



2350 W Marland Blvd Hobbs, NM 88240

Closure Report

May 5, 2020

Re: South Eunice Seven Rivers Queen # 418

API# 30-025-09181

Case # NRM2004537466

On February 7, 2020 a release occurred due to a stuffing box failure resulting in the loss of fluid. The release area is located south of Eunice New Mexico (GPS Coordinates 32.35377, - 103.22530) in unit letter D section 36 Township 22S Range 36E. A search of NMOSE wells of record was conducted to determine the depth of groundwater beneath the release. The nearest wells of record indicates that the depth of groundwater beneath the release is greater than 50 feet below ground surface.

The release area was scraped to depths of 6 inches to 1 foot. On March 5, 2020 final 5 point bottom composite samples were collected not to exceed 200 square feet. All bottom samples were collected and submitted to a commercial laboratory for analysis of chloride, TPH, and BTEX. All laboratory results were below table 1 standards for releases 51-100 feet to groundwater. On March 11, 2020 5 point wall composite samples were collected not to exceed 200 square feet. All samples collected were taken to a commercial laboratory for analysis of chloride, TPH, and BTEX. All laboratory results were below table 1 standards for releases 51-100 feet to groundwater. All 72 yards of excavated soil was disposed of at an NMOCD approved facility. The excavation was backfilled with clean imported caliche and contoured to the surrounding area.

Apache Corporation has completed remediation activities to meet the criteria of table one standards for release 51-100 feet to groundwater and respectfully request that case NRM2004537466 be closed.

Enclosed: C-141, Groundwater Data, Maps, Sample Data, Laboratory Analysis, 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	
District RP	
Facility ID	
Application ID	

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, 88240		

Location of Release Source

Latitude 32.35377 Longitude -103.22530
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: South Eunice Seven Rivers Queen Unit #418	Site Type: Well
Date Release Discovered: 02/07/2020	API# 30-025-09181

Unit Letter	Section	Township	Range	County
D	36	22S	36E	Lea

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

Nature and Volume of Release

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

<input checked="" type="checkbox"/> Crude Oil	Volume Released (2.5 bbls)	Volume Recovered (2.0 bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (6.5 bbls)	Volume Recovered (0.0 bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input 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

Stuffing box leak due to inclement weather

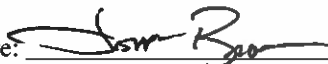
State of New Mexico
Oil Conservation Division

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

Initial Response

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

<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>JEFF BROWN</u>	Title: <u>Environmental Technician</u>
Signature: <u></u>	Date: <u>2/12/20</u>
email: <u>Jeffrey.Brown@apachecorp.com</u>	Telephone: <u>432.664.4677</u>
OCD Only	
Received by: _____	Date: _____

Volume Calculation

157.68 cubic feet of soil contamination X 7.48 gallons per cubic foot = 1,179 gallons / 42 gallons to a barrel = 28 barrels X .33 soil porosity = 9.26 barrels fluid in soil + 75 barrels recovered = 153 barrels total loss.

Incident ID	
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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?	<u>51-100</u> (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: *Each of the following items must be included in the report.*

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

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

State of New Mexico
Oil Conservation Division

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

Printed Name: Bruce Baker Title: Environmental Tech SR.

Signature: Bruce Baker Date: 5/5/20

email: larry.baker@apachecorp.com Telephone: 432-631-6982

OCD Only

Received by: _____ Date: _____

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District RP	
Facility ID	
Application ID	

Closure

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

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

- ☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- ☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- ☒ Description of remediation activities

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

Printed Name: Bruce Baker Title: Environmental Tech SR.
Signature: Bruce Baker Date: 5/5/20
email: larry.baker@apachecorp.com Telephone: 432-631-6982

OCD Only

Received by: _____ Date: _____

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

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

Show search results for 32.353...

CP-00776-POD1

CP-00575

CP-00398-POD1

CP-00397-POD1

E-03808-POD1

CP-00392-POD1

King Rd

King Rd


1:18055

-103.252 32.345 Degrees



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 00397 POD1	3	3	4	25	22S	36E	667696	3581341* 
<hr/>									
Driller License:	137	Driller Company:				ROBERTS, GRADY			
Driller Name:									
Drill Start Date:		Drill Finish Date:				12/31/1940		Plug Date:	
Log File Date:		PCW Rcv Date:				Source:			
Pump Type:		Pipe Discharge Size:				2		Estimated Yield:	50 GPM
Casing Size:	8.00	Depth Well:				180 feet		Depth Water:	118 feet

*UTM location was derived from PLSS - see Help

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


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POINT OF DIVERSION SUMMARY



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
	E 03808 POD1							666105	3580686 
<hr/>									
Driller License:	539	Driller Company:			GARCIA BROTHERS DRILLING CO., LLC				
Driller Name:	GARCIA, RAYMOND								
Drill Start Date:	04/27/1983	Drill Finish Date:			04/27/1983		Plug Date:		
Log File Date:	05/03/1983	PCW Rcv Date:					Source:		Shallow
Pump Type:		Pipe Discharge Size:					Estimated Yield:		35 GPM
Casing Size:	5.00	Depth Well:			125 feet		Depth Water:		55 feet
<hr/>									
Water Bearing Stratifications:				Top	Bottom	Description			
				35	55	Limestone/Dolomite/Chalk			
<hr/>									
Casing Perforations:				Top	Bottom				
				30	50				
				105	125				
<hr/>									

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.

5/4/20 12:28 PM

POINT OF DIVERSION SUMMARY



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
	E 03808 POD2					410127	3863022

Driller License:	539	Driller Company:	GARCIA BROTHERS DRILLING CO., LLC	
Driller Name:	GARCIA, RAYMOND, JR.			
Drill Start Date:	05/08/1983	Drill Finish Date:	05/08/1983	Plug Date:
Log File Date:	05/19/1983	PCW Rcv Date:		Source:
Pump Type:		Pipe Discharge Size:		Estimated Yield:
Casing Size:	5.00	Depth Well:	400 feet	Depth Water:
				136 feet

Water Bearing Stratifications:	Top	Bottom	Description
	120	130	Shallow Alluvium/Basin Fill
	165	180	Shallow Alluvium/Basin Fill

Casing Perforations:	Top	Bottom
	160	180
	380	400

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.

5/4/20 12:29 PM

POINT OF DIVERSION SUMMARY

Click **Map** to Draw Radius





B2
B3
B1
B4
B5
B6
B7
B8
B9
B10
B11
B12
B13

100 ft

© 2020 Google

Google earth



W1

W6

W5

W4

W2

W3

100 ft

© 2020 Google

Google earth

NEDU Injection Line

Complete List

Map ID	Sample Date	Sample ID	Depth	Chloride	Benzene	Toulene	Ethybenzene	Total Xylenes	Total BTEX	GRO	DRO	EXT DRO	GPS Coordinates
Wall Samples													
W1	3/12/2020	W1	6"	96	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.3537712 -103.2254848
W2	3/12/2020	W2	6"	48	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	42	<10.0	32.353825 -103.225217
W3	3/12/2020	W3	6"	<16.0	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.3540366 -103.2251177
W4	3/12/2020	W4	6"	32	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.3538332 -103.2252367
W5	3/12/2020	W5	6"	32	<0.050	<0.050	<0.050	0.596	0.596	20	954	155	32.3538593 -103.2253393
W6	3/12/2020	W6	6"	144	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.3538848 -103.2254302

NEDU Injection Line
Complete List

Bottom Samples													
B1	3/6/2020	B1	1'	80	<0.050	1.69	3.24	8.33	13.3	73.5	320	37.9	32.3538669 -103.2253712
B2	3/6/2020	B2	6"	144	<0.050	0.388	1.21	3.53	5.12	30.9	417	76.5	32.3538596 -103.2254412
B3	3/6/2020	B3	6"	64	0.249	0.83	1.13	2.86	5.07	13.7	68.7	<10.0	32.3538335 -103.2254171
B4	3/6/2020	B4	6"	96	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	32.3537638 -103.2254536
B5	3/6/2020	B5	6"	336	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	13	<10.0	32.3537630 -103.2254168
B6	3/6/2020	B6	6"	256	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	29.6	<10.0	32.3537712 -103.2253470
B7	3/6/2020	B7	6"	128	0.073	0.071	0.077	0.167	0.387	<10.0	12.1	<10.0	32.3537786 -103.2253219
B8	3/6/2020	B8	6"	64	<0.050	<0.050	0.065	<0.150	<0.300	<10.0	<10.0	<10.0	32.3537851 -103.2252957
B9	3/6/2020	B9	6"	32	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	48.3	<10.0	32.3538092 -103.2252790
B10	3/11/2020	B10	6"	<16.0	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	494	100	32.3538239 -103.2252290
B11	3/11/2020	B11	6"	<16.0	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	593	110	32.3538808 -103.2251764
B12	3/11/2020	B12	6"	<16.0	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	194	32.4	32.3539899 -103.2251271
B13	3/11/2020	B13	6"	16	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	85.3	11.8	32.3540196 -103.2251247



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

March 10, 2020

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: SESRQU #418

Enclosed are the results of analyses for samples received by the laboratory on 03/06/20 7:27.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-19-12. 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 black ink that reads "Celey D. Keene". The signature is written in a cursive style with a large, stylized 'C' and 'K'.

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: 03/06/2020
 Reported: 03/10/2020
 Project Name: SESRQU #418
 Project Number: NOT GIVEN
 Project Location: SESRQU #418

Sampling Date: 03/05/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Angela Cabrera

Sample ID: B1 @ 1' (H000727-01)

BTX 8021B		mg/kg		Analyzed By: MS				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/09/2020	ND	2.00	100	2.00	0.815	
Toluene*	1.69	0.050	03/09/2020	ND	2.03	102	2.00	1.39	
Ethylbenzene*	3.24	0.050	03/09/2020	ND	2.05	103	2.00	1.32	
Total Xylenes*	8.33	0.150	03/09/2020	ND	5.94	99.0	6.00	1.44	
Total BTX	13.3	0.300	03/09/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 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	03/09/2020	ND	400	100	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*	73.5	10.0	03/09/2020	ND	194	97.0	200	1.69	
DRO >C10-C28*	320	10.0	03/09/2020	ND	192	95.9	200	7.35	
EXT DRO >C28-C36	37.9	10.0	03/09/2020	ND					

Surrogate: 1-Chlorooctane 99.1 % 44.3-144

Surrogate: 1-Chlorooctadecane 95.0 % 42.2-156

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: 03/06/2020
 Reported: 03/10/2020
 Project Name: SESRQU #418
 Project Number: NOT GIVEN
 Project Location: SESRQU #418

Sampling Date: 03/05/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Angela Cabrera

Sample ID: B2 @ 6" (H000727-02)

BTX 8021B		mg/kg	Analyzed By: MS					S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/09/2020	ND	2.00	100	2.00	0.815	
Toluene*	0.388	0.050	03/09/2020	ND	2.03	102	2.00	1.39	
Ethylbenzene*	1.21	0.050	03/09/2020	ND	2.05	103	2.00	1.32	
Total Xylenes*	3.53	0.150	03/09/2020	ND	5.94	99.0	6.00	1.44	
Total BTX	5.12	0.300	03/09/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 133 % 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	144	16.0	03/09/2020	ND	400	100	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*	30.9	10.0	03/09/2020	ND	194	97.0	200	1.69	
DRO >C10-C28*	417	10.0	03/09/2020	ND	192	95.9	200	7.35	
EXT DRO >C28-C36	76.5	10.0	03/09/2020	ND					

Surrogate: 1-Chlorooctane 91.1 % 44.3-144

Surrogate: 1-Chlorooctadecane 92.6 % 42.2-156

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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: 03/06/2020
 Reported: 03/10/2020
 Project Name: SESRQU #418
 Project Number: NOT GIVEN
 Project Location: SESRQU #418

Sampling Date: 03/05/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Angela Cabrera

Sample ID: B3 @ 6" (H000727-03)

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	0.249	0.050	03/09/2020	ND	2.00	100	2.00	0.815	
Toluene*	0.830	0.050	03/09/2020	ND	2.03	102	2.00	1.39	
Ethylbenzene*	1.13	0.050	03/09/2020	ND	2.05	103	2.00	1.32	
Total Xylenes*	2.86	0.150	03/09/2020	ND	5.94	99.0	6.00	1.44	
Total BTEX	5.07	0.300	03/09/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 117 % 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	03/09/2020	ND	400	100	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*	13.7	10.0	03/09/2020	ND	194	97.0	200	1.69	
DRO >C10-C28*	68.7	10.0	03/09/2020	ND	192	95.9	200	7.35	
EXT DRO >C28-C36	<10.0	10.0	03/09/2020	ND					

Surrogate: 1-Chlorooctane 89.2 % 44.3-144

Surrogate: 1-Chlorooctadecane 98.0 % 42.2-156

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 03/06/2020
 Reported: 03/10/2020
 Project Name: SESRQU #418
 Project Number: NOT GIVEN
 Project Location: SESRQU #418

Sampling Date: 03/05/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Angela Cabrera

Sample ID: B4 @ 6" (H000727-04)

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	03/09/2020	ND	2.00	100	2.00	0.815	
Toluene*	<0.050	0.050	03/09/2020	ND	2.03	102	2.00	1.39	
Ethylbenzene*	<0.050	0.050	03/09/2020	ND	2.05	103	2.00	1.32	
Total Xylenes*	<0.150	0.150	03/09/2020	ND	5.94	99.0	6.00	1.44	
Total BTEx	<0.300	0.300	03/09/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.3 % 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	96.0	16.0	03/09/2020	ND	400	100	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	03/09/2020	ND	194	97.0	200	1.69	
DRO >C10-C28*	<10.0	10.0	03/09/2020	ND	192	95.9	200	7.35	
EXT DRO >C28-C36	<10.0	10.0	03/09/2020	ND					

Surrogate: 1-Chlorooctane 91.0 % 44.3-144

Surrogate: 1-Chlorooctadecane 93.2 % 42.2-156

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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: 03/06/2020
 Reported: 03/10/2020
 Project Name: SESRQU #418
 Project Number: NOT GIVEN
 Project Location: SESRQU #418

Sampling Date: 03/05/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Angela Cabrera

Sample ID: B5 @ 6" (H000727-05)

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	03/09/2020	ND	2.00	100	2.00	0.815	
Toluene*	<0.050	0.050	03/09/2020	ND	2.03	102	2.00	1.39	
Ethylbenzene*	<0.050	0.050	03/09/2020	ND	2.05	103	2.00	1.32	
Total Xylenes*	<0.150	0.150	03/09/2020	ND	5.94	99.0	6.00	1.44	
Total BTEx	<0.300	0.300	03/09/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.9 % 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	336	16.0	03/09/2020	ND	400	100	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	03/09/2020	ND	194	97.0	200	1.69	
DRO >C10-C28*	13.0	10.0	03/09/2020	ND	192	95.9	200	7.35	
EXT DRO >C28-C36	<10.0	10.0	03/09/2020	ND					

Surrogate: 1-Chlorooctane 87.6 % 44.3-144

Surrogate: 1-Chlorooctadecane 91.6 % 42.2-156

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 03/06/2020
 Reported: 03/10/2020
 Project Name: SESRQU #418
 Project Number: NOT GIVEN
 Project Location: SESRQU #418

Sampling Date: 03/05/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Angela Cabrera

Sample ID: B6 @ 6" (H000727-06)

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	03/09/2020	ND	2.00	100	2.00	0.815	
Toluene*	0.054	0.050	03/09/2020	ND	2.03	102	2.00	1.39	
Ethylbenzene*	<0.050	0.050	03/09/2020	ND	2.05	103	2.00	1.32	
Total Xylenes*	<0.150	0.150	03/09/2020	ND	5.94	99.0	6.00	1.44	
Total BTEx	<0.300	0.300	03/09/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.8 % 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	256	16.0	03/09/2020	ND	400	100	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	03/09/2020	ND	194	97.0	200	1.69	
DRO >C10-C28*	29.6	10.0	03/09/2020	ND	192	95.9	200	7.35	
EXT DRO >C28-C36	<10.0	10.0	03/09/2020	ND					

Surrogate: 1-Chlorooctane 93.6 % 44.3-144

Surrogate: 1-Chlorooctadecane 100 % 42.2-156

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 03/06/2020
 Reported: 03/10/2020
 Project Name: SESRQU #418
 Project Number: NOT GIVEN
 Project Location: SESRQU #418

Sampling Date: 03/05/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Angela Cabrera

Sample ID: B7 @ 6" (H000727-07)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	0.073	0.050	03/09/2020	ND	2.00	100	2.00	0.815	
Toluene*	0.071	0.050	03/09/2020	ND	2.03	102	2.00	1.39	
Ethylbenzene*	0.077	0.050	03/09/2020	ND	2.05	103	2.00	1.32	
Total Xylenes*	0.167	0.150	03/09/2020	ND	5.94	99.0	6.00	1.44	
Total BTX	0.387	0.300	03/09/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 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	128	16.0	03/09/2020	ND	400	100	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	03/09/2020	ND	194	97.0	200	1.69	
DRO >C10-C28*	12.1	10.0	03/09/2020	ND	192	95.9	200	7.35	
EXT DRO >C28-C36	<10.0	10.0	03/09/2020	ND					

Surrogate: 1-Chlorooctane 86.1 % 44.3-144

Surrogate: 1-Chlorooctadecane 90.2 % 42.2-156

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 03/06/2020
 Reported: 03/10/2020
 Project Name: SESRQU #418
 Project Number: NOT GIVEN
 Project Location: SESRQU #418

Sampling Date: 03/05/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Angela Cabrera

Sample ID: B8 @ 6" (H000727-08)

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	03/09/2020	ND	2.00	100	2.00	0.815	
Toluene*	<0.050	0.050	03/09/2020	ND	2.03	102	2.00	1.39	
Ethylbenzene*	0.065	0.050	03/09/2020	ND	2.05	103	2.00	1.32	
Total Xylenes*	<0.150	0.150	03/09/2020	ND	5.94	99.0	6.00	1.44	
Total BTEx	<0.300	0.300	03/09/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.5 % 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	64.0	16.0	03/09/2020	ND	400	100	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	03/09/2020	ND	194	97.0	200	1.69	
DRO >C10-C28*	<10.0	10.0	03/09/2020	ND	192	95.9	200	7.35	
EXT DRO >C28-C36	<10.0	10.0	03/09/2020	ND					

Surrogate: 1-Chlorooctane 90.5 % 44.3-144

Surrogate: 1-Chlorooctadecane 93.2 % 42.2-156

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 03/06/2020
 Reported: 03/10/2020
 Project Name: SESRQU #418
 Project Number: NOT GIVEN
 Project Location: SESRQU #418

Sampling Date: 03/05/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Angela Cabrera

Sample ID: B9 @ 6" (H000727-09)

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	03/09/2020	ND	2.00	100	2.00	0.815	
Toluene*	<0.050	0.050	03/09/2020	ND	2.03	102	2.00	1.39	
Ethylbenzene*	<0.050	0.050	03/09/2020	ND	2.05	103	2.00	1.32	
Total Xylenes*	<0.150	0.150	03/09/2020	ND	5.94	99.0	6.00	1.44	
Total BTEx	<0.300	0.300	03/09/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 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	03/09/2020	ND	400	100	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	03/09/2020	ND	194	97.0	200	1.69	
DRO >C10-C28*	<10.0	10.0	03/09/2020	ND	192	95.9	200	7.35	
EXT DRO >C28-C36	<10.0	10.0	03/09/2020	ND					

Surrogate: 1-Chlorooctane 93.6 % 44.3-144

Surrogate: 1-Chlorooctadecane 96.8 % 42.2-156

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
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

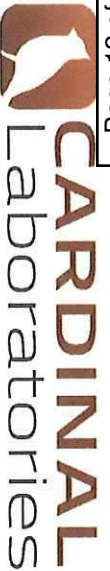
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A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager



101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: <u>Aggreco</u> Project Manager: <u>Self-pro</u>				BILL TO				ANALYSIS REQUEST			
Address: City: <u>Hobbs</u> State: <u>NM</u> Zip: <u>88240</u>				Company: Attn: _____							
Phone #: _____ Fax #: _____				Address: _____							
Project #: _____ Project Owner: _____				City: _____							
Project Name: _____				State: _____ Zip: _____							
Project Location: <u>SESL DR 4416</u>				Phone #: _____							
Sample Name: <u>See Results</u>				Fax #: _____							

FOR LAB USE ONLY		PRESERV		SAMPLING							
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX	DATE	TIME	Standard	Bacteria (only)	Sample Condition	Observed Temp. °C	Corrected Temp. °C
<u>H00027</u>	<u>B101'</u>	<u>(C)</u>	<u>1</u>	GROUNDWATER	<u>3/5</u>	<u>4:06</u>	<u>1</u>	<u>1</u>	<u>1</u>		
	<u>B206'</u>	<u>(C)</u>	<u>1</u>	WASTEWATER		<u>4:18</u>	<u>1</u>	<u>1</u>	<u>1</u>		
	<u>B306'</u>	<u>(C)</u>	<u>1</u>	SOIL		<u>4:20</u>	<u>1</u>	<u>1</u>	<u>1</u>		
	<u>B406'</u>	<u>(C)</u>	<u>1</u>	OIL		<u>4:22</u>	<u>1</u>	<u>1</u>	<u>1</u>		
	<u>B506'</u>	<u>(C)</u>	<u>1</u>	SLUDGE		<u>4:24</u>	<u>1</u>	<u>1</u>	<u>1</u>		
	<u>B606'</u>	<u>(C)</u>	<u>1</u>	OTHER :		<u>4:26</u>	<u>1</u>	<u>1</u>	<u>1</u>		
	<u>B706'</u>	<u>(C)</u>	<u>1</u>	ACID/BASE:		<u>4:28</u>	<u>1</u>	<u>1</u>	<u>1</u>		
	<u>B806'</u>	<u>(C)</u>	<u>1</u>	ICE / COOL		<u>4:30</u>	<u>1</u>	<u>1</u>	<u>1</u>		
	<u>B906'</u>	<u>(C)</u>	<u>1</u>	OTHER :		<u>4:32</u>	<u>1</u>	<u>1</u>	<u>1</u>		

PLEASE NOTE: Liability and Damages. Cardnet'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 the client for the analyses. All claims including those for negligence shall be deemed waived unless made in writing and received by Cardnet within 30 days after completion of the applicable service. In no event shall Cardnet 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 services hereunder by Cardnet, regardless of whether such claim is based upon any of the above stated reasons or otherwise.		Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #: _____	
Relinquished By: <u>Jose Ruesada</u> Date: <u>3/4/20</u> Time: <u>07:27</u>		Received By: <u>Amelia Corrao</u>	
Relinquished By: _____ Date: _____ Time: _____		REMARKS: <u>See Ma: 1 Results</u>	
Delivered By: (Circle One) <u>Observed Temp. °C</u> <u>3.9</u> Corrected Temp. °C _____		Turnaround Time: <u>Standard</u> <input checked="" type="checkbox"/> <u>Rush</u> <input type="checkbox"/> Bacteria (only) <input type="checkbox"/> Sample Condition <input type="checkbox"/> Observed Temp. °C _____ Corrected Temp. °C _____	



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

March 13, 2020

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: SESRQU #418

Enclosed are the results of analyses for samples received by the laboratory on 03/11/20 15:25.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-19-12. 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 black ink that reads "Celey D. Keene". The signature is written in a cursive style with a large, stylized 'C' and 'K'.

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:	03/11/2020	Sampling Date:	03/11/2020
Reported:	03/13/2020	Sampling Type:	Soil
Project Name:	SESRQU #418	Sampling Condition:	Cool & Intact
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	SESRQU #418		

Sample ID: B10 @ 6" (H000771-01)

BTX 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	03/12/2020	ND	1.81	90.3	2.00	5.67	
Toluene*	<0.050	0.050	03/12/2020	ND	1.82	91.1	2.00	5.50	
Ethylbenzene*	<0.050	0.050	03/12/2020	ND	1.85	92.5	2.00	5.64	
Total Xylenes*	<0.150	0.150	03/12/2020	ND	5.36	89.3	6.00	5.86	
Total BTX	<0.300	0.300	03/12/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.6 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	03/13/2020	ND	416	104	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	03/13/2020	ND	203	101	200	1.75	
DRO >C10-C28*	494	10.0	03/13/2020	ND	198	98.9	200	3.75	
EXT DRO >C28-C36	100	10.0	03/13/2020	ND					

Surrogate: 1-Chlorooctane 89.2 % 44.3-144

Surrogate: 1-Chlorooctadecane 105 % 42.2-156

Cardinal Laboratories

*=Accredited Analyte

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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: 03/11/2020
 Reported: 03/13/2020
 Project Name: SESRQU #418
 Project Number: NOT GIVEN
 Project Location: SESRQU #418

Sampling Date: 03/11/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B11 @ 6" (H000771-02)

BTX 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	03/12/2020	ND	1.81	90.3	2.00	5.67		
Toluene*	<0.050	0.050	03/12/2020	ND	1.82	91.1	2.00	5.50		
Ethylbenzene*	<0.050	0.050	03/12/2020	ND	1.85	92.5	2.00	5.64		
Total Xylenes*	<0.150	0.150	03/12/2020	ND	5.36	89.3	6.00	5.86		
Total BTX	<0.300	0.300	03/12/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	03/13/2020	ND	416	104	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	03/13/2020	ND	203	101	200	1.75	
DRO >C10-C28*	593	10.0	03/13/2020	ND	198	98.9	200	3.75	
EXT DRO >C28-C36	110	10.0	03/13/2020	ND					

Surrogate: 1-Chlorooctane 93.3 % 44.3-144

Surrogate: 1-Chlorooctadecane 104 % 42.2-156

Cardinal Laboratories

*=Accredited Analyte

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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: 03/11/2020
 Reported: 03/13/2020
 Project Name: SESRQU #418
 Project Number: NOT GIVEN
 Project Location: SESRQU #418

Sampling Date: 03/11/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B12 @ 6" (H000771-03)

BTX 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	03/12/2020	ND	1.81	90.3	2.00	5.67		
Toluene*	<0.050	0.050	03/12/2020	ND	1.82	91.1	2.00	5.50		
Ethylbenzene*	<0.050	0.050	03/12/2020	ND	1.85	92.5	2.00	5.64		
Total Xylenes*	<0.150	0.150	03/12/2020	ND	5.36	89.3	6.00	5.86		
Total BTX	<0.300	0.300	03/12/2020	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	03/13/2020	ND	416	104	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	03/13/2020	ND	203	101	200	1.75	
DRO >C10-C28*	194	10.0	03/13/2020	ND	198	98.9	200	3.75	
EXT DRO >C28-C36	32.4	10.0	03/13/2020	ND					

Surrogate: 1-Chlorooctane 91.7 % 44.3-144

Surrogate: 1-Chlorooctadecane 101 % 42.2-156

Cardinal Laboratories

*=Accredited Analyte

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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: 03/11/2020
 Reported: 03/13/2020
 Project Name: SESRQU #418
 Project Number: NOT GIVEN
 Project Location: SESRQU #418

Sampling Date: 03/11/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: B13 @ 6" (H000771-04)

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	03/12/2020	ND	1.81	90.3	2.00	5.67		
Toluene*	<0.050	0.050	03/12/2020	ND	1.82	91.1	2.00	5.50		
Ethylbenzene*	<0.050	0.050	03/12/2020	ND	1.85	92.5	2.00	5.64		
Total Xylenes*	<0.150	0.150	03/12/2020	ND	5.36	89.3	6.00	5.86		
Total BTEX	<0.300	0.300	03/12/2020	ND						

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	03/13/2020	ND	416	104	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	03/13/2020	ND	203	101	200	1.75	
DRO >C10-C28*	85.3	10.0	03/13/2020	ND	198	98.9	200	3.75	
EXT DRO >C28-C36	11.8	10.0	03/13/2020	ND					

Surrogate: 1-Chlorooctane 90.4 % 44.3-144

Surrogate: 1-Chlorooctadecane 97.8 % 42.2-156

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

Notes and Definitions

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

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A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com



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

March 18, 2020

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: SESRQU #418

Enclosed are the results of analyses for samples received by the laboratory on 03/12/20 17:16.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-19-12. 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 black ink that reads "Celey D. Keene". The signature is written in a cursive, flowing style.

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: 03/12/2020
 Reported: 03/18/2020
 Project Name: SESRQU #418
 Project Number: NOT GIVEN
 Project Location: SESRQU #418

Sampling Date: 03/12/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: W1 @ 6" (H000792-01)

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	03/17/2020	ND	1.74	87.2	2.00	13.3	
Toluene*	<0.050	0.050	03/17/2020	ND	1.77	88.5	2.00	13.1	
Ethylbenzene*	<0.050	0.050	03/17/2020	ND	1.81	90.7	2.00	12.6	
Total Xylenes*	<0.150	0.150	03/17/2020	ND	5.31	88.6	6.00	12.6	
Total BTEX	<0.300	0.300	03/17/2020	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	03/17/2020	ND	432	108	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	03/16/2020	ND	196	98.2	200	2.65	
DRO >C10-C28*	<10.0	10.0	03/16/2020	ND	191	95.3	200	3.85	
EXT DRO >C28-C36	<10.0	10.0	03/16/2020	ND					

Surrogate: 1-Chlorooctane 93.2 % 44.3-144

Surrogate: 1-Chlorooctadecane 100 % 42.2-156

Cardinal Laboratories

*=Accredited Analyte

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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: 03/12/2020
 Reported: 03/18/2020
 Project Name: SESRQU #418
 Project Number: NOT GIVEN
 Project Location: SESRQU #418

Sampling Date: 03/12/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: W2 @ 6" (H000792-02)

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	03/17/2020	ND	1.74	87.2	2.00	13.3		
Toluene*	<0.050	0.050	03/17/2020	ND	1.77	88.5	2.00	13.1		
Ethylbenzene*	<0.050	0.050	03/17/2020	ND	1.81	90.7	2.00	12.6		
Total Xylenes*	<0.150	0.150	03/17/2020	ND	5.31	88.6	6.00	12.6		
Total BTEx	<0.300	0.300	03/17/2020	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	03/17/2020	ND	432	108	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	03/16/2020	ND	196	98.2	200	2.65	
DRO >C10-C28*	42.0	10.0	03/16/2020	ND	191	95.3	200	3.85	
EXT DRO >C28-C36	<10.0	10.0	03/16/2020	ND					

Surrogate: 1-Chlorooctane 100 % 44.3-144

Surrogate: 1-Chlorooctadecane 106 % 42.2-156

Cardinal Laboratories

*=Accredited Analyte

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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: 03/12/2020
 Reported: 03/18/2020
 Project Name: SESRQU #418
 Project Number: NOT GIVEN
 Project Location: SESRQU #418

Sampling Date: 03/12/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: W3 @ 6" (H000792-03)

BTX 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	03/13/2020	ND	1.91	95.7	2.00	4.35		
Toluene*	<0.050	0.050	03/13/2020	ND	1.90	95.0	2.00	3.89		
Ethylbenzene*	<0.050	0.050	03/13/2020	ND	1.94	96.9	2.00	4.73		
Total Xylenes*	<0.150	0.150	03/13/2020	ND	5.64	93.9	6.00	6.00		
Total BTX	<0.300	0.300	03/13/2020	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	03/17/2020	ND	432	108	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	03/16/2020	ND	196	98.2	200	2.65	
DRO >C10-C28*	<10.0	10.0	03/16/2020	ND	191	95.3	200	3.85	
EXT DRO >C28-C36	<10.0	10.0	03/16/2020	ND					

Surrogate: 1-Chlorooctane 104 % 44.3-144

Surrogate: 1-Chlorooctadecane 110 % 42.2-156

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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: 03/12/2020
 Reported: 03/18/2020
 Project Name: SESRQU #418
 Project Number: NOT GIVEN
 Project Location: SESRQU #418

Sampling Date: 03/12/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: W4 @ 6" (H000792-04)

BTX 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	03/13/2020	ND	1.91	95.7	2.00	4.35		
Toluene*	<0.050	0.050	03/13/2020	ND	1.90	95.0	2.00	3.89		
Ethylbenzene*	<0.050	0.050	03/13/2020	ND	1.94	96.9	2.00	4.73		
Total Xylenes*	<0.150	0.150	03/13/2020	ND	5.64	93.9	6.00	6.00		
Total BTX	<0.300	0.300	03/13/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.7 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	03/17/2020	ND	432	108	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	03/16/2020	ND	196	98.2	200	2.65	
DRO >C10-C28*	<10.0	10.0	03/16/2020	ND	191	95.3	200	3.85	
EXT DRO >C28-C36	<10.0	10.0	03/16/2020	ND					

Surrogate: 1-Chlorooctane 103 % 44.3-144

Surrogate: 1-Chlorooctadecane 111 % 42.2-156

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 03/12/2020
 Reported: 03/18/2020
 Project Name: SESRQU #418
 Project Number: NOT GIVEN
 Project Location: SESRQU #418

Sampling Date: 03/12/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: W5 @ 6" (H000792-05)

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	03/16/2020	ND	1.77	88.6	2.00	8.28	
Toluene*	<0.050	0.050	03/16/2020	ND	1.77	88.7	2.00	8.63	
Ethylbenzene*	<0.050	0.050	03/16/2020	ND	1.80	89.9	2.00	8.51	
Total Xylenes*	0.596	0.150	03/16/2020	ND	5.21	86.9	6.00	8.00	
Total BTEX	0.596	0.300	03/16/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 110 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	03/17/2020	ND	432	108	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*	20.0	10.0	03/17/2020	ND	196	98.2	200	2.65	
DRO >C10-C28*	954	10.0	03/17/2020	ND	191	95.3	200	3.85	
EXT DRO >C28-C36	155	10.0	03/17/2020	ND					

Surrogate: 1-Chlorooctane 109 % 44.3-144

Surrogate: 1-Chlorooctadecane 129 % 42.2-156

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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: 03/12/2020
 Reported: 03/18/2020
 Project Name: SESRQU #418
 Project Number: NOT GIVEN
 Project Location: SESRQU #418

Sampling Date: 03/12/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: W6 @ 6" (H000792-06)

BTX 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	03/16/2020	ND	1.77	88.6	2.00	8.28	
Toluene*	<0.050	0.050	03/16/2020	ND	1.77	88.7	2.00	8.63	
Ethylbenzene*	<0.050	0.050	03/16/2020	ND	1.80	89.9	2.00	8.51	
Total Xylenes*	<0.150	0.150	03/16/2020	ND	5.21	86.9	6.00	8.00	
Total BTX	<0.300	0.300	03/16/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	16.0	03/17/2020	ND	432	108	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	03/16/2020	ND	196	98.2	200	2.65	
DRO >C10-C28*	<10.0	10.0	03/16/2020	ND	191	95.3	200	3.85	
EXT DRO >C28-C36	<10.0	10.0	03/16/2020	ND					

Surrogate: 1-Chlorooctane 97.7 % 44.3-144

Surrogate: 1-Chlorooctadecane 103 % 42.2-156

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
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

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A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager

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1. ACUSME

BILL TO

ANALYSIS REQUEST

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

