

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

**HOBBS OCD** State of New Mexico  
Energy Minerals and Natural Resources  
**MAR 28 2013** Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

**HOBBS OCD**

Form C-141  
Revised October 10, 2003

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

**RECEIVED**

**RECEIVED**

**Release Notification and Corrective Action**

**OPERATOR**

Initial Report  Final Report

Name of Company Apache Corporation	Contact Natalie Gladden
Address PO Box 1849, Eunice NM 88231	Telephone No. 575-390-4186
Facility Name Seven Rivers Queen Unit #421	Facility Type Injection well
Surface Owner Deck Estate	Mineral Owner State
Lease No. 30-025-09022	

**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
E	25	22S	36E	1980	FNL	660	FWL	Lea

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

**NATURE OF RELEASE**

Type of Release Produced Water	Volume of Release 400	Volume Recovered 15
Source of Release Injection Line	Date and Hour of Occurrence 9/27/12	Date and Hour of Discovery Same
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Geoffrey Leking	
By Whom? Natalie Gladden	Date and Hour 9/27/12	
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.\*  
  
DTW = 220'

Describe Cause of Problem and Remedial Action Taken.\*  
Injection line leaked due to line rupture releasing fluid down the right-of-way. An attempt to recover the released fluids resulted in 15 of the 400 barrels to be recovered. Saturation levels caused the vacuum trucks to get stuck, therefore all recovery efforts were stopped. The line was excavated and replaced.

Describe Area Affected and Cleanup Action Taken.\* Soil samples were taken at the surface and at depth throughout the release area. The samples were field tested for chlorides and hydrocarbons and representative samples were taken to a commercial laboratory for chloride and TPH analysis. Additional samples at depth were collected from four vertical sample points. Each vertical was advanced until two consecutive samples with concentrations below 250 mg/kg chloride were obtained. These two samples from each vertical were submitted to a commercial laboratory for chloride and TPH analyses. Based on the vertical delineation results the excavation began on October 2, 2012. The area north of the Apache pipeline was excavated to 5 and 6 ft bgs. The remaining area south of the pipeline was excavated to 4 ft bgs where a 20-mil reinforced poly liner was installed at 4 ft bgs throughout the majority of that area. Impacted soils were removed to a NMOCD approved disposal facility. The excavation was backfilled with clean, imported soil and the area was contoured to the surrounding landscape.

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>	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Natalie Gladden	Approved by District Supervisor <i>Geoffrey Leking</i> Environmental Specialist	
Title: Sr. Environmental Tech	Approval Date: 03/28/13	Expiration Date: -
E-mail Address: Natalie.gladden@apachecorp.com	Conditions of Approval: -	Attached <input type="checkbox"/>
Date: 3/28/13 Phone: 575-390-4186	IRP-06-14-3087	

\* Attach Additional Sheets If Necessary

JUN 17 2014  
NSAD1416734222  
h.



EXPLORING WHAT'S POSSIBLE

HOBBS OCD

MAR 28 2013

RECEIVED

HOBBS OCD

MAR 28 2013

RECEIVED

# APACHE CORPORATION

P.O.Box 1849  
Eunice, NM 88231  
Phone 575.394.3159

## Seven Rivers Queen Unit #421

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# Termination Report

1RP-10-12-2853

API 30-025-09022

Release Date: September 27, 2012

Unit Letter E, Section 25, Township 22S, Range 36E

# Rice Environmental Consulting & Safety

P.O. Box 5630 Hobbs, NM 88241  
Phone 575.393.4411 Fax 575.393.0293

**March 1<sup>st</sup>, 2013**

**Mr. Geoffrey Leking**

New Mexico Energy, Minerals, & Natural Resources  
Oil Conservation Division, District 1  
1625 N. French Drive  
Hobbs, New Mexico 88240

**RE: Termination Request**

**Apache Corporation – Seven Rivers Queen Unit #421**

**UL/E sec. 25 T22S R36E**

**API No. 30-025-09022**

**1RP-10-12-2853**

Mr. Leking:

Apache Corporation (Apache) has retained Rice-Environmental Consulting and Safety (RECS) to address potential environmental concerns at the above-referenced site.

## **Background and Previous Work**

The site is a result of an accidental discharge of produced water located approximately 6.5 miles southwest of Eunice, New Mexico at unit letter E, section 25 of T22S R36E. According to the New Mexico Office of the State Engineer, groundwater will likely be encountered at a depth of approximately 148 +/- feet.

On September 27, 2012, an injection line leak occurred releasing fluid down the right-of-way. A vacuum truck was dispatched and recovered 15 barrels of the 400 barrels released. The injection line was excavated and replaced. An initial C-141 was submitted by Apache on October 1<sup>st</sup>, 2012 (Appendix A)

On September 27, 2012, RECS personnel initiated work on site. Soil samples were taken at the surface and at depth throughout the release area (Figure 1). The samples were field tested for chlorides and hydrocarbons and representative samples were taken to a commercial laboratory for chloride and TPH analysis (Appendix B).

Additional samples at depth were collected from four vertical sample points on October 5, 2012 (Figure 2). Each vertical was advanced until two consecutive samples with concentrations below 250 mg/kg chloride were obtained. These two samples from each vertical were submitted to a commercial laboratory for chloride and TPH analyses (Appendix B). Chloride values decreased to less than 250 mg/kg at 13 ft below ground surface (bgs) in Vertical #2, at 14 ft bgs in Vertical #3, at 9 ft bgs in Vertical #4, and at 15 ft bgs in Vertical #5.

Based on the vertical delineation results (Figure 3), the excavation began on October 2, 2012. The area north of the Apache pipeline was excavated to 5 and 6 ft bgs. The remaining area south of the pipeline was excavated to 4 ft bgs where a 20-mil reinforced poly liner was installed at 4 ft bgs throughout the majority of that area. Impacted soils were removed to a NMOCD approved disposal facility. The excavation was backfilled with clean, imported soil and the area was contoured to the surrounding landscape. Photo documentation of these activities can be found in Appendix C.

## **Conclusion**

Due to the soil remedy having been completed per the NMOCD District 1 office, Apache respectfully requests the termination of the regulatory file for this site. The final C-141 can be found in Appendix D.

RECS appreciates the opportunity to work with you on this project. Please call me at (575) 631-5157 if you have any questions or wish to discuss the site.

Sincerely,



Bruce Baker  
Field Foreman  
RECS  
(575) 631-5157

cc Natalie Gladden – Apache Corporation

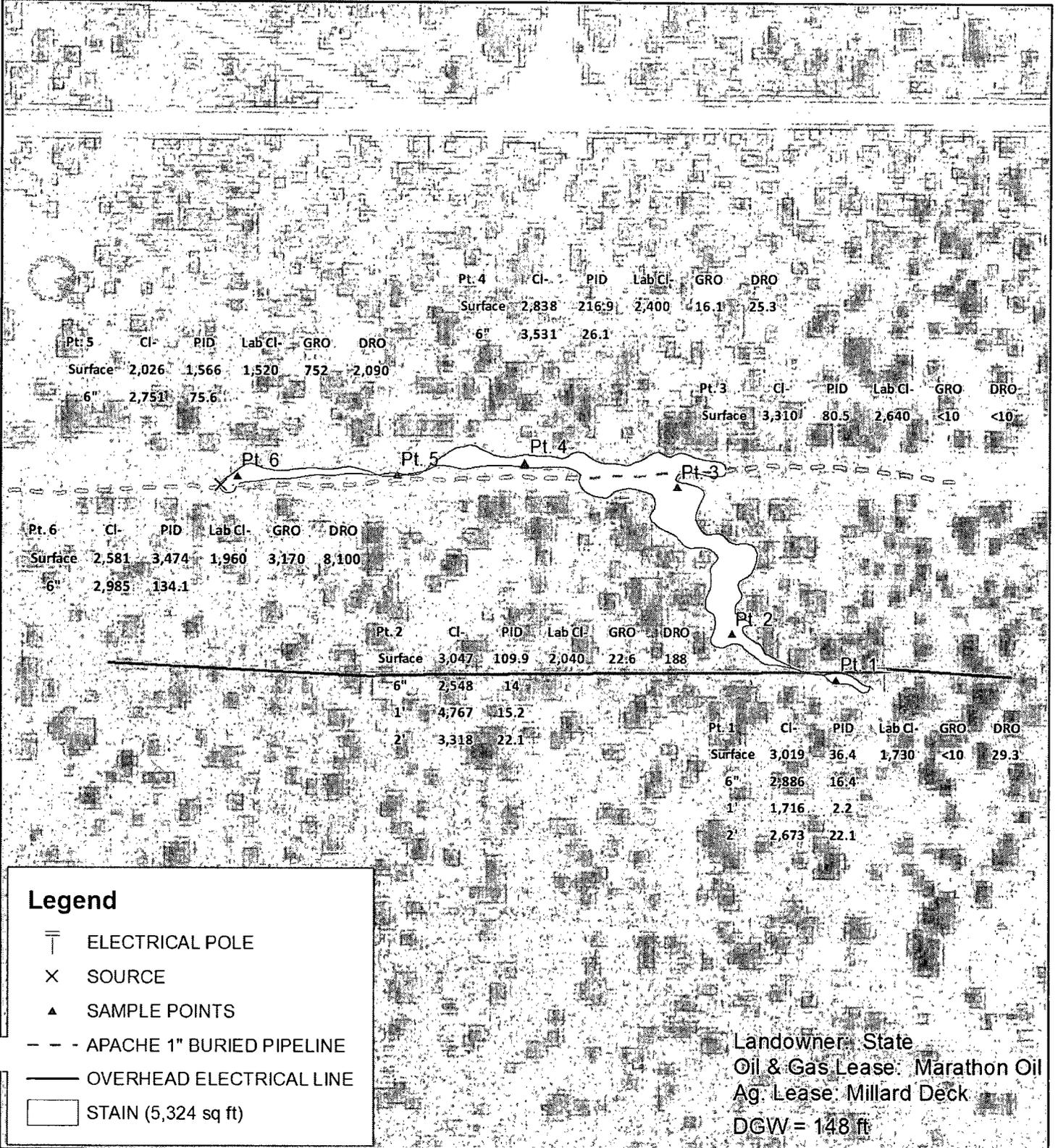
### Attachments:

- Figure 1 – Initial Sampling Data
- Figure 2 – Vertical Sampling Data
- Figure 3 – Excavation Diagram
- Appendix A – Initial C-141
- Appendix B – Laboratory Analysis
- Appendix C – Photo-documentation
- Appendix D – Final C-141

# Figures

**RICE Environmental Consulting and Safety (RECS)**  
P.O. Box 5630 Hobbs, NM 88241  
Phone 575.393.4411 Fax 575.393.0293

# Initial Sampling Data



## Legend

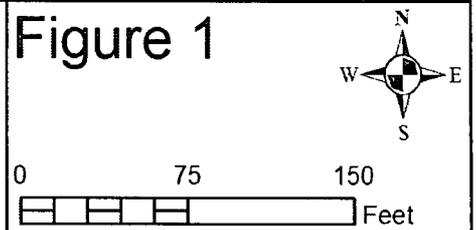
- ELECTRICAL POLE
- SOURCE
- SAMPLE POINTS
- APACHE 1" BURIED PIPELINE
- OVERHEAD ELECTRICAL LINE
- STAIN (5,324 sq ft)



## APACHE SEVEN RIVERS QUEEN UNIT #421 AD

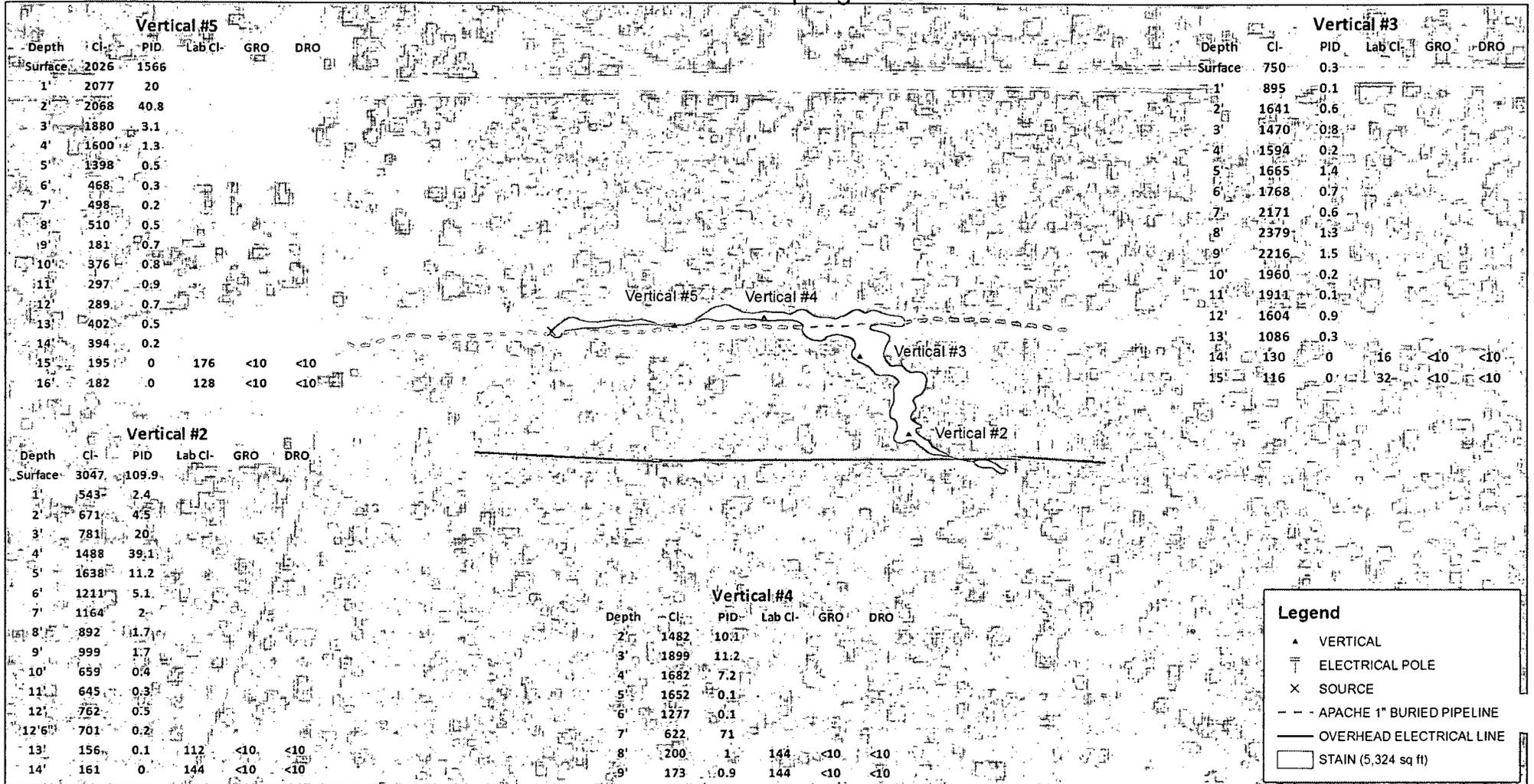
LEGALS: UL/E sec. 25  
 T-22-S R-36-E  
 LEA COUNTY, NM

### Figure 1



GPS date: 9/27/12 RP  
 Drawing date: 10/10/12  
 Drafted by: L. Weinheimer

# Vertical Sampling Data



**APACHE SEVEN  
RIVERS QUEEN  
UNIT #421 AD**  
 LEGALS: UL/E sec. 25  
 T-22-S R-36-E  
 LEA COUNTY, NM

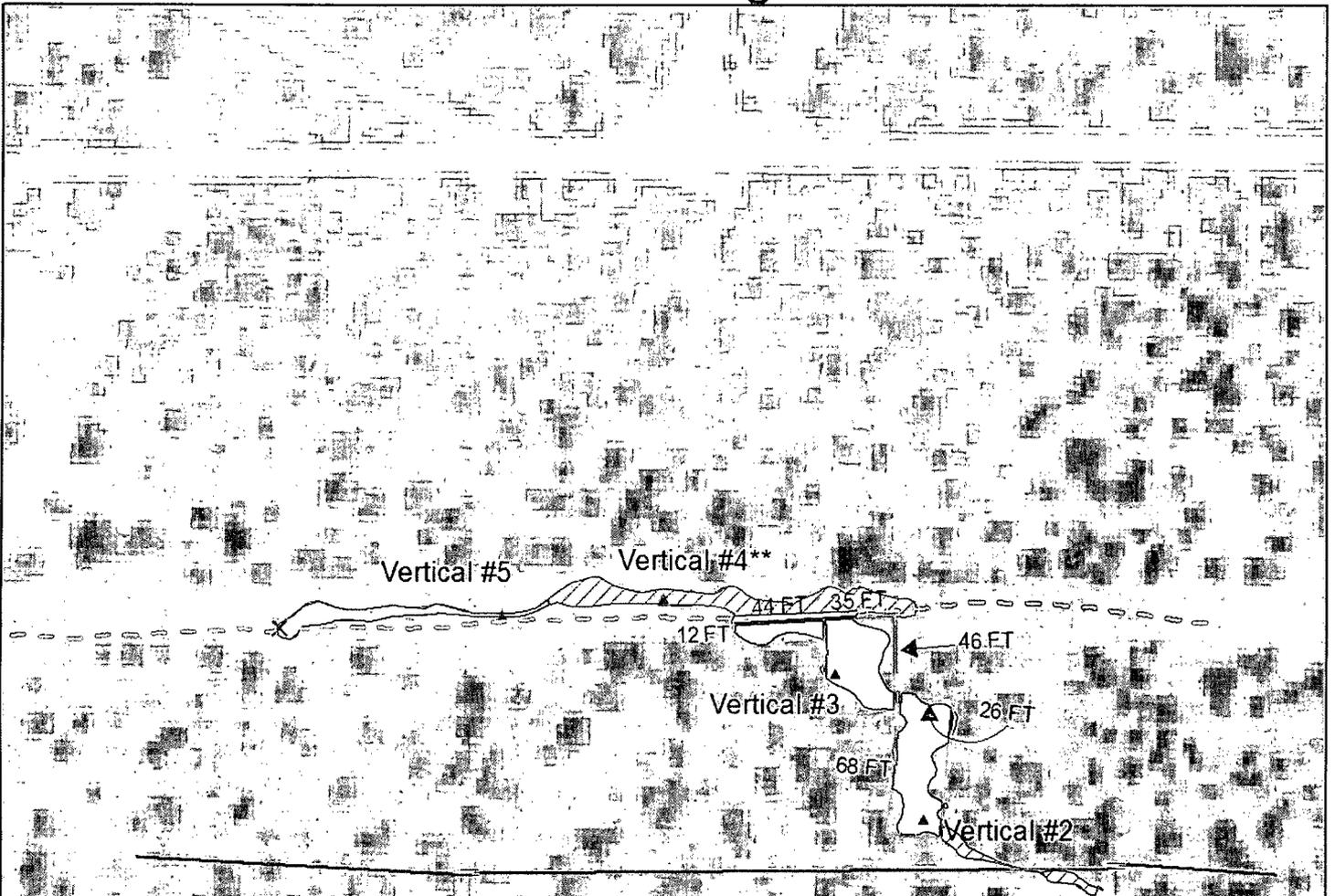
Landowner: State  
 Oil & Gas Lease: Marathon Oil  
 Ag. Lease: Millard Deck  
 DGW = 148 ft

**Figure 2**

0 75 150 Feet

GPS date: 10/4/12 JK  
 Drawing date: 10/8/12  
 Drafted by: L. Weinheimer

# Excavation Diagram



## Legend

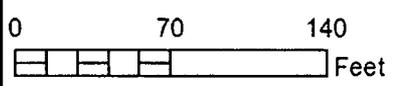
- ▲ VERTICAL
- ┆ ELECTRICAL POLE
- X SOURCE
- - - APACHE 1" BURIED PIPELINE
- OVERHEAD ELECTRICAL LINE
- ▨ EXCAVATE TO 4 FT
- ▩ EXCAVATE TO 5 FT
- ▧ EXCAVATE TO 6 FT
- PLACE LINER AT 4 FT BGS
- STAIN (5,324 sq ft)

\*\* Approximate location  
 Landowner: State  
 Oil & Gas Lease: Marathon Oil  
 Ag. Lease: Millard Deck  
 DGW = 148 ft



**APACHE SEVEN  
 RIVERS QUEEN  
 UNIT #421 AD**  
 LEGALS: UL/E sec. 25  
 T-22-S R-36-E  
 LEA COUNTY, NM

Figure 3



GPS date: 10/4/12 JK  
 Drawing date: 10/8/12  
 Drafted by: L. Weinheimer

# Appendix A

Initial C-141

**RICE Environmental Consulting and Safety (RECS)**  
P.O. Box 5630 Hobbs, NM 88241  
Phone 575.393.4411 Fax 575.393.0293

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
811 S. First St., Artesia, NM 88210  
District III  
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District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources

Form C-141  
Revised August 8, 2011

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

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

**Release Notification and Corrective Action**

**OPERATOR**

Initial Report  Final Report

Name of Company Apache Corporation	Contact Natalie Gladden
Address PO Box 1849, Eunice NM 88231	Telephone No. 575-390-4186
Facility Name Seven Rivers Queen Unit #421	Facility Type Injection Well

Surface Owner Deck Estate	Mineral Owner State	API No. 30-025-09022
---------------------------	---------------------	----------------------

**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
E	25	22S	36	1980	FNL	660	FWL	Lea

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

**NATURE OF RELEASE**

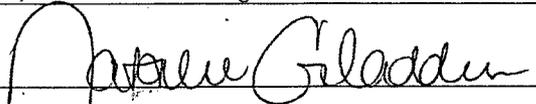
Type of Release Produced Water	Volume of Release 400	Volume Recovered 15
Source of Release Injection line	Date and Hour of Occurrence 09/27/12	Date and Hour of Discovery Same
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Geoffrey Leking	
By Whom? Natalie Gladden	Date and Hour 09/27/12	
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.\*

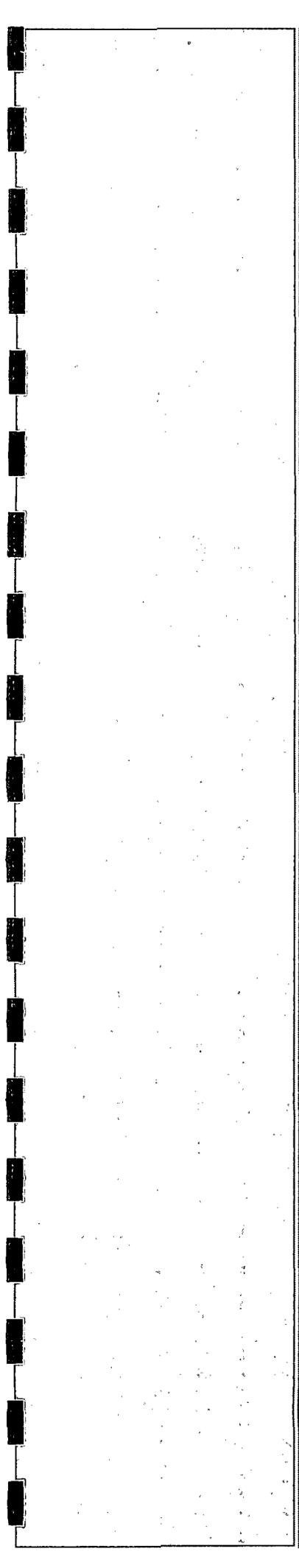
Describe Cause of Problem and Remedial Action Taken.\*  
Injection line leak due to line rupture released fluid down right-of-way. An attempt to recover the released fluids, which resulting in 15 of the 400bbls to be recovered. Saturation levels caused the vacuum trucks to get stuck, therefore all recovery efforts were stopped. The line was excavated and replaced.

Describe Area Affected and Cleanup Action Taken.\*  
All NMOCD guidelines will be followed 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: 	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Natalie Gladden	Approved by Environmental Specialist:	
Title: Sr. Environmental Tech	Approval Date:	Expiration Date:
E-mail Address: natalie.gladden@apachecorp.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 10/01/12 Phone: 575-390-4186		

\* Attach Additional Sheets If Necessary



# Appendix B

## Laboratory Analysis

**RICE Environmental Consulting and Safety (RECS)**  
P.O. Box 5630 Hobbs, NM 88241  
Phone 575.393.4411 Fax 575.393.0293

October 10, 2012

NATALIE GLADDEN

APACHE - EUNICE

P. O. BOX 1849

EUNICE, NM 88231

RE: SEVEN RIVERS QUEEN #421 AD

Enclosed are the results of analyses for samples received by the laboratory on 10/05/12 10:19.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. 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 - EUNICE  
 NATALIE GLADDEN  
 P. O. BOX 1849  
 EUNICE NM, 88231  
 Fax To: 394-2425

Received:	10/05/2012	Sampling Date:	09/27/2012
Reported:	10/10/2012	Sampling Type:	Soil
Project Name:	SEVEN RIVERS QUEEN #421 AD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Hope S. Moreno
Project Location:	EUNICE, NM		

**Sample ID: PT. 1 SURFACE (H202426-01)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>1730</b>	16.0	10/08/2012	ND	416	104	400	3.92		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	10/05/2012	ND	210	105	200	4.24		
<b>DRO &gt;C10-C28</b>	<b>29.3</b>	10.0	10/05/2012	ND	209	105	200	7.91		

Surrogate: 1-Chlorooctane	88.9 %	65.2-140
Surrogate: 1-Chlorooctadecane	93.4 %	63.6-154

**Sample ID: PT. 2 SURFACE (H202426-02)**

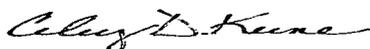
Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>2040</b>	16.0	10/08/2012	ND	416	104	400	3.92		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10</b>	<b>22.6</b>	10.0	10/05/2012	ND	210	105	200	4.24		
<b>DRO &gt;C10-C28</b>	<b>188</b>	10.0	10/05/2012	ND	209	105	200	7.91		

Surrogate: 1-Chlorooctane	90.2 %	65.2-140
Surrogate: 1-Chlorooctadecane	91.7 %	63.6-154

Cardinal Laboratories

\* = Accredited Analyte

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



Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	10/05/2012	Sampling Date:	09/27/2012
Reported:	10/10/2012	Sampling Type:	Soil
Project Name:	SEVEN RIVERS QUEEN #421 AD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Hope S. Moreno
Project Location:	EUNICE, NM		

**Sample ID: PT. 3 SURFACE (H202426-03)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>2640</b>	16.0	10/08/2012	ND	416	104	400	3.92		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	10/05/2012	ND	210	105	200	4.24		
DRO >C10-C28	<10.0	10.0	10/05/2012	ND	209	105	200	7.91		
<i>Surrogate: 1-Chlorooctane</i>	90.9 %	65.2-140								
<i>Surrogate: 1-Chlorooctadecane</i>	92.2 %	63.6-154								

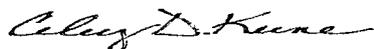
**Sample ID: PT. 4 SURFACE (H202426-04)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>2400</b>	16.0	10/08/2012	ND	416	104	400	3.92		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10</b>	<b>16.1</b>	10.0	10/05/2012	ND	210	105	200	4.24		
<b>DRO &gt;C10-C28</b>	<b>25.3</b>	10.0	10/05/2012	ND	209	105	200	7.91		
<i>Surrogate: 1-Chlorooctane</i>	78.9 %	65.2-140								
<i>Surrogate: 1-Chlorooctadecane</i>	80.5 %	63.6-154								

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	10/05/2012	Sampling Date:	09/27/2012
Reported:	10/10/2012	Sampling Type:	Soil
Project Name:	SEVEN RIVERS QUEEN #421 AD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Hope S. Moreno
Project Location:	EUNICE, NM		

**Sample ID: PT. 5 SURFACE (H202426-05)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>1520</b>	16.0	10/08/2012	ND	416	104	400	3.92		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10</b>	<b>752</b>	50.0	10/05/2012	ND	210	105	200	4.24		
<b>DRO &gt;C10-C28</b>	<b>2090</b>	50.0	10/05/2012	ND	209	105	200	7.91		

Surrogate: 1-Chlorooctane 127 % 65.2-140

Surrogate: 1-Chlorooctadecane 109 % 63.6-154

**Sample ID: PT. 6 SURFACE (H202426-06)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>1960</b>	16.0	10/08/2012	ND	416	104	400	3.92		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10</b>	<b>3170</b>	50.0	10/05/2012	ND	210	105	200	4.24		
<b>DRO &gt;C10-C28</b>	<b>8100</b>	50.0	10/05/2012	ND	209	105	200	7.91		

Surrogate: 1-Chlorooctane 211 % 65.2-140

Surrogate: 1-Chlorooctadecane 151 % 63.6-154

Cardinal Laboratories

\*=Accredited Analyte

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



Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

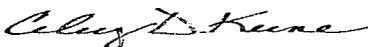
S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
QM-4X	The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration. The QC batch was accepted based on LCS and/or LCSD recoveries within the acceptance limits.
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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Cardinal Laboratories

\*=Accredited Analyte

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---

Celey D. Keene, Lab Director/Quality Manager



October 11, 2012

NATALIE GLADDEN

APACHE - EUNICE

P. O. BOX 1849

EUNICE, NM 88231

RE: SEVEN RIVERS QUEEN #421 AD

Enclosed are the results of analyses for samples received by the laboratory on 10/05/12 15:05.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. 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).

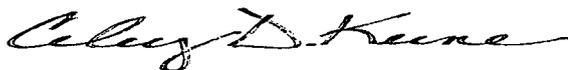
Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

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

Received:	10/05/2012	Sampling Date:	10/05/2012
Reported:	10/11/2012	Sampling Type:	Soil
Project Name:	SEVEN RIVERS QUEEN #421 AD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EUNICE, NM		

**Sample ID: PT. 2 @ 13' (H202438-01)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>112</b>	16.0	10/10/2012	ND	400	100	400	0.00		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	10/10/2012	ND	197	98.7	200	1.44		
DRO >C10-C28	<10.0	10.0	10/10/2012	ND	204	102	200	4.09		

<i>Surrogate: 1-Chlorooctane</i>	89.3 %	65.2-140
<i>Surrogate: 1-Chlorooctadecane</i>	88.4 %	63.6-154

**Sample ID: PT. 2 @ 14' (H202438-02)**

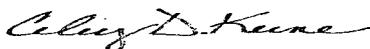
Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>144</b>	16.0	10/10/2012	ND	400	100	400	0.00		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	10/10/2012	ND	197	98.7	200	1.44		
DRO >C10-C28	<10.0	10.0	10/10/2012	ND	204	102	200	4.09		

<i>Surrogate: 1-Chlorooctane</i>	90.7 %	65.2-140
<i>Surrogate: 1-Chlorooctadecane</i>	87.9 %	63.6-154

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\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	10/05/2012	Sampling Date:	10/05/2012
Reported:	10/11/2012	Sampling Type:	Soil
Project Name:	SEVEN RIVERS QUEEN #421 AD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EUNICE, NM		

**Sample ID: VERT. 3 @ 14' (H202438-03)**

Chloride, SM4500CI-B	mg/kg	Analyzed By: AP							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>16.0</b>	16.0	10/10/2012	ND	400	100	400	0.00	
TPH 8015M	mg/kg	Analyzed By: MS							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/10/2012	ND	197	98.7	200	1.44	
DRO >C10-C28	<10.0	10.0	10/10/2012	ND	204	102	200	4.09	
<i>Surrogate: 1-Chlorooctane</i>	<i>91.1 %</i>	<i>65.2-140</i>							
<i>Surrogate: 1-Chlorooctadecane</i>	<i>91.8 %</i>	<i>63.6-154</i>							

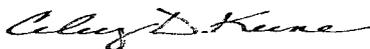
**Sample ID: VERT. 3 @ 15' (H202438-04)**

Chloride, SM4500CI-B	mg/kg	Analyzed By: AP							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>32.0</b>	16.0	10/10/2012	ND	400	100	400	0.00	
TPH 8015M	mg/kg	Analyzed By: MS							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/10/2012	ND	197	98.7	200	1.44	
DRO >C10-C28	<10.0	10.0	10/10/2012	ND	204	102	200	4.09	
<i>Surrogate: 1-Chlorooctane</i>	<i>87.5 %</i>	<i>65.2-140</i>							
<i>Surrogate: 1-Chlorooctadecane</i>	<i>86.3 %</i>	<i>63.6-154</i>							

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\* = Accredited Analyte

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Celest D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	10/05/2012	Sampling Date:	10/05/2012
Reported:	10/11/2012	Sampling Type:	Soil
Project Name:	SEVEN RIVERS QUEEN #421 AD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EUNICE, NM		

**Sample ID: PT. 5 @ 15' (H202438-05)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>176</b>	16.0	10/10/2012	ND	400	100	400	0.00		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	10/10/2012	ND	197	98.7	200	1.44		
DRO >C10-C28	<10.0	10.0	10/10/2012	ND	204	102	200	4.09		

Surrogate: 1-Chlorooctane 91.9 % 65.2-140  
 Surrogate: 1-Chlorooctadecane 92.2 % 63.6-154

**Sample ID: PT. 5 @ 16' (H202438-06)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>128</b>	16.0	10/10/2012	ND	400	100	400	0.00		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	10/10/2012	ND	197	98.7	200	1.44		
DRO >C10-C28	<10.0	10.0	10/10/2012	ND	204	102	200	4.09		

Surrogate: 1-Chlorooctane 89.1 % 65.2-140  
 Surrogate: 1-Chlorooctadecane 89.3 % 63.6-154

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\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	10/05/2012	Sampling Date:	10/05/2012
Reported:	10/11/2012	Sampling Type:	Soil
Project Name:	SEVEN RIVERS QUEEN #421 AD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EUNICE, NM		

**Sample ID: PT. 4 @ 8' (H202438-07)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>144</b>	16.0	10/10/2012	ND	400	100	400	0.00		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	10/10/2012	ND	197	98.7	200	1.44		
DRO >C10-C28	<10.0	10.0	10/10/2012	ND	204	102	200	4.09		

Surrogate: 1-Chlorooctane 94.5 % 65.2-140  
 Surrogate: 1-Chlorooctadecane 93.0 % 63.6-154

**Sample ID: PT. 4 @ 9' (H202438-08)**

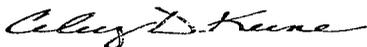
Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>144</b>	16.0	10/10/2012	ND	400	100	400	0.00		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	10/10/2012	ND	197	98.7	200	1.44		
DRO >C10-C28	<10.0	10.0	10/10/2012	ND	204	102	200	4.09		

Surrogate: 1-Chlorooctane 87.0 % 65.2-140  
 Surrogate: 1-Chlorooctadecane 87.8 % 63.6-154

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

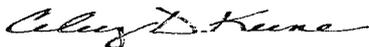
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- \*\* Samples not received at proper temperature of 6°C or below.
- \*\*\* Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C  
Samples reported on an as received basis (wet) unless otherwise noted on report

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---

Celey D. Keene, Lab Director/Quality Manager



October 10, 2012

NATALIE GLADDEN  
APACHE - EUNICE  
P. O. BOX 1849  
EUNICE, NM 88231

RE: SEVEN RIVERS QUEEN #421 AD

Enclosed are the results of analyses for samples received by the laboratory on 10/03/12 8:37.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. 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,



Cēley D. Keene  
Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	10/03/2012	Sampling Date:	09/28/2012
Reported:	10/10/2012	Sampling Type:	Soil
Project Name:	SEVEN RIVERS QUEEN #421 AD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	EUNICE, NM		

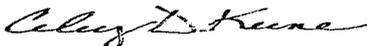
**Sample ID: IMPORTED SOIL (H202407-01)**

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	10/08/2012	ND	400	100	400	0.00	

Cardinal Laboratories

\*=Accredited Analyte

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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

---

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





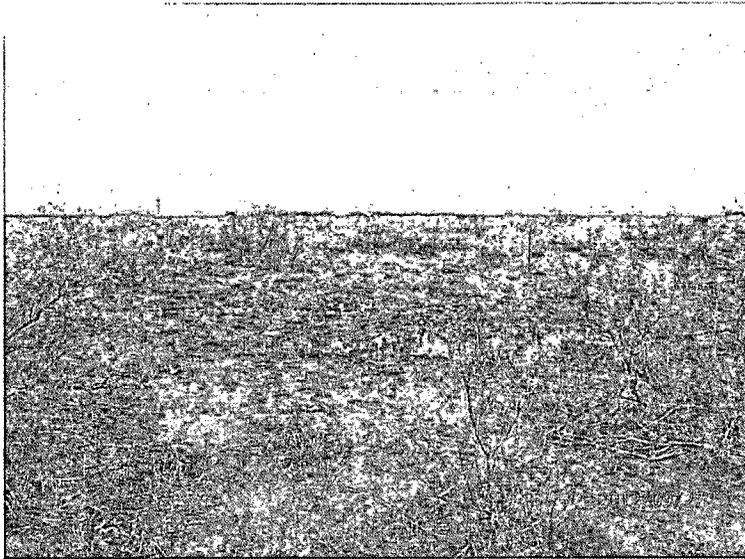
# Appendix C

Photo Documentation

**RICE Environmental Consulting and Safety (RECS)**  
P.O. Box 5630 Hobbs, NM 88241  
Phone 575.393.4411 Fax 575.393.0293

# Apache Seven Rivers Queen Unit #421 AD

Unit Letter E, Section 25, T22S, R36E



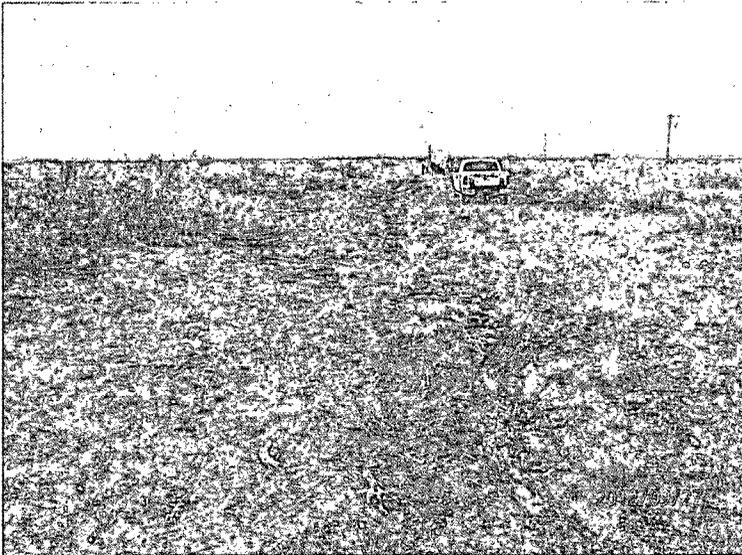
Initial release area, facing north

9/27/12



Initial release area, facing west

9/27/12



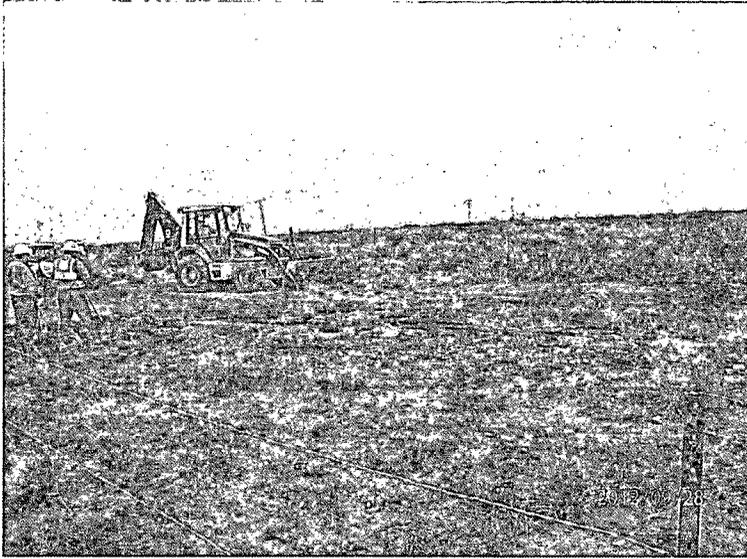
Initial release area, facing east

9/27/12



Initial release area, facing west

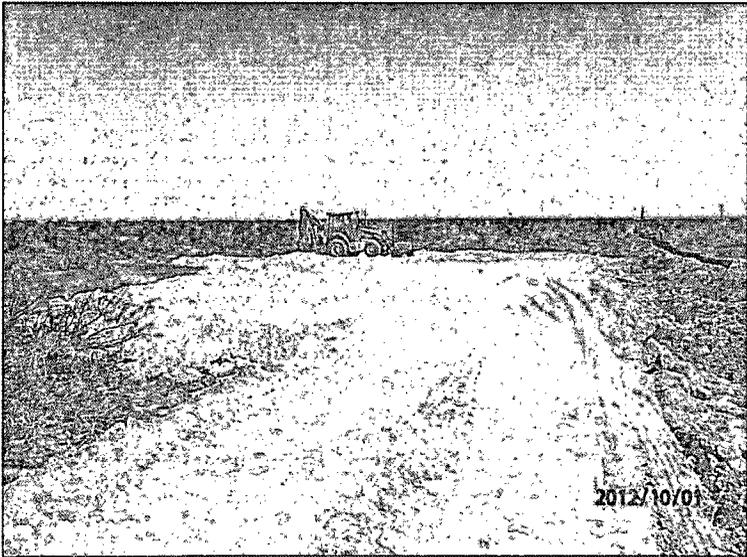
9/27/12



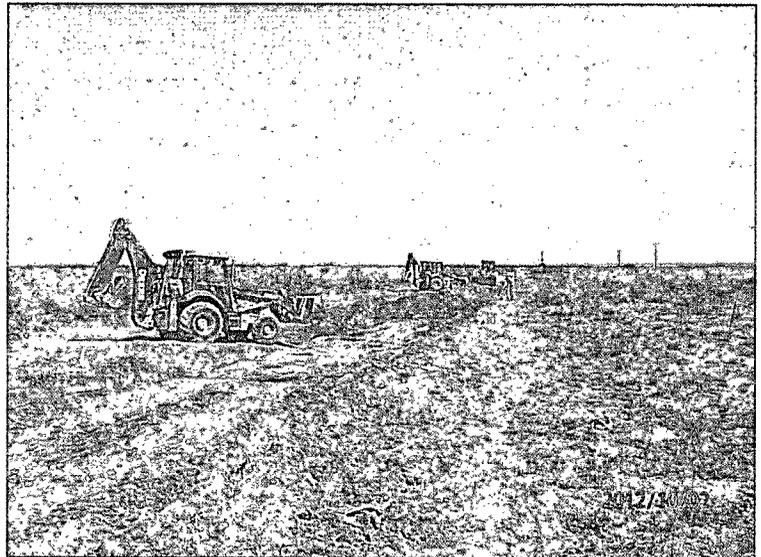
Building access road, facing northwest 9/28/12



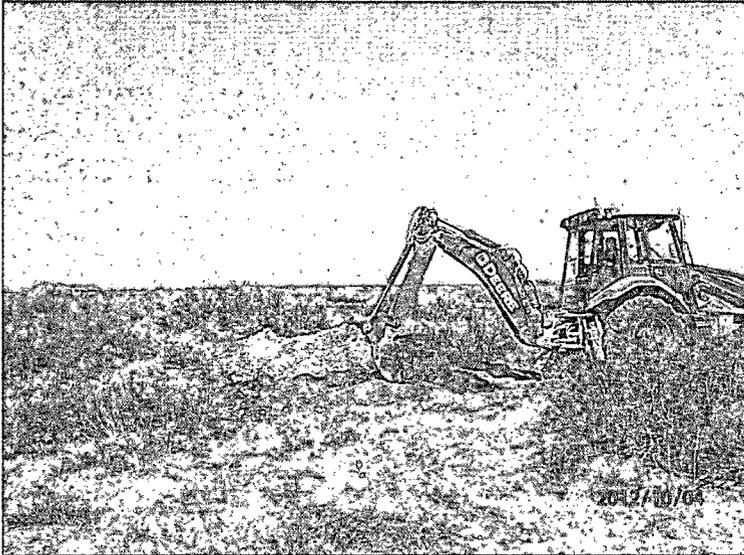
Digging Vertical #1, facing northwest 9/28/12



Building pad, facing northeast 10/1/12



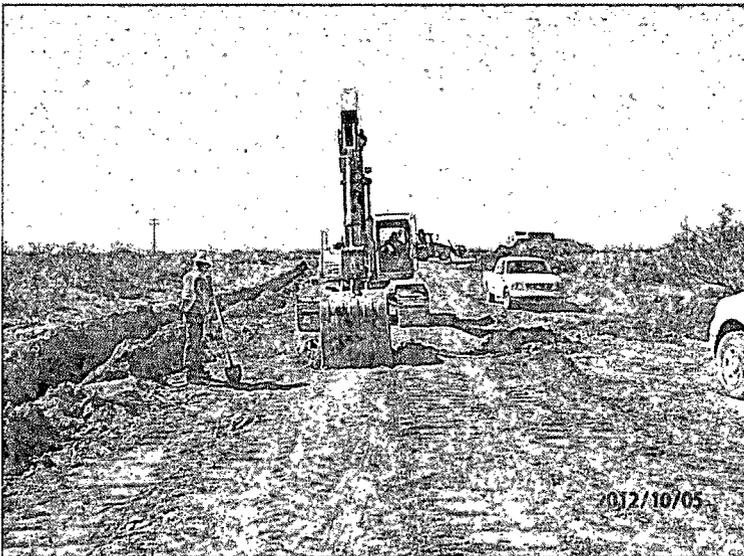
Excavating site, facing northeast 10/2/12



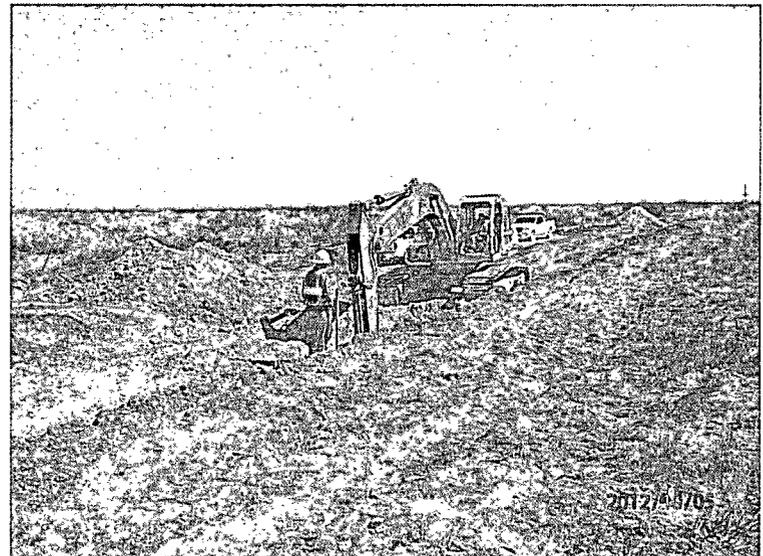
Digging Vertical #2, facing northwest 10/4/12



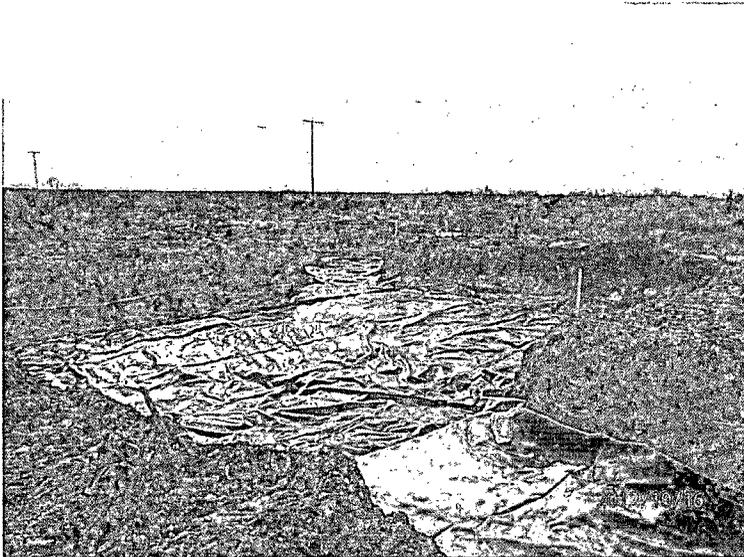
Digging Vertical #3 10/4/12



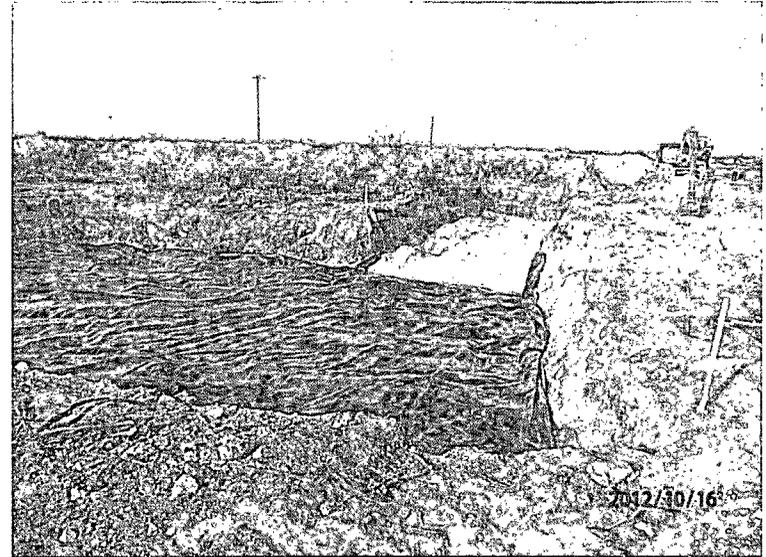
Digging Vertical #4, facing west 10/5/12



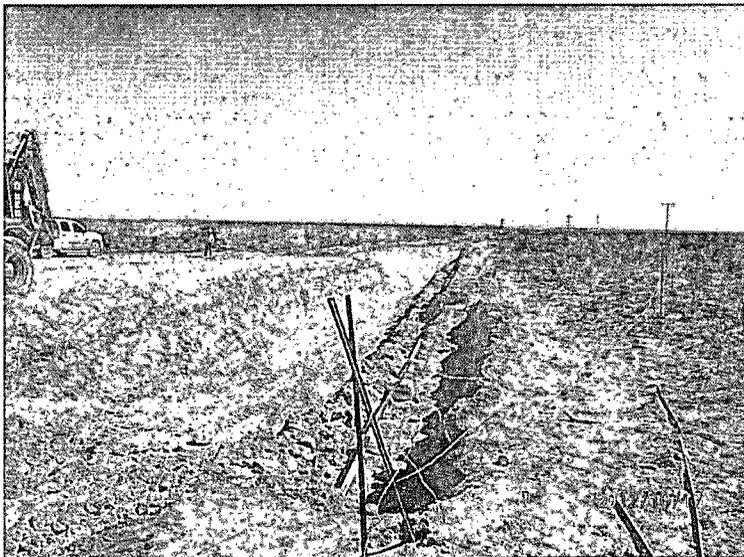
Digging Vertical #5, facing northwest 10/5/12



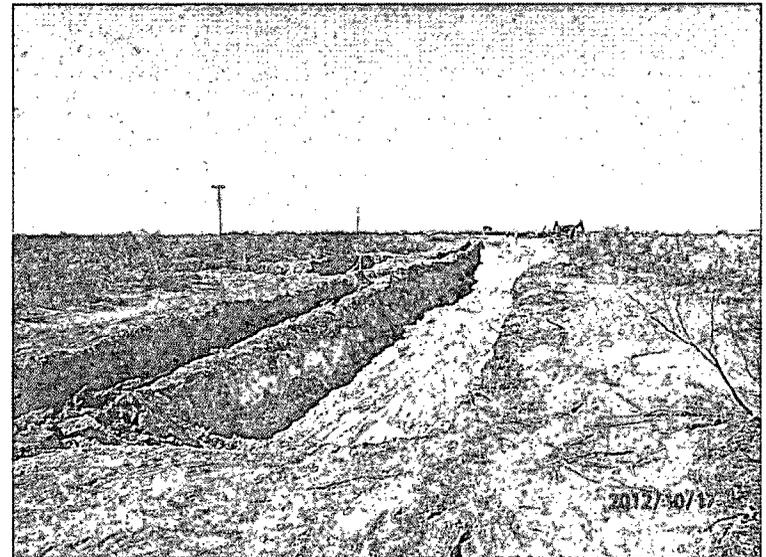
Liner in SE excavation, facing southeast 10/16/12



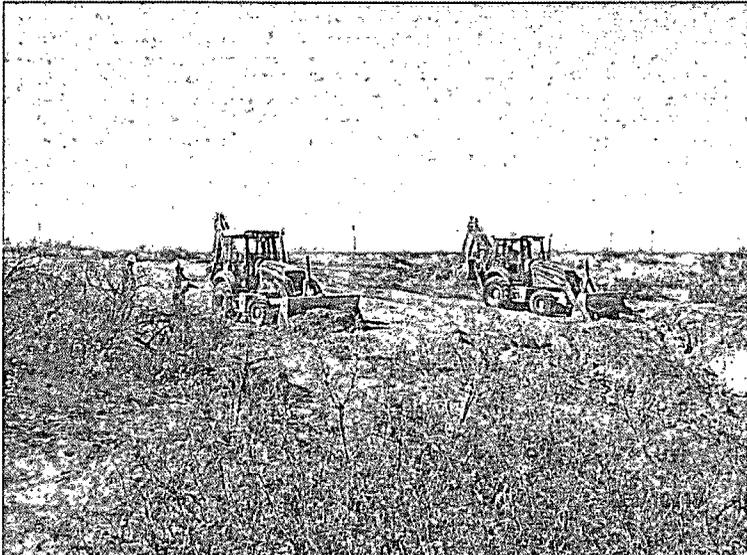
Liner in SE excavation, facing west 10/16/12



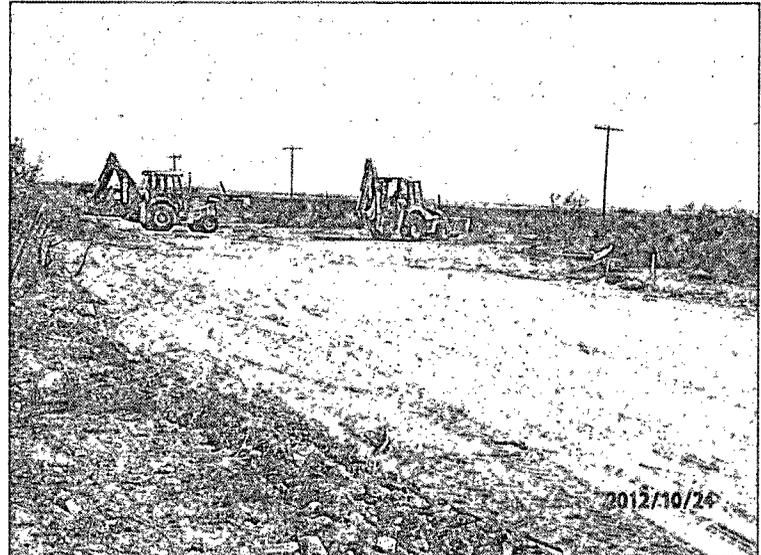
Excavation complete, facing east 10/17/12



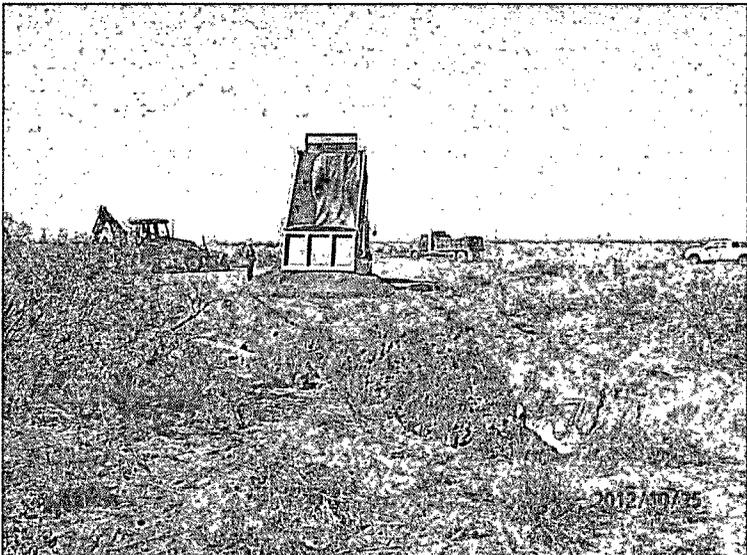
Excavation complete, facing southwest 10/17/12



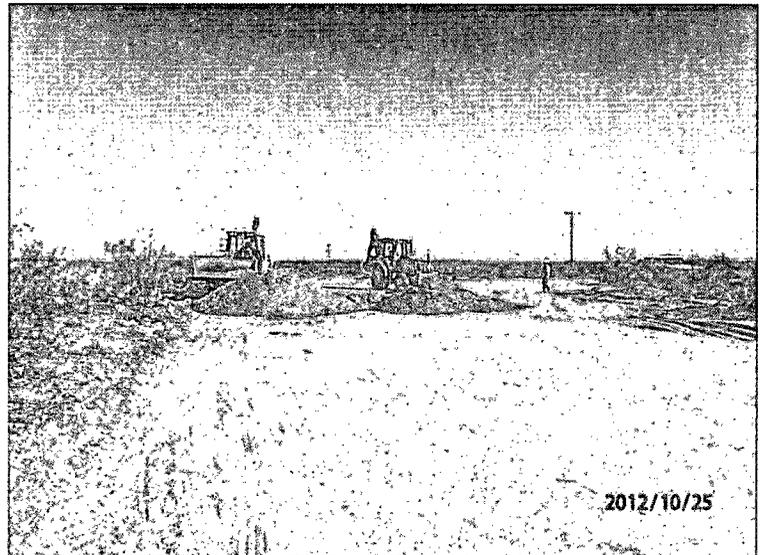
Backfilling with caliche, facing northwest 10/18/12



Backfilling SE excavation, facing southeast 10/24/12



Backfilling SE excavation, facing northwest 10/24/12



Spreading topsoil, facing east 10/25/12

# Appendix D

Final C-141

**RICE Environmental Consulting and Safety (RECS)**  
P.O. Box 5630 Hobbs, NM 88241  
Phone 575.393.4411 Fax 575.393.0293

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

**HOBBS OCD**

State of New Mexico

Energy Minerals and Natural Resources **MAR 28 2**

**MAR 28 2013**

Oil Conservation Division

1220 South St. Francis Dr.

Santa Fe, NM 87505

**HOBBS OCD**

Form C-141

Revised October 10, 2003

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

**RECEIVED**

**RECEIVED**

**Release Notification and Corrective Action**

**OPERATOR**

Initial Report  Final Report

Name of Company Apache Corporation	Contact Natalie Gladden
Address PO Box 1849, Eunice NM 88231	Telephone No. 575-390-4186
Facility Name Seven Rivers Queen Unit #421	Facility Type Injection well

Surface Owner Deck Estate	Mineral Owner State	Lease No. 30-025-09022
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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
E	25	22S	36E	1980	FNL	660	FWL	Lea

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

**NATURE OF RELEASE**

Type of Release Produced Water	Volume of Release 400	Volume Recovered 15
Source of Release Injection Line	Date and Hour of Occurrence 9/27/12	Date and Hour of Discovery Same
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Geoffrey Leking	
By Whom? Natalie Gladden	Date and Hour 9/27/12	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

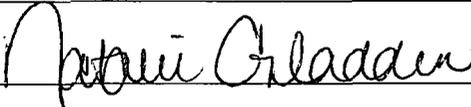
If a Watercourse was Impacted, Describe Fully.\*  
  

DTW = 220'

Describe Cause of Problem and Remedial Action Taken.\*  
Injection line leaked due to line rupture releasing fluid down the right-of-way. An attempt to recover the released fluids resulted in 15 of the 400 barrels to be recovered. Saturation levels caused the vacuum trucks to get stuck, therefore all recovery efforts were stopped. The line was excavated and replaced.

Describe Area Affected and Cleanup Action Taken.\* Soil samples were taken at the surface and at depth throughout the release area. The samples were field tested for chlorides and hydrocarbons and representative samples were taken to a commercial laboratory for chloride and TPH analysis. Additional samples at depth were collected from four vertical sample points. Each vertical was advanced until two consecutive samples with concentrations below 250 mg/kg chloride were obtained. These two samples from each vertical were submitted to a commercial laboratory for chloride and TPH analyses. Based on the vertical delineation results the excavation began on October 2, 2012. The area north of the Apache pipeline was excavated to 5 and 6 ft bgs. The remaining area south of the pipeline was excavated to 4 ft bgs where a 20-mil reinforced poly liner was installed at 4 ft bgs throughout the majority of that area. Impacted soils were removed to a NMOCD approved disposal facility. The excavation was backfilled with clean, imported soil and the area was contoured to the surrounding landscape.

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: 	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Natalie Gladden	 Approved by District Supervisor <b>Environmental Specialist</b>	
Title: Sr. Environmental Tech	Approval Date: 03/28/13	Expiration Date: -
E-mail Address: Natalie.gladden@apachecorp.com	Conditions of Approval: -	Attached <input type="checkbox"/>
Date: 3/28/13 Phone: 575-390-4186		IRP-06-14-3087

\* Attach Additional Sheets If Necessary