



DAVID FEATHER
ENVIRONMENTAL SUPERVISOR
DIRECT: (432) 818-1615
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2 RP-1134
NMLB1215050616

October 1, 2019

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

RE: 2RP-1134 NB Tween # 16

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 March 12, 2012. 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 28, 2019

Trinity Oilfield Services & Rentals, LLC

Environmental Site Summary & Closure Request



Company: Apache Corporation Address: 2530 W. Marland St., Hobbs, NM 88240 Telephone #: (575) 393-7106

Site Name: NB Tween #16 NMOCD Reference#: 2RP-1134

Surface Owner: Concho Resources Mineral Owner: State of New Mexico

Unit Letter: H (SE/NE) Section: 25 Township: 17S Range: 28E County: Eddy GPS Coordinates: 32.809462 N -104.124638 W

Date/Time of Release: 3/12/2012 Type of Release: Crude Oil Produced Water

Volume(s) Released: 10 bbls Volume(s) Recovered: 0 bbls

Closure Criteria for Impacted Soil (mg/kg; See Appendix C, "Closure Criteria Justification"):

Benzene: 10 BTEX: 50 GRO+DRO: 1,000 TPH: 100 2,500 Chloride: 600 10,000 20,000

Background Information:

On March 12, 2012, Apache Corporation (Apache) discovered a release at the NB Tween #16 well site. Failure of a blowout preventer (BOP) valve resulted in the release of approximately 10 barrels (bbls) of crude oil. The release was limited to the caliche pad around the wellhead and did not affect the adjacent pasture. The seals on the BOP were replaced during initial response activities.

The release was reported to the New Mexico Oil Conservation Division's (NMOCD) Hobbs District Office on March 21, 2012. The NMOCD "Release Notification & Corrective Action" form (C-141) is provided as Appendix A. A "Site Location Map" is provided as Figure 1.

Remediation of the affected area took place at some point following the release. However, no extant documentation or work records of such activities could be located. In addition, no records or analytical results from soil sampling could be obtained from Cardinal Laboratories.

On July 25, 2019, Apache requested Trinity Oilfield Services & Rentals, LLC (Trinity), assume remediation activities at the release site.

Summary of Field Activities:

On August 5, 2019, representatives of Trinity conducted a sampling event to assess the current state of the site. A hand auger was utilized to advance a series of 3 boreholes (SP-1 through SP-3) in the inferred affected area around the wellhead to investigate the extent of impacted soil. The boreholes were advanced to the extent practicable to the hard rock layer running underneath the site, which was encountered approximately 1.5 feet below ground surface (bgs). Soil samples were collected at ground surface and 1 foot bgs from each location, and confirmation samples were submitted to Cardinal Laboratories in Hobbs, New Mexico, for analysis of chloride, total petroleum hydrocarbons (TPH), and benzene, toluene, ethylbenzene, and total xylene (BTEX) concentrations using Environmental Protection Agency (EPA) Methods 4500-CI B, SW 846-8015 Mod, and SW 846-8021B, respectively.

Laboratory analytical results indicated TPH and BTEX constituent concentrations were below the laboratory method detection limit (MDL) in all submitted soil samples, with the exception of sample SP-2 @ 1', which exhibited a TPH concentration of 485 mg/kg. Chloride concentrations ranged from 80.0 mg/kg in soil sample SP-3 @ Surface to 1,040 mg/kg in sample SP-1 @ Surface.

Locations of the auger holes are depicted in Figure 2, "Sample Location Map". Laboratory analytical results are summarized in Table 1, and an analytical report is provided in Appendix C.

Trinity Oilfield Services & Rentals, LLC

Environmental Site Summary & Closure Request



Site Closure Request:

Soil samples collected from the inferred impacted area were analyzed by an NMOCD-approved laboratory, and concentrations of chloride, TPH, and BTEX were below the Closure Criteria listed in Table 1 of Section 19.15.29.12 of the New Mexico Administrative Code (NMAC) for a site where depth to groundwater is greater than 100 feet bgs (see Appendix B, "Closure Criteria Justification", for more information). Based on these laboratory analytical results, the initial response and subsequent activities conducted at the site in 2012 were effective in remediating the release. Trinity, on behalf of Apache, hereby requests the NMOCD grant closure to the NB Tween #16 release site.

Enclosures:

Figure 1: Site Location Map

Figure 2: Sample Location Map

Table 1: Concentrations of Benzene, BTEX, TPH & Chloride in Soil

Appendix A: Release Notification & Corrective Action (Form C-141)

Appendix B: Closure Criteria Justification

Appendix C: Laboratory Analytical Results

 8/28/2019
Ben J. Arguijo
Project Manager

Figures

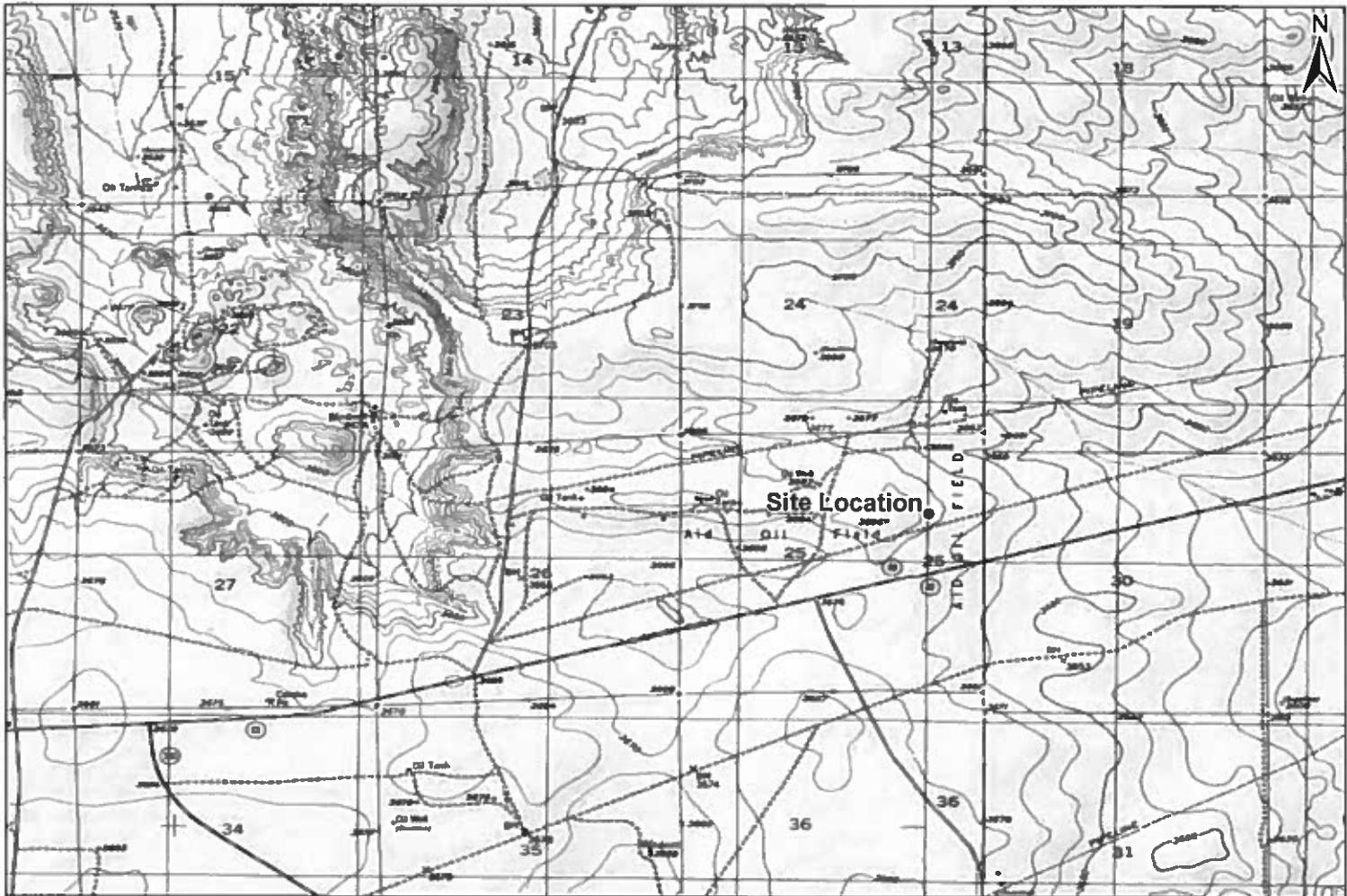


Figure 1
Site Location Map
 Apache Corporation
 NB Tween #16
 Eddy County, New Mexico
 NMOCD Reference #: 2RP-1134



Trinity Oilfield Services & Rentals, LLC
 PO Box 2587
 Hobbs, NM 88241

Drawn By: BJA	Checked By: JEH
August 28, 2019	Scale 1" = 0.5mi



<p>Legend</p> <ul style="list-style-type: none"> ● Auger Hole 	<p align="center"> Figure 2 Sample Location Plan Apache Corporation NB Tween #16 Eddy County, New Mexico NMOCD Reference #: 2RP-1134 </p>	 <p align="center"> TRINITY <small>OILFIELD SERVICES & RENTALS</small> </p>	<p align="right"> Trinity Oilfield Services & Rentals, LLC PO Box 2587 Hobbs, NM 88241 </p> <table border="1"> <tr> <td>Drawn By: BJA</td> <td>Checked By: JEH</td> </tr> <tr> <td>August 28, 2019</td> <td>Scale: 1" = 40'</td> </tr> </table>	Drawn By: BJA	Checked By: JEH	August 28, 2019	Scale: 1" = 40'
Drawn By: BJA	Checked By: JEH						
August 28, 2019	Scale: 1" = 40'						

Tables

TABLE 1
CONCENTRATIONS OF BENZENE, BTEX, TPH & CHLORIDE IN SOIL

APACHE CORPORATION
NB TWEEN #16
EDDY COUNTY, NEW MEXICO
NMOCD REFERENCE #: 2RP-1134



SAMPLE LOCATION	SAMPLE DEPTH (BGS)	SAMPLE DATE	SOIL STATUS	EPA SW-846 Method 8021B					EPA SW-846 Method 8015M				4500-C1 B	
				BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL-BENZENE (mg/kg)	TOTAL XYLENES (mg/kg)	TOTAL BTEX (mg/kg)	GRO C6-C12 (mg/kg)	DRO C12-C28 (mg/kg)	GRO+ DRO (mg/kg)	MRO C28-C35 (mg/kg)	TPH C6-C35 (mg/kg)	CHLORIDE (mg/kg)
NMOCD Closure Limits (mg/kg)				10	NE	NE	NE	50	NE	NE	1,000	NE	2,500	20,000
SP-1 @ Surface	Surface	8/5/2019	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	1,040
SP-1 @ 1'	1'	8/5/2019	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	752
SP-2 @ Surface	Surface	8/5/2019	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	144
SP-2 @ 1'	1'	8/5/2019	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	337	337	148	485	400
SP-3 @ Surface	Surface	8/5/2019	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	80.0
SP-3 @ 1'	1'	8/5/2019	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	160

NE = Not Established

-- = Not Analyzed

Concentrations in **BOLD** exceed the NMOCD Closure Limit

Appendices

Appendix A
Release Notification &
Corrective Action (Form C-141)

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

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

NMLB 12/5050616 OPERATOR Initial Report Final Report

Name of Company Apache Corporation	873	Contact Natalie Gladden
Address PO Box 1849 Eunice, NM 88231		Telephone No. 575-390-4186
Facility Name NB Tween #16		Facility Type Production well
Surface Owner Concho Resources	Mineral Owner State	API No. 30-015-38406

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
H	25	17S	28E	1650'	FNL	990'	FEL	Eddy

Latitude _____ Longitude _____

NATURE OF RELEASE

Type of Release Oil	Volume of Release 10	Volume Recovered 0
Source of Release BOP Failure	Date and Hour of Occurrence 3/12/12	Date and Hour of Discovery 03/12/12
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Bratcher	
By Whom? Natalie	Date and Hour 3/21/02 824am	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

RECEIVED
 APR 30 2012
NMOCD-ARTESIA

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
 Workover rig on well shut in BOP Valves the evening before but it did not seal correctly. Seals were replaced and fluid was recovered.

Describe Area Affected and Cleanup Action Taken.*
 Site will be remediated and the NMOCD Guidelines will be followed to closure of this release.

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: <i>Natalie Gladden</i>	OIL CONSERVATION DIVISION	
Printed Name: Natalie Gladden	Signed By <i>Mike Benavise</i> Approved by Environmental Specialist:	
Title: EHS Environmental Tech	Approval Date: MAY 29 2012	Expiration Date:
E-mail Address: natalie.gladden@apachecorp.com	Conditions of Approval: Remediation per OCD Rules & Guidelines. SUBMIT REMEDIATION PROPOSAL NOT LATER THAN:	Attached <input type="checkbox"/>
Date: 3/26/12 Phone: 575-390-4186	<i>6/29/2012</i>	

* Attach Additional Sheets If Necessary

2RP-1134

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>175</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 1/2-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: Bruce Baker Title: Environmental Tech SR.
 Signature: Bruce Baker Date: 9/30/19
 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: Bruce Baker Title: Environmental Tech. SR
 Signature: Bruce Baker Date: 9/30/19
 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

NOTE: As a general rule OCD does not use old groundwater trend map for decision on depth to water, and lack of evidence is not lack of occurrence. Significant sampling for Section 13 of Rule 29 will need to occur at P&A, and may include a more detailed depth to water analysis.

Appendix B
Closure Criteria Justification

**TABLE 3
CLOSURE CRITERIA JUSTIFICATION**

**APACHE CORPORATION
NB TWEEN #16
EDDY COUNTY, NEW MEXICO
NMOCD REFERENCE #: 2RP-1134**



Groundwater, Water Wells & Other Water Sources	
Depth to groundwater (ft)?	175
Horizontal distance (ft) from all water sources within 0.5 miles?	N/A
Within 500' of a spring or a private, domestic fresh water well used by less than 5 households for domestic or stock watering purposes?	No
Within 1000' of any fresh water well or spring?	No
Surface Water	
Horizontal distance (ft) to nearest significant watercourse?	>1,000
Within 300' of any continuously flowing watercourse or any other significant watercourse?	No
Within 200' of any lakebed, sinkhole or playa lake?	No
Human-Occupied, Environmental & Other Areas	
Within incorporated municipal boundaries or within a defined municipal fresh water well field?	No
Within 300' of an occupied permanent residence, school, hospital, institution or church?	No
Within 300' of a wetland?	No
Within the area overlying a subsurface mine?	No
Within an unstable area?	No
Within a 100-year floodplain?	No

Closure Criteria (mg/kg)*				
Benzene	BTEX	GRO + DRO	TPH	Chloride
10	50	1,000	2,500	20,000

*Numerical limits or natural background level, whichever is greater

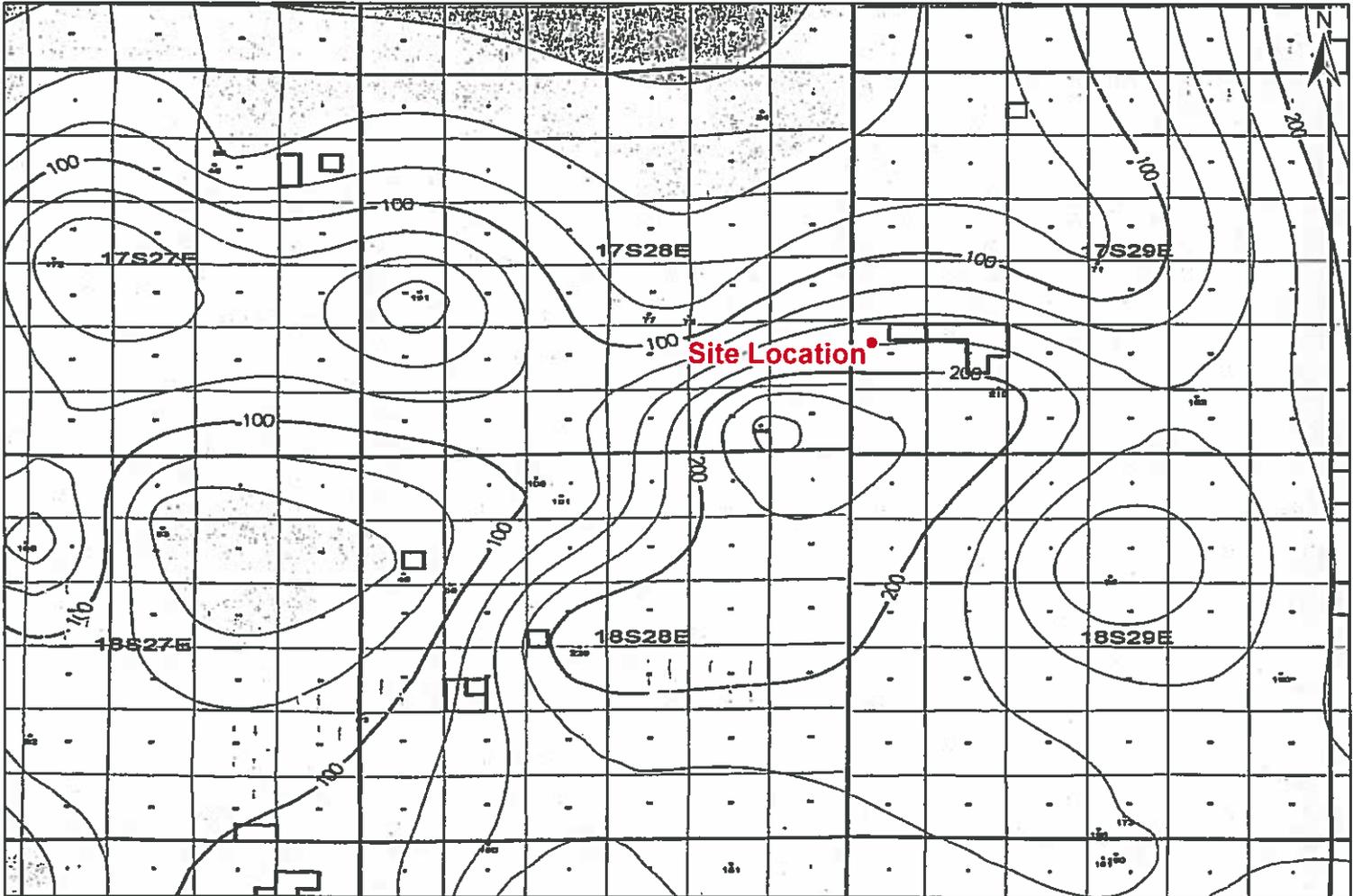
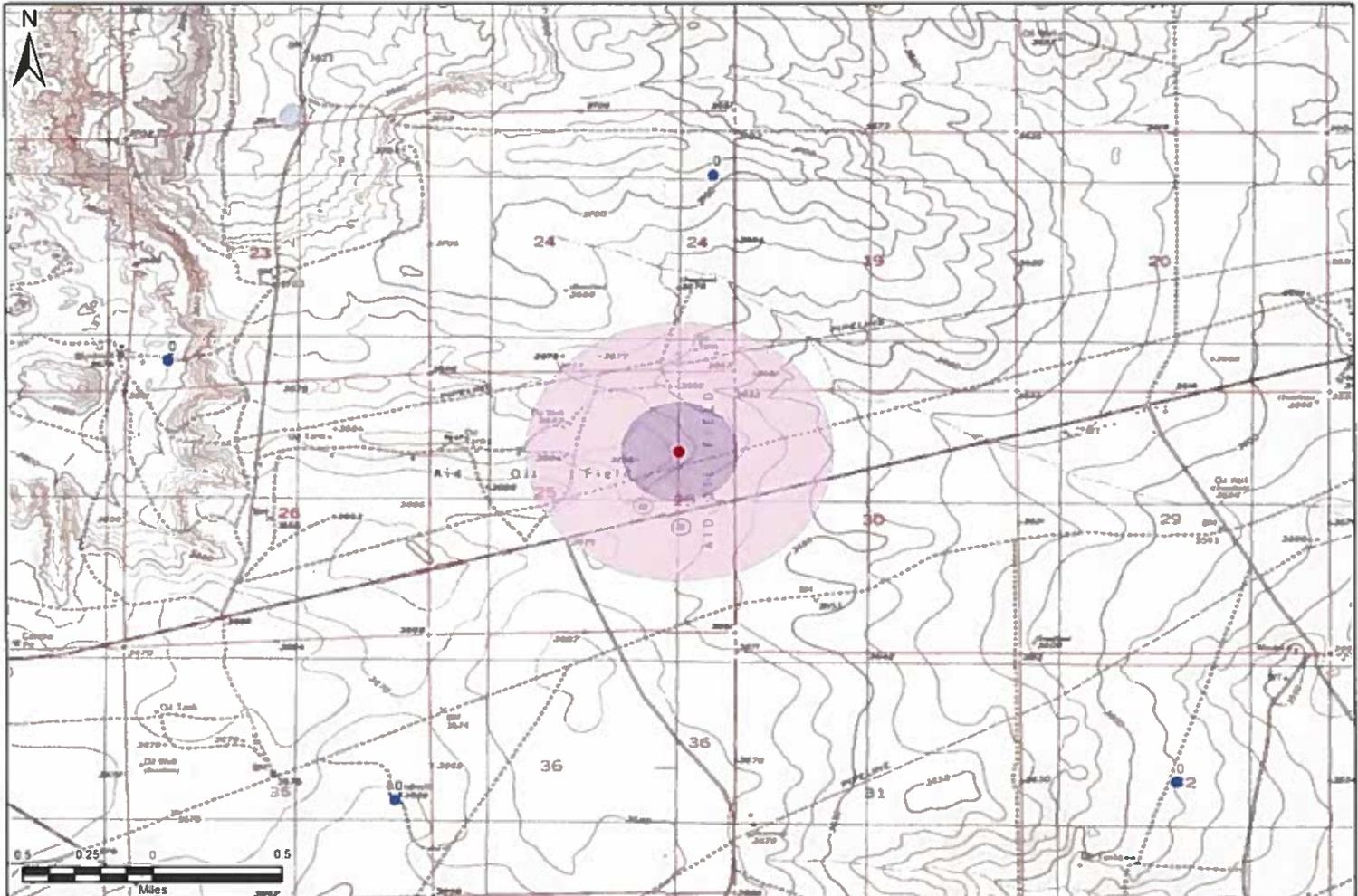


Figure 3
 Depth-to-Groundwater Trend Map
 Apache Corporation
 NB Tween #16
 Eddy County, New Mexico
 NMOCD Reference #: 2RP-1134



Trinity Oilfield Services & Rentals, LLC
 P.O. Box 2587
 Hobbs, NM 88241

Drawn By BJA	Checked By JEH
August 28, 2019	Scale 1" = 2mi



Legend

	1,000-ft Radius		Site Location
	0.5-mi Radius		NMOSE Depth to Water
	FEMA 100-Year Flood Zone		

Figure 4
Vicinity & Wellhead Protection Area Map
Apache Corporation
NB Tween #15
Eddy County, New Mexico
NMOCD Reference #: 2RP-1134



Trinity Oilfield Services & Rentals, LLC
 PO Box 2587
 Hobbs, NM 88241

Drawn By BJA	Checked By JEH
August 28, 2019	Scale 1" = 0.5mi



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

No records found.

UTMNAD83 Radius Search (in meters):

Easting (X): 581949.3

Northing (Y): 3630503.42

Radius: 1610
(1 mile)

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.

8/23/19 2:04 PM

Page 1 of 1

WATER COLUMN/ AVERAGE
DEPTH TO WATER

Appendix C
Laboratory Analytical Reports

August 08, 2019

BRUCE BAKER
APACHE CORP - HOBBS
2350 W. MARLAND BLVD.
HOBBS, NM 88240

RE: NB TWEEN

Enclosed are the results of analyses for samples received by the laboratory on 08/05/19 15:15.

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

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,



Mike Snyder For 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:	08/05/2019	Sampling Date:	08/05/2019
Reported:	08/08/2019	Sampling Type:	Soil
Project Name:	NB TWEEN	Sampling Condition:	Cool & Intact
Project Number:	NB TWEEN STATE #16	Sample Received By:	Tamara Oldaker
Project Location:	EDDY COUNTY		

Sample ID: SP - 1 SURFACE (H902677-01)

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	08/07/2019	ND	1.97	98.7	2.00	2.19	
Toluene*	<0.050	0.050	08/07/2019	ND	2.01	100	2.00	1.19	
Ethylbenzene*	<0.050	0.050	08/07/2019	ND	1.87	93.7	2.00	0.598	
Total Xylenes*	<0.150	0.150	08/07/2019	ND	5.66	94.4	6.00	0.195	
Total BTEX	<0.300	0.300	08/07/2019	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1040	16.0	08/08/2019	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	08/06/2019	ND	213	107	200	0.553	
DRO >C10-C28*	<10.0	10.0	08/06/2019	ND	208	104	200	0.767	
EXT DRO >C28-C36	<10.0	10.0	08/06/2019	ND					

Surrogate: 1-Chlorooctane 67.9% 41-142

Surrogate: 1-Chlorooctadecane 69.4% 37.6-147

Cardinal Laboratories

* = Accredited Analyte

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



Mike Snyder For 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: 08/05/2019
 Reported: 08/08/2019
 Project Name: NB TWEEN
 Project Number: NB TWEEN STATE #16
 Project Location: EDDY COUNTY

 Sampling Date: 08/05/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP - 1 @ 1 (H902677-02)

BTEX 80218		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	08/07/2019	ND	1.97	98.7	2.00	2.19		
Toluene*	<0.050	0.050	08/07/2019	ND	2.01	100	2.00	1.19		
Ethylbenzene*	<0.050	0.050	08/07/2019	ND	1.87	93.7	2.00	0.598		
Total Xylenes*	<0.150	0.150	08/07/2019	ND	5.66	94.4	6.00	0.195		
Total BTEX	<0.300	0.300	08/07/2019	ND						

Surrogate: 4-Bromofluorobenzene (PIC) 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	752	16.0	08/08/2019	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	08/06/2019	ND	213	107	200	0.553		
DRO >C10-C28*	<10.0	10.0	08/06/2019	ND	208	104	200	0.767		
EXT DRO >C28-C36	<10.0	10.0	08/06/2019	ND						

Surrogate: 1-Chlorooctane 73.8 % 41-142

Surrogate: 1-Chlorooctadecane 74.6 % 37.6-147

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* = Accredited Analyte

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Mike Snyder For 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: 08/05/2019
 Reported: 08/08/2019
 Project Name: NB TWEEN
 Project Number: NB TWEEN STATE #16
 Project Location: EDDY COUNTY

 Sampling Date: 08/05/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP - 2 SURFACE (H902677-03)

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	08/07/2019	ND	1.97	98.7	2.00	2.19	
Toluene*	<0.050	0.050	08/07/2019	ND	2.01	100	2.00	1.19	
Ethylbenzene*	<0.050	0.050	08/07/2019	ND	1.87	93.7	2.00	0.598	
Total Xylenes*	<0.150	0.150	08/07/2019	ND	5.66	94.4	6.00	0.195	
Total BTEX	<0.300	0.300	08/07/2019	ND					

Surrogate 4-Bromofluorobenzene (PIE) 98.9 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	16.0	08/08/2019	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	08/06/2019	ND	213	107	200	0.553	
DRO >C10-C28*	<10.0	10.0	08/06/2019	ND	208	104	200	0.767	
EXT DRO >C28-C36	<10.0	10.0	08/06/2019	ND					

Surrogate 1-Chlorooctane 64.4 % 41-142

Surrogate 1-Chlorooctadecane 62.6 % 37.6-147

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Mike Snyder For 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: 08/05/2019
 Reported: 08/08/2019
 Project Name: NB TWEEN
 Project Number: NB TWEEN STATE #16
 Project Location: EDDY COUNTY

 Sampling Date: 08/05/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP - 2 @ 1 (H902677-04)

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	08/07/2019	ND	1.97	98.7	2.00	2.19		
Toluene*	<0.050	0.050	08/07/2019	ND	2.01	100	2.00	1.19		
Ethylbenzene*	<0.050	0.050	08/07/2019	ND	1.87	93.7	2.00	0.598		
Total Xylenes*	<0.150	0.150	08/07/2019	ND	5.66	94.4	6.00	0.195		
Total BTEX	<0.300	0.300	08/07/2019	ND						

Surrogate: 4-Bromofluorobenzene (PIE) 100 % 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	400	16.0	08/08/2019	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	08/06/2019	ND	213	107	200	0.553		
DRO >C10-C28*	337	10.0	08/06/2019	ND	208	104	200	0.767		
EXT DRO >C28-C36	148	10.0	08/06/2019	ND						

Surrogate: 1-Chlorooctane 70.5 % 41-142

Surrogate: 1-Chlorooctadecane 81.6 % 37.6-147

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Mike Snyder For 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: 08/05/2019
 Reported: 08/08/2019
 Project Name: NB TWEEN
 Project Number: NB TWEEN STATE #16
 Project Location: EDDY COUNTY

 Sampling Date: 08/05/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP - 3 SURFACE (H902677-05)

BTEX 80218		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	08/07/2019	ND	1.97	98.7	2.00	2.19		
Toluene*	<0.050	0.050	08/07/2019	ND	2.01	100	2.00	1.19		
Ethylbenzene*	<0.050	0.050	08/07/2019	ND	1.87	93.7	2.00	0.598		
Total Xylenes*	<0.150	0.150	08/07/2019	ND	5.66	94.4	6.00	0.195		
Total BTEX	<0.300	0.300	08/07/2019	ND						

Surrogate 4-Bromofluorobenzene (PIE) 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	80.0	16.0	08/08/2019	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	08/06/2019	ND	215	108	200	1.84		
DRO >C10-C28*	<10.0	10.0	08/06/2019	ND	230	115	200	6.71		
EXT DRO >C28-C36	<10.0	10.0	08/06/2019	ND						

Surrogate 1-Chlorooctane 81.5 % 41-142

Surrogate 1-Chlorooctadecane 87.6 % 37.6-147

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Mike Snyder For 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: 08/05/2019
 Reported: 08/08/2019
 Project Name: NB TWEEN
 Project Number: NB TWEEN STATE #16
 Project Location: EDDY COUNTY

 Sampling Date: 08/05/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP - 3 @ 1 (H902677-06)

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	08/07/2019	ND	1.97	98.7	2.00	2.19	
Toluene*	<0.050	0.050	08/07/2019	ND	2.01	100	2.00	1.19	
Ethylbenzene*	<0.050	0.050	08/07/2019	ND	1.87	93.7	2.00	0.598	
Total Xylenes*	<0.150	0.150	08/07/2019	ND	5.66	94.4	6.00	0.195	
Total BTEX	<0.300	0.300	08/07/2019	ND					

Surrogate 4-Bromofluorobenzene (PIE) 99.5% 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	160	16.0	08/08/2019	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	08/06/2019	ND	215	108	200	1.84	
DRO >C10-C28*	<10.0	10.0	08/06/2019	ND	230	115	200	6.71	
EXT DRO >C28-C36	<10.0	10.0	08/06/2019	ND					

Surrogate 1-Chlorooctane 82.7% 41-142

Surrogate 1-Chlorooctadecane 90.6% 37.6-147

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Mike Snyder For 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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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: <u>APACHE Corporation</u>		BILL TO		ANALYSIS REQUEST											
Project Manager: <u>Boke Baker</u>		P.O. #:													
Address:		Company:													
City:	State:	Zip:	Attn:												
Phone #:	Fax #:	Address:													
Project #:	Project Owner:		City:												
Project Name: <u>NB Tween State #16</u>		State:	Zip:												
Project Location: <u>NB Tween State #16</u>		Phone #:													
Sampler Name: <u>Daniel Toster</u>		Fax #:													
FOR LAB USE ONLY															
Lab I.D.	Sample I.D.	(C)RAB OR (C)OMP	# CONTAINERS							MATRIX	PRESERV	SAMPLING	DATE	TIME	CL
<u>H9021677</u>				GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER	ACID/BASE ICE / COOL OTHER										
	<u>1 Sp-1 surface</u>						<u>8-5-19</u>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
	<u>2 Sp-1 @ 1</u>														
	<u>3 Sp-2 surface</u>														
	<u>4 Sp-2 @ 1</u>														
	<u>5 Sp-3 surface</u>														
	<u>6 Sp-3 @ 1</u>						<u>8-5-19</u>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				

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Relinquished By: <u>[Signature]</u>	Date: <u>8-5-19</u>	Received By: <u>[Signature]</u>	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
	Time: <u>15:15</u>		Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS:	
	Time:			
Delivered By: (Circle One) <u>1.8c</u>	<u>#97</u>	Sample Condition	CHECKED BY: (Initials)	
Sampler - UPS - Bus - Other: <u>Corrected 2.8c</u>		Cool Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<u>TO</u>	