Inc, Carlsbad, NM

Urraca II SB Fed Com 4H

Sample Id:	**SP3**	Matrix:	Soil	Date Received:	11.15.19 14.35
Lab Sample Id:	643413-003	Date Collected:	11.14.19 12.45	Sample Depth:	0 - 1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	11.19.19 15.15	Basis:	Wet Weight
Seq Number:	3108091			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**1.93**	0.497	mg/kg	11.19.19 20.55		250
Toluene	108-88-3	**18.7**	0.497	mg/kg	11.19.19 20.55		250
Ethylbenzene	100-41-4	**8.40**	0.497	mg/kg	11.19.19 20.55		250
m,p-Xylenes	179601-23-1	**22.3**	0.994	mg/kg	11.19.19 20.55		250
o-Xylene	95-47-6	**8.28**	0.497	mg/kg	11.19.19 20.55		250
Total Xylenes	1330-20-7	**30.6**	0.497	mg/kg	11.19.19 20.55		250
Total BTEX		**59.6**	0.497	mg/kg	11.19.19 20.55		250

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	135	%	70-130	11.19.19 20.55	**
1,4-Difluorobenzene	540-36-3	93	%	70-130	11.19.19 20.55	

Certificate of Analytical Results 643413

Wescom Inc, Carlsbad, NM

Urraca II SB Fed Com 4H

Sample Id:	**SP4**	Matrix:	Soil	Date Received:	11.15.19 14.35
Lab Sample Id:	643413-004	Date Collected:	11.14.19 10.21	Sample Depth:	0 - 1 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	11.20.19 12.10	Basis:	Wet Weight
Seq Number:	3108158			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**246**	4.98	mg/kg	11.20.19 17.06		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	11.19.19 15.00	Basis:	Wet Weight
Seq Number:	3108110			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	**4400**	250	mg/kg	11.20.19 13.40		5
Diesel Range Organics (DRO)	C10C28DRO	**8630**	250	mg/kg	11.20.19 13.40		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**1070**	250	mg/kg	11.20.19 13.40		5
Total TPH	PHC635	**14100**	250	mg/kg	11.20.19 13.40		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	11.20.19 13.40	
o-Terphenyl	84-15-1	105	%	70-135	11.20.19 13.40	

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Wescom Inc, Carlsbad, NM

Urraca II SB Fed Com 4H

Sample Id:	**SP4**	Matrix:	Soil	Date Received:	11.15.19 14.35
Lab Sample Id:	643413-004	Date Collected:	11.14.19 10.21	Sample Depth:	0 - 1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	11.19.19 15.15	Basis:	Wet Weight
Seq Number:	3108091			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**25.5**	0.497	mg/kg	11.19.19 21.15		250
Toluene	108-88-3	**112**	0.994	mg/kg	11.20.19 15.53	D	500
Ethylbenzene	100-41-4	**41.2**	0.497	mg/kg	11.19.19 21.15		250
m,p-Xylenes	179601-23-1	**101**	0.994	mg/kg	11.19.19 21.15		250
o-Xylene	95-47-6	**35.0**	0.497	mg/kg	11.19.19 21.15		250
Total Xylenes	1330-20-7	**136**	0.497	mg/kg	11.19.19 21.15		250
Total BTEX		**315**	0.497	mg/kg	11.20.19 15.53		500

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	182	%	70-130	11.19.19 21.15	**
1,4-Difluorobenzene	540-36-3	100	%	70-130	11.19.19 21.15	

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Wescom Inc, Carlsbad, NM

Urraca II SB Fed Com 4H

Sample Id:	**SP5**	Matrix:	Soil	Date Received:	11.15.19 14.35
Lab Sample Id:	643413-005	Date Collected:	11.14.19 10.49	Sample Depth:	0 - 1 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	11.20.19 12.10	Basis:	Wet Weight
Seq Number:	3108158			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**732**	5.00	mg/kg	11.20.19 17.12		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	11.19.19 15.00	Basis:	Wet Weight
Seq Number:	3108110			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	**3740**	250	mg/kg	11.20.19 14.01		5
Diesel Range Organics (DRO)	C10C28DRO	**8000**	250	mg/kg	11.20.19 14.01		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**890**	250	mg/kg	11.20.19 14.01		5
Total TPH	PHC635	**12600**	250	mg/kg	11.20.19 14.01		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	118	%	70-135	11.20.19 14.01	
o-Terphenyl	84-15-1	111	%	70-135	11.20.19 14.01	

Certificate of Analytical Results 643413

Wescom Inc, Carlsbad, NM

Urraca II SB Fed Com 4H

Sample Id:	**SP5**	Matrix:	Soil	Date Received:	11.15.19 14.35
Lab Sample Id:	643413-005	Date Collected:	11.14.19 10.49	Sample Depth:	0 - 1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	11.19.19 15.15	Basis:	Wet Weight
Seq Number:	3108091			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**21.8**	0.497	mg/kg	11.19.19 21.35		250
Toluene	108-88-3	**79.6**	0.994	mg/kg	11.20.19 16.13	D	500
Ethylbenzene	100-41-4	**39.3**	0.497	mg/kg	11.19.19 21.35		250
m,p-Xylenes	179601-23-1	**103**	0.994	mg/kg	11.19.19 21.35		250
o-Xylene	95-47-6	**35.5**	0.497	mg/kg	11.19.19 21.35		250
Total Xylenes	1330-20-7	**139**	0.497	mg/kg	11.19.19 21.35		250
Total BTEX		**279**	0.497	mg/kg	11.20.19 16.13		500

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	188	%	70-130	11.19.19 21.35	**
1,4-Difluorobenzene	540-36-3	100	%	70-130	11.19.19 21.35	

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Wescom Inc, Carlsbad, NM

Urraca II SB Fed Com 4H

Sample Id:	**SP6**	Matrix:	Soil	Date Received:	11.15.19 14.35
Lab Sample Id:	643413-006	Date Collected:	11.14.19 11.10	Sample Depth:	0 - 1 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	11.20.19 12.10	Basis:	Wet Weight
Seq Number:	3108158			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**773**	4.99	mg/kg	11.20.19 17.19		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	11.19.19 15.00	Basis:	Wet Weight
Seq Number:	3108110			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	**4470**	249	mg/kg	11.20.19 14.22		5
Diesel Range Organics (DRO)	C10C28DRO	**11700**	249	mg/kg	11.20.19 14.22		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**1310**	249	mg/kg	11.20.19 14.22		5
Total TPH	PHC635	**17500**	249	mg/kg	11.20.19 14.22		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	122	%	70-135	11.20.19 14.22	
o-Terphenyl	84-15-1	114	%	70-135	11.20.19 14.22	

Certificate of Analytical Results 643413

Wescom Inc, Carlsbad, NM

Urraca II SB Fed Com 4H

Sample Id:	**SP6**	Matrix:	Soil	Date Received:	11.15.19 14.35
Lab Sample Id:	643413-006	Date Collected:	11.14.19 11.10	Sample Depth:	0 - 1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	11.19.19 15.15	Basis:	Wet Weight
Seq Number:	3108091			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**30.7**	0.498	mg/kg	11.19.19 22.54		250
Toluene	108-88-3	**102**	0.996	mg/kg	11.20.19 16.33	D	500
Ethylbenzene	100-41-4	**43.2**	0.498	mg/kg	11.19.19 22.54		250
m,p-Xylenes	179601-23-1	**92.4**	0.996	mg/kg	11.19.19 22.54		250
o-Xylene	95-47-6	**37.1**	0.498	mg/kg	11.19.19 22.54		250
Total Xylenes	1330-20-7	**130**	0.498	mg/kg	11.19.19 22.54		250
Total BTEX		**305**	0.498	mg/kg	11.20.19 16.33		500

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	99	%	70-130	11.19.19 22.54	
4-Bromofluorobenzene	460-00-4	174	%	70-130	11.19.19 22.54	**

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Wescom Inc, Carlsbad, NM

Urraca II SB Fed Com 4H

Sample Id:	**SP7**	Matrix:	Soil	Date Received:	11.15.19 14.35
Lab Sample Id:	643413-007	Date Collected:	11.14.19 09.50	Sample Depth:	0 - 1 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	11.20.19 12.10	Basis:	Wet Weight
Seq Number:	3108158			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**218**	5.03	mg/kg	11.20.19 17.26		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	11.19.19 15.00	Basis:	Wet Weight
Seq Number:	3108110			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	**4420**	250	mg/kg	11.20.19 14.43		5
Diesel Range Organics (DRO)	C10C28DRO	**14200**	250	mg/kg	11.20.19 14.43		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**1450**	250	mg/kg	11.20.19 14.43		5
Total TPH	PHC635	**20100**	250	mg/kg	11.20.19 14.43		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	128	%	70-135	11.20.19 14.43	
o-Terphenyl	84-15-1	117	%	70-135	11.20.19 14.43	

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Wescom Inc, Carlsbad, NM

Urraca II SB Fed Com 4H

Sample Id:	**SP7**	Matrix:	Soil	Date Received:	11.15.19 14.35
Lab Sample Id:	643413-007	Date Collected:	11.14.19 09.50	Sample Depth:	0 - 1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	11.19.19 15.15	Basis:	Wet Weight
Seq Number:	3108091			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**17.8**	0.501	mg/kg	11.19.19 23.15		250
Toluene	108-88-3	**72.0**	1.00	mg/kg	11.20.19 16.53	D	500
Ethylbenzene	100-41-4	**41.0**	0.501	mg/kg	11.19.19 23.15		250
m,p-Xylenes	179601-23-1	**99.4**	1.00	mg/kg	11.19.19 23.15		250
o-Xylene	95-47-6	**39.5**	0.501	mg/kg	11.19.19 23.15		250
Total Xylenes	1330-20-7	**139**	0.501	mg/kg	11.19.19 23.15		250
Total BTEX		**270**	0.501	mg/kg	11.20.19 16.53		500

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	97	%	70-130	11.19.19 23.15	
4-Bromofluorobenzene	460-00-4	189	%	70-130	11.19.19 23.15	**

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Wescom Inc, Carlsbad, NM

Urraca II SB Fed Com 4H

Sample Id:	**SP1-A**	Matrix:	Soil	Date Received:	11.15.19 14.35
Lab Sample Id:	643413-008	Date Collected:	11.14.19 16.45	Sample Depth:	3.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	11.20.19 12.10	Basis:	Wet Weight
Seq Number:	3108158			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**6.06**	5.01	mg/kg	11.20.19 17.46		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	11.19.19 15.00	Basis:	Wet Weight
Seq Number:	3108110			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	**8670**	250	mg/kg	11.20.19 15.04		5
Diesel Range Organics (DRO)	C10C28DRO	**10900**	250	mg/kg	11.20.19 15.04		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**1050**	250	mg/kg	11.20.19 15.04		5
Total TPH	PHC635	**20600**	250	mg/kg	11.20.19 15.04		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	127	%	70-135	11.20.19 15.04	
o-Terphenyl	84-15-1	114	%	70-135	11.20.19 15.04	

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Wescom Inc, Carlsbad, NM

Urraca II SB Fed Com 4H

Sample Id:	**SP1-A**	Matrix:	Soil	Date Received:	11.15.19 14.35
Lab Sample Id:	643413-008	Date Collected:	11.14.19 16.45	Sample Depth:	3.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	11.19.19 15.15	Basis:	Wet Weight
Seq Number:	3108091			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**99.9**	2.00	mg/kg	11.20.19 17.13	D	1000
Toluene	108-88-3	**257**	2.00	mg/kg	11.20.19 17.13	D	1000
Ethylbenzene	100-41-4	**63.7**	0.499	mg/kg	11.19.19 23.35		250
m,p-Xylenes	179601-23-1	**158**	0.998	mg/kg	11.19.19 23.35		250
o-Xylene	95-47-6	**51.2**	0.499	mg/kg	11.19.19 23.35		250
Total Xylenes	1330-20-7	**209**	0.499	mg/kg	11.19.19 23.35		250
Total BTEX		**630**	0.499	mg/kg	11.20.19 17.13		1000

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	212	%	70-130	11.19.19 23.35	**
1,4-Difluorobenzene	540-36-3	117	%	70-130	11.19.19 23.35	

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Wescom Inc, Carlsbad, NM

Urraca II SB Fed Com 4H

Sample Id:	**SP2-A**	Matrix:	Soil	Date Received:	11.15.19 14.35
Lab Sample Id:	643413-009	Date Collected:	11.14.19 16.37	Sample Depth:	3.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	11.20.19 12.10	Basis:	Wet Weight
Seq Number:	3108158			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**38.9**	4.96	mg/kg	11.20.19 17.52		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	11.20.19 11.00	Basis:	Wet Weight
Seq Number:	3108144			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	**10800**	250	mg/kg	11.20.19 14.00		5
Diesel Range Organics (DRO)	C10C28DRO	**11700**	250	mg/kg	11.20.19 14.00		5
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**1410**	250	mg/kg	11.20.19 14.00		5
Total TPH	PHC635	**23900**	250	mg/kg	11.20.19 14.00		5

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	87	%	70-135	11.20.19 14.00	
o-Terphenyl	84-15-1	122	%	70-135	11.20.19 14.00	

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Wescom Inc, Carlsbad, NM

Urraca II SB Fed Com 4H

Sample Id:	**SP2-A**	Matrix:	Soil	Date Received:	11.15.19 14.35
Lab Sample Id:	643413-009	Date Collected:	11.14.19 16.37	Sample Depth:	3.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	11.19.19 15.15	Basis:	Wet Weight
Seq Number:	3108091			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**96.4**	0.495	mg/kg	11.19.19 23.55		250
Toluene	108-88-3	**226**	1.98	mg/kg	11.20.19 17.33	D	1000
Ethylbenzene	100-41-4	**64.1**	0.495	mg/kg	11.19.19 23.55		250
m,p-Xylenes	179601-23-1	**145**	0.990	mg/kg	11.19.19 23.55		250
o-Xylene	95-47-6	**49.1**	0.495	mg/kg	11.19.19 23.55		250
Total Xylenes	1330-20-7	**194**	0.495	mg/kg	11.19.19 23.55		250
Total BTEX		**581**	0.495	mg/kg	11.20.19 17.33		1000

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	206	%	70-130	11.19.19 23.55	**
1,4-Difluorobenzene	540-36-3	107	%	70-130	11.19.19 23.55	

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Wescom Inc, Carlsbad, NM

Urraca II SB Fed Com 4H

Sample Id:	**SP3-A**	Matrix:	Soil	Date Received:	11.15.19 14.35
Lab Sample Id:	643413-010	Date Collected:	11.14.19 16.51	Sample Depth:	3.5 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	11.20.19 12.10	Basis:	Wet Weight
Seq Number:	3108158			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**929**	5.01	mg/kg	11.20.19 17.59		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	11.20.19 11.00	Basis:	Wet Weight
Seq Number:	3108144			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.20.19 14.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	11.20.19 14.19	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.20.19 14.19	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	11.20.19 14.19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	11.20.19 14.19	
o-Terphenyl	84-15-1	112	%	70-135	11.20.19 14.19	

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Wescom Inc, Carlsbad, NM

Urraca II SB Fed Com 4H

Sample Id:	**SP3-A**	Matrix:	Soil	Date Received:	11.15.19 14.35
Lab Sample Id:	643413-010	Date Collected:	11.14.19 16.51	Sample Depth:	3.5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	11.19.19 15.15	Basis:	Wet Weight
Seq Number:	3108091			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	11.20.19 13.34	U	1
Toluene	108-88-3	**0.00550**	0.00201	mg/kg	11.20.19 13.34		1
Ethylbenzene	100-41-4	**0.00505**	0.00201	mg/kg	11.20.19 13.34		1
m,p-Xylenes	179601-23-1	**0.0232**	0.00402	mg/kg	11.20.19 13.34		1
o-Xylene	95-47-6	**0.0168**	0.00201	mg/kg	11.20.19 13.34		1
Total Xylenes	1330-20-7	**0.0400**	0.00201	mg/kg	11.20.19 13.34		1
Total BTEX		**0.0506**	0.00201	mg/kg	11.20.19 13.34		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	93	%	70-130	11.20.19 13.34	
4-Bromofluorobenzene	460-00-4	122	%	70-130	11.20.19 13.34	

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Wescom Inc, Carlsbad, NM

Urraca II SB Fed Com 4H

Sample Id:	**SP4-A**	Matrix:	Soil	Date Received:	11.15.19 14.35
Lab Sample Id:	643413-011	Date Collected:	11.14.19 14.25	Sample Depth:	2 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	11.20.19 12.10	Basis:	Wet Weight
Seq Number:	3108158			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**15.8**	5.01	mg/kg	11.20.19 18.05		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	11.20.19 11.00	Basis:	Wet Weight
Seq Number:	3108144			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.20.19 13.04	U	1
Diesel Range Organics (DRO)	C10C28DRO	**63.9**	49.9	mg/kg	11.20.19 13.04		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.20.19 13.04	U	1
Total TPH	PHC635	**63.9**	49.9	mg/kg	11.20.19 13.04		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	11.20.19 13.04	
o-Terphenyl	84-15-1	113	%	70-135	11.20.19 13.04	

Certificate of Analytical Results 643413

Wescom Inc, Carlsbad, NM

Urraca II SB Fed Com 4H

Sample Id:	**SP4-A**	Matrix:	Soil	Date Received:	11.15.19 14.35
Lab Sample Id:	643413-011	Date Collected:	11.14.19 14.25	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	11.19.19 15.15	Basis:	Wet Weight
Seq Number:	3108091			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**0.00525**	0.00200	mg/kg	11.20.19 00.35		1
Toluene	108-88-3	**0.00990**	0.00200	mg/kg	11.20.19 00.35		1
Ethylbenzene	100-41-4	**0.00721**	0.00200	mg/kg	11.20.19 00.35		1
m,p-Xylenes	179601-23-1	**0.00491**	0.00400	mg/kg	11.20.19 00.35		1
o-Xylene	95-47-6	**0.00385**	0.00200	mg/kg	11.20.19 00.35		1
Total Xylenes	1330-20-7	**0.00876**	0.00200	mg/kg	11.20.19 00.35		1
Total BTEX		**0.0311**	0.00200	mg/kg	11.20.19 00.35		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	88	%	70-130	11.20.19 00.35	
4-Bromofluorobenzene	460-00-4	114	%	70-130	11.20.19 00.35	

Certificate of Analytical Results 643413

Wescom Inc, Carlsbad, NM

Urraca II SB Fed Com 4H

Sample Id:	**SP5-A**	Matrix:	Soil	Date Received:	11.15.19 14.35
Lab Sample Id:	643413-012	Date Collected:	11.14.19 14.50	Sample Depth:	2 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	11.20.19 12.10	Basis:	Wet Weight
Seq Number:	3108158			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**25.9**	4.96	mg/kg	11.20.19 18.12		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	11.20.19 11.00	Basis:	Wet Weight
Seq Number:	3108144			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.20.19 14.38	U	1
Diesel Range Organics (DRO)	C10C28DRO	**66.0**	49.9	mg/kg	11.20.19 14.38		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.20.19 14.38	U	1
Total TPH	PHC635	**66.0**	49.9	mg/kg	11.20.19 14.38		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	11.20.19 14.38	
o-Terphenyl	84-15-1	113	%	70-135	11.20.19 14.38	

Certificate of Analytical Results 643413

Wescom Inc, Carlsbad, NM

Urraca II SB Fed Com 4H

Sample Id:	**SP5-A**	Matrix:	Soil	Date Received:	11.15.19 14.35
Lab Sample Id:	643413-012	Date Collected:	11.14.19 14.50	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	11.19.19 15.15	Basis:	Wet Weight
Seq Number:	3108091			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**0.0120**	0.00199	mg/kg	11.20.19 00.55		1
Toluene	108-88-3	**0.0331**	0.00199	mg/kg	11.20.19 00.55		1
Ethylbenzene	100-41-4	**0.00870**	0.00199	mg/kg	11.20.19 00.55		1
m,p-Xylenes	179601-23-1	**0.00573**	0.00398	mg/kg	11.20.19 00.55		1
o-Xylene	95-47-6	**0.00590**	0.00199	mg/kg	11.20.19 00.55		1
Total Xylenes	1330-20-7	**0.0116**	0.00199	mg/kg	11.20.19 00.55		1
Total BTEX		**0.0654**	0.00199	mg/kg	11.20.19 00.55		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	89	%	70-130	11.20.19 00.55	
4-Bromofluorobenzene	460-00-4	114	%	70-130	11.20.19 00.55	

Certificate of Analytical Results 643413

Wescom Inc, Carlsbad, NM

Urraca II SB Fed Com 4H

Sample Id:	**SP6-A**	Matrix:	Soil	Date Received:	11.15.19 14.35
Lab Sample Id:	643413-013	Date Collected:	11.14.19 15.30	Sample Depth:	2 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	11.20.19 12.10	Basis:	Wet Weight
Seq Number:	3108158			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**24.2**	4.97	mg/kg	11.20.19 18.19		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	11.20.19 11.00	Basis:	Wet Weight
Seq Number:	3108144			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	11.20.19 14.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	**50.8**	49.9	mg/kg	11.20.19 14.56		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	11.20.19 14.56	U	1
Total TPH	PHC635	**50.8**	49.9	mg/kg	11.20.19 14.56		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	11.20.19 14.56	
o-Terphenyl	84-15-1	111	%	70-135	11.20.19 14.56	

Certificate of Analytical Results 643413

Wescom Inc, Carlsbad, NM

Urraca II SB Fed Com 4H

Sample Id:	**SP6-A**	Matrix:	Soil	Date Received:	11.15.19 14.35
Lab Sample Id:	643413-013	Date Collected:	11.14.19 15.30	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	11.19.19 15.15	Basis:	Wet Weight
Seq Number:	3108091			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**0.0108**	0.00200	mg/kg	11.20.19 01.15		1
Toluene	108-88-3	**0.0328**	0.00200	mg/kg	11.20.19 01.15		1
Ethylbenzene	100-41-4	**0.00680**	0.00200	mg/kg	11.20.19 01.15		1
m,p-Xylenes	179601-23-1	**0.00807**	0.00400	mg/kg	11.20.19 01.15		1
o-Xylene	95-47-6	**0.00617**	0.00200	mg/kg	11.20.19 01.15		1
Total Xylenes	1330-20-7	**0.0142**	0.00200	mg/kg	11.20.19 01.15		1
Total BTEX		**0.0646**	0.00200	mg/kg	11.20.19 01.15		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	92	%	70-130	11.20.19 01.15	
4-Bromofluorobenzene	460-00-4	115	%	70-130	11.20.19 01.15	

Certificate of Analytical Results 643413

Wescom Inc, Carlsbad, NM

Urraca II SB Fed Com 4H

Sample Id:	**SP7-A**	Matrix:	Soil	Date Received:	11.15.19 14.35
Lab Sample Id:	643413-014	Date Collected:	11.14.19 15.45	Sample Depth:	2 ft

Analytical Method:	Inorganic Anions by EPA 300			Prep Method:	E300P
Tech:	CHE			% Moisture:	
Analyst:	CHE	Date Prep:	11.20.19 12.10	Basis:	Wet Weight
Seq Number:	3108158			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**37.2**	5.00	mg/kg	11.20.19 18.39		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DVM			% Moisture:	
Analyst:	ARM	Date Prep:	11.20.19 11.00	Basis:	Wet Weight
Seq Number:	3108144			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	11.20.19 15.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	**58.5**	50.0	mg/kg	11.20.19 15.15		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	11.20.19 15.15	U	1
Total TPH	PHC635	**58.5**	50.0	mg/kg	11.20.19 15.15		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	11.20.19 15.15	
o-Terphenyl	84-15-1	113	%	70-135	11.20.19 15.15	

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Wescom Inc, Carlsbad, NM

Urraca II SB Fed Com 4H

Sample Id:	**SP7-A**	Matrix:	Soil	Date Received:	11.15.19 14.35
Lab Sample Id:	643413-014	Date Collected:	11.14.19 15.45	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	KTL			% Moisture:	
Analyst:	KTL	Date Prep:	11.19.19 15.15	Basis:	Wet Weight
Seq Number:	3108091			SUB:	T104704400-19-19

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**0.00800**	0.00201	mg/kg	11.20.19 01.36		1
Toluene	108-88-3	**0.0127**	0.00201	mg/kg	11.20.19 01.36		1
Ethylbenzene	100-41-4	**0.00442**	0.00201	mg/kg	11.20.19 01.36		1
m,p-Xylenes	179601-23-1	**0.00696**	0.00402	mg/kg	11.20.19 01.36		1
o-Xylene	95-47-6	**0.00652**	0.00201	mg/kg	11.20.19 01.36		1
Total Xylenes	1330-20-7	**0.0135**	0.00201	mg/kg	11.20.19 01.36		1
Total BTEX		**0.0386**	0.00201	mg/kg	11.20.19 01.36		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	114	%	70-130	11.20.19 01.36	
1,4-Difluorobenzene	540-36-3	90	%	70-130	11.20.19 01.36	

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

QC Summary 643413

Wescom Inc

Urraca II SB Fed Com 4H

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3108153 Matrix: Solid Date Prep: 11.20.19
MB Sample Id: 7690747-1-BLK LCS Sample Id: 7690747-1-BKS LCSD Sample Id: 7690747-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	244	98	243	97	90-110	0	20	mg/kg	11.20.19 11:13	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3108158 Matrix: Solid Date Prep: 11.20.19
MB Sample Id: 7690750-1-BLK LCS Sample Id: 7690750-1-BKS LCSD Sample Id: 7690750-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	258	103	260	104	90-110	1	20	mg/kg	11.20.19 16:32	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3108153 Matrix: Solid Date Prep: 11.20.19
Parent Sample Id: 643610-001 MS Sample Id: 643610-001 S MSD Sample Id: 643610-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1.88	301	285	94	273	90	90-110	4	20	mg/kg	11.20.19 11:33	

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3108153 Matrix: Soil Date Prep: 11.20.19
Parent Sample Id: 643626-007 MS Sample Id: 643626-007 S MSD Sample Id: 643626-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	27.1	248	243	87	276	100	90-110	13	20	mg/kg	11.20.19 13:06	X

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3108158 Matrix: Soil Date Prep: 11.20.19
Parent Sample Id: 643413-003 MS Sample Id: 643413-003 S MSD Sample Id: 643413-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1100	199	1280	90	1310	106	90-110	2	20	mg/kg	11.20.19 16:52	

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 643413

Wescom Inc

Urraca II SB Fed Com 4H

Analytical Method: **Inorganic Anions by EPA 300** Prep Method: E300P
Seq Number: 3108158 Matrix: Soil Date Prep: 11.20.19
Parent Sample Id: 643413-013 MS Sample Id: 643413-013 S MSD Sample Id: 643413-013 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	24.2	249	298	110	299	110	90-110	0	20	mg/kg	11.20.19 18:25	

Analytical Method: **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3108110 Matrix: Solid Date Prep: 11.19.19
MB Sample Id: 7690675-1-BLK LCS Sample Id: 7690675-1-BKS LCSD Sample Id: 7690675-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	1060	106	1040	104	70-135	2	20	mg/kg	11.19.19 22:14	
Diesel Range Organics (DRO)	<15.0	1000	1080	108	1060	106	70-135	2	20	mg/kg	11.19.19 22:14	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	126		103		101		70-135	%	11.19.19 22:14
o-Terphenyl	139	**	107		106		70-135	%	11.19.19 22:14

Analytical Method: **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3108144 Matrix: Solid Date Prep: 11.20.19
MB Sample Id: 7690736-1-BLK LCS Sample Id: 7690736-1-BKS LCSD Sample Id: 7690736-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	1170	117	1200	120	70-135	3	20	mg/kg	11.20.19 12:27	
Diesel Range Organics (DRO)	<15.0	1000	1090	109	1130	113	70-135	4	20	mg/kg	11.20.19 12:27	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	113		128		127		70-135	%	11.20.19 12:27
o-Terphenyl	112		117		111		70-135	%	11.20.19 12:27

Analytical Method: **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3108110 Matrix: Solid Date Prep: 11.19.19
MB Sample Id: 7690675-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.19.19 21:53	

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 643413

Wescom Inc

Urraca II SB Fed Com 4H

Analytical Method: **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3108144 Matrix: Solid Date Prep: 11.20.19
MB Sample Id: 7690736-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	11.20.19 12:09	

Analytical Method: **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3108110 Matrix: Soil Date Prep: 11.19.19
Parent Sample Id: 643626-001 MS Sample Id: 643626-001 S MSD Sample Id: 643626-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	21.1	999	1010	99	1020	100	70-135	1	20	mg/kg	11.19.19 23:18	
Diesel Range Organics (DRO)	36.4	999	1010	97	1030	100	70-135	2	20	mg/kg	11.19.19 23:18	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	106		107		70-135	%	11.19.19 23:18
o-Terphenyl	109		109		70-135	%	11.19.19 23:18

Analytical Method: **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3108144 Matrix: Soil Date Prep: 11.20.19
Parent Sample Id: 643413-011 MS Sample Id: 643413-011 S MSD Sample Id: 643413-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	999	1140	114	1160	116	70-135	2	20	mg/kg	11.20.19 13:23	
Diesel Range Organics (DRO)	63.9	999	1090	103	1100	104	70-135	1	20	mg/kg	11.20.19 13:23	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	128		128		70-135	%	11.20.19 13:23
o-Terphenyl	111		113		70-135	%	11.20.19 13:23

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

[D] = 100*(C-A) / B
RPD = 200* | (C-E) / (C+E) |
[D] = 100 * (C) / [B]
Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

QC Summary 643413

Wescom Inc

Urraca II SB Fed Com 4H

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B

Seq Number: 3108091 Matrix: Solid Date Prep: 11.19.19

MB Sample Id: 7690662-1-BLK LCS Sample Id: 7690662-1-BKS LCSD Sample Id: 7690662-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0923	92	0.102	102	70-130	10	35	mg/kg	11.19.19 16:34	
Toluene	<0.00200	0.100	0.0921	92	0.0994	99	70-130	8	35	mg/kg	11.19.19 16:34	
Ethylbenzene	<0.00200	0.100	0.0905	91	0.0989	99	70-130	9	35	mg/kg	11.19.19 16:34	
m,p-Xylenes	<0.00400	0.200	0.184	92	0.201	101	70-130	9	35	mg/kg	11.19.19 16:34	
o-Xylene	<0.00200	0.100	0.0911	91	0.100	100	70-130	9	35	mg/kg	11.19.19 16:34	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		98		98		70-130	%	11.19.19 16:34
4-Bromofluorobenzene	87		94		94		70-130	%	11.19.19 16:34

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B

Seq Number: 3108091 Matrix: Soil Date Prep: 11.19.19

Parent Sample Id: 643413-010 MS Sample Id: 643413-010 S MSD Sample Id: 643413-010 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	0.00131	0.0992	0.0997	99	0.0946	93	70-130	5	35	mg/kg	11.19.19 17:14	
Toluene	0.00550	0.0992	0.125	120	0.112	107	70-130	11	35	mg/kg	11.19.19 17:14	
Ethylbenzene	0.00505	0.0992	0.112	108	0.0956	91	70-130	16	35	mg/kg	11.19.19 17:14	
m,p-Xylenes	0.0232	0.198	0.241	110	0.203	90	70-130	17	35	mg/kg	11.19.19 17:14	
o-Xylene	0.0168	0.0992	0.121	105	0.101	84	70-130	18	35	mg/kg	11.19.19 17:14	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	110		103		70-130	%	11.19.19 17:14
4-Bromofluorobenzene	109		116		70-130	%	11.19.19 17:14

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

Chain of Custody

Work Order No: 643413

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432) 704-5440 EL Paso,TX (915) 585-3443 Lubbock,TX (806) 794-1296 Craslbad, NM (432) 704-5440
Phoenix,AZ (480) 355-0900 Atlanta,GA (770) 449-8800 Tampa,FL (813) 620-2000 West Palm Beach, FL (561) 689-6701
www.xenco.com

Project Manager:	Shelly Tucker	Bill to: (if different)	Isaac CASTRO
Company Name:	Wescom	Company Name:	Marathon
Address:		Address:	
City, State ZIP:		City, State ZIP:	
Phone:	Email:		

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project:
Reporting:Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	Urraca 11 SB Fed Com 4H	Turn Around	
Project Number:		Routine ☒	
Project Location	Lea County, NM	Rush:	
Sampler's Name:	Shelly Tucker	Due Date:	
PO #:	Quote #:		

SAMPLE RECEIPT			
Temperature (°C):	16.8	Temp Blank:	Yes (No)
Received Intact:	(Yes) No	Wet Ice:	(Yes) No
Cooler Custody Seals:	Yes (No) N/A	Thermometer ID	NM007
Sample Custody Seals:	Yes (No) N/A	Correction Factor:	-0.2
		Total Containers:	14

Lab ID	Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	Chlorides	BTEX	DRO GRO + MRO
	SP1	Soil	11.14.19	1130	0-1'	1	x	x	x
	SP2			1200	0-1'	1	x	x	x
	SP3			1245	0-1'	1	x	x	x
	SP4			1021	0-1'	1	x	x	x
	SP5			1049	0-1'	1	x	x	x
	SP6			1110	0-1'	1	x	x	x
	SP7			0950	0-1'	1	x	x	x
	SP1-A			1645	3'6"	1	x	x	x
	SP2-A			1637	3'6"	1	x	x	x
	SP3 A			1651	3'6"	1	x	x	x

ANALYSIS REQUEST

Preservative Codes

MeOH: Me
None: NO
HNO3: HN
H2S04: H2
HCL: HL
NaOH: Na
Zn Acetate+ NaOH: Zn

TAT starts the day recevied by the lab, if received by 4:00pm

Sample Comments

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed

TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of $75.00 will be applied to each project and a charge of $5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Shelly Tucker	Conno	11/15/19 1435	2		
			4		
			6		

Revised Date 022619 Rev. 2019.1

Chain of Custody

Work Order No: 443413

XENCO LABORATORIES
Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432) 704-5440 EL Paso,TX (915) 585-3443 Lubbock,TX (806) 794-1296 Crasbad, NM (432) 704-5440
Phoenix,AZ (480) 355-0900 Atlanta,GA (770) 449-8800 Tampa,FL (813) 620-2000 West Palm Beach, FL (561) 689-6701
www.xenco.com

Project Manager:	Shelly Tucker	Bill to: (if different)	Isaac Castro
Company Name:	Wesson	Company Name:	Marathon
Address:		Address:	
City, State ZIP:		City, State ZIP:	
Phone:	Email:		

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project:
Reporting:Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	Urraca 11 SB Fed Com 4H	Turn Around	
Project Number:		Routine	☒
Project Location	Lea County NM	Rush:	
Sampler's Name:	Shelly Tucker	Due Date:	
PO #:	Quote #:		

SAMPLE RECEIPT			
Temp Blank:	Yes No	Wet Ice:	Yes ~~No~~
Temperature (°C):		Thermometer ID	See NOTE
Received Intact:	Yes No		
Cooler Custody Seals:	Yes No ~~N/A~~	Correction Factor:	
Sample Custody Seals:	~~Yes~~ No N/A	Total Containers:	

Lab ID	Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	Chlorides	BTEX	DRO GRO MRO
	SP4-A	Soil	11.14.19	1425	2'	1	X	X	X
	SP5-A			1450	2'	1	X	X	X
	SP6-A			1530	2'	1	X	X	X
	SP7-A			1545	2'	1	X	X	X

Preservative Codes

MeOH: Me
None: NO
HNO3: HN
H2S04: H2
HCL: HL
NaOH: Na
Zn Acetate+ NaOH: Zn

TAT starts the day recevied by the lab, if received by 4:00pm

Sample Comments

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed

TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **1631 / 245.1 / 7470 / 7471** : Hg

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of $75.00 will be applied to each project and a charge of $5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		11/15/19 14:35	2		
			4		
			6		

Revised Date 022619 Rev. 2019.1

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

January 27, 2020

Shelly Tucker
Marathon Oil Company
4111 Tidwell Road
Carlsbad, NM 88220
TEL: (575) 297-0956
FAX:

RE: Urraca 11 SB Fed Com 4 OrderNo.: 2001966

Dear Shelly Tucker:

Hall Environmental Analysis Laboratory received 10 sample(s) on 1/24/2020 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 **2001966**
Date Reported: **1/27/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Oil Company
Project: Urraca 11 SB Fed Com 4
Lab ID: 2001966-001 **Matrix:** SOIL

Client Sample ID: SP8 EW
Collection Date: 1/20/2020 12:00:00 PM
Received Date: 1/24/2020 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	1/24/2020 12:55:52 PM	50029
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	1/24/2020 1:03:53 PM	50023
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	1/24/2020 1:03:53 PM	50023
Surr: DNOP	95.8	55.1-146		%Rec	1	1/24/2020 1:03:53 PM	50023
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	1/25/2020 12:36:52 PM	50028
Surr: BFB	86.4	66.6-105		%Rec	1	1/25/2020 12:36:52 PM	50028
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.023		mg/Kg	1	1/25/2020 12:36:52 PM	50028
Toluene	ND	0.047		mg/Kg	1	1/25/2020 12:36:52 PM	50028
Ethylbenzene	ND	0.047		mg/Kg	1	1/25/2020 12:36:52 PM	50028
Xylenes, Total	ND	0.094		mg/Kg	1	1/25/2020 12:36:52 PM	50028
Surr: 4-Bromofluorobenzene	98.0	80-120		%Rec	1	1/25/2020 12:36:52 PM	50028

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **2001966**
Date Reported: **1/27/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Oil Company
Project: Urraca 11 SB Fed Com 4
Lab ID: 2001966-002 **Matrix:** SOIL

Client Sample ID: SP8 NW
Collection Date: 1/20/2020 12:00:00 PM
Received Date: 1/24/2020 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**MRA**
Chloride	ND	60		mg/Kg	20	1/24/2020 1:08:17 PM	50029
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**BRM**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	1/24/2020 1:13:09 PM	50023
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	1/24/2020 1:13:09 PM	50023
Surr: DNOP	91.3	55.1-146		%Rec	1	1/24/2020 1:13:09 PM	50023
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	1/25/2020 1:47:39 PM	50028
Surr: BFB	85.0	66.6-105		%Rec	1	1/25/2020 1:47:39 PM	50028
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.024		mg/Kg	1	1/25/2020 1:47:39 PM	50028
Toluene	ND	0.048		mg/Kg	1	1/25/2020 1:47:39 PM	50028
Ethylbenzene	ND	0.048		mg/Kg	1	1/25/2020 1:47:39 PM	50028
Xylenes, Total	ND	0.096		mg/Kg	1	1/25/2020 1:47:39 PM	50028
Surr: 4-Bromofluorobenzene	95.6	80-120		%Rec	1	1/25/2020 1:47:39 PM	50028

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **2001966**
Date Reported: **1/27/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Oil Company
Project: Urraca 11 SB Fed Com 4
Lab ID: 2001966-003 **Matrix:** SOIL

Client Sample ID: SP8 F 5'
Collection Date: 1/20/2020 12:00:00 PM
Received Date: 1/24/2020 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	140	60		mg/Kg	20	1/24/2020 1:20:41 PM	50029
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	44	9.7		mg/Kg	1	1/24/2020 1:22:25 PM	50023
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	1/24/2020 1:22:25 PM	50023
Surr: DNOP	94.5	55.1-146		%Rec	1	1/24/2020 1:22:25 PM	50023
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	1/25/2020 2:58:13 PM	50028
Surr: BFB	88.5	66.6-105		%Rec	1	1/25/2020 2:58:13 PM	50028
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.023		mg/Kg	1	1/25/2020 2:58:13 PM	50028
Toluene	ND	0.046		mg/Kg	1	1/25/2020 2:58:13 PM	50028
Ethylbenzene	ND	0.046		mg/Kg	1	1/25/2020 2:58:13 PM	50028
Xylenes, Total	ND	0.092		mg/Kg	1	1/25/2020 2:58:13 PM	50028
Surr: 4-Bromofluorobenzene	99.7	80-120		%Rec	1	1/25/2020 2:58:13 PM	50028

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **2001966**
Date Reported: **1/27/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Oil Company
Project: Urraca 11 SB Fed Com 4
Lab ID: 2001966-004 **Matrix:** SOIL

Client Sample ID: SP9 F 2'
Collection Date: 1/20/2020 12:00:00 PM
Received Date: 1/24/2020 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	230	60		mg/Kg	20	1/24/2020 1:33:06 PM	50029
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	9.2	9.1		mg/Kg	1	1/24/2020 1:31:39 PM	50023
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	1/24/2020 1:31:39 PM	50023
Surr: DNOP	89.5	55.1-146		%Rec	1	1/24/2020 1:31:39 PM	50023
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	1/25/2020 3:21:37 PM	50028
Surr: BFB	87.6	66.6-105		%Rec	1	1/25/2020 3:21:37 PM	50028
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	1/25/2020 3:21:37 PM	50028
Toluene	ND	0.048		mg/Kg	1	1/25/2020 3:21:37 PM	50028
Ethylbenzene	ND	0.048		mg/Kg	1	1/25/2020 3:21:37 PM	50028
Xylenes, Total	ND	0.096		mg/Kg	1	1/25/2020 3:21:37 PM	50028
Surr: 4-Bromofluorobenzene	97.8	80-120		%Rec	1	1/25/2020 3:21:37 PM	50028

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **2001966**
Date Reported: **1/27/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Oil Company
Project: Urraca 11 SB Fed Com 4
Lab ID: 2001966-005 **Matrix:** SOIL

Client Sample ID: SP13 7' 6"
Collection Date: 1/20/2020 12:00:00 PM
Received Date: 1/24/2020 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	1/24/2020 1:45:30 PM	50029
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	1/24/2020 1:40:54 PM	50023
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	1/24/2020 1:40:54 PM	50023
Surr: DNOP	87.1	55.1-146		%Rec	1	1/24/2020 1:40:54 PM	50023
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	1/25/2020 3:45:04 PM	50028
Surr: BFB	87.2	66.6-105		%Rec	1	1/25/2020 3:45:04 PM	50028
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	1/25/2020 3:45:04 PM	50028
Toluene	ND	0.048		mg/Kg	1	1/25/2020 3:45:04 PM	50028
Ethylbenzene	ND	0.048		mg/Kg	1	1/25/2020 3:45:04 PM	50028
Xylenes, Total	ND	0.097		mg/Kg	1	1/25/2020 3:45:04 PM	50028
Surr: 4-Bromofluorobenzene	98.3	80-120		%Rec	1	1/25/2020 3:45:04 PM	50028

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **2001966**
Date Reported: **1/27/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Oil Company
Project: Urraca 11 SB Fed Com 4
Lab ID: 2001966-006 **Matrix:** SOIL

Client Sample ID: SPN S8W WS Comp
Collection Date: 1/22/2020 12:00:00 PM
Received Date: 1/24/2020 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**MRA**
Chloride	100	60		mg/Kg	20	1/24/2020 1:57:55 PM	50029
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**BRM**
Diesel Range Organics (DRO)	290	9.2		mg/Kg	1	1/24/2020 1:50:10 PM	50023
Motor Oil Range Organics (MRO)	93	46		mg/Kg	1	1/24/2020 1:50:10 PM	50023
Surr: DNOP	103	55.1-146		%Rec	1	1/24/2020 1:50:10 PM	50023
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	25	4.9		mg/Kg	1	1/25/2020 4:08:17 PM	50028
Surr: BFB	248	66.6-105	S	%Rec	1	1/25/2020 4:08:17 PM	50028
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.025		mg/Kg	1	1/25/2020 4:08:17 PM	50028
Toluene	0.27	0.049		mg/Kg	1	1/25/2020 4:08:17 PM	50028
Ethylbenzene	0.34	0.049		mg/Kg	1	1/25/2020 4:08:17 PM	50028
Xylenes, Total	1.6	0.099		mg/Kg	1	1/25/2020 4:08:17 PM	50028
Surr: 4-Bromofluorobenzene	115	80-120		%Rec	1	1/25/2020 4:08:17 PM	50028

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **2001966**
Date Reported: **1/27/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Oil Company
Project: Urraca 11 SB Fed Com 4
Lab ID: 2001966-007 **Matrix:** SOIL

Client Sample ID: SPN FS Comp 3.5'
Collection Date: 1/22/2020 12:00:00 PM
Received Date: 1/24/2020 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**MRA**
Chloride	140	60		mg/Kg	20	1/24/2020 2:10:20 PM	50029
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**BRM**
Diesel Range Organics (DRO)	2000	94		mg/Kg	10	1/24/2020 1:59:28 PM	50023
Motor Oil Range Organics (MRO)	570	470		mg/Kg	10	1/24/2020 1:59:28 PM	50023
Surr: DNOP	0	55.1-146	S	%Rec	10	1/24/2020 1:59:28 PM	50023
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	560	23		mg/Kg	5	1/25/2020 4:31:35 PM	50028
Surr: BFB	578	66.6-105	S	%Rec	5	1/25/2020 4:31:35 PM	50028
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	1.1	0.12		mg/Kg	5	1/25/2020 4:31:35 PM	50028
Toluene	22	0.23		mg/Kg	5	1/25/2020 4:31:35 PM	50028
Ethylbenzene	9.6	0.23		mg/Kg	5	1/25/2020 4:31:35 PM	50028
Xylenes, Total	35	0.47		mg/Kg	5	1/25/2020 4:31:35 PM	50028
Surr: 4-Bromofluorobenzene	155	80-120	S	%Rec	5	1/25/2020 4:31:35 PM	50028

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **2001966**
Date Reported: **1/27/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Oil Company
Project: Urraca 11 SB Fed Com 4
Lab ID: 2001966-008 **Matrix:** SOIL

Client Sample ID: SPN FS Comp 4'
Collection Date: 1/22/2020 12:00:00 PM
Received Date: 1/24/2020 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	60	60		mg/Kg	20	1/24/2020 2:22:45 PM	50029
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	6200	85		mg/Kg	10	1/24/2020 2:08:45 PM	50023
Motor Oil Range Organics (MRO)	1500	420		mg/Kg	10	1/24/2020 2:08:45 PM	50023
Surr: DNOP	0	55.1-146	S	%Rec	10	1/24/2020 2:08:45 PM	50023
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	4200	470		mg/Kg	100	1/26/2020 11:10:59 AM	50028
Surr: BFB	186	66.6-105	S	%Rec	100	1/26/2020 11:10:59 AM	50028
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	43	2.3		mg/Kg	100	1/26/2020 11:10:59 AM	50028
Toluene	290	4.7		mg/Kg	100	1/26/2020 11:10:59 AM	50028
Ethylbenzene	71	4.7		mg/Kg	100	1/26/2020 11:10:59 AM	50028
Xylenes, Total	250	9.4		mg/Kg	100	1/26/2020 11:10:59 AM	50028
Surr: 4-Bromofluorobenzene	113	80-120		%Rec	100	1/26/2020 11:10:59 AM	50028

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **2001966**
Date Reported: **1/27/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Oil Company
Project: Urraca 11 SB Fed Com 4
Lab ID: 2001966-009 **Matrix:** SOIL

Client Sample ID: SPN FS Comp 8'
Collection Date: 1/22/2020 12:00:00 PM
Received Date: 1/24/2020 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**MRA**
Chloride	160	60		mg/Kg	20	1/24/2020 2:59:58 PM	50029
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**BRM**
Diesel Range Organics (DRO)	890	43		mg/Kg	5	1/24/2020 2:54:40 PM	50023
Motor Oil Range Organics (MRO)	320	210		mg/Kg	5	1/24/2020 2:54:40 PM	50023
Surr: DNOP	142	55.1-146		%Rec	5	1/24/2020 2:54:40 PM	50023
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	59	4.9		mg/Kg	1	1/25/2020 5:42:00 PM	50028
Surr: BFB	446	66.6-105	S	%Rec	1	1/25/2020 5:42:00 PM	50028
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	0.12	0.025		mg/Kg	1	1/25/2020 5:42:00 PM	50028
Toluene	0.86	0.049		mg/Kg	1	1/25/2020 5:42:00 PM	50028
Ethylbenzene	0.31	0.049		mg/Kg	1	1/25/2020 5:42:00 PM	50028
Xylenes, Total	2.4	0.098		mg/Kg	1	1/25/2020 5:42:00 PM	50028
Surr: 4-Bromofluorobenzene	121	80-120	S	%Rec	1	1/25/2020 5:42:00 PM	50028

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **2001966**
Date Reported: **1/27/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Marathon Oil Company
Client Sample ID: NSP E/N Wall Comp
Project: Urraca 11 SB Fed Com 4
Collection Date: 1/22/2020 12:00:00 PM
Lab ID: 2001966-010 **Matrix:** SOIL
Received Date: 1/24/2020 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**MRA**
Chloride	170	60		mg/Kg	20	1/24/2020 3:12:23 PM	50029
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**BRM**
Diesel Range Organics (DRO)	1300	49		mg/Kg	5	1/24/2020 3:03:49 PM	50023
Motor Oil Range Organics (MRO)	430	240		mg/Kg	5	1/24/2020 3:03:49 PM	50023
Surr: DNOP	179	55.1-146	S	%Rec	5	1/24/2020 3:03:49 PM	50023
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	330	24		mg/Kg	5	1/25/2020 6:05:23 PM	50028
Surr: BFB	394	66.6-105	S	%Rec	5	1/25/2020 6:05:23 PM	50028
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	0.53	0.12		mg/Kg	5	1/25/2020 6:05:23 PM	50028
Toluene	13	0.24		mg/Kg	5	1/25/2020 6:05:23 PM	50028
Ethylbenzene	6.2	0.24		mg/Kg	5	1/25/2020 6:05:23 PM	50028
Xylenes, Total	23	0.48		mg/Kg	5	1/25/2020 6:05:23 PM	50028
Surr: 4-Bromofluorobenzene	137	80-120	S	%Rec	5	1/25/2020 6:05:23 PM	50028

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 Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001966**
27-Jan-20

Client: Marathon Oil Company
Project: Urraca 11 SB Fed Com 4

Sample ID: **MB-50029**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **50029**	RunNo: **66060**							
Prep Date: **1/24/2020**	Analysis Date: **1/24/2020**	SeqNo: **2269555**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-50029**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **50029**	RunNo: **66060**							
Prep Date: **1/24/2020**	Analysis Date: **1/24/2020**	SeqNo: **2269556**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.3	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative 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 Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001966**
27-Jan-20

Client: Marathon Oil Company
Project: Urraca 11 SB Fed Com 4

Sample ID: **MB-50023**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **50023**	RunNo: **66047**
Prep Date: **1/24/2020**	Analysis Date: **1/24/2020**	SeqNo: **2268100** 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	11		10.00		108	55.1	146			

Sample ID: **LCS-50023**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **50023**	RunNo: **66047**
Prep Date: **1/24/2020**	Analysis Date: **1/24/2020**	SeqNo: **2268101** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	52	10	50.00	0	104	63.9	124			
Surr: DNOP	5.1		5.000		103	55.1	146			

Sample ID: **LCS-50000**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **50000**	RunNo: **66058**
Prep Date: **1/23/2020**	Analysis Date: **1/24/2020**	SeqNo: **2268880** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	3.9		5.000		78.9	55.1	146			

Sample ID: **MB-50000**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **50000**	RunNo: **66058**
Prep Date: **1/23/2020**	Analysis Date: **1/24/2020**	SeqNo: **2268883** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.6		10.00		85.8	55.1	146			

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 Quanitative 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 Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001966**
27-Jan-20

Client: Marathon Oil Company
Project: Urraca 11 SB Fed Com 4

Sample ID: **mb-50028** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS** Batch ID: **50028** RunNo: **66066**
Prep Date: **1/24/2020** Analysis Date: **1/25/2020** SeqNo: **2268988** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	860		1000		85.6	66.6	105			

Sample ID: **lcs-50028** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS** Batch ID: **50028** RunNo: **66066**
Prep Date: **1/24/2020** Analysis Date: **1/25/2020** SeqNo: **2268989** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	94.0	80	120			
Surr: BFB	960		1000		96.4	66.6	105			

Sample ID: **2001966-001ams** SampType: **MS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **SP8 EW** Batch ID: **50028** RunNo: **66066**
Prep Date: **1/24/2020** Analysis Date: **1/25/2020** SeqNo: **2268991** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	24.85	0	95.6	69.1	142			
Surr: BFB	950		994.0		95.4	66.6	105			

Sample ID: **2001966-001amsd** SampType: **MSD** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **SP8 EW** Batch ID: **50028** RunNo: **66066**
Prep Date: **1/24/2020** Analysis Date: **1/25/2020** SeqNo: **2268992** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	4.7	23.52	0	98.0	69.1	142	2.99	20	
Surr: BFB	890		940.7		94.4	66.6	105	0	0	

Sample ID: **MB-50043** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS** Batch ID: **50043** RunNo: **66068**
Prep Date: **1/24/2020** Analysis Date: **1/27/2020** SeqNo: **2269049** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	770		1000		77.0	66.6	105			

Sample ID: **LCS-50043** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS** Batch ID: **50043** RunNo: **66068**
Prep Date: **1/24/2020** Analysis Date: **1/27/2020** SeqNo: **2269050** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	890		1000		89.0	66.6	105			

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 Quanitative 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 Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001966**
27-Jan-20

Client: Marathon Oil Company
Project: Urraca 11 SB Fed Com 4

Sample ID: **mb-50028** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS** Batch ID: **50028** RunNo: **66066**
Prep Date: **1/24/2020** Analysis Date: **1/25/2020** SeqNo: **2269004** 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	0.97		1.000		96.9	80	120			

Sample ID: **LCS-50028** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS** Batch ID: **50028** RunNo: **66066**
Prep Date: **1/24/2020** Analysis Date: **1/25/2020** SeqNo: **2269005** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.96	0.025	1.000	0	95.5	80	120			
Toluene	0.97	0.050	1.000	0	97.5	80	120			
Ethylbenzene	0.97	0.050	1.000	0	97.2	80	120			
Xylenes, Total	2.9	0.10	3.000	0	98.1	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		101	80	120			

Sample ID: **2001966-002ams** SampType: **MS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **SP8 NW** Batch ID: **50028** RunNo: **66066**
Prep Date: **1/24/2020** Analysis Date: **1/25/2020** SeqNo: **2269008** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	0.9980	0	102	78.5	119			
Toluene	1.0	0.050	0.9980	0.01286	102	75.7	123			
Ethylbenzene	1.0	0.050	0.9980	0	103	74.3	126			
Xylenes, Total	3.1	0.10	2.994	0.01871	103	72.9	130			
Surr: 4-Bromofluorobenzene	0.97		0.9980		97.4	80	120			

Sample ID: **2001966-002amsd** SampType: **MSD** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **SP8 NW** Batch ID: **50028** RunNo: **66066**
Prep Date: **1/24/2020** Analysis Date: **1/25/2020** SeqNo: **2269009** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	0.9881	0	104	78.5	119	1.42	20	
Toluene	1.0	0.049	0.9881	0.01286	101	75.7	123	1.71	20	
Ethylbenzene	1.0	0.049	0.9881	0	103	74.3	126	0.945	20	
Xylenes, Total	3.1	0.099	2.964	0.01871	103	72.9	130	0.505	20	
Surr: 4-Bromofluorobenzene	0.97		0.9881		98.6	80	120	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 Quanitative 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 Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001966**
27-Jan-20

Client: Marathon Oil Company
Project: Urraca 11 SB Fed Com 4

Sample ID: **MB-50043**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**							
Client ID: **PBS**	Batch ID: **50043**	RunNo: **66068**							
Prep Date: **1/24/2020**	Analysis Date: **1/27/2020**	SeqNo: **2269077**	Units: **%Rec**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.87		1.000		86.6	80	120			

Sample ID: **LCS-50043**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**							
Client ID: **LCSS**	Batch ID: **50043**	RunNo: **66068**							
Prep Date: **1/24/2020**	Analysis Date: **1/27/2020**	SeqNo: **2269078**	Units: **%Rec**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.88		1.000		87.7	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative 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 Limit

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: **MARATHON OIL COMPA** Work Order Number: **2001966** RcptNo: 1

Received By: **Desiree Dominguez** **1/24/2020 9:15:00 AM** DD

Completed By: **Isaiah Ortiz** **1/24/2020 9:26:51 AM** I-Ox

Reviewed By: DAD 1/24/20

Chain of Custody

1. Is Chain of Custody sufficiently 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. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	NA ☑
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: 1/24/20

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	4.3	Good	Not Present			

Chain-of-Custody Record

Client: Marathon

Mailing Address:

Phone #:

email or Fax#: Shelly.Tucker@wsconinc.com

QA/QC Package: Isaac

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance ☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time: 24 hour

☐ Standard ☒ Rush

Project Name: Urraca 11 SB Fed Com 4H

Project #:

Project Manager: Shelly J. Tucker

Sampler:

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 4.3-0.0=4.3 (°C)

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. 2001966	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)
1/20/20	1200	soil	SP8 EW	4 oz g 1		-001	X	X					X			
			SP8 NW			-002	X	X					X			
			SP8 F 5'			-003	X	X					X			
			SP9 F 2'			-004	X	X					X			
			SP13 7'6"			-005	X	X					X			
1/22/20			SPN 58W WS comp			-006	X	X					X			
			SP-N FS comp 3.5'			-007	X	X					X			
			SPN FS comp 4'			-008	X	X					X			
			SPN FS comp 8'			-009	X	X					X			
			NSP E/N wall comp			-010	X	X					X			
		Tar														
		Jar														

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
1/23/20	1655				1/23/20	1655
1/23/20	1900			Courier	1/24/20	9:15

Remarks:

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.

Analytical Report
Lab Order **2001B49**
Date Reported:

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Wescom Inc
Client Sample ID: SPN-E-COMP 6'
Project: URRACA 11 SB FED COM 004H
Collection Date: 1/29/2020 9:30:00 AM
Lab ID: 2001B49-001 **Matrix:** SOIL
Received Date: 1/30/2020 9:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**
Diesel Range Organics (DRO)	290	9.5		mg/Kg	1	1/30/2020 10:33:32 AM
Motor Oil Range Organics (MRO)	150	47		mg/Kg	1	1/30/2020 10:33:32 AM
Surr: DNOP	116	55.1-146		%Rec	1	1/30/2020 10:33:32 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	25		mg/Kg	5	1/30/2020 10:45:59 AM
Surr: BFB	91.3	66.6-105		%Rec	5	1/30/2020 10:45:59 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.12		mg/Kg	5	1/30/2020 10:45:59 AM
Toluene	ND	0.25		mg/Kg	5	1/30/2020 10:45:59 AM
Ethylbenzene	ND	0.25		mg/Kg	5	1/30/2020 10:45:59 AM
Xylenes, Total	ND	0.50		mg/Kg	5	1/30/2020 10:45:59 AM
Surr: 4-Bromofluorobenzene	92.8	80-120		%Rec	5	1/30/2020 10:45:59 AM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	87	60		mg/Kg	20	1/30/2020 12:07:00 PM

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **2001B49**
Date Reported:

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Wescom Inc
Client Sample ID: SPN-SW- COMP-6'
Project: URRACA 11 SB FED COM 004H
Collection Date: 1/29/2020 9:45:00 AM
Lab ID: 2001B49-002 **Matrix:** SOIL
Received Date: 1/30/2020 9:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**
Diesel Range Organics (DRO)	85	9.2		mg/Kg	1	1/30/2020 10:42:33 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	1/30/2020 10:42:33 AM
Surr: DNOP	109	55.1-146		%Rec	1	1/30/2020 10:42:33 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	18		mg/Kg	5	1/30/2020 11:09:32 AM
Surr: BFB	85.7	66.6-105		%Rec	5	1/30/2020 11:09:32 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.088		mg/Kg	5	1/30/2020 11:09:32 AM
Toluene	ND	0.18		mg/Kg	5	1/30/2020 11:09:32 AM
Ethylbenzene	ND	0.18		mg/Kg	5	1/30/2020 11:09:32 AM
Xylenes, Total	ND	0.35		mg/Kg	5	1/30/2020 11:09:32 AM
Surr: 4-Bromofluorobenzene	92.8	80-120		%Rec	5	1/30/2020 11:09:32 AM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	ND	60		mg/Kg	20	1/30/2020 12:20:00 PM

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 Limit
S	% Recovery outside of range due to dilution or matrix		