



DAVID FEATHER
ENVIRONMENTAL SUPERVISOR
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1RP-1924
NGRL0822628696

October 1, 2019

Mr. Bradford Billings
State of New Mexico Oil Conservation Division
1220 South St Francis Drive
Santa Fe, NM 87505

RE: 1RP-1924 EBDU # 28

Mr. Billings,

In compliance with 19.15.29.15(B) NMAC and the agreement submitted by Apache Corporation on November 8, 2018, Apache Corporation is submitting information related to closure for the release occurring July 23, 2008. Apache is respectfully submitting the closure report based on studies occurring in 2019 that demonstrate the site meeting the requirements of the agency. Unless further information is requested by NMOCD, Apache Corporation considers this release closed.

If there are any questions, please feel free to contact me by telephone at 432-818-1615 or by e-mail at David.Feather@ApacheCorp.com.

Sincerely,

David Feather
Environmental Supervisor
Apache Corporation - Permian Basin Region

Attachment: Closure Report Dated August 22, 2019



Bruce Baker

EBDU #28

Closure Plan

API # 30-025-06538

1RP-1924

Release Date: 7/23/2008

U/L D, Section 12, Township 21S, Range 37E

Lea County, New Mexico

August 22, 2019



Hungry Horse LLC
4024 Plains Highway
Lovington, NM 88260

August 22, 2019

RE: Closure Request for Apache Corporation – EBDU #28
API No. 30-025-06538
U/L D, Section 12, Township 21 S, Range 37E

To Whom it May Concern,

On behalf of Apache Corporation, Hungry Horse LLC has prepared this Closure Report that demonstrates the delineation and remediation for the release associated with the EBDU #28 that occurred on July 23rd, 2008, with the RP # of 1RP-1924.

Background

This site is located in the southern part of Lea County near Eunice, New Mexico. The release was found on July 23rd, 2008. The cause of the release was due to a buried flowline that had ruptured days before discovery. Approximately 25bbls of fluid was released. The fluid had soaked into the soil; therefore, no fluid was recovered.

The area of impact measured approximately 14,293.22 sq. ft of pasture area. The corresponding C141 for the release is attached.

Ground Water Information

Hungry Horse has conducted a ground water study of the area. It has been determined that according to the New Mexico Office of the State Engineer, the average depth of ground water is 59'bgs (below ground surface), minimum depth is 17'bgs and maximum depth is 80'bgs. The wells located closest to the release point that have recorded data are as follows:

CP 00562: well is set at 136'bgs and the water level is 65'bgs, distance from the site is 3251'
CP 01574 POD2: well is set at 68'bgs and the water level is 57'bgs, distance from the site is 3,257'

This site was remediated under the old rule and therefore does not fall under the new standard 19.15.29 NMAC adopted on August 14, 2018.

Site Delineation and Remediation

Hungry Horse, LLC began delineation of this site starting on July 25th of 2008. Surface and 2'bgs samples were taken as per the landowner. Lab data and photos were available from the remediation and backfill process. They are included in this report. Approximately, 1,914 cubic yards of contaminated soil was hauled to Sundance Disposal. 508 cubic yards of topsoil and 136 yards of fill dirt was hauled in. The remediation was final on August 4th, 2008. Please also notice the historical maps attached herein.

Apache Corporation re-sampled the site on July 20th, 2019 to verify that the release area was in fact remediated. Please see the Cardinal Laboratories Analysis Report detailed herein. The sample results are as follows:

SP1: 5'bgs – 32 mg/kg chlorides, <10 mg/kg TPH, <0.300 mg/kg BTEX
SP1: 10'bgs – 96 mg/kg chlorides, <10 mg/kg TPH, <0.300 mg/kg BTEX
SP1: 15'bgs – 48 mg/kg chlorides, <10 mg/kg TPH, <0.300 mg/kg BTEX

SP2: 5'bgs – 32 mg/kg chlorides, <10 mg/kg TPH, <0.300 mg/kg BTEX
SP2: 10'bgs – <16 mg/kg chlorides, <10 mg/kg TPH, <0.300 mg/kg BTEX
SP2: 15'bgs – <16 mg/kg chlorides, <10 mg/kg TPH, <0.300 mg/kg BTEX

Request for Closure

Apache Corporation in conjunction with Hungry Horse, LLC would like to request the closure of 1RP-1924 that occurred on July 23rd, 2008. If you have any questions or concerns, please contact me at any time.

Sincerely,



Jerry Brian

Environmental Manager/Geologist/REM/REPA
4024 Plains Highway
Lovington, NM 88260
Cell: 970-630-6293
jbrian@hungry-horse.com

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, 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

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

RECEIVED

AUG 12 2008

HOBBS OIL

Form C-141
Revised October 10, 2003

Submit 2 Copies to appropriate
District Office in accordance
with Rule 116 on back
side of form

Release Notification and Corrective Action

OPERATOR

☒ Initial Report

☐ Final Report

Name of Company	Apache Corporation	Contact	Natalie Gladden
Address	P.O. Box 1849 Eunice, NM 88231	Telephone No.	505-390-4186
Facility Name	EBDU #28	Facility Type	Production Well

Surface Owner	Paige McNeil	Mineral Owner	BLM	Lease No.	30-025-06538
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LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	12	21S	37E	330'	North Line	660'	West Line	Lea

Latitude_N 32 deg 29.919' Longitude_W 103deg 07.344'

WTR 60'

NATURE OF RELEASE

Type of Release	Oil	Volume of Release over 25	Volume Recovered 0
Source of Release	Busted flowline	07/23/08	07/23/08 12 pm
Was Immediate Notice Given?	☒ Yes ☐ No ☐ Not Required	If YES, To Whom?	Larry Johnson
By Whom?	Natalie Gladden	07/23/08 1pm	
Was a Watercourse Reached?	☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

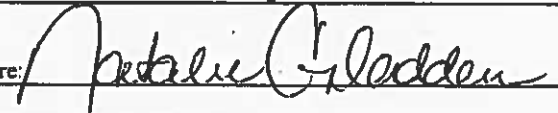
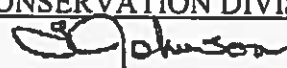
If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

Flowline out in pasture had busted several days before discovery. Well only makes 1bbl of fluid daily. Most of the fluid had soaked in. Flowline was re-routed. Hungry Horse responded to spill, made one-call and with in 48 hrs remediation started. There is a Targa line 6" under our point of release.

Describe Area Affected and Cleanup Action Taken.*
NMOCD guidelines will be followed.

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

Signature: 	OIL CONSERVATION DIVISION	
Printed Name: Natalie Gladden	Approved by District Supervisor:  ENVIRONMENTAL ENGINEER	
Title: EH&S Environmental Tech	Approval Date: 8.12.08	Expiration Date: 10.15.08
E-mail Address: natalie.gladden@apachecorp.com	Conditions of Approval:	Attached ☐
Date: 7/23/08 Phone: 505-390-4186	Submit Final C-141	KRP# 1924

* Attach Additional Sheets If Necessary

F GRL 0822628000

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?	<u>65' bgs</u> (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas not on an exploration, development, production, or storage site?	☐ Yes ☒ No

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

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

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

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table I 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: Larry Baker Title: Environmental Tech Sr.

Signature: Larry Baker Date: 10-1-19

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

OCD Only

Received by: _____ Date: _____

Incident ID	
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: Larry Baker Title: Environmental Tech Sr.

Signature: Larry Baker Date: 10-1-19

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: Bradford Billings Date: 05/22/2020

Printed Name: Bradford Billings Title: E. Spec.A



New Mexico Office of the State Engineer **Water Column/Average Depth to Water**

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

(quarters are smallest to largest) (NAD83 UTM in meters)

No records found.

UTMNAD83 Radius Search (in meters):

Easting (X): 676328.4

Northing (Y): 3597380.42

Radius: 1000

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.

8/16/19 5:20 PM

WATER COLUMN/ AVERAGE
DEPTH TO WATER



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

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

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

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

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth	Well	Depth	Water	Column
CP.00197	O	CP	LE	1	4	1	01	21S	37E	676611	3598599*	1250	85				
CP.00197.POD1		CP	LE	1	4	1	01	21S	37E	676611	3598599*	1250	85				
CP.00137.POD1		CP	LE	2	2	1	13	21S	37E	676862	3595783*	1684	65				
CP.00286.POD1		CP	LE	2	1	2	10	21S	37E	674019	3597338*	2309	70				
CP.01741.POD1		CP	LE	1	3	4	03	21S	37E	673895	3597759	2462	45				
L.13546.POD1		L	LE	4	4	3	34	20S	38E	675011	3600037	2965	88				
CP.01185.POD2		CP	LE			3	14	21S	37E	674623	3594674	3198	70				
CP.01185.POD1		CP	LE			3	14	21S	37E	674598	3594689	3199	70				
CP.00134.POD1		CP	LE	1	1	1	24	21S	37E	676289	3594166*	3214	85				
CP.01110.POD1		CP	LE			3	14	21S	37E	674586	3594648	3240	70				
CP.01110.POD2		CP	LE			3	14	21S	37E	674586	3594648	3240	70				
CP.01110.POD3		CP	LE			3	14	21S	37E	674586	3594648	3240	70				
CP.01110.POD4		CP	LE			3	14	21S	37E	674586	3594648	3240	20				
CP.01110.POD5		CP	LE			3	14	21S	37E	674586	3594648	3240	20				
CP.01185.POD4		CP	LE			3	14	21S	37E	674633	3594610	3247	70				
CP.00562		CP	LE	1	2	2	23	21S	37E	675887	3594159*	3251	136			65	71
CP.01574.POD2		CP	LE	1	3	3	14	21S	37E	674666	3594578	3257	68			57	11
CP.01185.POD3		CP	LE			3	14	21S	37E	674592	3594620	3260	70				
CP.01574.POD1		CP	LE	2	4	4	15	21S	37E	674559	3594598	3297	68			57	11
CP.00239.POD1		CP	LE	1	1	2	23	21S	37E	675485	3594152*	3336	89			61	28
CP.00235.POD1		CP	LE	2	2	1	23	21S	37E	675283	3594144*	3401	81				
CP.00235.POD2		CP	LE	1	2	1	23	21S	37E	675083	3594144*	3467	96			65	31
CP.00235.POD8		CP	LE	3	1	2	23	21S	37E	675485	3593952*	3530	94			58	36
CP.00236.POD1		CP	LE	3	1	2	23	21S	37E	675485	3593952*	3530	83				
CP.00235.POD6		CP	LE	2	1	1	23	21S	37E	674881	3594137*	3551	85			65	20
CP.00700		CP	LE			2	23	21S	37E	675794	3593851*	3569	75			65	10
CP.00240.POD1		CP	LE	4	2	1	23	21S	37E	675283	3593944*	3591					
CP.00241.POD1		CP	LE	4	2	1	23	21S	37E	675283	3593944*	3591	79				
CP.00235.POD3		CP	LE	1	1	1	23	21S	37E	674681	3594137*	3637	90			61	29
CP.00552		CP	LE			2	04	21S	37E	672700	3598022*	3684	90			75	15

CP.00553	CP	LE	2	4	04	21S	37E	672700	3598022*		3684	90	75	15	
CP.00235.POD10	CP	LE	1	3	2	23	21S	37E	675492	3593749*		3726	92	60	32
CP.00235.POD11	CP	LE	1	3	2	23	21S	37E	675492	3593749*		3726	97	60	37
CP.00237.POD1	CP	LE	1	3	2	23	21S	37E	675492	3593749*		3726	84		
CP.00235.POD7	CP	LE	3	1	1	23	21S	37E	674681	3593937*		3817	85	65	20
CP.00235.POD5	CP	LE	1	4	1	23	21S	37E	675090	3593742*		3843	90	70	20
CP.00238.POD1	CP	LE	3	3	2	23	21S	37E	675492	3593549*		3921	81		
CP.00235.POD4	CP	LE	1	3	1	23	21S	37E	674688	3593735*		3997	100	80	20
CP.00554	CP	LE	2	2	16	21S	37E	672744	3595610*		3997	80	70	10	
CP.00235.POD9	CP	LE	3	4	1	23	21S	37E	675090	3593542*		4033	94	58	36
CP.00729.POD1	CP	LE	4	1	3	15	21S	37E	673259	3594711*		4067	8015		
CP.01141.POD3	CP	LE				15	21S	37E	673520	3594272		4188	40		
CP.01141.POD4	CP	LE				15	21S	37E	673556	3594239		4189	45		
CP.01141.POD2	CP	LE				15	21S	37E	673543	3594250		4190	40		
CP.01575.POD2	CP	LE	2	2	1	22	21S	37E	673615	3594181		4194	35	35	0
CP.01575.POD1	CP	LE	1	2	1	22	21S	37E	673544	3594204		4223	40	35	5
CP.00442.POD1	CP	ED		4	05	21S	38E	680550	3597966*		4262	532	17	515	
L. 07980	L	LE	4	3	26	20S	38E	676412	3601687*		4307	130	65	65	
CP.00731.POD1	CP	LE	2	1	22	21S	37E	673577	3594015*		4346	8130			
CP.00678	CP	ED		3	17	21S	38E	679802	3594732*		4368	125	37	88	
CP.00705.POD1	CP	ED	1	4	3	17	21S	38E	679903	3594637*		4506	160		
CP.01222.POD3	CP	LE	2	4	4	23	21S	37E	676036	3592871		4518	60	48	12
CP.00252.POD1	CP	LE	4	2	4	22	21S	37E	674493	3593125*		4634	106	78	28
CP.00139.POD1	CP	LE	2	4	2	19	21S	38E	679312	3593818*		4646	75		
CP.00732.POD1	CP	LE		4	1	22	21S	37E	673584	3593613*		4661	6633		
CP.00881	CP	LE		4	4	22	21S	37E	674402	3592824*		4946	95	53	42
CP.00251.POD1	CP	LE	2	3	4	22	21S	37E	674099	3592915*		4991	103		

Average Depth to Water: 59 feet

Minimum Depth: 17 feet

Maximum Depth: 80 feet

Record Count: 57

UTMNAD83 Radius Search (in meters):

Easting (X): 676328.4

Northing (Y): 3597380.42

Radius: 5000

*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.

8/16/19 5:20 PM

WATER COLUMN/ AVERAGE DEPTH TO WATER



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 01574 POD2	1	3	3	14	21S	37E	674666	3594578

Driller License:	1456	Driller Company:	WHITE DRILLING COMPANY
Driller Name:	JOHN W WHITE		
Drill Start Date:	12/14/2015	Drill Finish Date:	12/15/2015
Log File Date:	12/30/2015	PCW Rev Date:	
Pump Type:		Pipe Discharge Size:	
Casing Size:	2.00	Depth Well:	68 feet
		Depth Water:	57 feet

Water Bearing Stratifications:	Top	Bottom	Description
	55	66	Sandstone/Gravel/Conglomerate
	66	68	Sandstone/Gravel/Conglomerate

Casing Perforations:	Top	Bottom
	52	67

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.

8/16/19 5:32 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
	CP 00562	1	2	2	23	21S	37E	675887	3594159*

Driller License: 576

Driller Company: STONE, T.J.

Driller Name: STONE, T.J.

Drill Start Date: 12/20/1976

Drill Finish Date: 12/23/1976

Plug Date:

Log File Date: 01/11/1977

PCW Rcv Date:

Source: Shallow

Pump Type:

Pipe Discharge Size:

Estimated Yield: 20 GPM

Casing Size: 6.63

Depth Well: 136 feet

Depth Water: 65 feet

Water Bearing Stratifications:

Top	Bottom	Description
-----	--------	-------------

65	90	Sandstone/Gravel/Conglomerate
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Casing Perforations:

Top	Bottom
-----	--------

65	130
----	-----

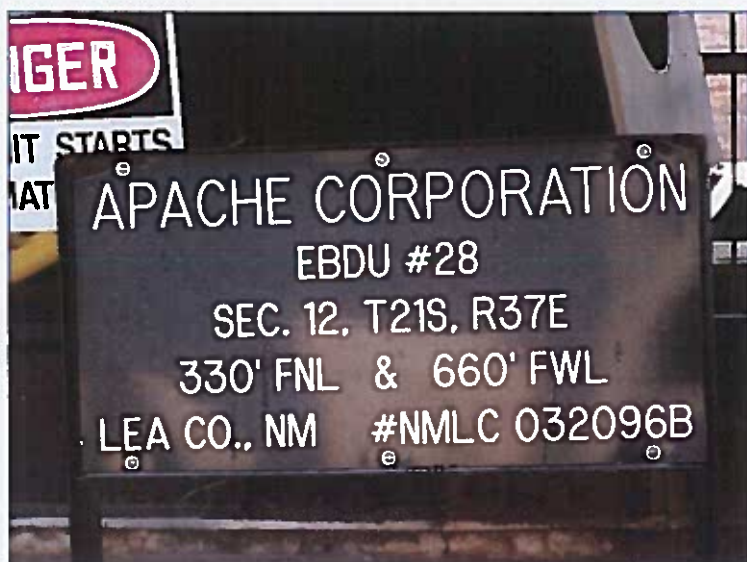
*UTM location was derived from PLSS - see Help

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.

8/16/19 5:31 PM

POINT OF DIVERSION SUMMARY







EBDU #29

Apache Corporation

EBDU #28
DOR: 7/23/2008

Legend

 Point of Release



Google Earth

Image © EDA Form Services Agency

400 ft

N



EBDU #28

Apache Corporation
EBDU #28
DOR 7/23/2008

Legend
Point of Release

POR

Google Earth

Map data USGS, Farnsworth Service, etc.

400 ft



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

August 02, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: EBDU 28

Enclosed are the results of analyses for samples received by the laboratory on 07/30/19 14:40.

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

Analytical Results For:

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

Received: 07/30/2019
Reported: 08/02/2019
Project Name: EBDU 28
Project Number: NONE GIVEN
Project Location: LEA COUNTY

Sampling Date: 07/30/2019
Sampling Type: Soil
Sampling Condition: ** (See Notes)
Sample Received By: Tamara Oldaker

Sample ID: SP 1 - 5' (H902596-01)

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	08/01/2019	ND	1.94	97.0	2.00	0.844	
Toluene*	<0.050	0.050	08/01/2019	ND	2.04	102	2.00	2.80	
Ethylbenzene*	<0.050	0.050	08/01/2019	ND	1.97	98.4	2.00	1.37	
Total Xylenes*	<0.150	0.150	08/01/2019	ND	5.95	99.2	6.00	2.11	
Total BTEX	<0.300	0.300	08/01/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 102 % 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	07/31/2019	ND	432	108	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	07/31/2019	ND	201	100	200	0.472	
DRO >C10-C28*	<10.0	10.0	07/31/2019	ND	201	100	200	3.79	
EXT DRO >C28-C36	<10.0	10.0	07/31/2019	ND					

Surrogate: 1-Chlorooctane 91.3 % 41-142

Surrogate: 1-Chlorooctadecane 99.8 % 37.6-147

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 07/30/2019
 Reported: 08/02/2019
 Project Name: EBDU 28
 Project Number: NONE GIVEN
 Project Location: LEA COUNTY

 Sampling Date: 07/30/2019
 Sampling Type: Soil
 Sampling Condition: ** (See Notes)
 Sample Received By: Tamara Oldaker

Sample ID: SP 1 - 10' (H902596-02)

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	08/01/2019	ND	1.96	98.2	2.00	4.23	
Toluene*	<0.050	0.050	08/01/2019	ND	2.11	106	2.00	6.10	
Ethylbenzene*	<0.050	0.050	08/01/2019	ND	2.06	103	2.00	6.20	
Total Xylenes*	<0.150	0.150	08/01/2019	ND	6.23	104	6.00	6.30	
Total BTEX	<0.300	0.300	08/01/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 105 % 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	07/31/2019	ND	432	108	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	07/31/2019	ND	201	100	200	0.472	
DRO >C10-C28*	<10.0	10.0	07/31/2019	ND	201	100	200	3.79	
EXT DRO >C28-C36	<10.0	10.0	07/31/2019	ND					

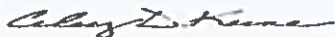
Surrogate: 1-Chlorooctane 94.8 % 41-142

Surrogate: 1-Chlorooctadecane 102 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/30/2019
Reported: 08/02/2019
Project Name: EBDU 28
Project Number: NONE GIVEN
Project Location: LEA COUNTY

Sampling Date: 07/30/2019
Sampling Type: Soil
Sampling Condition: ** (See Notes)
Sample Received By: Tamara Oldaker

Sample ID: SP 1 - 15' (H902596-03)

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	08/01/2019	ND	1.96	98.2	2.00	4.23	
	Toluene*	<0.050	0.050	08/01/2019	ND	2.11	106	2.00	6.10	
	Ethylbenzene*	<0.050	0.050	08/01/2019	ND	2.06	103	2.00	6.20	
	Total Xylenes*	<0.150	0.150	08/01/2019	ND	6.23	104	6.00	6.30	
	Total BTEX	<0.300	0.300	08/01/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 105 % 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	48.0	16.0	07/31/2019	ND	432	108	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	07/31/2019	ND	201	100	200	0.472	
DRO >C10-C28*	<10.0	10.0	07/31/2019	ND	201	100	200	3.79	
EXT DRO >C28-C36	<10.0	10.0	07/31/2019	ND					

Surrogate: 1-Chlorooctane 95.6 % 41-142

Surrogate: 1-Chlorooctadecane 101 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/30/2019
Reported: 08/02/2019
Project Name: EBDU 28
Project Number: NONE GIVEN
Project Location: LEA COUNTY

Sampling Date: 07/30/2019
Sampling Type: Soil
Sampling Condition: ** (See Notes)
Sample Received By: Tamara Oldaker

Sample ID: SP 2 - 5' (H902596-04)

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	08/01/2019	ND	1.96	98.2	2.00	4.23	
Toluene*	<0.050	0.050	08/01/2019	ND	2.11	106	2.00	6.10	
Ethylbenzene*	<0.050	0.050	08/01/2019	ND	2.06	103	2.00	6.20	
Total Xylenes*	<0.150	0.150	08/01/2019	ND	6.23	104	6.00	6.30	
Total BTEX	<0.300	0.300	08/01/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 105 % 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	07/31/2019	ND	432	108	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	07/31/2019	ND	201	100	200	0.472	
DRO >C10-C28*	<10.0	10.0	07/31/2019	ND	201	100	200	3.79	
EXT DRO >C28-C36	<10.0	10.0	07/31/2019	ND					

Surrogate: 1-Chlorooctane 93.5 % 41-142

Surrogate: 1-Chlorooctadecane 99.4 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/30/2019
Reported: 08/02/2019
Project Name: EBDU 28
Project Number: NONE GIVEN
Project Location: LEA COUNTY

Sampling Date: 07/30/2019
Sampling Type: Soil
Sampling Condition: ** (See Notes)
Sample Received By: Tamara Oldaker

Sample ID: SP 2 - 10' (H902596-05)

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	08/01/2019	ND	1.96	98.2	2.00	4.23	
Toluene*	<0.050	0.050	08/01/2019	ND	2.11	106	2.00	6.10	
Ethylbenzene*	<0.050	0.050	08/01/2019	ND	2.06	103	2.00	6.20	
Total Xylenes*	<0.150	0.150	08/01/2019	ND	6.23	104	6.00	6.30	
Total BTEX	<0.300	0.300	08/01/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 104 % 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	07/31/2019	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	08/01/2019	ND	201	100	200	0.472	
DRO >C10-C28*	<10.0	10.0	08/01/2019	ND	201	100	200	3.79	
EXT DRO >C28-C36	<10.0	10.0	08/01/2019	ND					

Surrogate: 1-Chlorooctane 91.5 % 41-142

Surrogate: 1-Chlorooctadecane 93.7 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 07/30/2019
Reported: 08/02/2019
Project Name: EBDU 28
Project Number: NONE GIVEN
Project Location: LEA COUNTY

Sampling Date: 07/30/2019
Sampling Type: Soil
Sampling Condition: ** (See Notes)
Sample Received By: Tamara Oldaker

Sample ID: SP 2 - 15' (H902596-06)

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	08/02/2019	ND	1.95	97.5	2.00	2.95	
Toluene*	<0.050	0.050	08/02/2019	ND	2.07	103	2.00	2.48	
Ethylbenzene*	<0.050	0.050	08/02/2019	ND	2.01	100	2.00	2.59	
Total Xylenes*	<0.150	0.150	08/02/2019	ND	6.03	100	6.00	2.35	
Total BTEX	<0.300	0.300	08/02/2019	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	07/31/2019	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	08/01/2019	ND	201	100	200	0.472	
DRO >C10-C28*	<10.0	10.0	08/01/2019	ND	201	100	200	3.79	
EXT DRO >C28-C36	<10.0	10.0	08/01/2019	ND					

Surrogate: 1-Chlorooctane 90.3 % 41-142

Surrogate: 1-Chlorooctadecane 93.0 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

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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Celey D. Keene, Lab Director/Quality Manager

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]