



2350 W Marland Blvd Hobbs, NM 88240

Deferment Request

February 4, 2020

Re: WS Marshall B-011

API# 30-025-37895

Case # 1RP-5456

On April 22, 2019 a release occurred due to a gasket failure on a heater treater at the above listed location. An initial C-141 was submitted to NMOCD and approved on April 24, 2019. The release is located north of Eunice New Mexico (GPS: 32.449000, -103.15510) in unit letter L, section 27, township 21S range 37E. Groundwater data was collected utilizing NMOSE wells of record. 2 wells were located within a ½ mile radius with an average depth of groundwater of 44 feet below ground surface. A USGS topographic map was utilized and there are no significant water courses within a ½ mile radius of the release site.

The entire release was contained to the lease pad except some light overspray on the vegetation in the pasture. The overspray on the vegetation was cleaned the day of the release with micro-blaze. Standing fluid was picked up via vacuum truck. Vertical delineation was conducted on June 6, 2019 utilizing a backhoe at sample point 1 (SP1) and a hand auger at sample point 2 (SP2). Samples were collected in one-foot (1') intervals and submitted to a commercial laboratory for CL, TPH, and BTEX. A remediation plan was submitted to NMOCD and denied on September 3, 2019 due to SP 2 was not fully delineated.

On September 11, 2019 SP 2 was further delineated to a depth of 3' and the 3 foot sample was taken to a commercial laboratory for analysis of chloride, TPH, and BTEX. Another sample point (SP 3) was added inside the battery area of the release and advanced to a total depth of 9 feet. Representative samples were collected and submitted to a commercial laboratory for analysis of chloride, TPH, and BTEX. Laboratory results showed that SP 2 was below table one standards at 3 feet and SP 3 was below table one standards at 9 feet.

The area (SP 1) on the lease pad outside the battery containment was excavated to a depth of 1 foot below ground surface. On October 11, 2019 final 5 point bottom and wall samples were collected not to exceed 200 square feet. All samples were submitted to a commercial laboratory for analysis of chloride, TPH, and BTEX. Laboratory results showed TPH levels above table one standards for B4, B7, B10, B12, B13, B15, and B17. Those areas were further excavated to a depth of 1.5 and 1.6 feet. 5 point bottom composite samples were collected on 10/23/2019 and submitted to a commercial laboratory for analysis of chloride, TPH, and BTEX. Laboratory results were below table one standards.

The release area in the battery was excavated utilizing hand shovels to a depth of 6 inches. On October 23, 2019 final 5 point bottom and wall samples were collected not to exceed 200 square feet and submitted to a commercial laboratory for analysis of chloride, TPH, and BTEX. All samples were above table one standards for TPH. That area was not further excavated due to the close proximity to facility infrastructure. All excavated material was hauled to an NMOCD

approved disposal facility. The excavated areas were backfilled with clean imported caliche to ground surface.

Apache Corporation has remediated the release area on the pad outside the battery to below table one standards. Apache Corporation request that the remainder contamination inside the battery containment be deferred until system abandonment.

Enclosed: C-141, Groundwater Data, Sample Data, Maps, Laboratory Results, and Photos

Submitted by;

Bruce Baker

Environmental Technician

larry.baker@apachecorp.com

Cell# 432-631-6982

Off# 575-393-7106

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	NDHR1912732011
District RP	1RP-5456
Facility ID	FDHR1912731062
Application ID	pDHR1912731640

Release Notification

Responsible Party

Responsible Party	Apache Corporation	OGRID	873
Contact Name	Bruce Baker	Contact Telephone	432-631-6982
Contact email	larry.baker@apachecorp.com	Incident # (assigned by OCD)	
Contact mailing address	2350 W. Marland BLVD Hobbs, NM 88240		

Location of Release Source

Latitude 32.44928 Longitude -103.15499
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	W.S. Marshall B-1 Battery	Site Type	Battery
Date Release Discovered	4/22/2019	API# (if applicable)	Nearest Well 30-025-37895

Unit Letter	Section	Township	Range	County
L	27	21S	37E	Lea

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☒ Private (Name: Apache Corporation)

Nature and Volume of Release

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

<input checked="" type="checkbox"/> Crude Oil	Volume Released (bbls) 10 barrels	Volume Recovered (bbls) 8 barrels
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 25 barrels	Volume Recovered (bbls) 4 recovered
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release **Gasket failure on heater treater.**

Form C-141

Page 2

State of New Mexico
Oil Conservation Division

Incident ID	NDHR1912732011
District RP	1RP-5456
Facility ID	IDHR1912731062
Application ID	pDHR1912731640

Was this a major release as defined by 19.15.29.7(A) NMAC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release? Release volume greater than 25 barrels
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Bruce Baker notified Jim Griswold (NMOCD) via email on 4/23/2019	

Initial Response

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

<input checked="" type="checkbox"/> The source of the release has been stopped.	
<input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment.	
<input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.	
<input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> 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: <u>Bruce Baker</u>	Title: <u>Environmental Tech. SR</u>
Signature: <u>Bruce Baker</u>	Date: <u>4/24/2019</u>
email: <u>larry.baker@apachecorp.com</u>	Telephone: <u>432-631-6982</u>
OCD Only	
Received by: <u>Dylan Rose-Coss</u>	Date: <u>05/07/2019</u>

Incident ID	
District RP	
Facility ID	
Application ID	

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?	45 (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas not on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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: <i>Each of the following items must be included in the report.</i>
<input checked="" type="checkbox"/> Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
<input checked="" type="checkbox"/> Field data
<input type="checkbox"/> Data table of soil contaminant concentration data
<input checked="" type="checkbox"/> Depth to water determination
<input checked="" type="checkbox"/> Determination of water sources and significant watercourses within 1/2-mile of the lateral extents of the release
<input type="checkbox"/> Boring or excavation logs
<input type="checkbox"/> Photographs including date and GIS information
<input checked="" type="checkbox"/> Topographic/Aerial maps
<input checked="" type="checkbox"/> Laboratory data including chain of custody

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

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

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: JEFF BRUMTitle: ENV. TECHSignature: Jeff BrumDate: 7/18/19email: Jeffrey.Brums@apachecorp.comTelephone: 432.664.4677**OCD Only**

Received by: _____

Date: _____

Incident ID	
District RP	
Facility ID	
Application ID	

Remediation Plan

Remediation Plan Checklist: Each of the following items must be included in the plan.

- ☐ Detailed description of proposed remediation technique
- ☐ Scaled sitemap with GPS coordinates showing delineation points
- ☐ Estimated volume of material to be remediated
- ☐ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- ☐ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: Each of the following items must be confirmed as part of any request for deferral of remediation.

- ☒ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- ☒ Extents of contamination must be fully delineated.
- ☒ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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.

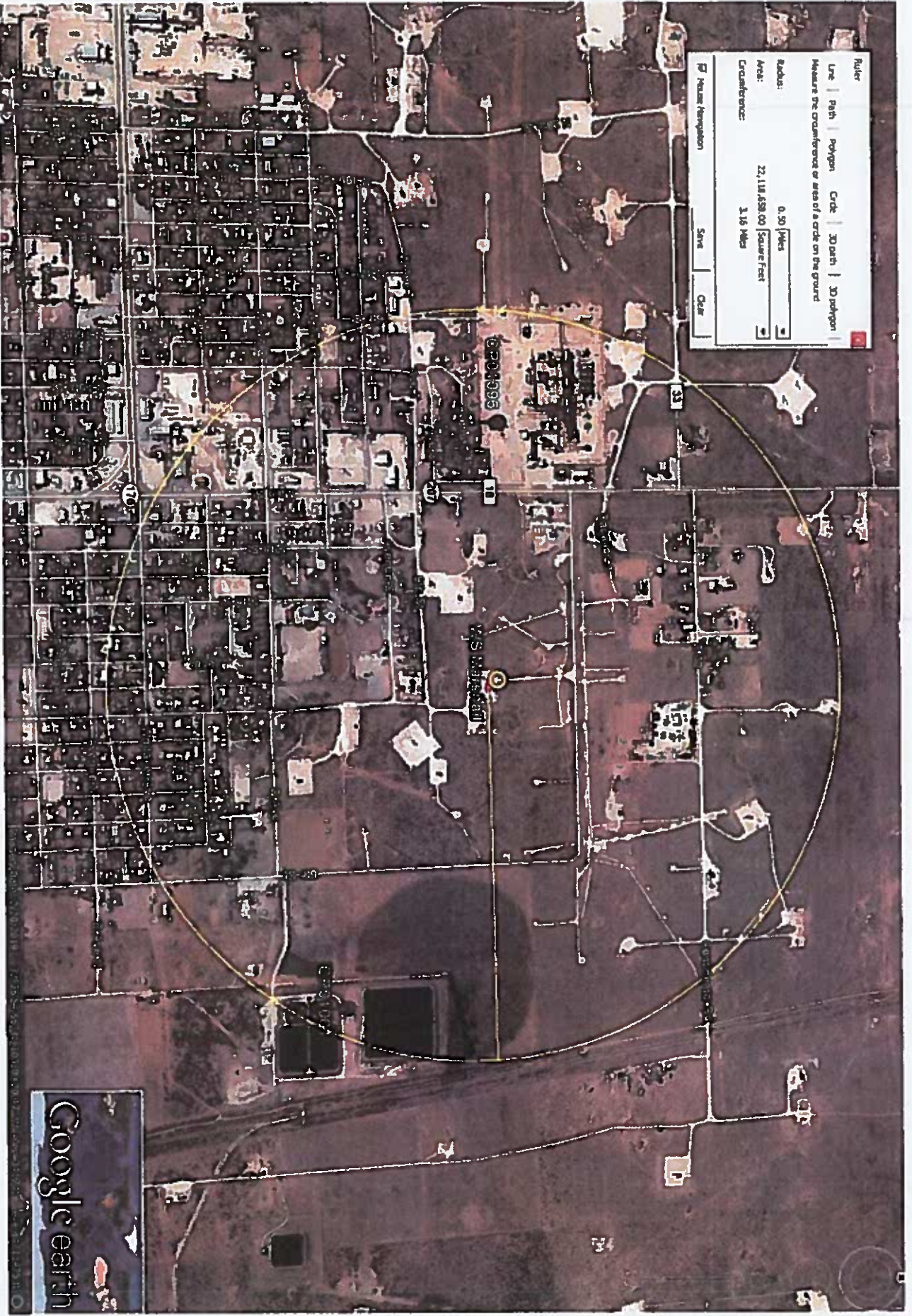
Printed Name: Bruce BAKER Title: Environmental Tech SR.
Signature: Bruce Baker Date: 2-4-20
email: larry.baker@apachecorp.com Telephone: 432-631-6982

OCD Only

Received by: _____ Date: _____

☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: _____ Date: _____





New Mexico Office of the State Engineer

Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)
 (quarters are smallest to largest) (NAD83 UTM in meters)

Well Tag	POD Number	Q64 Q16 Q4	Sec	Tws	Rng	X	Y
	CP 01096 POD1	2 2 4	28	21S	37E	672861	3591708

Driller License: 1670

Driller Company: HARRISON & COOPER, INC. (WD-1670)

Driller Name: COOPER, KEN D.

Drill Start Date: 06/19/2012

Drill Finish Date: 06/19/2012

Plug Date:

Log File Date: 07/19/2012

PCW Rcv Date:

Source: Shallow

Pump Type:

Pipe Discharge Size:

Estimated Yield:

Casing Size: 4.00

Depth Well: 108 feet

Depth Water: 48 feet

Water Bearing Stratifications:

Top	Bottom	Description
48	108	Other/Unknown

Casing Perforations:

Top	Bottom
98	108

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

7/18/19 12:37 PM

Page 1 of 1

POD SUMMARY - CP 01096 POD1



New Mexico Office of the State Engineer

Point of Diversion Summary

		(quarters are 1=NW 2=NE 3=SW 4=SE)			
		(quarters are smallest to largest)		(NAD83 UTM in meters)	
Well Tag	POD Number	Q64 Q16 Q4	Sec Tws Rng	X	Y
	CP 01001 POD1	2 3 4	27 21S 37E	674108	3591371

Driller License: 1575 **Driller Company:** TALON/LPE
Driller Name: CURRIE, SHANE

Drill Start Date: 10/07/2008 **Drill Finish Date:** 10/08/2008 **Plug Date:**
Log File Date: 11/20/2008 **PCW Rcv Date:** **Source:** Shallow
Pump Type: **Pipe Discharge Size:** **Estimated Yield:**
Casing Size: 4.00 **Depth Well:** 72 feet **Depth Water:** 40 feet

Water Bearing Stratifications:	Top	Bottom	Description
	42	69	Sandstone/Gravel/Conglomerate

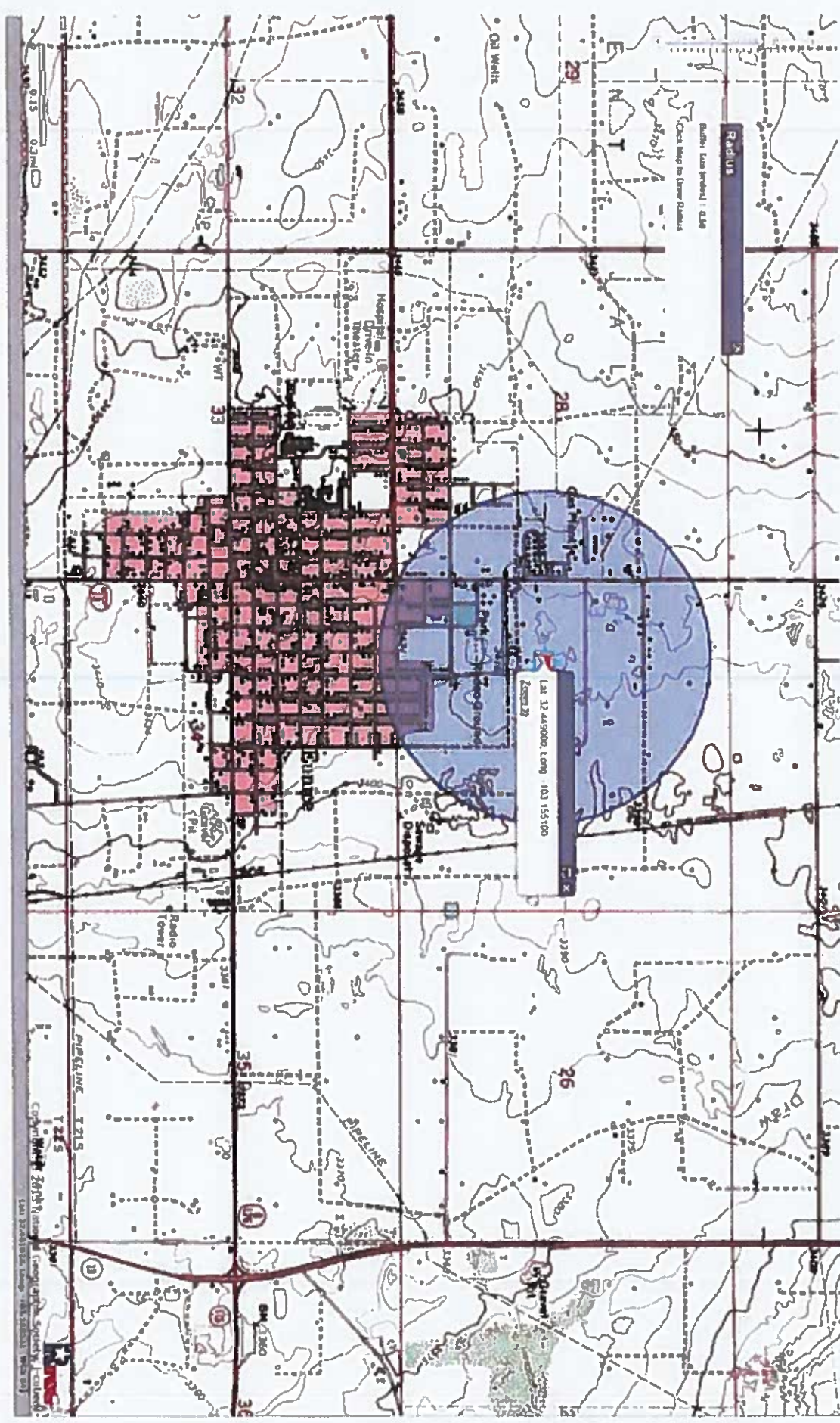
Casing Perforations:	Top	Bottom
	50	70

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

7/18/19 12:40 PM

Page 1 of 1

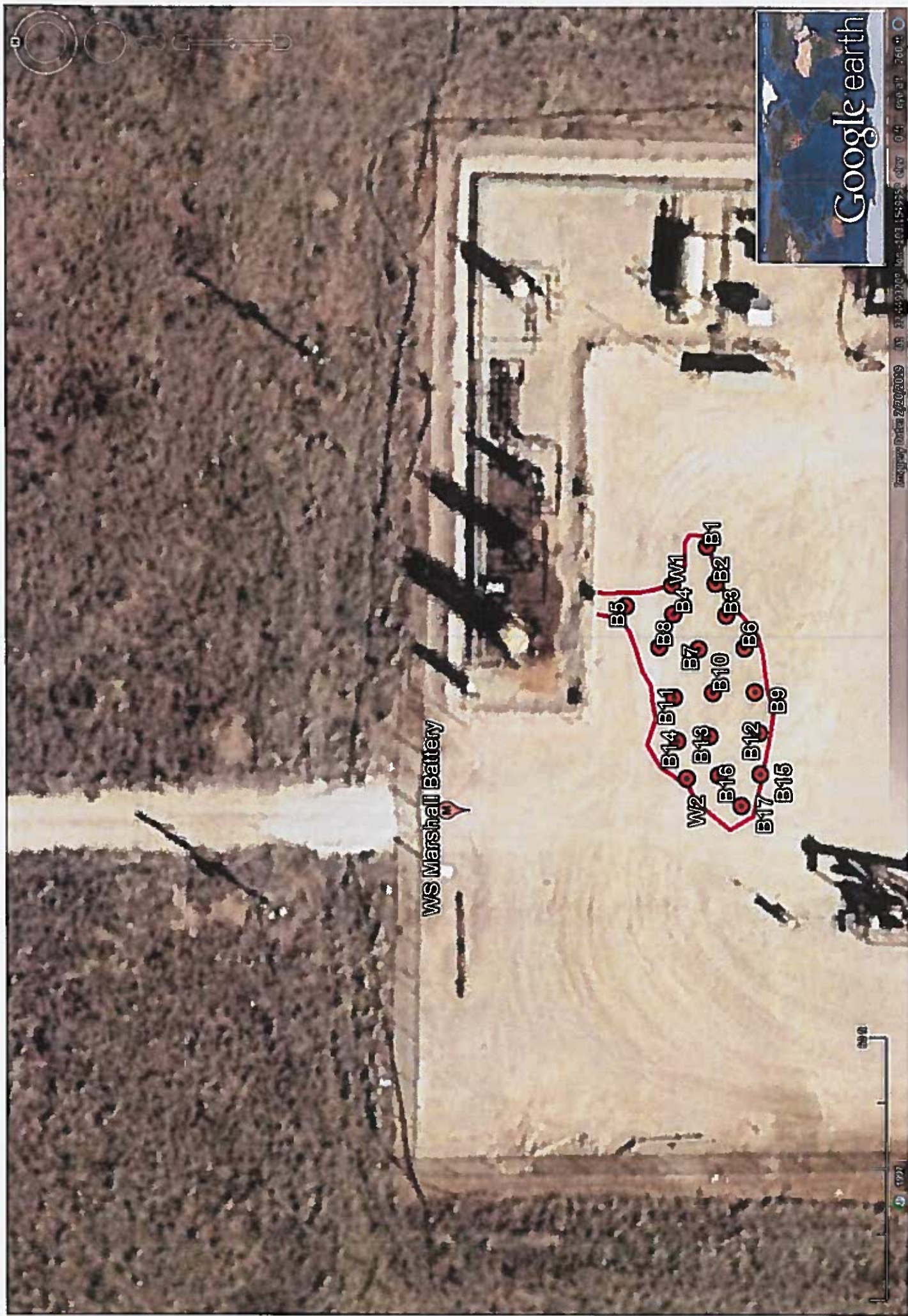
POD SUMMARY - CP 01001 POD1





Delineation Samples

Sample Pt.	Depth	CL-	Benzene	Toluene	Ethylbenzene	Total Xylene	Total BTEX	GRO	DRO	EXT DRO	Date sampled	GPS
SP 1	Surface	128	0.225	<0.050	<0.050	<0.150	<0.300	<50.0	10,500	2500	6/6/2019	32.449166 - 103.155003
SP 1	1'	32	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	6/6/2019	
SP 2	Surface	64	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	6/6/2019	32.449301 - 103.154962
SP 2	1'	32	<0.050	<0.050	<0.050	<0.150	<0.300	10.9	352	43.9	6/6/2019	
SP 2	3'	<16.0	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	9/11/2019	
SP 3	Surface	<16.0	<0.050	0.647	0.132	3.10	3.88	334	26600	7700	9/11/2019	32.449301 - 103.154953
SP 3	1'	64	0.075	0.207	0.346	1.59	2.22	52	1680	203	9/11/2019	
SP 3	3'	608	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	9/11/2019	
SP 3	6'	368	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	522	113	9/11/2019	
SP 3	9'	48	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	9/11/2019	





Bottom Samples

Sample Pt.	Depth	CL-	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX	GRO	DRO	EXT DRO	Date sampled	GPS
B1	1'	<16.0	<0.050	0.064	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	10/11/2019	32.449111 - 103.154838
B2	1'	<16.0	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	10.4	<10.0	10/11/2019	32.449118 - 103.154912
B3	1'	16	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	69.3	18.1	10/11/2019	32.449109 - 103.154952
B4	1'	32	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	521	143	10/11/2019	32.449167 - 103.154936
B4	1.5'	<16.0	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	10/23/2019	
B5	1'	16	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	57.8	23.4	10/11/2019	32.449152 - 103.154928
B6	1'	<16.0	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	54.7	12.2	10/11/2019	32.449098 - 103.154971
B7	1'	16	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	131	31.4	10/11/2019	32.449113 - 103.154980
B7	1.5'	16	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	10/23/2019	
B8	1'	48	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	139	27.9	10/11/2019	32.449145 - 103.154968
B8	1.5'	16	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	10/23/2019	
B9	1'	<16.0	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	16.2	<10.0	10/11/2019	32.449101 - 103.155019
B10	1'	<16.0	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	117	20.5	10/11/2019	32.449123 - 103.155017
B10	1.5	16	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	10/23/2019	

B11	1'	<16.0	<0.050	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	27.6	<10.0	10/11/2019	32.449147 - 103.155019
B12	1'	16	<0.050	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	87.9	13.9	10/11/2019	32.449109 - 103.155047
B12	1.5'	16	<0.050	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	10/23/2019	
B13	1'	32	<0.050	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	226	56.6	10/11/2019	32.449158 - 103.155054
B13	1.6'	<16.0	<0.050	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	10/23/2019	
B14	1'	32	<0.050	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	21.8	<10.0	10/11/2019	32.449191 - 103.155061
B15	1'	<16.0	<0.050	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	153	27.8	10/11/2019	32.449105 - 103.155080
B15	1.6'	<16.0	<0.050	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	10/23/2019	
B16	1'	<16.0	<0.050	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	37.2	<10.0	10/11/2019	32.449120 - 103.155079
B17	1'	16	<0.050	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	106	14.8	10/11/2019	32.449130 - 103.155121
B17	1.6'	<16.0	<0.050	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	10/23/2019	
B18	.5'	80	<0.050	<0.050	<0.050	0.243	0.911	1.15	56.4	5300	1110	10/23/2019	32.449302 - 103.154980
B19	.5'	80	<0.100	0.956	2.09	7.78	10.8	225	7450	1460	1460	10/23/2019	32.449310 - 103.154984
B20	0.5	400	<0.200	1.26	2.46	9.93	13.7	407	122000	2860	2860	10/23/2019	32.449235 - 103.154930
B21	0.5'	528	<0.100	0.34	1.01	3.34	4.69	212	11400	2730	2730	10/23/2019	32.449228 - 103.154939

B22	0.5'	48	<0.100	0.787	1.58	4.78	7.14	248	7600	1600	10/23/2019	32.449264 - 103.154918
Wall Samples												
Sample Pt.	Depth	CL-	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX	GRO	DRO	EXT DRO	Date sampled	GPS
W1		48	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	10/11/2019	32.449077 - 103.155077
W2		64	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	10/11/2019	32.449074 - 103.154881
W3		48	<0.050	<0.050	<0.050	<0.150	<0.300	<50.0	5230	1210	10/23/2019	32.449295 - 103.154970
W4		96	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	5370	1380	10/23/2019	32.449242 - 103.154950
W5		224	<0.050	<0.050	<0.050	<0.150	<0.300	<50.0	16600	3800	10/23/2019	32.449306 - 103.154980
W6		32	<0.050	<0.050	<0.050	<0.150	<0.300	<50.0	6420	1450	10/23/2019	32.449279 - 103.154843



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

June 13, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: WS MARSHALL

Enclosed are the results of analyses for samples received by the laboratory on 06/06/19 14:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in cursive script that reads "Coley D. Keene".

Celey D. Keene

Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 06/06/2019
 Reported: 06/13/2019
 Project Name: WS MARSHALL
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 06/06/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 1 @ SURFACE (H901986-01)

BTEX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	0.225	0.050	06/11/2019	ND	2.22	111	2.00	0.995	
Toluene*	<0.050	0.050	06/11/2019	ND	1.86	93.2	2.00	0.501	
Ethylbenzene*	<0.050	0.050	06/11/2019	ND	2.17	109	2.00	3.14	
Total Xylenes*	<0.150	0.150	06/11/2019	ND	5.64	94.0	6.00	3.49	
Total BTEX	<0.300	0.300	06/11/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 91.0 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	06/10/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<50.0	50.0	06/08/2019	ND	244	122	200	1.39	
DRO >C10-C28*	10500	50.0	06/08/2019	ND	221	111	200	0.645	
EXT DRO >C28-C36	2500	50.0	06/08/2019	ND					

Surrogate: 1-Chlorooctane 106 % 41-142

Surrogate: 1-Chlorooctadecane 570 % 37.6-147

Cardinal Laboratories

* = Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based on contract or tort, shall be limited to the amount paid by client for analysis. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruption, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

 Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 06/06/2019
 Reported: 06/13/2019
 Project Name: WS MARSHALL
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 06/06/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 1 @ 1' (H901986-02)**BTEX 80218****mg/kg****Analyzed By: BF**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/11/2019	ND	2.22	111	2.00	0.995	
Toluene*	<0.050	0.050	06/11/2019	ND	1.86	93.2	2.00	0.501	
Ethylbenzene*	<0.050	0.050	06/11/2019	ND	2.17	109	2.00	3.14	
Total Xylenes*	<0.150	0.150	06/11/2019	ND	5.64	94.0	6.00	3.49	
Total BTEX	<0.300	0.300	06/11/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.3 % 73.3-129

Chloride, SM4500Cl-B**mg/kg****Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	06/10/2019	ND	416	104	400	0.00	

TPH 8015M**mg/kg****Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/08/2019	ND	244	122	200	1.39	
DRO >C10-C28*	<10.0	10.0	06/08/2019	ND	221	111	200	0.645	
EXT DRO >C28-C36	<10.0	10.0	06/08/2019	ND					

Surrogate: 1-Chlorooctane 99.5 % 41-142

Surrogate: 1-Chlorooctadecane 102 % 37.6-147

Cardinal Laboratories

* = Accredited Analyte

PLEASE NOTE: Liability and Coverage. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analysis. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.


 Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 06/06/2019
 Reported: 06/13/2019
 Project Name: WS MARSHALL
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 06/06/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 2 @ SURFACE (H901986-03)**BTEX 80218****mg/kg****Analyzed By: BF**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/11/2019	ND	2.22	111	2.00	0.995	
Toluene*	<0.050	0.050	06/11/2019	ND	1.86	93.2	2.00	0.501	
Ethylbenzene*	<0.050	0.050	06/11/2019	ND	2.17	109	2.00	3.14	
Total Xylenes*	<0.150	0.150	06/11/2019	ND	5.64	94.0	6.00	3.49	
Total BTEX	<0.300	0.300	06/11/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC 113 % 73.3-129)**Chloride, SM4500Cl-B****mg/kg****Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	06/10/2019	ND	416	104	400	0.00	

TPH 8015M**mg/kg****Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/08/2019	ND	244	122	200	1.39	
DRO >C10-C28*	<10.0	10.0	06/08/2019	ND	221	111	200	0.645	
EXT DRO >C28-C36	<10.0	10.0	06/08/2019	ND					

Surrogate: 1-Chlorooctane 99.2 % 41-142**Surrogate: 1-Chlorooctadecane 101 % 37.6-147****Cardinal Laboratories*****=Accredited Analyte**

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other claims whatsoever shall be deemed waived unless made in writing and received by Cardinal within ninety (90) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or in relation to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.


 Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 06/06/2019
 Reported: 06/13/2019
 Project Name: WS MARSHALL
 Project Number: NONE GIVEN
 Project Location: NONE GIVEN

Sampling Date: 06/06/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 2 @ 1' (H901986-04)

STEX 80218		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/11/2019	ND	2.22	111	2.00	0.995	
Toluene*	<0.050	0.050	06/11/2019	ND	1.86	93.2	2.00	0.501	
Ethylbenzene*	<0.050	0.050	06/11/2019	ND	2.17	109	2.00	3.14	
Total Xylenes*	<0.150	0.150	06/11/2019	ND	5.64	94.0	6.00	3.49	
Total BTEX	<0.300	0.300	06/11/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 103 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	06/10/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	10.9	10.0	06/08/2019	ND	244	122	200	1.39	
DRO >C10-C28*	352	10.0	06/08/2019	ND	221	111	200	0.645	
EXT DRO >C28-C36	43.9	10.0	06/08/2019	ND					

Surrogate: 1-Chlorooctane 94.5 % 41-142

Surrogate: 1-Chlorooctadecane 109 % 37.6-147

Cardinal Laboratories

* = Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated causes or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Notes and Definitions

- S-06 The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
- QR-03 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- ** Samples not received at proper temperature of 6°C or below.
- *** Insufficient time to reach temperature.
- Chloride by SM4500C-B does not require samples be received at or below 6°C
Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages: Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other claim whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services rendered by Cardinal, regardless of whether such claim is based upon any of the above stated claims or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Received by OCD: 2/4/2020 2:19:20 PM



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

September 18, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: MARSHALL B 001

Enclosed are the results of analyses for samples received by the laboratory on 09/11/19 16:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 09/11/2019
 Reported: 09/18/2019
 Project Name: MARSHALL B 001
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/11/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 2 @ 3 32.449301 (H903146-01)

BTEX 8021B		mg/kg	Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/16/2019	ND	1.84	92.0	2.00	6.79	
Toluene*	<0.050	0.050	09/16/2019	ND	1.89	94.4	2.00	4.62	
Ethylbenzene*	<0.050	0.050	09/16/2019	ND	1.94	96.9	2.00	4.64	
Total Xylenes*	<0.150	0.150	09/16/2019	ND	5.87	97.9	6.00	5.18	
Total BTEX	<0.300	0.300	09/16/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 80.3 % 73.3-129

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	09/16/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/12/2019	ND	195	97.7	200	6.40	
DRO >C10-C28*	<10.0	10.0	09/12/2019	ND	198	99.0	200	7.79	
EXT DRO >C28-C36	<10.0	10.0	09/12/2019	ND					

Surrogate: 1-Chlorooctane 91.5 % 41-142

Surrogate: 1-Chlorooctadecane 99.9 % 37.6-147

Cardinal Laboratories

* = Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 09/11/2019
 Reported: 09/18/2019
 Project Name: MARSHALL B 001
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/11/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 3 @ SURFACE - 103.154962 (H903146-02)

BTEX 80218		mg/kg	Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/16/2019	ND	2.14	107	2.00	2.36	GC-NC
Toluene*	0.647	0.050	09/16/2019	ND	1.96	98.0	2.00	4.79	
Ethylbenzene*	0.132	0.050	09/16/2019	ND	2.42	121	2.00	17.2	
Total Xylenes*	3.10	0.150	09/16/2019	ND	6.01	100	6.00	1.48	
Total BTEX	3.88	0.300	09/16/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 127 % 73.3-129

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	09/16/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	334	100	09/12/2019	ND	195	97.7	200	6.40	
DRO >C10-C28*	26600	100	09/12/2019	ND	198	99.0	200	7.79	
EXT DRO >C28-C36	7700	100	09/12/2019	ND					

Surrogate: 1-Chlorooctane 148 % 41-142

Surrogate: 1-Chlorooctadecane 875 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analysis. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 09/11/2019
 Reported: 09/18/2019
 Project Name: MARSHALL B 001
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/11/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 3 @ 1 32.449301 (H903146-03)

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	0.075	0.050	09/16/2019	ND	2.14	107	2.00	2.36	
Toluene*	0.207	0.050	09/16/2019	ND	1.96	98.0	2.00	4.79	
Ethylbenzene*	0.346	0.050	09/16/2019	ND	2.42	121	2.00	17.2	
Total Xylenes*	1.59	0.150	09/16/2019	ND	6.01	100	6.00	1.48	
Total BTEX	2.22	0.300	09/16/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 127 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	09/16/2019	ND	416	104	400	0.00	
TPH 8015M		mg/kg		Analyzed By: MS					
5-06									

Surrogate: 1-Chlorooctane 112 % 41-142

Surrogate: 1-Chlorooctadecane 155 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 09/11/2019
 Reported: 09/18/2019
 Project Name: MARSHALL B 001
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/11/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 3 @ 3 -103.154953 (H903146-04)

BTEX 80218		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/16/2019	ND	2.14	107	2.00	2.36	
Toluene*	<0.050	0.050	09/16/2019	ND	1.96	98.0	2.00	4.79	
Ethylbenzene*	<0.050	0.050	09/16/2019	ND	2.42	121	2.00	17.2	
Total Xylenes*	<0.150	0.150	09/16/2019	ND	6.01	100	6.00	1.48	
Total BTEX	<0.300	0.300	09/16/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.7 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	608	16.0	09/16/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/12/2019	ND	195	97.7	200	6.40	
DRO >C10-C28*	<10.0	10.0	09/12/2019	ND	198	99.0	200	7.79	
EXT DRO >C28-C36	<10.0	10.0	09/12/2019	ND					

Surrogate: 1-Chlorooctane 92.4 % 41-142

Surrogate: 1-Chlorooctadecane 98.9 % 37.6-147

Cardinal Laboratories

* = Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 09/11/2019
 Reported: 09/18/2019
 Project Name: MARSHALL B 001
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/11/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 3 @ 6 (H903146-05)

BTEX 80218		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/16/2019	ND	2.14	107	2.00	2.36	
Toluene*	<0.050	0.050	09/16/2019	ND	1.96	98.0	2.00	4.79	
Ethylbenzene*	<0.050	0.050	09/16/2019	ND	2.42	121	2.00	17.2	
Total Xylenes*	<0.150	0.150	09/16/2019	ND	6.01	100	6.00	1.48	
Total BTEX	<0.300	0.300	09/16/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 98.0 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	368	16.0	09/16/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/12/2019	ND	195	97.7	200	6.40	
DRO >C10-C28*	522	10.0	09/12/2019	ND	198	99.0	200	7.79	
EXT DRO >C28-C36	113	10.0	09/12/2019	ND					

Surrogate: 1-Chlorooctane 93.5 % 41-142

Surrogate: 1-Chlorooctadecane 114 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 09/11/2019
 Reported: 09/18/2019
 Project Name: MARSHALL B 001
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 09/11/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 3 @ 9 (H903146-06)

BTEX 80218		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/16/2019	ND	2.14	107	2.00	2.36	
Toluene*	<0.050	0.050	09/16/2019	ND	1.96	98.0	2.00	4.79	
Ethylbenzene*	<0.050	0.050	09/16/2019	ND	2.42	121	2.00	17.2	
Total Xylenes*	<0.150	0.150	09/16/2019	ND	6.01	100	6.00	1.48	
Total BTEX	<0.300	0.300	09/16/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 97.1 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	09/16/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/12/2019	ND	195	97.7	200	6.40	
DRO >C10-C28*	<10.0	10.0	09/12/2019	ND	198	99.0	200	7.79	
EXT DRO >C28-C36	<10.0	10.0	09/12/2019	ND					

Surrogate: 1-Chlorooctane 92.8 % 41-142

Surrogate: 1-Chlorooctadecane 101 % 37.6-147

Cardinal Laboratories

* = Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Notes and Definitions

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
GC-NC	8260 confirmation analysis was performed; Initial GC results were not supported by GC/MS analysis and are reported as ND.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager

Email to Bruce and Jeff

Email to Bruce and Jeff

Email to Bruce and Jeff

Received by *OCD*: 2/4/2020 2:19:20 PM



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

October 17, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: MARSHALL B 001

Enclosed are the results of analyses for samples received by the laboratory on 10/11/19 13:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/ga/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 10/11/2019
 Reported: 10/17/2019
 Project Name: MARSHALL B 001
 Project Number: NONE GIVEN
 Project Location: EUNICE, NM

Sampling Date: 10/11/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Celey D. Keene

Sample ID: B-1 32.449111 -103.154838 (H903466-01)

BTEX 80218		mg/kg	Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/14/2019	ND	1.91	95.5	2.00	1.84	
Toluene*	0.064	0.050	10/14/2019	ND	1.95	97.7	2.00	2.67	
Ethylbenzene*	<0.050	0.050	10/14/2019	ND	1.94	97.1	2.00	2.36	
Total Xylenes*	<0.150	0.150	10/14/2019	ND	5.84	97.3	6.00	2.20	
Total BTEX	<0.300	0.300	10/14/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 97.6 % 73.3-129

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/15/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/11/2019	ND	218	109	200	12.9	
DRO >C10-C28*	<10.0	10.0	10/11/2019	ND	212	106	200	10.3	
EXT DRO >C28-C36	<10.0	10.0	10/11/2019	ND					

Surrogate: 1-Chlorooctane 94.9 % 41-142

Surrogate: 1-Chlorooctadecane 111 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 10/11/2019
 Reported: 10/17/2019
 Project Name: MARSHALL B 001
 Project Number: NONE GIVEN
 Project Location: EUNICE, NM

Sampling Date: 10/11/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Celey D. Keene

Sample ID: B-2 32.449118 -103.154912 (H903466-02)

BTEX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/14/2019	ND	1.91	95.5	2.00	1.84	
Toluene*	<0.050	0.050	10/14/2019	ND	1.95	97.7	2.00	2.67	
Ethylbenzene*	<0.050	0.050	10/14/2019	ND	1.94	97.1	2.00	2.36	
Total Xylenes*	<0.150	0.150	10/14/2019	ND	5.84	97.3	6.00	2.20	
Total BTEX	<0.300	0.300	10/14/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 112 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/15/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/11/2019	ND	218	109	200	12.9	
DRO >C10-C28*	10.4	10.0	10/11/2019	ND	212	106	200	10.3	
EXT DRO >C28-C36	<10.0	10.0	10/11/2019	ND					

Surrogate: 1-Chlorooctane 95.2 % 41-142

Surrogate: 1-Chlorooctadecane 103 % 37.6-147

Cardinal Laboratories

* = Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 10/11/2019
 Reported: 10/17/2019
 Project Name: MARSHALL B 001
 Project Number: NONE GIVEN
 Project Location: EUNICE, NM

Sampling Date: 10/11/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Celey D. Keene

Sample ID: B-3 32.449109 -103.154952 (H903466-03)

BTEX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/14/2019	ND	1.91	95.5	2.00	1.84	
Toluene*	<0.050	0.050	10/14/2019	ND	1.95	97.7	2.00	2.67	
Ethylbenzene*	<0.050	0.050	10/14/2019	ND	1.94	97.1	2.00	2.36	
Total Xylenes*	<0.150	0.150	10/14/2019	ND	5.84	97.3	6.00	2.20	
Total BTEX	<0.300	0.300	10/14/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 97.5 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	10/15/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/11/2019	ND	218	109	200	12.9	
DRO >C10-C28*	69.3	10.0	10/11/2019	ND	212	106	200	10.3	
EXT DRO >C28-C36	18.1	10.0	10/11/2019	ND					

Surrogate: 1-Chlorooctane 96.8 % 41-142

Surrogate: 1-Chlorooctadecane 108 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 10/11/2019
 Reported: 10/17/2019
 Project Name: MARSHALL B 001
 Project Number: NONE GIVEN
 Project Location: EUNICE, NM

Sampling Date: 10/11/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Celey D. Keene

Sample ID: B-4 32.449167 -103.154936 (H903466-04)

BTEX 80218 mg/kg			Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/14/2019	ND	1.91	95.5	2.00	1.84	
Toluene*	<0.050	0.050	10/14/2019	ND	1.95	97.7	2.00	2.67	
Ethylbenzene*	<0.050	0.050	10/14/2019	ND	1.94	97.1	2.00	2.36	
Total Xylenes*	<0.150	0.150	10/14/2019	ND	5.84	97.3	6.00	2.20	
Total BTEX	<0.300	0.300	10/14/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 97.0 % 73.3-129

Chloride, SM4500Cl-B mg/kg			Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	10/15/2019	ND	416	104	400	0.00	

TPH 8015M mg/kg			Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/11/2019	ND	218	109	200	12.9	
DRO >C10-C28*	521	10.0	10/11/2019	ND	212	106	200	10.3	
EXT DRO >C28-C36	143	10.0	10/11/2019	ND					

Surrogate: 1-Chlorooctane 90.9 % 41-142

Surrogate: 1-Chlorooctadecane 120 % 37.6-147

Cardinal Laboratories

* = Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 10/11/2019
 Reported: 10/17/2019
 Project Name: MARSHALL B 001
 Project Number: NONE GIVEN
 Project Location: EUNICE, NM

Sampling Date: 10/11/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Celey D. Keene

Sample ID: B-5 32.449152 -103.154928 (H903466-05)

BTEX 8021B		mg/kg	Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/14/2019	ND	1.91	95.5	2.00	1.84	
Toluene*	<0.050	0.050	10/14/2019	ND	1.95	97.7	2.00	2.67	
Ethylbenzene*	<0.050	0.050	10/14/2019	ND	1.94	97.1	2.00	2.36	
Total Xylenes*	<0.150	0.150	10/14/2019	ND	5.84	97.3	6.00	2.20	
Total BTEX	<0.300	0.300	10/14/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 96.4 % 73.3-129

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	10/15/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/11/2019	ND	218	109	200	12.9	
DRO >C10-C28*	57.8	10.0	10/11/2019	ND	212	106	200	10.3	
EXT DRO >C28-C36	23.4	10.0	10/11/2019	ND					

Surrogate: 1-Chlorooctane 95.9 % 41-142

Surrogate: 1-Chlorooctadecane 104 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 10/11/2019
 Reported: 10/17/2019
 Project Name: MARSHALL B 001
 Project Number: NONE GIVEN
 Project Location: EUNICE, NM

Sampling Date: 10/11/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Celey D. Keene

Sample ID: B-6 @ 1 32.449098 -103.154971 (H903466-06)

BTEX 80218		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/14/2019	ND	1.91	95.5	2.00	1.84	
Toluene*	<0.050	0.050	10/14/2019	ND	1.95	97.7	2.00	2.67	
Ethylbenzene*	<0.050	0.050	10/14/2019	ND	1.94	97.1	2.00	2.36	
Total Xylenes*	<0.150	0.150	10/14/2019	ND	5.84	97.3	6.00	2.20	
Total BTEX	<0.300	0.300	10/14/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 96.3 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/15/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/11/2019	ND	218	109	200	12.9	
DRO >C10-C28*	54.7	10.0	10/11/2019	ND	212	106	200	10.3	
EXT DRO >C28-C36	12.2	10.0	10/11/2019	ND					

Surrogate: 1-Chlorooctane 99.4 % 41-142

Surrogate: 1-Chlorooctadecane 109 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 10/11/2019
 Reported: 10/17/2019
 Project Name: MARSHALL B 001
 Project Number: NONE GIVEN
 Project Location: EUNICE, NM

Sampling Date: 10/11/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Celey D. Keene

Sample ID: B-7 @ 1 32.449113 -103.154980 (H903466-07)

BTEX 80218		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/15/2019	ND	1.94	96.9	2.00	2.55	
Toluene*	<0.050	0.050	10/15/2019	ND	1.95	97.3	2.00	1.46	
Ethylbenzene*	<0.050	0.050	10/15/2019	ND	1.96	98.1	2.00	1.60	
Total Xylenes*	<0.150	0.150	10/15/2019	ND	5.89	98.1	6.00	1.61	
Total BTEX	<0.300	0.300	10/15/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 97.7 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	10/15/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/11/2019	ND	218	109	200	12.9	
DRO >C10-C28*	131	10.0	10/11/2019	ND	212	106	200	10.3	
EXT DRO >C28-C36	31.4	10.0	10/11/2019	ND					

Surrogate: 1-Chlorooctane 93.4 % 41-142

Surrogate: 1-Chlorooctadecane 107 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 10/11/2019
 Reported: 10/17/2019
 Project Name: MARSHALL B 001
 Project Number: NONE GIVEN
 Project Location: EUNICE, NM

Sampling Date: 10/11/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Celey D. Keene

Sample ID: B-8 @ 1 32.449145 -103.154968 (H903466-08)

BTEX 8021B		mg/kg		Analyzed By: BF				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/15/2019	ND	1.94	96.9	2.00	2.55	
Toluene*	<0.050	0.050	10/15/2019	ND	1.95	97.3	2.00	1.46	
Ethylbenzene*	<0.050	0.050	10/15/2019	ND	1.96	98.1	2.00	1.60	
Total Xylenes*	<0.150	0.150	10/15/2019	ND	5.89	98.1	6.00	1.61	
Total BTEX	<0.300	0.300	10/15/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 131 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	10/15/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/11/2019	ND	218	109	200	12.9	
DRO >C10-C28*	139	10.0	10/11/2019	ND	212	106	200	10.3	
EXT DRO >C28-C36	27.9	10.0	10/11/2019	ND					

Surrogate: 1-Chlorooctane 85.5 % 41-142

Surrogate: 1-Chlorooctadecane 96.7 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 10/11/2019
 Reported: 10/17/2019
 Project Name: MARSHALL B 001
 Project Number: NONE GIVEN
 Project Location: EUNICE, NM

Sampling Date: 10/11/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Celey D. Keene

Sample ID: B-9 @ 1 32.449101 -103.155019 (H903466-09)

BTEX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/15/2019	ND	1.95	97.4	2.00	1.13	
Toluene*	<0.050	0.050	10/15/2019	ND	2.02	101	2.00	0.971	
Ethylbenzene*	<0.050	0.050	10/15/2019	ND	1.97	98.7	2.00	0.572	
Total Xylenes*	<0.150	0.150	10/15/2019	ND	6.04	101	6.00	1.42	
Total BTEX	<0.300	0.300	10/15/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 98.8 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/15/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/11/2019	ND	218	109	200	12.9	
DRO >C10-C28*	16.2	10.0	10/11/2019	ND	212	106	200	10.3	
EXT DRO >C28-C36	<10.0	10.0	10/11/2019	ND					

Surrogate: 1-Chlorooctane 93.9 % 41-142

Surrogate: 1-Chlorooctadecane 101 % 37.6-147

Cardinal Laboratories

* = Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 10/11/2019
 Reported: 10/17/2019
 Project Name: MARSHALL B 001
 Project Number: NONE GIVEN
 Project Location: EUNICE, NM

Sampling Date: 10/11/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Celey D. Keene

Sample ID: B-10 @ 1 32.449123 -103.155017 (H903466-10)

BTEX 80218		mg/kg	Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/15/2019	ND	1.95	97.4	2.00	1.13	
Toluene*	<0.050	0.050	10/15/2019	ND	2.02	101	2.00	0.971	
Ethylbenzene*	<0.050	0.050	10/15/2019	ND	1.97	98.7	2.00	0.572	
Total Xylenes*	<0.150	0.150	10/15/2019	ND	6.04	101	6.00	1.42	
Total BTEX	<0.300	0.300	10/15/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 100 % 73.3-129

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/15/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/14/2019	ND	210	105	200	2.10	
DRO >C10-C28*	117	10.0	10/14/2019	ND	213	106	200	1.03	
EXT DRO >C28-C36	20.5	10.0	10/14/2019	ND					

Surrogate: 1-Chlorooctane 108 % 41-142

Surrogate: 1-Chlorooctadecane 114 % 37.6-147

Cardinal Laboratories

* = Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 10/11/2019
 Reported: 10/17/2019
 Project Name: MARSHALL B 001
 Project Number: NONE GIVEN
 Project Location: EUNICE, NM

Sampling Date: 10/11/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Celey D. Keene

Sample ID: B-11 @ 1 32.449147 -103.155019 (H903466-11)

BTEX 8021B		mg/kg	Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/15/2019	ND	1.95	97.4	2.00	1.13	
Toluene*	<0.050	0.050	10/15/2019	ND	2.02	101	2.00	0.971	
Ethylbenzene*	<0.050	0.050	10/15/2019	ND	1.97	98.7	2.00	0.572	
Total Xylenes*	<0.150	0.150	10/15/2019	ND	6.04	101	6.00	1.42	
Total BTEX	<0.300	0.300	10/15/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 99.5 % 73.3-129

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/15/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/14/2019	ND	210	105	200	2.10	
DRO >C10-C28*	27.6	10.0	10/14/2019	ND	213	106	200	1.03	
EXT DRO >C28-C36	<10.0	10.0	10/14/2019	ND					

Surrogate: 1-Chlorooctane 110 % 41-142

Surrogate: 1-Chlorooctadecane 112 % 37.6-147

Cardinal Laboratories

* = Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene
 Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 10/11/2019
 Reported: 10/17/2019
 Project Name: MARSHALL B 001
 Project Number: NONE GIVEN
 Project Location: EUNICE, NM

Sampling Date: 10/11/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Celey D. Keene

Sample ID: B-12 @ 1 32.449109 -103.155047 (H903466-12)

BTEX 80218		mg/kg	Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/15/2019	ND	1.95	97.4	2.00	1.13	
Toluene*	<0.050	0.050	10/15/2019	ND	2.02	101	2.00	0.971	
Ethylbenzene*	<0.050	0.050	10/15/2019	ND	1.97	98.7	2.00	0.572	
Total Xylenes*	<0.150	0.150	10/15/2019	ND	6.04	101	6.00	1.42	
Total BTEX	<0.300	0.300	10/15/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 101 % 73.3-129

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	10/15/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/14/2019	ND	210	105	200	2.10	
DRO >C10-C28*	87.9	10.0	10/14/2019	ND	213	106	200	1.03	
EXT DRO >C28-C36	13.9	10.0	10/14/2019	ND					

Surrogate: 1-Chlorooctane 112 % 41-142

Surrogate: 1-Chlorooctadecane 120 % 37.6-147

Cardinal Laboratories

* = Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 10/11/2019
 Reported: 10/17/2019
 Project Name: MARSHALL B 001
 Project Number: NONE GIVEN
 Project Location: EUNICE, NM

Sampling Date: 10/11/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Celey D. Keene

Sample ID: B-13 @ 1 32.449158 -103.155054 (H903466-13)

BTEX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/15/2019	ND	1.95	97.4	2.00	1.13	
Toluene*	<0.050	0.050	10/15/2019	ND	2.02	101	2.00	0.971	
Ethylbenzene*	<0.050	0.050	10/15/2019	ND	1.97	98.7	2.00	0.572	
Total Xylenes*	<0.150	0.150	10/15/2019	ND	6.04	101	6.00	1.42	
Total BTEX	<0.300	0.300	10/15/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 97.7 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	10/15/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/14/2019	ND	210	105	200	2.10	
DRO >C10-C28*	226	10.0	10/14/2019	ND	213	106	200	1.03	
EXT DRO >C28-C36	56.6	10.0	10/14/2019	ND					

Surrogate: 1-Chlorooctane 111 % 41-142

Surrogate: 1-Chlorooctadecane 133 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 10/11/2019
 Reported: 10/17/2019
 Project Name: MARSHALL B 001
 Project Number: NONE GIVEN
 Project Location: EUNICE, NM

Sampling Date: 10/11/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Celey D. Keene

Sample ID: B-14 @ 1 32.449191 -103.155061 (H903466-14)

BTEX 80218		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/15/2019	ND	1.95	97.4	2.00	1.13	
Toluene*	<0.050	0.050	10/15/2019	ND	2.02	101	2.00	0.971	
Ethylbenzene*	<0.050	0.050	10/15/2019	ND	1.97	98.7	2.00	0.572	
Total Xylenes*	<0.150	0.150	10/15/2019	ND	6.04	101	6.00	1.42	
Total BTEX	<0.300	0.300	10/15/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 99.7 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	10/15/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/14/2019	ND	210	105	200	2.10	
DRO >C10-C28*	21.8	10.0	10/14/2019	ND	213	106	200	1.03	
EXT DRO >C28-C36	<10.0	10.0	10/14/2019	ND					

Surrogate: 1-Chlorooctane 104 % 41-142

Surrogate: 1-Chlorooctadecane 107 % 37.6-147

Cardinal Laboratories

* = Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

APACHE CORP - HOBBS
BRUCE BAKER
2350 W. MARLAND BLVD.
HOBBS NM, 88240
Fax To: (575) 393-2432

Received: 10/11/2019
Reported: 10/17/2019
Project Name: MARSHALL B 001
Project Number: NONE GIVEN
Project Location: EUNICE, NM

Sampling Date: 10/11/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Celey D. Keene

Sample ID: B-15 @ 1 32.449105 -103.155080 (H903466-15)

BTEX 80218		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/15/2019	ND	1.95	97.4	2.00	1.13	
Toluene*	<0.050	0.050	10/15/2019	ND	2.02	101	2.00	0.971	
Ethylbenzene*	<0.050	0.050	10/15/2019	ND	1.97	98.7	2.00	0.572	
Total Xylenes*	<0.150	0.150	10/15/2019	ND	6.04	101	6.00	1.42	
Total BTEX	<0.300	0.300	10/15/2019	ND					

Surrogate 4-Bromofluorobenzene (PIC) 99.6 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/15/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/14/2019	ND	210	105	200	2.10	
DRO >C10-C28*	153	10.0	10/14/2019	ND	213	106	200	1.03	
EXT DRO >C28-C36	27.8	10.0	10/14/2019	ND					

Surrogate 1-Chlorooctane 109 % 41-142

Surrogate 1-Chlorooctadecane 120 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 10/11/2019
 Reported: 10/17/2019
 Project Name: MARSHALL B 001
 Project Number: NONE GIVEN
 Project Location: EUNICE, NM

Sampling Date: 10/11/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Celey D. Keene

Sample ID: B-16 @ 1 32.449120 -103.155079 (H903466-16)

BTEX 80218		mg/kg	Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/15/2019	ND	1.95	97.4	2.00	1.13	
Toluene*	<0.050	0.050	10/15/2019	ND	2.02	101	2.00	0.971	
Ethylbenzene*	<0.050	0.050	10/15/2019	ND	1.97	98.7	2.00	0.572	
Total Xylenes*	<0.150	0.150	10/15/2019	ND	6.04	101	6.00	1.42	
Total BTEX	<0.300	0.300	10/15/2019	ND					

Surrogate 4-Bromofluorobenzene (PIE) 99.9 % 73.3-129

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/15/2019	ND	416	104	400	3.77	

TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/14/2019	ND	210	105	200	2.10	
DRO >C10-C28*	37.2	10.0	10/14/2019	ND	213	106	200	1.03	
EXT DRO >C28-C36	<10.0	10.0	10/14/2019	ND					

Surrogate 1-Chlorooctane 103 % 41-142

Surrogate 1-Chlorooctadecane 107 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 10/11/2019
 Reported: 10/17/2019
 Project Name: MARSHALL B 001
 Project Number: NONE GIVEN
 Project Location: EUNICE, NM

Sampling Date: 10/11/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Celey D. Keene

Sample ID: B-17 @ 1 32.449130 -103.155121 (H903466-17)

BTEX 80218		mg/kg	Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/15/2019	ND	1.95	97.4	2.00	1.13	
Toluene*	<0.050	0.050	10/15/2019	ND	2.02	101	2.00	0.971	
Ethylbenzene*	<0.050	0.050	10/15/2019	ND	1.97	98.7	2.00	0.572	
Total Xylenes*	<0.150	0.150	10/15/2019	ND	6.04	101	6.00	1.42	
Total BTEX	<0.300	0.300	10/15/2019	ND					

Surrogate 4-Bromofluorobenzene (PIC) 98.8 % 73.3-129

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	10/15/2019	ND	416	104	400	3.77	

TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/14/2019	ND	210	105	200	2.10	
DRO >C10-C28*	106	10.0	10/14/2019	ND	213	106	200	1.03	
EXT DRO >C28-C36	14.8	10.0	10/14/2019	ND					

Surrogate 1-Chlorooctane 90.5 % 41-142

Surrogate 1-Chlorooctadecane 97.9 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 10/11/2019
 Reported: 10/17/2019
 Project Name: MARSHALL B 001
 Project Number: NONE GIVEN
 Project Location: EUNICE, NM

Sampling Date: 10/11/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Celey D. Keene

Sample ID: W-1 @ 1 32.449077 -103.155077 (H903466-18)

BTEX 80218		mg/kg	Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/15/2019	ND	1.95	97.4	2.00	1.13	
Toluene*	<0.050	0.050	10/15/2019	ND	2.02	101	2.00	0.971	
Ethylbenzene*	<0.050	0.050	10/15/2019	ND	1.97	98.7	2.00	0.572	
Total Xylenes*	<0.150	0.150	10/15/2019	ND	6.04	101	6.00	1.42	
Total BTEX	<0.300	0.300	10/15/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 100 % 73.3-129

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	10/15/2019	ND	416	104	400	3.77	

TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/14/2019	ND	210	105	200	2.10	
DRO >C10-C28*	<10.0	10.0	10/14/2019	ND	213	106	200	1.03	
EXT DRO >C28-C36	<10.0	10.0	10/14/2019	ND					

Surrogate: 1-Chlorooctane 94.6 % 41-142

Surrogate: 1-Chlorooctadecane 95.3 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 10/11/2019
 Reported: 10/17/2019
 Project Name: MARSHALL B 001
 Project Number: NONE GIVEN
 Project Location: EUNICE, NM

Sampling Date: 10/11/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Celey D. Keene

Sample ID: W-2 @ 1 32.449074 -103.154881 (H903466-19)

BTEX 80218		mg/kg	Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/15/2019	ND	1.95	97.4	2.00	1.13	
Toluene*	<0.050	0.050	10/15/2019	ND	2.02	101	2.00	0.971	
Ethylbenzene*	<0.050	0.050	10/15/2019	ND	1.97	98.7	2.00	0.572	
Total Xylenes*	<0.150	0.150	10/15/2019	ND	6.04	101	6.00	1.42	
Total BTEX	<0.300	0.300	10/15/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 101 % 73.3-129

Chloride, SM4500CI-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	10/15/2019	ND	416	104	400	3.77	

TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/14/2019	ND	210	105	200	2.10	
DRO >C10-C28*	<10.0	10.0	10/14/2019	ND	213	106	200	1.03	
EXT DRO >C28-C36	<10.0	10.0	10/14/2019	ND					

Surrogate: 1-Chlorooctane 104 % 41-142

Surrogate: 1-Chlorooctadecane 103 % 37.6-147

Cardinal Laboratories

* = Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix Interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

October 29, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: MARSHALL B 001

Enclosed are the results of analyses for samples received by the laboratory on 10/23/19 14:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 10/23/2019
 Reported: 10/29/2019
 Project Name: MARSHALL B 001
 Project Number: NONE GIVEN
 Project Location: EUNICE, NM

Sampling Date: 10/23/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B- 4 @ 1.5" (H903629-01)

BTEX 8021B			mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/26/2019	ND	1.82	91.0	2.00	0.462		
Toluene*	<0.050	0.050	10/26/2019	ND	1.79	89.6	2.00	0.870		
Ethylbenzene*	<0.050	0.050	10/26/2019	ND	1.82	91.1	2.00	0.648		
Total Xylenes*	<0.150	0.150	10/26/2019	ND	5.46	91.0	6.00	0.983		
Total BTEX	<0.300	0.300	10/26/2019	ND						

Surrogate: 4-Bromofluorobenzene (PIC) 97.5 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	< 16.0	16.0	10/25/2019	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/25/2019	ND	211	106	200	2.35	
DRO >C10-C28*	<10.0	10.0	10/25/2019	ND	210	105	200	2.02	
EXT DRO >C28-C36	<10.0	10.0	10/25/2019	ND					

Surrogate: 1-Chlorooctane 83.9 % 41-142

Surrogate: 1-Chlorooctadecane 82.5 % 37.6-147

Cardinal Laboratories***=Accredited Analyte**

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celestine Keene
 Celestine Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 10/23/2019
 Reported: 10/29/2019
 Project Name: MARSHALL B 001
 Project Number: NONE GIVEN
 Project Location: EUNICE, NM

Sampling Date: 10/23/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B- 7 @ 1.5" (H903629-02)

BTEX 80218		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/26/2019	ND	1.82	91.0	2.00	0.462	
Toluene*	<0.050	0.050	10/26/2019	ND	1.79	89.6	2.00	0.870	
Ethylbenzene*	<0.050	0.050	10/26/2019	ND	1.82	91.1	2.00	0.648	
Total Xylenes*	<0.150	0.150	10/26/2019	ND	5.46	91.0	6.00	0.983	
Total BTEX	<0.300	0.300	10/26/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 98.1 % 73.3-129

Chloride, 5M4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	10/25/2019	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/25/2019	ND	211	106	200	2.35	
DRO >C10-C28*	<10.0	10.0	10/25/2019	ND	210	105	200	2.02	
EXT DRO >C28-C36	<10.0	10.0	10/25/2019	ND					

Surrogate: 1-Chlorooctane 85.6 % 41-142

Surrogate: 1-Chlorooctadecane 84.1 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 10/23/2019
 Reported: 10/29/2019
 Project Name: MARSHALL B 001
 Project Number: NONE GIVEN
 Project Location: EUNICE, NM

Sampling Date: 10/23/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B- 8 @ 1.5" (H903629-03)

BTEX 80218		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/26/2019	ND	1.82	91.0	2.00	0.462	
Toluene*	<0.050	0.050	10/26/2019	ND	1.79	89.6	2.00	0.870	
Ethylbenzene*	<0.050	0.050	10/26/2019	ND	1.82	91.1	2.00	0.648	
Total Xylenes*	<0.150	0.150	10/26/2019	ND	5.46	91.0	6.00	0.983	
Total BTEX	<0.300	0.300	10/26/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 98.5 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	10/25/2019	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/25/2019	ND	211	106	200	2.35	
DRO >C10-C28*	<10.0	10.0	10/25/2019	ND	210	105	200	2.02	
EXT DRO >C28-C36	<10.0	10.0	10/25/2019	ND					

Surrogate: 1-Chlorooctane 82.4 % 41-142

Surrogate: 1-Chlorooctadecane 81.1 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 10/23/2019
 Reported: 10/29/2019
 Project Name: MARSHALL B 001
 Project Number: NONE GIVEN
 Project Location: EUNICE, NM

Sampling Date: 10/23/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B- 10 @ 1.5" (H903629-04)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/26/2019	ND	1.82	91.0	2.00	0.462	
Toluene*	<0.050	0.050	10/26/2019	ND	1.79	89.6	2.00	0.870	
Ethylbenzene*	<0.050	0.050	10/26/2019	ND	1.82	91.1	2.00	0.648	
Total Xylenes*	<0.150	0.150	10/26/2019	ND	5.46	91.0	6.00	0.983	
Total BTEX	<0.300	0.300	10/26/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 97.5 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	10/25/2019	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/25/2019	ND	211	106	200	2.35	
DRO >C10-C28*	<10.0	10.0	10/25/2019	ND	210	105	200	2.02	
EXT DRO >C28-C36	<10.0	10.0	10/25/2019	ND					

Surrogate: 1-Chlorooctane 80.1 % 41-142

Surrogate: 1-Chlorooctadecane 80.3 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celestine
 Celestine
 Celestine

Celestine, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 10/23/2019
 Reported: 10/29/2019
 Project Name: MARSHALL B 001
 Project Number: NONE GIVEN
 Project Location: EUNICE, NM

Sampling Date: 10/23/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B- 12 @ 1.6" (H903629-05)

BTEX 80218		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/26/2019	ND	1.82	91.0	2.00	0.462	
Toluene*	<0.050	0.050	10/26/2019	ND	1.79	89.6	2.00	0.870	
Ethylbenzene*	<0.050	0.050	10/26/2019	ND	1.82	91.1	2.00	0.648	
Total Xylenes*	<0.150	0.150	10/26/2019	ND	5.46	91.0	6.00	0.983	
Total BTEX	<0.300	0.300	10/26/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 97.4 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	10/25/2019	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/25/2019	ND	211	106	200	2.35	
DRO >C10-C28*	<10.0	10.0	10/25/2019	ND	210	105	200	2.02	
EXT DRO >C28-C36	<10.0	10.0	10/25/2019	ND					


Surrogate: 1-Chlorooctane 81.2 % 41-142

Surrogate: 1-Chlorooctadecane 78.7 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.


 Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 10/23/2019
 Reported: 10/29/2019
 Project Name: MARSHALL B 001
 Project Number: NONE GIVEN
 Project Location: EUNICE, NM

Sampling Date: 10/23/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B- 13 @ 1.6" (H903629-06)**BTEX 8021B**

mg/kg

Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/26/2019	ND	1.82	91.0	2.00	0.462	
Toluene*	<0.050	0.050	10/26/2019	ND	1.79	89.6	2.00	0.870	
Ethylbenzene*	<0.050	0.050	10/26/2019	ND	1.82	91.1	2.00	0.648	
Total Xylenes*	<0.150	0.150	10/26/2019	ND	5.46	91.0	6.00	0.983	
Total BTEX	<0.300	0.300	10/26/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 98.6 % 73.3-129

Chloride, SM4500Cl-B

mg/kg

Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2019	ND	400	100	400	3.92	

TPH 8015M

mg/kg

Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/25/2019	ND	211	106	200	2.35	
DRO >C10-C28*	<10.0	10.0	10/25/2019	ND	210	105	200	2.02	
EXT DRO >C28-C36	<10.0	10.0	10/25/2019	ND					

Surrogate: 1-Chlorooctane 80.5 % 41-142

Surrogate: 1-Chlorooctadecane 78.0 % 37.6-147

Cardinal Laboratories

* = Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 10/23/2019
 Reported: 10/29/2019
 Project Name: MARSHALL B 001
 Project Number: NONE GIVEN
 Project Location: EUNICE, NM

Sampling Date: 10/23/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B- 15 @ 1.6" (H903629-07)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/26/2019	ND	1.82	91.0	2.00	0.462	
Toluene*	<0.050	0.050	10/26/2019	ND	1.79	89.6	2.00	0.870	
Ethylbenzene*	<0.050	0.050	10/26/2019	ND	1.82	91.1	2.00	0.648	
Total Xylenes*	<0.150	0.150	10/26/2019	ND	5.46	91.0	6.00	0.983	
Total BTEX	<0.300	0.300	10/26/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 97.9 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2019	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/25/2019	ND	211	106	200	2.35	
DRO >C10-C28*	<10.0	10.0	10/25/2019	ND	210	105	200	2.02	
EXT DRO >C28-C36	<10.0	10.0	10/25/2019	ND					

Surrogate: 1-Chlorooctane 82.9 % 41-142

Surrogate: 1-Chlorooctadecane 80.5 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 10/23/2019
 Reported: 10/29/2019
 Project Name: MARSHALL B 001
 Project Number: NONE GIVEN
 Project Location: EUNICE, NM

Sampling Date: 10/23/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B- 17 @ 1.6" (H903629-08)

BTEX 80218		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/26/2019	ND	1.82	91.0	2.00	0.462	
Toluene*	<0.050	0.050	10/26/2019	ND	1.79	89.6	2.00	0.870	
Ethylbenzene*	<0.050	0.050	10/26/2019	ND	1.82	91.1	2.00	0.648	
Total Xylenes*	<0.150	0.150	10/26/2019	ND	5.46	91.0	6.00	0.983	
Total BTEX	<0.300	0.300	10/26/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 98.1 % 73.3-129

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/25/2019	ND	400	100	400	3.92	

TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/25/2019	ND	211	106	200	2.35	
DRO >C10-C28*	<10.0	10.0	10/25/2019	ND	210	105	200	2.02	
EXT DRO >C28-C36	<10.0	10.0	10/25/2019	ND					

Surrogate: 1-Chlorooctane 80.9 % 41-142

Surrogate: 1-Chlorooctadecane 79.9 % 37.6-147

Cardinal Laboratories

* = Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 10/23/2019
 Reported: 10/29/2019
 Project Name: MARSHALL B 001
 Project Number: NONE GIVEN
 Project Location: EUNICE, NM

Sampling Date: 10/23/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B- 18 @ .6" (H903629-09)

BTEX 8021B		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/26/2019	ND	1.82	91.0	2.00	0.462	
Toluene*	<0.050	0.050	10/26/2019	ND	1.79	89.6	2.00	0.870	
Ethylbenzene*	0.243	0.050	10/26/2019	ND	1.82	91.1	2.00	0.648	
Total Xylenes*	0.911	0.150	10/26/2019	ND	5.46	91.0	6.00	0.983	
Total BTEX	1.15	0.300	10/26/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 125 % 73.3-129

Chloride, SM4500CI-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	10/25/2019	ND	400	100	400	3.92	

TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	56.4	50.0	10/25/2019	ND	211	106	200	2.35	
DRO >C10-C28*	5300	50.0	10/25/2019	ND	210	105	200	2.02	
EXT DRO >C28-C36	1110	50.0	10/25/2019	ND					

Surrogate: 1-Chlorooctane 99.0 % 41-142

Surrogate: 1-Chlorooctadecane 223 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celestine Keene
 Celestine Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 10/23/2019
 Reported: 10/29/2019
 Project Name: MARSHALL B 001
 Project Number: NONE GIVEN
 Project Location: EUNICE, NM

Sampling Date: 10/23/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B- 19 @ .6" (H903629-10)

BTEX 80218		mg/kg	Analyzed By: MS				S-04		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.100	0.100	10/29/2019	ND	1.87	93.3	2.00	1.68	
Toluene*	0.956	0.100	10/29/2019	ND	1.87	93.4	2.00	0.957	
Ethylbenzene*	2.09	0.100	10/29/2019	ND	1.89	94.4	2.00	0.129	
Total Xylenes*	7.78	0.300	10/29/2019	ND	5.65	94.2	6.00	0.0742	
Total BTEX	10.8	0.600	10/29/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 154 % 73.3-129

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	10/28/2019	ND	400	100	400	3.92	

TPH 8015M		mg/kg	Analyzed By: MS				S-06		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	225	50.0	10/25/2019	ND	211	106	200	2.35	
DRO >C10-C28*	7450	50.0	10/25/2019	ND	210	105	200	2.02	
EXT DRO >C28-C36	1460	50.0	10/25/2019	ND					

Surrogate: 1-Chlorooctane 112 % 41-142

Surrogate: 1-Chlorooctadecane 270 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 10/23/2019
 Reported: 10/29/2019
 Project Name: MARSHALL B 001
 Project Number: NONE GIVEN
 Project Location: EUNICE, NM

Sampling Date: 10/23/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B- 20 @ .6" (H903629-11)

BTEX 8021B		mg/kg	Analyzed By: M5				S-04		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.200	0.200	10/29/2019	ND	1.87	93.3	2.00	1.68	
Toluene*	1.26	0.200	10/29/2019	ND	1.87	93.4	2.00	0.957	
Ethylbenzene*	2.46	0.200	10/29/2019	ND	1.89	94.4	2.00	0.129	
Total Xylenes*	9.93	0.600	10/29/2019	ND	5.65	94.2	6.00	0.0742	
Total BTEX	13.7	1.20	10/29/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 138 % 73.3-129

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	400	16.0	10/28/2019	ND	400	100	400	3.92	

TPH 8015M		mg/kg	Analyzed By: M5				S-06		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	407	50.0	10/26/2019	ND	211	106	200	2.35	
DRO >C10-C28*	12200	50.0	10/26/2019	ND	210	105	200	2.02	
EXT DRO >C28-C36	2860	50.0	10/26/2019	ND					

Surrogate: 1-Chlorooctane 124 % 41-142

Surrogate: 1-Chlorooctadecane 398 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 10/23/2019
 Reported: 10/29/2019
 Project Name: MARSHALL B 001
 Project Number: NONE GIVEN
 Project Location: EUNICE, NM

Sampling Date: 10/23/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B- 21 @ .6" (H903629-12)

BTEX 80218		mg/kg	Analyzed By: MS				S-04		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.100	0.100	10/29/2019	ND	1.87	93.3	2.00	1.68	
Toluene*	0.340	0.100	10/29/2019	ND	1.87	93.4	2.00	0.957	
Ethylbenzene*	1.01	0.100	10/29/2019	ND	1.89	94.4	2.00	0.129	
Total Xylenes*	3.34	0.300	10/29/2019	ND	5.65	94.2	6.00	0.0742	
Total BTEX	4.69	0.600	10/29/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIB) 147 % 73.3-129

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	528	16.0	10/28/2019	ND	400	100	400	3.92	

TPH 8015M		mg/kg	Analyzed By: MS				S-06		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	212	50.0	10/26/2019	ND	211	106	200	2.35	
DRO >C10-C28*	11400	50.0	10/26/2019	ND	210	105	200	2.02	
EXT DRO >C28-C36	2730	50.0	10/26/2019	ND					

Surrogate: 1-Chlorooctane 114 % 41-142

Surrogate: 1-Chlorooctadecane 367 % 37.6-147

Cardinal Laboratories

* = Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 10/23/2019
 Reported: 10/29/2019
 Project Name: MARSHALL B 001
 Project Number: NONE GIVEN
 Project Location: EUNICE, NM

Sampling Date: 10/23/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B- 22 @ .6" (H903629-13)

BTX 80218		mg/kg	Analyzed By: MS				S-04		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.100	0.100	10/29/2019	ND	1.87	93.3	2.00	1.68	
Toluene*	0.787	0.100	10/29/2019	ND	1.87	93.4	2.00	0.957	
Ethylbenzene*	1.58	0.100	10/29/2019	ND	1.89	94.4	2.00	0.129	
Total Xylenes*	4.78	0.300	10/29/2019	ND	5.65	94.2	6.00	0.0742	
Total BTX	7.14	0.600	10/29/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 156 % 73.3-129

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	10/28/2019	ND	400	100	400	3.92	

TPH 8015M		mg/kg	Analyzed By: MS				S-06		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	248	50.0	10/26/2019	ND	211	106	200	2.35	
DRO >C10-C28*	7600	50.0	10/26/2019	ND	210	105	200	2.02	
EXT DRO >C28-C36	1600	50.0	10/26/2019	ND					

Surrogate: 1-Chlorooctane 112 % 41-142

Surrogate: 1-Chlorooctadecane 245 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 10/23/2019
 Reported: 10/29/2019
 Project Name: MARSHALL B 001
 Project Number: NONE GIVEN
 Project Location: EUNICE, NM

Sampling Date: 10/23/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: W- 3 @ .6" (H903629-14)

BTEX 80218		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/29/2019	ND	1.87	93.3	2.00	1.68	
Toluene*	<0.050	0.050	10/29/2019	ND	1.87	93.4	2.00	0.957	
Ethylbenzene*	<0.050	0.050	10/29/2019	ND	1.89	94.4	2.00	0.129	
Total Xylenes*	<0.150	0.150	10/29/2019	ND	5.65	94.2	6.00	0.0742	
Total BTEX	<0.300	0.300	10/29/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 107 % 73.3-129

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	10/28/2019	ND	400	100	400	3.92	

TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<50.0	50.0	10/26/2019	ND	223	111	200	4.51	
DRO >C10-C28*	5230	50.0	10/26/2019	ND	216	108	200	6.19	QR-03
EXT DRO >C28-C36	1210	50.0	10/26/2019	ND					

Surrogate: 1-Chlorooctane 81.4 % 41-142

Surrogate: 1-Chlorooctadecane 236 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celestine Keene
 Celestine Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 10/23/2019
 Reported: 10/29/2019
 Project Name: MARSHALL B 001
 Project Number: NONE GIVEN
 Project Location: EUNICE, NM

Sampling Date: 10/23/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: W- 4 @ .6" (H903629-15)

BTEX 80218		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/29/2019	ND	1.87	93.3	2.00	1.68	
Toluene*	<0.050	0.050	10/29/2019	ND	1.87	93.4	2.00	0.957	
Ethylbenzene*	<0.050	0.050	10/29/2019	ND	1.89	94.4	2.00	0.129	
Total Xylenes*	<0.150	0.150	10/29/2019	ND	5.65	94.2	6.00	0.0742	
Total BTEX	<0.300	0.300	10/29/2019	ND					

Surrogate 4-Bromofluorobenzene (PIC) 100 % 73.3-129

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	10/28/2019	ND	400	100	400	3.92	

TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/26/2019	ND	223	111	200	4.51	
DRO >C10-C28*	5370	10.0	10/26/2019	ND	216	108	200	6.19	
EXT DRO >C28-C36	1380	10.0	10/26/2019	ND					

Surrogate 1-Chlorooctane 79.7 % 41-142

Surrogate 1-Chlorooctadecane 235 % 37.6-147

Cardinal Laboratories

* = Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene
 Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 10/23/2019
 Reported: 10/29/2019
 Project Name: MARSHALL B 001
 Project Number: NONE GIVEN
 Project Location: EUNICE, NM

Sampling Date: 10/23/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: W- 5 @ .6" (H903629-16)

BTEX 80218		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/29/2019	ND	1.87	93.3	2.00	1.68	
Toluene*	<0.050	0.050	10/29/2019	ND	1.87	93.4	2.00	0.957	
Ethylbenzene*	<0.050	0.050	10/29/2019	ND	1.89	94.4	2.00	0.129	
Total Xylenes*	<0.150	0.150	10/29/2019	ND	5.65	94.2	6.00	0.0742	
Total BTEX	<0.300	0.300	10/29/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 124 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	224	16.0	10/28/2019	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<50.0	50.0	10/26/2019	ND	223	111	200	4.51	
DRO >C10-C28*	16600	50.0	10/26/2019	ND	216	108	200	6.19	
EXT DRO >C28-C36	3800	50.0	10/26/2019	ND					

Surrogate: 1-Chlorooctane 97.3 % 41-142

Surrogate: 1-Chlorooctadecane 542 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celestine Keene
 Celestine Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Analytical Results For:

APACHE CORP - HOBBS
 BRUCE BAKER
 2350 W. MARLAND BLVD.
 HOBBS NM, 88240
 Fax To: (575) 393-2432

Received: 10/23/2019
 Reported: 10/29/2019
 Project Name: MARSHALL B 001
 Project Number: NONE GIVEN
 Project Location: EUNICE, NM

Sampling Date: 10/23/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: W- 6 @ .6" (H903629-17)

BTEX 80218		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/29/2019	ND	1.87	93.3	2.00	1.68	
Toluene*	<0.050	0.050	10/29/2019	ND	1.87	93.4	2.00	0.957	
Ethylbenzene*	<0.050	0.050	10/29/2019	ND	1.89	94.4	2.00	0.129	
Total Xylenes*	<0.150	0.150	10/29/2019	ND	5.65	94.2	6.00	0.0742	
Total BTEX	<0.300	0.300	10/29/2019	ND					

Surrogate 4-Bromofluorobenzene (PIE) 106 % 73.3-129

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	10/28/2019	ND	400	100	400	3.92	

TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<50.0	50.0	10/26/2019	ND	223	111	200	4.51	
DRO >C10-C28*	6420	50.0	10/26/2019	ND	216	108	200	6.19	
EXT DRO >C28-C36	1450	50.0	10/26/2019	ND					

Surrogate 1-Chlorooctane 89.2 % 41-142

Surrogate 1-Chlorooctadecane 277 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

Notes and Definitions

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
*	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager

Received by OCD: 2/4/2020 2:19:20 PM



CARDINAL
Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

+ Cardinal cannot accept verbal changes. Please email changes to celej.keene@cardinallabsnm.com



