



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

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September 16, 2016

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: NBTWEEN

Enclosed are the results of analyses for samples received by the laboratory on 09/08/16 13:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. 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](http://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

**Analytical Results For:**

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

Received: 09/08/2016  
Reported: 09/16/2016  
Project Name: NBTWEEN  
Project Number: NONE GIVEN  
Project Location: EDDY COUNTY

Sampling Date: 09/08/2016  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: S-5 (H602022-01)**

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	09/12/2016	ND	2.10	105	2.00	0.123	
Toluene*	<0.050	0.050	09/12/2016	ND	2.16	108	2.00	0.288	
Ethylbenzene*	<0.050	0.050	09/12/2016	ND	2.10	105	2.00	0.00802	
<b>Total Xylenes*</b>	<b>0.169</b>	0.150	09/12/2016	ND	6.37	106	6.00	0.0381	
Total BTX	<0.300	0.300	09/12/2016	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 73.6-140

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AC				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>32.0</b>	16.0	09/12/2016	ND	416	104	400	3.77	

TPH 8015M			mg/kg		Analyzed By: MS				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	09/14/2016	ND	205	102	200	4.27	
<b>DRO &gt;C10-C28</b>	<b>1040</b>	10.0	09/14/2016	ND	220	110	200	9.53	

Surrogate: 1-Chlorooctane 88.8 % 35-147

Surrogate: 1-Chlorooctadecane 117 % 28-171

Cardinal Laboratories

\*=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: 09/08/2016  
Reported: 09/16/2016  
Project Name: NBTWEEN  
Project Number: NONE GIVEN  
Project Location: EDDY COUNTY

Sampling Date: 09/08/2016  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: S-6 (H602022-02)**

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	09/12/2016	ND	2.10	105	2.00	0.123	
Toluene*	<0.050	0.050	09/12/2016	ND	2.16	108	2.00	0.288	
Ethylbenzene*	0.434	0.050	09/12/2016	ND	2.10	105	2.00	0.00802	
Total Xylenes*	0.446	0.150	09/12/2016	ND	6.37	106	6.00	0.0381	
Total BTEX	0.881	0.300	09/12/2016	ND					

Surrogate: 4-Bromofluorobenzene (PID) 112 % 73.6-140

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	09/12/2016	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	09/14/2016	ND	205	102	200	4.27	
DRO >C10-C28	530	10.0	09/14/2016	ND	220	110	200	9.53	

Surrogate: 1-Chlorooctane 94.0 % 35-147

Surrogate: 1-Chlorooctadecane 96.9 % 28-171

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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: 09/08/2016  
Reported: 09/16/2016  
Project Name: NBTWEEN  
Project Number: NONE GIVEN  
Project Location: EDDY COUNTY

Sampling Date: 09/08/2016  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: S-7 (H602022-03)**

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	09/12/2016	ND	2.10	105	2.00	0.123	
Toluene*	<0.050	0.050	09/12/2016	ND	2.16	108	2.00	0.288	
Ethylbenzene*	<0.050	0.050	09/12/2016	ND	2.10	105	2.00	0.00802	
Total Xylenes*	<0.150	0.150	09/12/2016	ND	6.37	106	6.00	0.0381	
Total BTEX	<0.300	0.300	09/12/2016	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.6 % 73.6-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	09/12/2016	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	09/14/2016	ND	205	102	200	4.27	
DRO >C10-C28	1140	10.0	09/14/2016	ND	220	110	200	9.53	

Surrogate: 1-Chlorooctane 92.0 % 35-147

Surrogate: 1-Chlorooctadecane 122 % 28-171

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

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

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Celey D. Keene, Lab Director/Quality Manager



# CARDINAL Laboratories

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240

(575) 393-2326 FAX (575) 393-2476

<b>Company Name:</b> <u>Talco/PLP</u>		<b>BILL TO</b>		<b>ANALYSIS REQUEST</b>																															
<b>Project Manager:</b> <u>David Perkins</u>		<b>P.O. #:</b>																																	
<b>Address:</b> <u>408 West Texas</u>		<b>Company:</b> <u>Apache</u>																																	
<b>City:</b> <u>Artesia</u>		<b>Attn:</b>																																	
<b>State:</b> <u>NM</u>		<b>Address:</b>																																	
<b>Phone #:</b> <u>575-8768</u>		<b>City:</b>																																	
<b>Fax #:</b> <u>575-746-8905</u>		<b>State:</b>																																	
<b>Project #:</b>		<b>Zip:</b>																																	
<b>Project Name:</b> <u>NB Tween</u>		<b>Phone #:</b>																																	
<b>Project Location:</b> <u>Eddy City</u>		<b>Fax #:</b>																																	
<b>Sampler Name:</b> <u>Kim Wilson</u>																																			
<b>FOR LAB USE ONLY</b>																																			
<b>Lab I.D.</b>		<b>Sample I.D.</b>		<b>(G)RAB OR (C)OMP.</b>		<b># CONTAINERS</b>		<b>GROUNDWATER</b>		<b>WASTEWATER</b>		<b>SOIL</b>		<b>OIL</b>		<b>SLUDGE</b>		<b>OTHER :</b>		<b>ACID/BASE:</b>		<b>ICE / COOL</b>		<b>OTHER :</b>		<b>DATE</b>		<b>TIME</b>		<b>TPH</b>		<b>BTEX</b>		<b>Cl</b>	
<u>HL002002</u>		<u>3-5</u>		<u>61</u>		<u>41</u>		<u>✓</u>		<u>✓</u>		<u>✓</u>		<u>✓</u>		<u>✓</u>		<u>✓</u>		<u>✓</u>		<u>✓</u>		<u>✓</u>		<u>✓</u>		<u>✓</u>		<u>✓</u>		<u>✓</u>		<u>✓</u>	
<u>1</u>		<u>3-5</u>		<u>61</u>		<u>41</u>		<u>✓</u>		<u>✓</u>		<u>✓</u>		<u>✓</u>		<u>✓</u>		<u>✓</u>		<u>✓</u>		<u>✓</u>		<u>✓</u>		<u>✓</u>		<u>✓</u>		<u>✓</u>		<u>✓</u>		<u>✓</u>	
<u>2</u>		<u>3-5</u>		<u>61</u>		<u>41</u>		<u>✓</u>		<u>✓</u>		<u>✓</u>		<u>✓</u>		<u>✓</u>		<u>✓</u>		<u>✓</u>		<u>✓</u>		<u>✓</u>		<u>✓</u>		<u>✓</u>		<u>✓</u>		<u>✓</u>		<u>✓</u>	
<u>3</u>		<u>3-7</u>		<u>61</u>		<u>41</u>		<u>✓</u>		<u>✓</u>		<u>✓</u>		<u>✓</u>		<u>✓</u>		<u>✓</u>		<u>✓</u>		<u>✓</u>		<u>✓</u>		<u>✓</u>		<u>✓</u>		<u>✓</u>		<u>✓</u>		<u>✓</u>	
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<b>Relinquished By:</b> <u>Kim Wilson</u>		<b>Date:</b> <u>9/8/16</u>		<b>Received By:</b> <u>Speci Jensen</u>		<b>Time:</b>		<b>Sample Condition</b>		<b>CHECKED BY:</b> <u>Kim Wilson</u>		<b>Phone Result:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Add'l Phone #:		<b>Fax Result:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Add'l Fax #:		<b>REMARKS:</b> <u>Kimberly added Cl</u>																			
<b>Delivered By: (Circle One)</b>		<b>Sampler - UPS - Bus - Other:</b>		<b>Time:</b>		<b>Sample Condition</b>		<b>CHECKED BY:</b>		<b>Phone Result:</b>		<b>Fax Result:</b>																							
<u>5.10</u>		<u>5.10</u>		<u>5.10</u>		<u>5.10</u>		<u>5.10</u>		<u>5.10</u>		<u>5.10</u>																							

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476