



DAVID FEATHER  
ENVIRONMENTAL SUPERVISOR  
DIRLCT: (432) 818-1615  
E MAIL: DAVID.FEATHER@APACHECORP.COM

October 30, 2019

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

RE: 1RP-3066 South Eunice Seven Rivers Queen Unit 428

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 June 18, 2010. 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 October 24, 2019



**Bruce Baker**

**South Eunice Seven Rivers Queen Unit #428**  
**Closure Report**

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**API NO. 30-025-09017**

**1RP-06-14-3066**

**Release Date: 06/18/2010**

**U/L M, Section 24, Township 22S, Range 36E**

**Lea County, NM**

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**10/24/19**

**Prepared By:**

**Hungry Horse, LLC**

**4024 Plains Hwy**

**Lovington, NM 88260**

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October 24, 2019

New Mexico Energy, Minerals, & Natural Resources  
Oil Conservation Division, Environmental Bureau – District I  
1625 N. French Dr.  
Hobbs, NM 88240-9273

**RE: TERMINATION REQUEST**  
**Apache Corporation – South Eunice Seven Rivers Queen Unit #428**  
**U/L M, Section 24, Township 22S, Range 36E**  
**API No. 30-025-09017**

To Whom it May Concern,

Apache Corporation has retained Hungry Horse, LLC to address the potential environmental concerns at the site referenced above.

#### **Background and Previous Work**

The site had an accidental discharge of produced water associated with the SESRQU #428 (South Eunice Seven Rivers Queen Unit #428) on June 18<sup>th</sup>, 2010. It was determined that external corrosion was found on the 1 ½" cement lined pipe that was buried. When the release surfaced, approximately 50bbls of produced water was released with recovering 30bbls of produced water. The saturated soil was immediately excavated and hauled to Sundance Services. The Initial C-141 (Release Notification and Corrective Action) was submitted on July 18<sup>th</sup>, 2010. Apache Corporation contacted Larry Johnson with the NMOCD on June 18<sup>th</sup> at approximately 4:15pm.

On July 10<sup>th</sup> of 2010, Apache personnel conducted final sampling of the release area and submitted to Cardinal Laboratories. Initial samples were collected and field tested. Once the excavation was completed, final samples were confirmed by lab analysis to be under the NMOCD Rules and Regulations. Site was backfilled with clean soil and reseeded. Attached you will find a site map dated back to August of 2011. The release point was south of the well pad for the SESRQU #428 in the pasture, a road was constructed to get to the release point for haul-off access. The contaminated soil was excavated and hauled to Sundance Services. Backfill from Strain Ranch was brought in for backfilling of the site.

The closure sample data obtained at the time of the excavation was only tested for chloride impacted soil and was confirmed by Cardinal Laboratories and are as follows:

#### **2010 Sample Data**

<b>Sample ID</b>	<b>Chlorides</b>
SP1	16
SP2	16
SP3	<16
SP4	112
SP5	96

## Groundwater Information

According to the New Mexico Office of the State Engineer, the ground water depth at this site ranges from 22'bgs to 55'bgs. Below you will find the ground water information for the site listed herein:

CP00776 POD1: 1922' from site and no ground water was notated

E03808 POD1: 2433' from site with 55'dgw

CP00609: 2461' from site at 22'dgw

Hungry Horse used the depth of ground water found above as the basis of the Closure Criteria for Soils impacted by a release and is listed below for the new rule dated August 14<sup>th</sup>, 2018. The site was delineated using the new criteria. Below you will find the closure criteria for the South Eunice Seven Rivers Unit #428:

Closure for Soils Impacted by a Release			
Depth	Constituent	Method	Limit
51' to 100'	Chloride	EPA 300.00 or SM4500 CL B	10,000 mg/kg
	TPH (GRO, DRO, MRO)	EPA SW-846 Method 8015M	2,500 mg/kg
	GRO+DRO	EPA SW-846 Method 8015M	1,000 mg/kg
	BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8260B	10 mg/kg

Based on the condition of the site, it was determined that the site had been remediated in 2010, with that being said further delineation took place to confirm prior remediation.

## Delineation

At this time Hungry Horse staff began taking samples on September 6<sup>th</sup>, 2019. The horizontal soil samples were not tested in the field but delivered immediately to Cardinal Laboratories for analysis. The previously impacted area had sufficient vegetation. The site was delineated by use of hand auger to keep from disturbing the previously seeded area. The impacted area was sampled using 1' intervals and footages were alternated between chloride only every other foot to chloride, BTEX, and TPH. Below you will find the lab analysis confirmed by Cardinal Lab:

Sample ID	Footage	BTEX	CHLORIDE	TPH
CENTER SP1	1'	<0.300	<16	<10
CENTER SP1	2'		32	
WEST SP1	1'	<0.300	32	<10
WEST SP1	2'		928	
WEST SP1	3'	<0.300	1330	<10
WEST SP1	4'		1140	
WEST SP1	5'	<0.300	1070	<10
NORTH SP1	1'	<0.300	32	<10

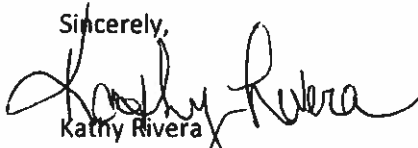
NORTH SP1	2'		48	
EAST SP1	1'	<0.300	<16	<10
EAST SP1	2'		<16	
EAST SP1	3'	<0.300	<32	<10
EAST SP1	4'		80	
EAST SP1	5'	<0.300	432	<10
SOUTH SP1	1'	<0.300	16	<10

### Conclusion

Based on the previous delineation and remediation conducted in 2010 and the further delineation in 2019, along with sufficient vegetation Apache Corporation respectfully requests closure of the regulatory file for this site. This will include a variance for the west sample point area due to the concentrations being over 1000 mg/kg below 4' bgs.

Apache Corporation appreciates the opportunity to work with you on this project. Please Call Bruce Baker at 432-631-6982 if you have any questions or concerns.

Sincerely,



Kathy Rivera  
Environmental Office Manager  
Hungry Horse, LLC.  
4024 Plains Highway  
Lovington, NM 88260  
Cell (575) 441-4374  
[tjennings@hungry-horse.com](mailto:tjennings@hungry-horse.com)

### Attachments:

- Initial C-141
- Historical/Present Site Map
- Groundwater Information
- Historical Lab Analysis
- Current Sample Data
- Current Lab Analysis



# AE Order Number Banner

## Report Description

This report shows an AE Order Number in Barcode format for purposes of scanning. The Barcode format is Code 39.



**App Number:** pJXK1606056300

**1RP -**

**APACHE CORP**

2/29/2016

MAR 01 2016

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

RECEIVED

AUG 04 2010

HOBBSOCD

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 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. 575-390-4186
Facility Name South Eunice Seven Rivers Queen Unit #428	Facility Type Injection well

Surface Owner Deck Estate	Mineral Owner State of NM	Lease No. 30-025-09017
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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
M	24	22S	36E	467'	FNL	467'	FWL	Lea

Latitude \_\_\_\_\_ Longitude \_\_\_\_\_

#### NATURE OF RELEASE

Type of Release Produced Water	Volume of Release 50	Volume Recovered 30
Source of Release Injection line leak	Date and Hour of Occurrence 06/18/2010 302pm	Date and Hour of Discovery 06/18/2010 302pm
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Larry Johnson	
By Whom? Natalie Gladden	Date and Hour 06/18/2010 415pm	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.\*

WATER @ 120'



Describe Cause of Problem and Remedial Action Taken.\*

External corrosion on 1 1/2" cement lined pipe that was buried surfaced with releasing approx 50bbls of produced water and recovering approx 30bbls of fluid. Immediately the saturated soil was excavated and hauled to Sundance Services.

Describe Area Affected and Cleanup Action Taken.\*

Contaminated soil will be excavated and remediated according to the NMOCD Rules and Regulations to closure.

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 Specialist	
Title: EHS Environmental Tech	Approval Date: 08/04/10	Expiration Date: 10/04/10
E-mail Address: natalie.gladden@apachecorp.com	Conditions of Approval: SUBMIT FINAL C-141 BY 10/04/10	Attached <input type="checkbox"/>
Date: 07/18/2010 Phone: 575-390-4186		IRP-06-14-3066

\* Attach Additional Sheets If Necessary

State of New Mexico  
Oil Conservation Division

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>55</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 <b>not</b> on an exploration, development, production, or storage site?	<input checked="" type="checkbox"/> Yes <input 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 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.



State of New Mexico  
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

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

Printed Name: Bruce BakerTitle: Environmental Tech. SRSignature: Bruce BakerDate: 10-30-19email: Larry.baker@apachecorp.comTelephone: 432-631-6982**OCD Only**

Received by: \_\_\_\_\_

Date: \_\_\_\_\_

State of New Mexico  
Oil Conservation Division

Incident ID	1RP-3066
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: 10-30-19  
email: larry.baker@apachecorp.com Telephone: 432-631-6982

**OCD Only**

Received by: Cristina Eads Date: 12/20/2019

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: Denied Date: 01/10/2020  
Printed Name: Cristina Eads Title: Environmental Specialist

## Apache Corporation

South Eunice Seven Rivers Queen Unit #428  
Release Date: 06/08/2010  
API No: 30-025-09017  
Impacted Area: 40,272 Sq. Ft.  
Map View August of 2011

## Legend

- SESRQU #428 Well Pa
- Release Point

SESRQU #428

Release Area

Google Earth

© 2011 Google

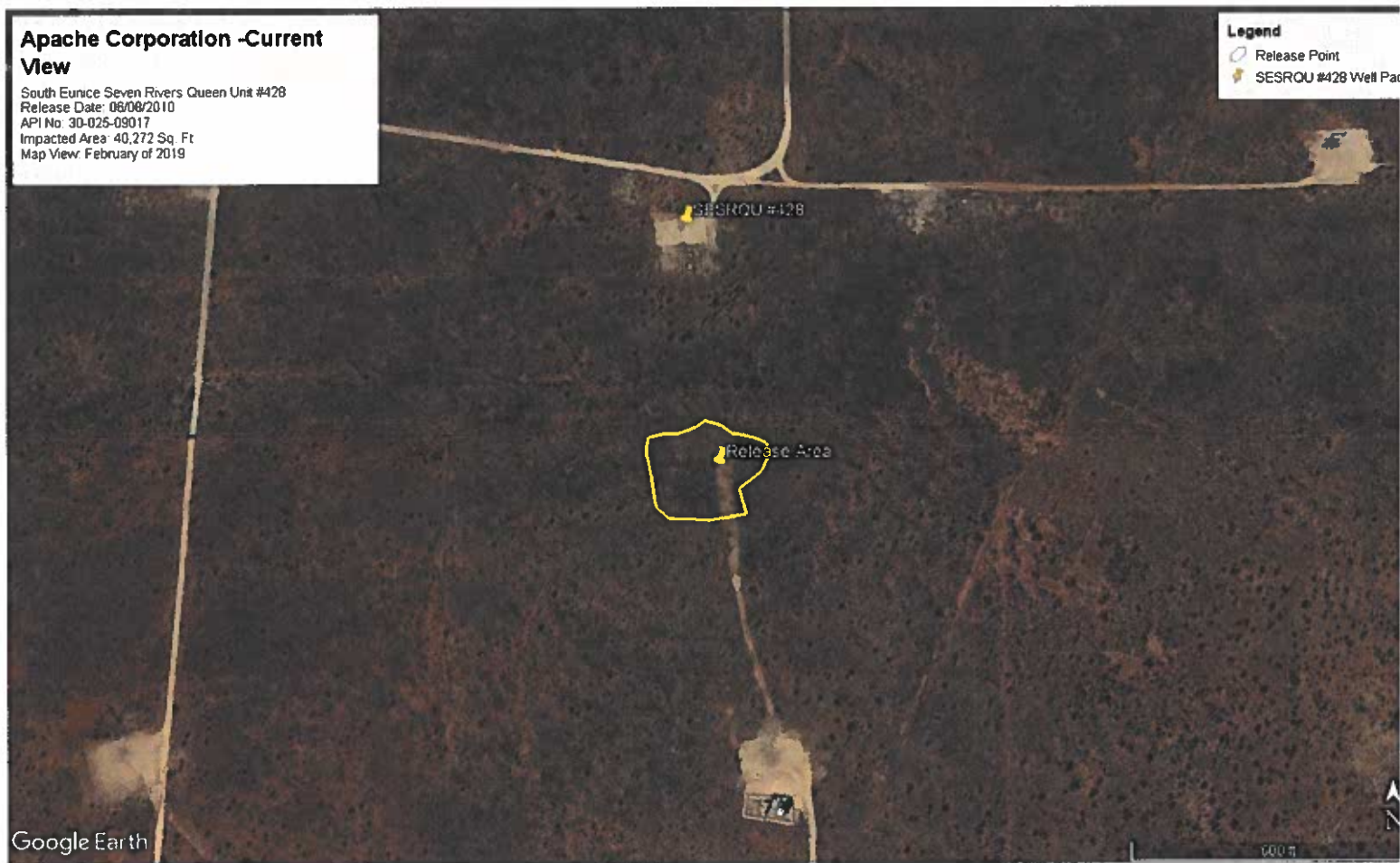
600 ft

**Apache Corporation -Current View**

South Eunice Seven Rivers Queen Unit #428  
Release Date: 06/08/2010  
API No: 30-025-09017  
Impacted Area: 40,272 Sq. Ft  
Map View: February of 2019

**Legend**

- Release Point
- SESROU #428 Well Pad





# 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)

<b>Well Tag</b>	<b>POD Number</b>	<b>Q64 Q16 Q4</b>	<b>Sec</b>	<b>Tws</b>	<b>Rng</b>	<b>X</b>	<b>Y</b>
	CP 00609	1 3 4	22	22S	36E	664451	3583098*

<b>Driller License:</b> 208	<b>Driller Company:</b> VAN NOY, W.L.	
<b>Driller Name:</b> VAN NOY, W.L.		
<b>Drill Start Date:</b> 06/06/1980	<b>Drill Finish Date:</b> 06/28/1980	<b>Plug Date:</b>
<b>Log File Date:</b> 07/01/1980	<b>PCW Rcv Date:</b>	<b>Source:</b> Shallow
<b>Pump Type:</b>	<b>Pipe Discharge Size:</b>	<b>Estimated Yield:</b>
<b>Casing Size:</b> 6.63	<b>Depth Well:</b> 199 feet	<b>Depth Water:</b> 22 feet

<b>Water Bearing Stratifications:</b>	<b>Top</b>	<b>Bottom</b>	<b>Description</b>
	177	199	Sandstone/Gravel/Conglomerate

<b>Casing Perforations:</b>	<b>Top</b>	<b>Bottom</b>
	175	199

\*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.





# 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

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

Water Bearing Stratifications:	Top	Bottom	Description
	35	55	Limestone/Dolomite/Chalk

Casing Perforations:	Top	Bottom
	30	50
	105	125

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.



PHONE (876) 393-2336 • 101 E. MARLAND • HOBBS, NM 88240

August 09, 2010

NATALIE GLADDEN

APACHE - EUNICE

P. O. BOX 1849

EUNICE, NM 88231

RE: SRQU #428

Enclosed are the results of analyses for samples received by the laboratory on 07/30/10 17:08.

Cardinal Laboratories is accredited through Texas NELAP for:

Method SW-846 8021	Benzene, Toluene, Ethyl Benzene, and Total Xylenes
Method SW-846 8260	Benzene, Toluene, Ethyl Benzene, and Total Xylenes
Method TX 1005	Total Petroleum Hydrocarbons

Certificate number T104704398-08-TX. Accreditation applies to solid and chemical materials and non-potable water matrices.

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 (V2, V3)

Accreditation applies to public drinking water matrices.

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

Sincerely,

Celey D. Keene  
Lab Director/Quality Manager



PHONE (575) 383-2228 • 181 E. FARLAND • HOBBS, NM 88240

**Analytical Results For:**

APACHE - EUNICE  
NATALIE GLADDEN  
P. O. BOX 1849  
EUNICE NM, 88231  
Fax To: 394-2425

Received: 07/30/2010  
Reported: 08/09/2010  
Project Name: SRQU #428  
Project Number: NOT GIVEN  
Project Location: SRQU #428

Sampling Date: 07/10/2010  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Jodi Henson

**Sample ID: SP1 (H020497-01)**

Chloride, SM4500Cl-B			mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	08/04/2010	ND	432	108	400	3.64		

**Sample ID: SP2 (H020497-02)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	08/04/2010	ND	432	108	400	3.64	

**Sample ID: SP3 (H020497-03)**

Chloride, SM4500Cl-B			mg/kg		Analyzed By: HM				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	08/04/2010	ND	432	108	400	3.64	

**Sample ID: SP4 (H020497-04)**

Chloride, SM4500Cl-B			mg/kg		Analyzed By: HM				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	08/04/2010	ND	432	108	400	3.64	

**Sample ID: SP5 (H020497-05)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	08/04/2010	ND	432	108	400	3.64	

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analysis. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruption, loss of use, or loss of profits incurred by client, as a consequence, omission or satisfactory stamp out of or related to the performance of the services furnished 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) 383-2338 • 501 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

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and claim'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 material or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or customers 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 pertain only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Caley D. Keene, Lab Director/Quality Manager



**ARDINAL LABORATORIES**  
101 East Marland, Hobbs, NM 88240  
(876) 393-2326 FAX (876) 393-3476

**CHAIN-OF-CUSTODY AND ANALYSIS REQUEST**

Company Name: <u>Apache</u>		<b>BILL TO</b>		<b>ANALYSIS REQUEST</b>															
Project Manager: <u>Catalie Gladden</u>		P.O. #:																	
Address:		Company:																	
City: State: Zip:		Attn:																	
Phone #: Fax #:		Address:																	
Project #:		Project Owner:														City:			
Project Name:		State: Zip:																	
Project Location: <u>SEAN #428</u>		Phone #:																	
Sampler Name:		Fax #:																	
FOR LAB USE ONLY	Lab I.D.	Sample I.D.	CONTAINERS	MATRIX	PRESERV	SAMPLING	CIC												
			GROUNDWATER	WASTEWATER	SOIL	OIL							SLUDGE	OTHER	ACIDBASE	ICE / COOL	OTHER	DATE	TIME
	<u>B20497-1</u>	<u>SP1</u>																<u>7/20</u>	<u>2:15</u>
	<u>2</u>	<u>2</u>																	
	<u>3</u>	<u>3</u>																	
	<u>4</u>	<u>4</u>																	
	<u>5</u>	<u>5</u>																	

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Relinquished By: <u>Catalie Gladden</u>	Date: <u>7-30</u>	Received By: <u>Jodi Henson</u>	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #: _____
Relinquished By: _____	Date: _____	Received By: _____	Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #: _____
Delivered By: (Circle One)	Time: <u>5:00</u>	Sample Condition: <u>25°C</u>	REMARKS: <u>Email</u>	
Sampler - UPS - Bus - Other:	Time: _____	Checked by: <u>JH</u>		

FORM-006  
Revision 1.0

† Cardinal cannot accept verbal changes. Please fax written changes to 876-393-3476

#26

Page 4 of 4

Apache Corporation: SESRU #428

Release Date: 06/18/2010

**2010 Sample Data**

Sample ID	Chlorides
SP1	16
SP2	16
SP3	<16
SP4	112
SP5	96

**2019 Sample Data**

Sample ID	FT	BTEX	CHLORIDE	TPH
CENTER SP1	1'	<0.300	<16	<10
CENTER SP1	2'		32	
WEST SP1	1'	<0.300	32	<10
WEST SP1	2'		928	
WEST SP1	3'	<0.300	1330	<10
WEST SP1	4'		1140	
WEST SP1	5'	<0.300	1070	<10
NORTH SP1	1'	<0.300	32	<10
NORTH SP1	2'		48	
EAST SP1	1'	<0.300	<16	<10
EAST SP1	2'		<16	
EAST SP1	3'	<0.300	<32	<10
EAST SP1	4'		80	
EAST SP1	5'	<0.300	432	<10
SOUTH SP1	1'	<0.300	16	<10



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---

September 13, 2019

BRUCE BAKER

APACHE CORP - HOBBS

2350 W. MARLAND BLVD.

HOBBS, NM 88240

RE: SEVEN RIVERS QUEEN #428

Enclosed are the results of analyses for samples received by the laboratory on 09/10/19 12:15.

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](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,

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: 09/10/2019  
Reported: 09/13/2019  
Project Name: SEVEN RIVERS QUEEN #428  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 09/06/2019  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: CENTER SP - 1' (H903116-01)**

BTX 80218		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/12/2019	ND	2.15	107	2.00	3.80	
Toluene*	<0.050	0.050	09/12/2019	ND	1.88	93.8	2.00	3.15	
Ethylbenzene*	<0.050	0.050	09/12/2019	ND	1.88	94.1	2.00	3.58	
Total Xylenes*	<0.150	0.150	09/12/2019	ND	5.72	95.4	6.00	3.47	
Total BTX	<0.300	0.300	09/12/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 95.7 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	09/11/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/11/2019	ND	214	107	200	1.48	
DRO >C10-C28*	<10.0	10.0	09/11/2019	ND	215	108	200	2.86	
EXT DRO >C28-C36	<10.0	10.0	09/11/2019	ND					

Surrogate: 1-Chlorooctane 83.5 % 41-142

Surrogate: 1-Chlorooctadecane 89.2 % 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: 09/10/2019  
Reported: 09/13/2019  
Project Name: SEVEN RIVERS QUEEN #428  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 09/06/2019  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: CENTER SP - 2' (H903116-02)**

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	09/11/2019	ND	416	104	400	0.00	

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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: 09/10/2019  
Reported: 09/13/2019  
Project Name: SEVEN RIVERS QUEEN #428  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 09/06/2019  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: WEST SP - 1' (H903116-03)**

BTX 80218		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/12/2019	ND	2.15	107	2.00	3.80	
Toluene*	<0.050	0.050	09/12/2019	ND	1.88	93.8	2.00	3.15	
Ethylbenzene*	<0.050	0.050	09/12/2019	ND	1.88	94.1	2.00	3.58	
Total Xylenes*	<0.150	0.150	09/12/2019	ND	5.72	95.4	6.00	3.47	
Total BTX	<0.300	0.300	09/12/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 96.1 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	09/11/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/12/2019	ND	214	107	200	1.48	
DRO >C10-C28*	<10.0	10.0	09/12/2019	ND	215	108	200	2.86	
EXT DRO >C28-C36	<10.0	10.0	09/12/2019	ND					

Surrogate: 1-Chlorooctane 83.8 % 41-142

Surrogate: 1-Chlorooctadecane 89.8 % 37.6-147

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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: 09/10/2019  
Reported: 09/13/2019  
Project Name: SEVEN RIVERS QUEEN #428  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 09/06/2019  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: WEST SP - 2' (H903116-04)**

Chloride, SM4500CI-B

mg/kg

Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	928	16.0	09/11/2019	ND	416	104	400	0.00	

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*Ceiley D. Keene*

Ceiley 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: 09/10/2019  
Reported: 09/13/2019  
Project Name: SEVEN RIVERS QUEEN #428  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 09/06/2019  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: WEST SP - 3' (H903116-05)**

BTX 8021B			mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/12/2019	ND	2.15	107	2.00	3.80		
Toluene*	<0.050	0.050	09/12/2019	ND	1.88	93.8	2.00	3.15		
Ethylbenzene*	<0.050	0.050	09/12/2019	ND	1.88	94.1	2.00	3.58		
Total Xylenes*	<0.150	0.150	09/12/2019	ND	5.72	95.4	6.00	3.47		
Total BTX	<0.300	0.300	09/12/2019	ND						

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1330	16.0	09/11/2019	ND	416	104	400	0.00		
TPH 8015M		mg/kg		Analyzed By: MS						

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/11/2019	ND	214	107	200	4.27	
DRO >C10-C28*	<10.0	10.0	09/11/2019	ND	217	109	200	7.72	
EXT DRO >C28-C36	<10.0	10.0	09/11/2019	ND					

Surrogate: 1-Chlorooctane 87.6 % 41-142

Surrogate: 1-Chlorooctadecane 94.5 % 37.6-147

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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: 09/10/2019  
Reported: 09/13/2019  
Project Name: SEVEN RIVERS QUEEN #428  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 09/06/2019  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: WEST SP - 4' (H903116-06)**

Chloride, SM4500Cl-B

mg/kg

Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1140	16.0	09/11/2019	ND	416	104	400	0.00	

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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:	09/10/2019	Sampling Date:	09/06/2019
Reported:	09/13/2019	Sampling Type:	Soil
Project Name:	SEVEN RIVERS QUEEN #428	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

**Sample ID: WEST SP - 5' (H903116-07)**

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/12/2019	ND	2.15	107	2.00	3.80	
Toluene*	<0.050	0.050	09/12/2019	ND	1.88	93.8	2.00	3.15	
Ethylbenzene*	<0.050	0.050	09/12/2019	ND	1.88	94.1	2.00	3.58	
Total Xylenes*	<0.150	0.150	09/12/2019	ND	5.72	95.4	6.00	3.47	
Total BTEX	<0.300	0.300	09/12/2019	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1070	16.0	09/11/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/11/2019	ND	214	107	200	4.27	
DRO >C10-C28*	<10.0	10.0	09/11/2019	ND	217	109	200	7.72	
EXT DRO >C28-C36	<10.0	10.0	09/11/2019	ND					

Surrogate: 1-Chlorooctane 93.0 % 41-142

Surrogate: 1-Chlorooctadecane 99.8 % 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:	09/10/2019	Sampling Date:	09/06/2019
Reported:	09/13/2019	Sampling Type:	Soil
Project Name:	SEVEN RIVERS QUEEN #428	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

**Sample ID: NORTH SP - 1' (H903116-08)**

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/12/2019	ND	2.15	107	2.00	3.80	
Toluene*	<0.050	0.050	09/12/2019	ND	1.88	93.8	2.00	3.15	
Ethylbenzene*	<0.050	0.050	09/12/2019	ND	1.88	94.1	2.00	3.58	
Total Xylenes*	<0.150	0.150	09/12/2019	ND	5.72	95.4	6.00	3.47	
Total BTEX	<0.300	0.300	09/12/2019	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	09/11/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/11/2019	ND	214	107	200	4.27	
DRO >C10-C28*	<10.0	10.0	09/11/2019	ND	217	109	200	7.72	
EXT DRO >C28-C36	<10.0	10.0	09/11/2019	ND					

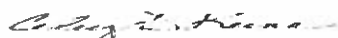
Surrogate: 1-Chlorooctane 93.3 % 41-142

Surrogate: 1-Chlorooctadecane 99.7 % 37.6-147

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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: 09/10/2019  
Reported: 09/13/2019  
Project Name: SEVEN RIVERS QUEEN #428  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 09/06/2019  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: NORTH SP - 2' (H903116-09)**

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	09/11/2019	ND	416	104	400	0.00	

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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: 09/10/2019  
Reported: 09/13/2019  
Project Name: SEVEN RIVERS QUEEN #428  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 09/06/2019  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: EAST SP - 1' (H903116-10)**

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/12/2019	ND	2.15	107	2.00	3.80	
Toluene*	<0.050	0.050	09/12/2019	ND	1.88	93.8	2.00	3.15	
Ethylbenzene*	<0.050	0.050	09/12/2019	ND	1.88	94.1	2.00	3.58	
Total Xylenes*	<0.150	0.150	09/12/2019	ND	5.72	95.4	6.00	3.47	
Total BTEX	<0.300	0.300	09/12/2019	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	09/11/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/11/2019	ND	214	107	200	4.27	
DRO >C10-C28*	<10.0	10.0	09/11/2019	ND	217	109	200	7.72	
EXT DRO >C28-C36	<10.0	10.0	09/11/2019	ND					

Surrogate: 1-Chlorooctane 90.2 % 41-142

Surrogate: 1-Chlorooctadecane 96.5 % 37.6-147

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: 09/10/2019  
Reported: 09/13/2019  
Project Name: SEVEN RIVERS QUEEN #428  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 09/06/2019  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: EAST SP - 2' (H903116-11)****Chloride, SM4500Cl-B****mg/kg****Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	09/11/2019	ND	416	104	400	0.00	

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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:	09/10/2019	Sampling Date:	09/06/2019
Reported:	09/13/2019	Sampling Type:	Soil
Project Name:	SEVEN RIVERS QUEEN #428	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

**Sample ID: EAST SP - 3' (H903116-12)**

BTEX 8021B		mg/kg	Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/12/2019	ND	2.15	107	2.00	3.80	
Toluene*	<0.050	0.050	09/12/2019	ND	1.88	93.8	2.00	3.15	
Ethylbenzene*	<0.050	0.050	09/12/2019	ND	1.88	94.1	2.00	3.58	
Total Xylenes*	<0.150	0.150	09/12/2019	ND	5.72	95.4	6.00	3.47	
Total BTEX	<0.300	0.300	09/12/2019	ND					

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

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	09/11/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/11/2019	ND	214	107	200	4.27	
DRO >C10-C28*	<10.0	10.0	09/11/2019	ND	217	109	200	7.72	
EXT DRO >C28-C36	<10.0	10.0	09/11/2019	ND					

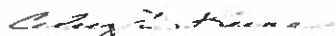
Surrogate: 1-Chlorooctane 91.1 % 41-142

Surrogate: 1-Chlorooctadecane 97.8 % 37.6-147

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\*=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: 09/10/2019  
Reported: 09/13/2019  
Project Name: SEVEN RIVERS QUEEN #428  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 09/06/2019  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: EAST SP - 4' (H903116-13)**

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	09/11/2019	ND	432	108	400	0.00	

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*Celey D. Keene*

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: 09/10/2019  
Reported: 09/13/2019  
Project Name: SEVEN RIVERS QUEEN #428  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 09/06/2019  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: EAST SP - 5' (H903116-14)**

BTEX 80218			mg/kg		Analyzed By: BF				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/11/2019	ND	1.99	99.4	2.00	0.0332	
Toluene*	<0.050	0.050	09/11/2019	ND	2.00	100	2.00	1.34	
Ethylbenzene*	<0.050	0.050	09/11/2019	ND	2.03	102	2.00	0.393	
Total Xylenes*	<0.150	0.150	09/11/2019	ND	6.08	101	6.00	0.808	
Total BTEX	<0.300	0.300	09/11/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 87.7 % 73.3-129

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AC				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	432	16.0	09/11/2019	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	09/11/2019	ND	214	107	200	4.27	
DRO >C10-C28*	<10.0	10.0	09/11/2019	ND	217	109	200	7.72	
EXT DRO >C28-C36	<10.0	10.0	09/11/2019	ND					

Surrogate: 1-Chlorooctane 92.1 % 41-142

Surrogate: 1-Chlorooctadecane 98.9 % 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: 09/10/2019  
Reported: 09/13/2019  
Project Name: SEVEN RIVERS QUEEN #428  
Project Number: NONE GIVEN  
Project Location: NOT GIVEN

Sampling Date: 09/06/2019  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: SOUTH SP - 1' (H903116-15)**

BTEX 8021B			mg/kg		Analyzed By: 8F				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/11/2019	ND	1.99	99.4	2.00	0.0332	
Toluene*	<0.050	0.050	09/11/2019	ND	2.00	100	2.00	1.34	
Ethylbenzene*	<0.050	0.050	09/11/2019	ND	2.03	102	2.00	0.393	
Total Xylenes*	<0.150	0.150	09/11/2019	ND	6.08	101	6.00	0.808	
Total BTEX	<0.300	0.300	09/11/2019	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 89.5 % 73.3-129

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AC				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	09/11/2019	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	09/11/2019	ND	214	107	200	4.27	
DRO >C10-C28*	<10.0	10.0	09/11/2019	ND	217	109	200	7.72	
EXT DRO >C28-C36	<10.0	10.0	09/11/2019	ND					

Surrogate: 1-Chlorooctane 86.5 % 41-142

Surrogate: 1-Chlorooctadecane 93.2 % 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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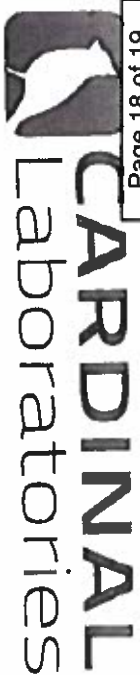
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**Celey D. Keene, Lab Director/Quality Manager**



1058

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240

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

Company Name: <b>Apacorp Corp</b>		P.O. #:		<b>BILL TO</b>		<b>ANALYSIS REQUEST</b>	
Project Manager:		Company: <b>Apacorp Corp</b>					
Address:		Attn: <b>Bruce Baker</b>					
City:		Address: <b>2350 Marland</b>					
State:		City: <b>18005</b>					
Zip:		State: <b>NM</b>					
Phone #:		Fax #:					
Project #:		Project Owner:					
Project Name:		State: <b>NM</b>					
Project Location: <b>Seven Rivers Queen #428</b>		Zip: <b>88240</b>					
Sample Name:		Phone #: <b>432-681-6988</b>					
FOR LAB USE ONLY		Fax #:					
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX	PRESERV.	SAMPLING	
H903116	Gen R SP-1			GROUNDWATER			
	Gen R SP-2			WASTEWATER			
	Gen R SP-3			SOIL			
	Gen R SP-4			OIL			
	Gen R SP-5			SLUDGE			
	Gen R SP-6			OTHER:			
	Gen R SP-7			ACID/BASE:			
	Gen R SP-8			ICE / COOL			
	Gen R SP-9			OTHER:			
	Gen R SP-10						
	Gen R SP-11						
	Gen R SP-12						
	Gen R SP-13						
	Gen R SP-14						
	Gen R SP-15						
	Gen R SP-16						
	Gen R SP-17						
	Gen R SP-18						
	Gen R SP-19						
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	Gen R SP-91						
	Gen R SP-92						
	Gen R SP-93						
	Gen R SP-94						
	Gen R SP-95						
	Gen R SP-96						
	Gen R SP-97						
	Gen R SP-98						
	Gen R SP-99						
	Gen R SP-100						

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Relinquished By: *[Signature]* Date: *12-15-19* Received By: *[Signature]* Date: *12-15-19*

Relinquished By: *[Signature]* Date: *12-15-19* Received By: *[Signature]* Date: *12-15-19*

Delivered By: (Circle One) *0.6c* *#47* Sample Condition: ☒ Cool ☒ Intact ☐ Yes ☐ No ☐ Yes ☐ No

Sampler - UPS - Bus - Other: *Consolidated 1.0c* CHECKED BY: *[Signature]* (Initials)

REMARKS: *1. Montanez@hugob4-horse.com*  
*2. Baker@Apacorp.com*

242

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

[illegible]