

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources

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

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 Corp.	Contact	Natalie Gladden
Address	P.O. Box 1849, Eunice, NM, 88231	Telephone No.	(575) 390-4186
Facility Name	Warn State A/C #19	Facility Type	Production Well

Surface Owner	Mineral Owner	State of NM	Lease No.	30-025-31927
---------------	---------------	-------------	-----------	--------------

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
F	6	18S	35E	2010	FNL	2230	FWL	Lea

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

NATURE OF RELEASE

Type of Release	Produced Water	Volume of Release	10 bbl	Volume Recovered	1 bbl
Source of Release	Flow line leak	Date and Hour of Occurrence	09/6/11	Date and Hour of Discovery	09/6/11
Was Immediate Notice Given?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?			
By Whom?	Date and Hour				
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.\*  
DWW = 104'

Describe Cause of Problem and Remedial Action Taken.\*  
Flow line leak. Fluid was recovered and location back-dragged until one-call cleared.

Describe Area Affected and Cleanup Action Taken.\*  
The leak affected an area of pasture land. Impacted soils were removed to a NMOCD approved disposal facility. Representative soil samples were collected from the excavation and sent to a commercial laboratory for chloride and TPH confirmation. The excavation was backfilled with clean soil and contoured to the surrounding area.

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

Signature: <i>Natalie Gladden</i>	OIL CONSERVATION DIVISION <i>Jeffrey Sekins</i> Environmental Specialist	
Printed Name: Natalie Gladden	Approved by District Supervisor	
Title: EH&S Environmental Tech	Approval Date: 11/9/12	Expiration Date: —
E-mail Address: Natalie.gladden@apachecorp.com	Conditions of Approval: —	Attached <input type="checkbox"/>
Date: 11/9/12 Phone: (575) 390-4186	VRP-06-14-3082	

\* Attach Additional Sheets If Necessary

JUN 7 2014

NSAD1416454346. h



EXPLORING WHAT'S POSSIBLE

HOBBS OCD

NOV 09 2012

RECEIVED

# APACHE CORPORATION

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

## Warn State A/C 2 #19

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## Closure Report

API 30-025-31927

Release Date: September 6, 2011

Unit Letter F, Section 6, Township 18S, Range 35E

# Rice Environmental Consulting & Safety

P.O. Box 5630 Hobbs, NM 88241

Phone 575.393.4411 Fax 575.393.0293

**May 1, 2012**

Geoffrey Leking

New Mexico Energy, Minerals, & Natural Resources

Oil Conservation Division, Environmental Bureau – District 1

1625 N. French Dr.

Hobbs, NM 88240-9273

**RE: TERMINATION REQUEST**

**Apache – Warn State A/C 2 #19 AD**

**UL/F sec. 6 T18S R35E**

**API No. 30-025-31927**

Mr. Leking:

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

## **Background and Previous Work**

The site is an accidental discharge of fluids associated with the Warn State A/C 2 #19. A surface produced water flow line leaked, releasing mixed fluids onto pasture land. Fluids were recovered and an initial form C-141 was submitted by Apache Corporation on September 7, 2011 (Appendix A). The site is located west of Hobbs, in unit letter 'F' of section 6, T18S, R35E near NM Highway 238 in Lea County, New Mexico.

On September 7, 2011, RECS personnel initiated work on the Warn State A/C 2 #19 (Figure 1). Surface soil samples were collected and field tested for chloride. Headspace measurements were also taken in the field using a Photo Ionization Detector (PID). The samples were submitted to a commercial laboratory for chloride and TPH (GRO/DRO) analyses (Appendix C). Chloride ranged from 11,000 ppm (parts per million or mg/kg) to 39,600 ppm. GRO ranged from <250 ppm to 7,670 ppm and DRO ranged from <250 ppm to 79,500 ppm.

On September 14, 2011, RECS personnel collected soil samples from the final excavation (Figure 2). Representative grab samples were collected from the excavation walls and the excavation floor, and were submitted to a commercial laboratory for chloride and TPH (GRO/DRO) analyses (Appendix C). Chloride did not exceed 272 ppm in the wall samples and 304 ppm in the floor samples. TPH was 233 ppm at the N Wall E End and <10.0 ppm in the remaining samples.

Impacted soils were removed to a NMOCD approved disposal facility. A small area beneath several steel and poly flow lines could not be fully excavated due to extreme soil compaction and


the inability of equipment to safely access the space between steel lines. The excavation was backfilled with clean soil and contoured to the surrounding area. See Appendix B for photographs of field activities.

## **Conclusion**

According to the New Mexico Office of the State Engineer and the United States Geological Survey (USGS), depth to groundwater in the area approximated 100 ft bgs (Appendix D). Due to the removal of the majority of impacted soils as was practicable relative to necessary groundwater depth, Apache submits the final C-141 (Appendix E) and respectfully requests the closure of the regulatory file for this site.

Apache Corporation appreciates the opportunity to work with you on this project. Please call Natalie Gladden (575) 390-4186 if you have any questions or comments.

Sincerely,



Bruce Baker  
Head Foreman  
RECS  
(575) 631-5157

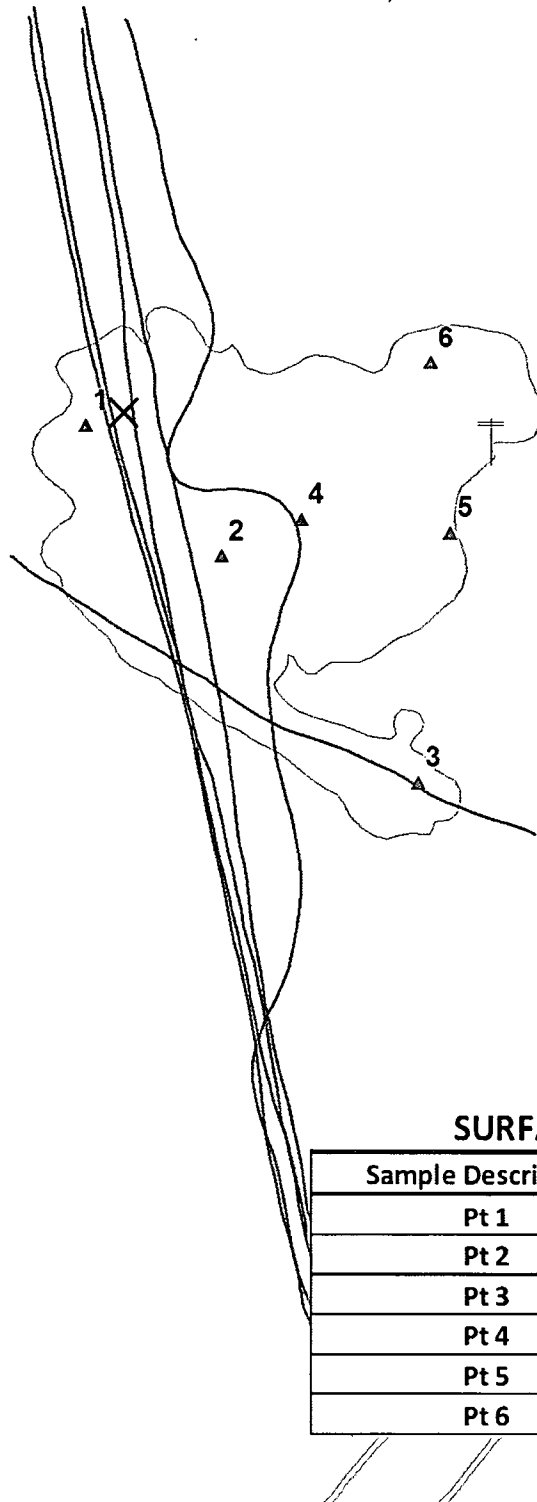
## **Attachments:**

- Figure 1: Site Plat including Surface Sample Data
- Figure 2: Site Plat including Final Excavation Data
- Appendix A: Initial Form C-141
- Appendix B: Site Photographs
- Appendix C: Laboratory Results
- Appendix D: Groundwater Study
- Appendix E: Final Form C-141

# Figures

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

# Site Plat



## Legend

- POWER POLE
- SAMPLE POINT
- SOURCE
- WELL
- LEASE ROAD EDGE
- POLY LINE
- STEEL LINE
- STAIN

## SURFACE SAMPLE LAB DATA

Sample Description	Cl-	GRO	DRO
Pt 1	11,000	7,670	79,500
Pt 2	26,800	<5000	41,900
Pt 3	22,400	<250	<250
Pt 4	27,200	4,530	32,700
Pt 5	26,000	<1250	10,200
Pt 6	39,600	<250	<250



**APACHE  
WARN STATE AC/2  
#019 AD**

UL/K SECTION 6  
T-18-S R-35-E  
LEA COUNTY, NM

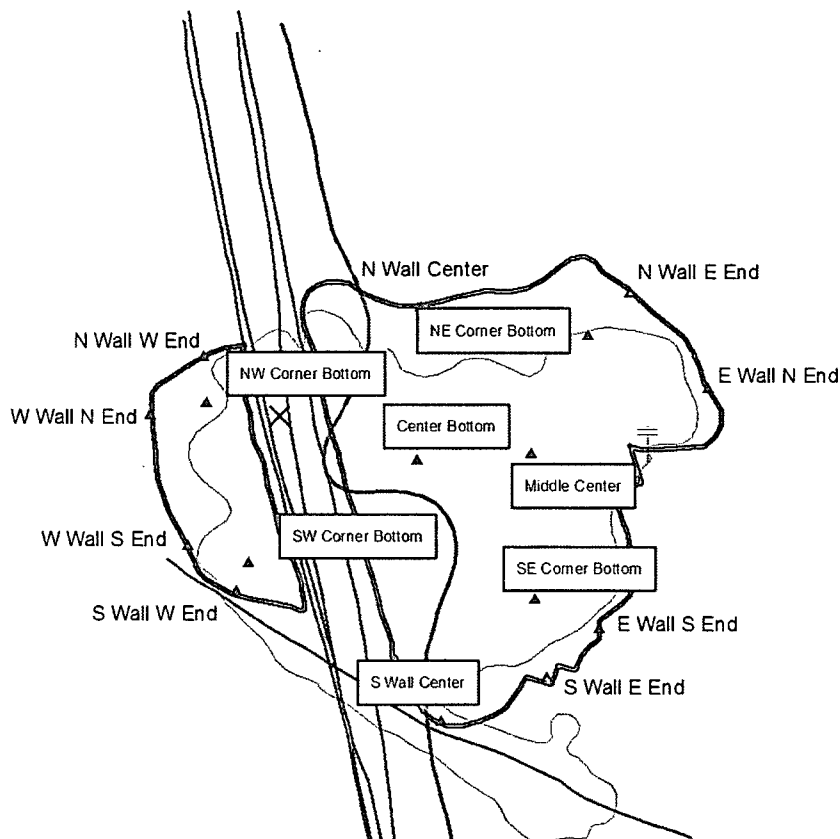
**Figure 1**

0 12.5 25 50  
Feet

GPS date: 9/8/11 DH  
Drawing date: 9/9/11  
Drafted by: T. Grieco, L. Weinheimer



# Site Plat



## FINAL EXCAVATION LAB DATA

Sample Description	Cl-	GRO	DRO
Southwest Corner Bottom	192	<10	<10
Northeast Corner Bottom	176	<10	<10
Center Bottom	304	<10	<10
Southeast Corner Bottom	176	<10	<10
Northwest Corner Bottom	272	<10	<10
Middle Center	210	<10	<10
North Wall Center	176	<10	<10
North Wall East End	32	<50	233
North Wall West End	16	<10	<10
East Wall South End	80	<10	<10
South Wall Center	192	<10	<10
South Wall East End	112	<10	<10
East Wall North End	272	<10	<10
South Wall West End	256	<10	<10
West Wall North End	176	<10	<10
West Wall South End	112	<10	<10

## Legend

- ▲ SAMPLE POINTS
- T ELECTRICAL POLE
- X SOURCE OF LEAK
- LEASE ROAD EDGE
- POLY LINE
- STEEL LINE
- FINAL EXCAVATION (4,557 sq ft)
- LEAK AREA (4,825 sq ft)



**APACHE**  
**WARN STATE AC/2**  
**#019 AD**  
 UL/K SECTION 6  
 T-18-S R-35-E  
 LEA COUNTY, NM

**Figure 2**



0 12.5 25 50  
 Feet

GPS date: 9/8/11 DH  
 Drawing date: 9/9/11  
 Drafted by: T. Grieco, L. Weinheimer

# Appendix A

Initial Form 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  
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State of New Mexico  
Energy Minerals and Natural Resources  
Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-141  
Revised August 8, 2011

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

**Release Notification and Corrective Action**

**OPERATOR**

☒ Initial Report ☐ Final Report

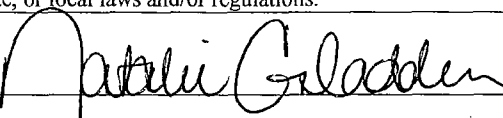
Name of Company Apache Corporation	Contact Natalie Gladden	
Address PO Box 1849, Eunice NM 88231	Telephone No. 575-390-4186	
Facility Name Warn State A/C #19	Facility Type Production well	
Surface Owner	Mineral Owner State of NM	API No. 30-025-31927

**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
F	6	18S	35E	2010	FNL	2230	FWL	Lea

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

**NATURE OF RELEASE**

Type of Release Produced Water	Volume of Release 10	Volume Recovered 1
Source of Release Flowline leak	Date and Hour of Occurrence 9/6/11	Date and Hour of Discovery 9/6/11
Was Immediate Notice Given? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
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.* Flowline leak. Fluid was recovered and location was backdragged until the one-call is cleared.		
Describe Area Affected and Cleanup Action Taken.* 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: EHS Environmental Tech	Approval Date:	Expiration Date:
E-mail Address: natalie.gladden@apachecorp.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 9/7/11 Phone: 575-390-4186		

\* Attach Additional Sheets If Necessary

# Appendix B

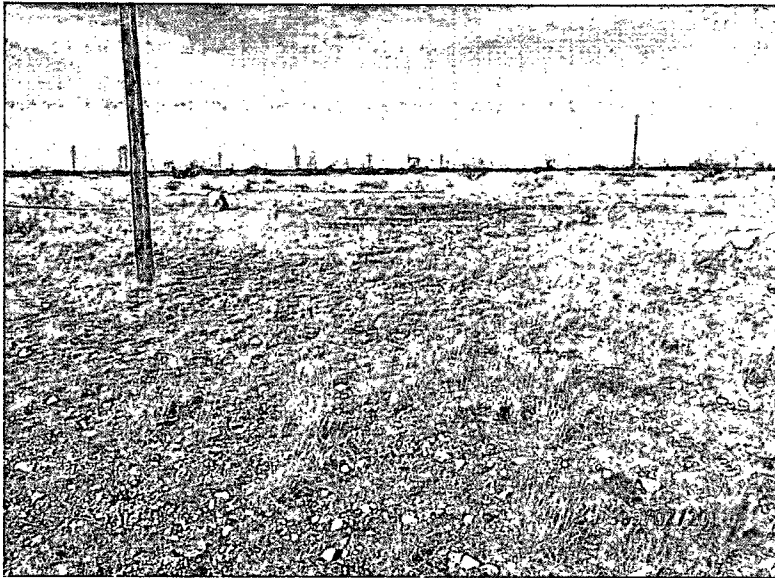
## Site Photographs

**RICE Environmental Consulting and Safety (RECS)**

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

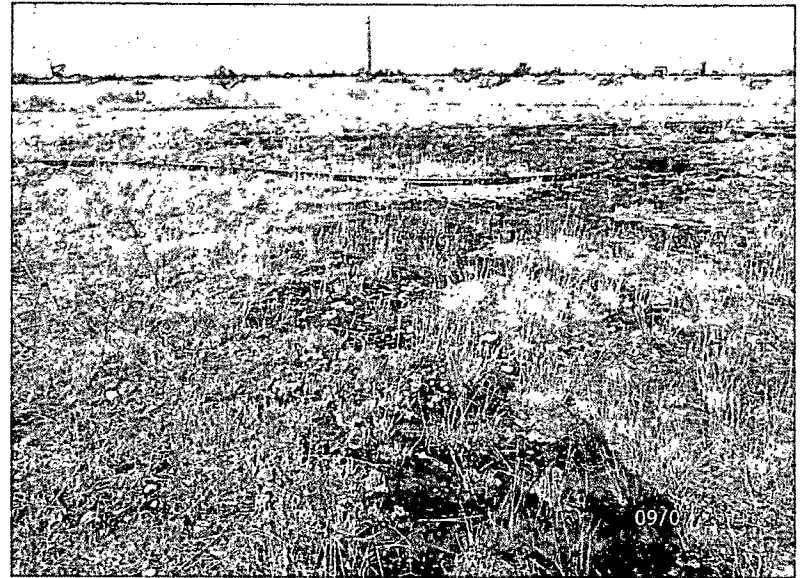
# Warn State A/C #19 AD

Unit Letter F, Section 6, T18S R35E



Initial release, facing north

9/7/2011



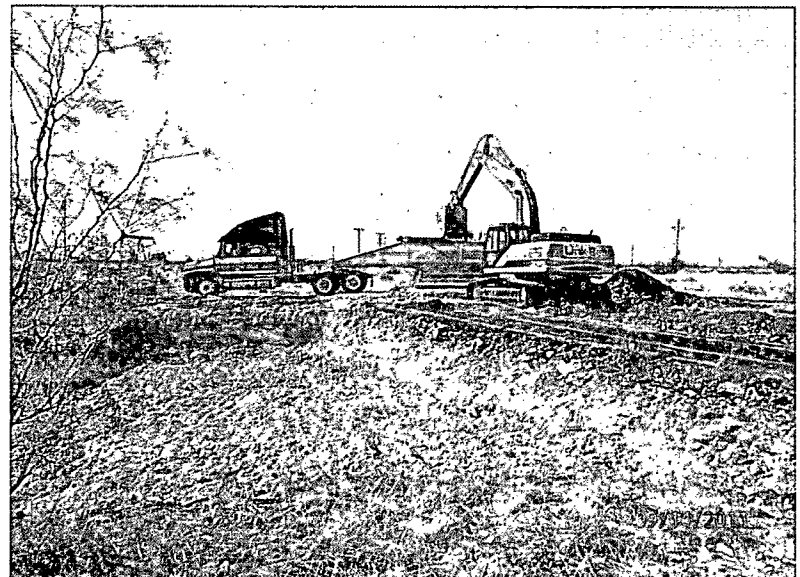
Initial release, facing west

9/7/2011



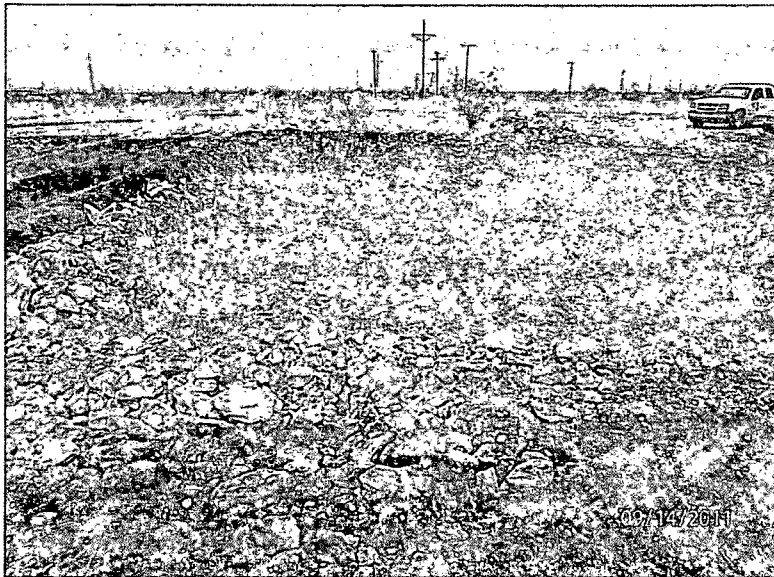
Excavating leak, facing east

9/7/2011



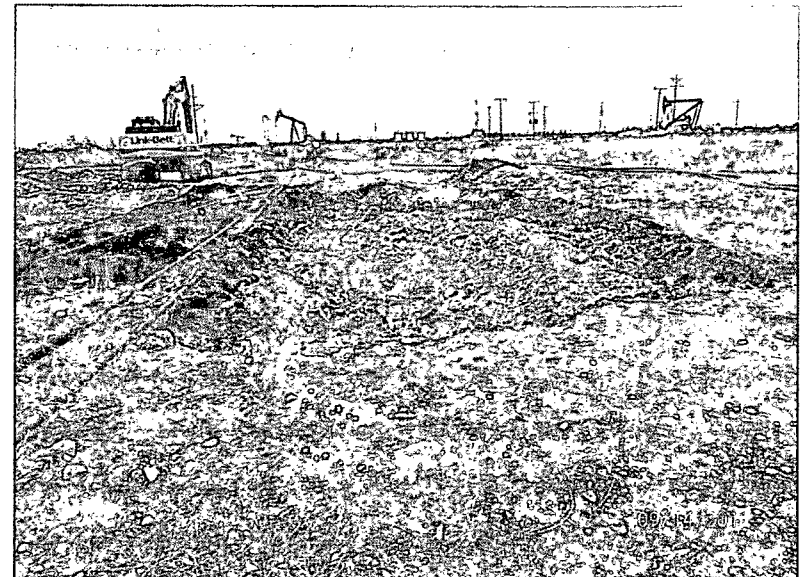
Exporting soil, facing south

9/14/2011



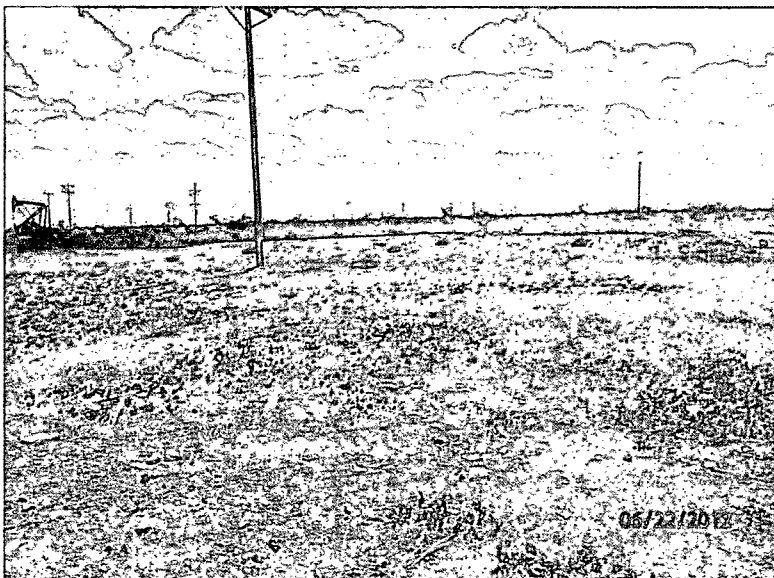
Final excavation, facing north

9/14/2011



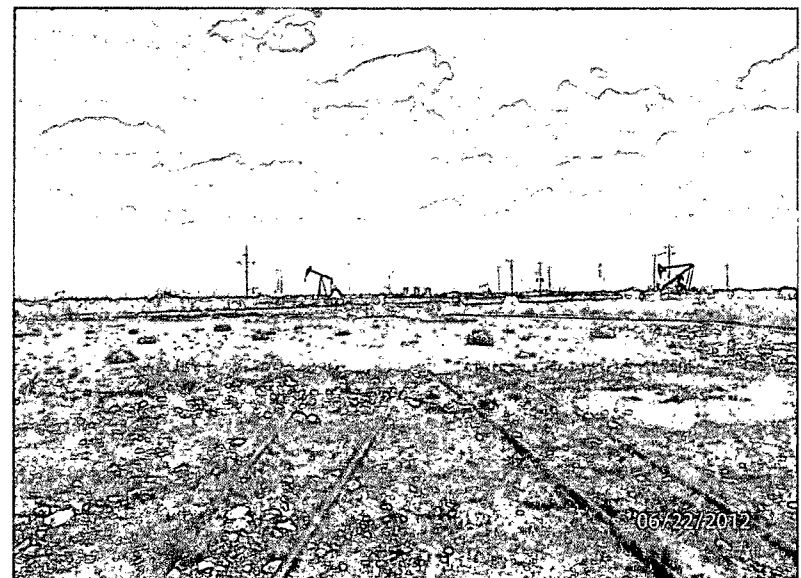
Final excavation, facing south

9/14/2011



Site backfilled, facing west

6/22/2012



Site backfilled, facing south

6/22/2012

# Appendix C

## Laboratory Results

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

**Analytical Results For:**

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

 Received: 09/08/2011  
 Reported: 09/13/2011  
 Project Name: WARN STATE A/C 2 #18  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 09/07/2011  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: PT. 1 (H101905-01)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	11000	16.0	09/08/2011	ND	432	108	400	0.00	
TPH 8015M		mg/kg		Analyzed By: ab					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	7670	5000	09/09/2011	ND	180	89.9	200	0.0812	
DRO >C10-C28	79500	5000	09/09/2011	ND	176	88.1	200	0.377	

Surrogate: 1-Chlorooctane 129 % 55.5-154

Surrogate: 1-Chlorooctadecane 109 % 57.6-158

**Sample ID: PT. 2 (H101905-02)**

Chloride, SM4500CI-B	mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	26800	16.0	09/08/2011	ND	432	108	400	0.00	
TPH 8015M	mg/kg		Analyzed By: ab						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<5000	5000	09/09/2011	ND	180	89.9	200	0.0812	
DRO >C10-C28	41900	5000	09/09/2011	ND	176	88.1	200	0.377	

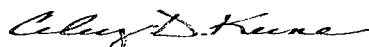
Surrogate: 1-Chlorooctane 135 % 55.5-154

Surrogate: 1-Chlorooctadecane 126 % 57.6-158

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: 09/08/2011  
 Reported: 09/13/2011  
 Project Name: WARN STATE A/C 2 #18  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 09/07/2011  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: PT. 3 (H101905-03)**

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>22400</b>	16.0	09/08/2011	ND	432	108	400	0.00	
TPH 8015M			mg/kg		Analyzed By: ab				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<250	250	09/09/2011	ND	180	89.9	200	0.0812	
DRO >C10-C28	<250	250	09/09/2011	ND	176	88.1	200	0.377	

Surrogate: 1-Chlorooctane 109 % 55.5-154  
 Surrogate: 1-Chlorooctadecane 108 % 57.6-158

**Sample ID: PT. 4 (H101905-04)**

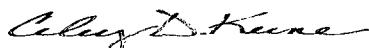
Chloride, SM4500CI-B			mg/kg		Analyzed By: HM				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>27200</b>	16.0	09/08/2011	ND	432	108	400	0.00	
TPH 8015M			mg/kg		Analyzed By: ab				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10</b>	<b>4530</b>	1250	09/09/2011	ND	180	89.9	200	0.0812	
<b>DRO &gt;C10-C28</b>	<b>32700</b>	1250	09/09/2011	ND	176	88.1	200	0.377	

Surrogate: 1-Chlorooctane 126 % 55.5-154  
 Surrogate: 1-Chlorooctadecane 111 % 57.6-158

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: 09/08/2011  
 Reported: 09/13/2011  
 Project Name: WARN STATE A/C 2 #18  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 09/07/2011  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: PT. 5 (H101905-05)**

Chloride, SM4500Cl-B			mg/kg		Analyzed By: HM				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>26000</b>	16.0	09/08/2011	ND	432	108	400	0.00	
TPH 8015M			mg/kg		Analyzed By: ab				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<1250	1250	09/12/2011	ND	180	89.9	200	0.0812	
<b>DRO &gt;C10-C28</b>	<b>10200</b>	1250	09/12/2011	ND	176	88.1	200	0.377	

Surrogate: 1-Chlorooctane 122 % 55.5-154

Surrogate: 1-Chlorooctadecane 115 % 57.6-158

**Sample ID: PT. 6 (H101905-06)**

Chloride, SM4500Cl-B			mg/kg		Analyzed By: HM				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>39600</b>	16.0	09/08/2011	ND	432	108	400	0.00	
TPH 8015M			mg/kg		Analyzed By: ab				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<250	250	09/12/2011	ND	180	89.9	200	0.0812	
<b>DRO &gt;C10-C28</b>	<b>&lt;250</b>	250	09/12/2011	ND	176	88.1	200	0.377	

Surrogate: 1-Chlorooctane 102 % 55.5-154

Surrogate: 1-Chlorooctadecane 95.9 % 57.6-158

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





## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

**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 the client for the 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 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 services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

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

**Analytical Results For:**

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

Received:	09/15/2011	Sampling Date:	09/14/2011
Reported:	09/22/2011	Sampling Type:	Soil
Project Name:	WARN STATE AC 2 #19 A.D.	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: N. WALL CENTER (H101958-01)**

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AP							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	176	16.0	09/15/2011	ND	448	112	400	0.00		
TPH 8015M		mg/kg	Analyzed By: ab							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	09/18/2011	ND	176	88.1	200	1.38		
DRO >C10-C28	<10.0	10.0	09/18/2011	ND	177	88.7	200	1.97		
Surrogate: 1-Chlorooctane	128 %	55.5-154								
Surrogate: 1-Chlorooctadecane	125 %	57.6-158								

**Sample ID: N. WALL E. END (H101958-02)**

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	09/16/2011	ND	448	112	400	0.00	
TPH 8015M		mg/kg	Analyzed By: ab						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<50.0	50.0	09/18/2011	ND	176	88.1	200	1.38	
DRO >C10-C28	233	50.0	09/18/2011	ND	177	88.7	200	1.97	
Surrogate: 1-Chlorooctane									
	123 %	55.5-154							
Surrogate: 1-Chlorooctadecane									
	118 %	57.6-158							

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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:	09/15/2011	Sampling Date:	09/14/2011
Reported:	09/22/2011	Sampling Type:	Soil
Project Name:	WARN STATE AC 2 #19 A.D.	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: N. WALL W. END (H101958-03)**

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	09/15/2011	ND	448	112	400	0.00		
TPH 8015M			mg/kg							Analyzed By: ab
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	09/18/2011	ND	176	88.1	200	1.38		
DRO >C10-C28	<10.0	10.0	09/18/2011	ND	177	88.7	200	1.97		
<i>Surrogate: 1-Chlorooctane</i>										
	120 %	55.5-154								
<i>Surrogate: 1-Chlorooctadecane</i>										
	112 %	57.6-158								


**Sample ID: E. WALL S. END (H101958-04)**

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>80.0</b>	16.0	09/15/2011	ND	448	112	400	0.00		
TPH 8015M			mg/kg							Analyzed By: ab
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	09/18/2011	ND	176	88.1	200	1.38		
DRO >C10-C28	<10.0	10.0	09/18/2011	ND	177	88.7	200	1.97		
<i>Surrogate: 1-Chlorooctane</i>										
	124 %	55.5-154								
<i>Surrogate: 1-Chlorooctadecane</i>										
	114 %	57.6-158								

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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: 09/15/2011  
 Reported: 09/22/2011  
 Project Name: WARN STATE AC 2 #19 A.D.  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 09/14/2011  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: S. WALL CENTER (H101958-05)**

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>192</b>	16.0	09/15/2011	ND	448	112	400	0.00	
TPH 8015M		mg/kg	Analyzed By: ab						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	09/18/2011	ND	176	88.1	200	1.38	
DRO >C10-C28	<10.0	10.0	09/18/2011	ND	177	88.7	200	1.97	
Surrogate: 1-Chlorooctane		118 %	55.5-154						
Surrogate: 1-Chlorooctadecane		111 %	57.6-158						

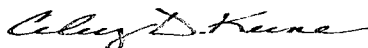
**Sample ID: S. WALL E. END (H101958-06)**

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	09/15/2011	ND	448	112	400	0.00	
TPH 8015M		mg/kg	Analyzed By: ab						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	09/18/2011	ND	176	88.1	200	1.38	
DRO >C10-C28	<10.0	10.0	09/18/2011	ND	177	88.7	200	1.97	
Surrogate: 1-Chlorooctane		118 %	55.5-154						
Surrogate: 1-Chlorooctadecane		117 %	57.6-158						

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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:	09/15/2011	Sampling Date:	09/14/2011
Reported:	09/22/2011	Sampling Type:	Soil
Project Name:	WARN STATE AC 2 #19 A.D.	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

**Sample ID: E. WALL N. END (H101958-07)**

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	272	16.0	09/15/2011	ND	448	112	400	0.00	
TPH 8015M		mg/kg	Analyzed By: ab						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	09/18/2011	ND	176	88.1	200	1.38	
DRO >C10-C28	<10.0	10.0	09/18/2011	ND	177	88.7	200	1.97	
Surrogate: 1-Chlorooctane	114 %	55.5-154							
Surrogate: 1-Chlorooctadecane	109 %	57.6-158							

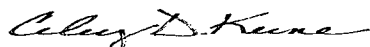
**Sample ID: S. WALL W. END (H101958-08)**

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	256	16.0	09/15/2011	ND	448	112	400	0.00	
TPH 8015M		mg/kg	Analyzed By: ab						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	09/18/2011	ND	176	88.1	200	1.38	
DRO >C10-C28	<10.0	10.0	09/18/2011	ND	177	88.7	200	1.97	
<hr/>									
Surrogate: 1-Chlorooctane		120 %	55.5-154						
Surrogate: 1-Chlorooctadecane		116 %	57.6-158						

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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: 09/15/2011  
 Reported: 09/22/2011  
 Project Name: WARN STATE AC 2 #19 A.D.  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 09/14/2011  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: W. WALL N. END (H101958-09)**

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	176	16.0	09/15/2011	ND	448	112	400	0.00		
TPH 8015M			mg/kg		Analyzed By: ab					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	09/18/2011	ND	176	88.1	200	1.38		
DRO >C10-C28	<10.0	10.0	09/18/2011	ND	177	88.7	200	1.97		
Surrogate: 1-Chlorooctane			122 %	55.5-154						
Surrogate: 1-Chlorooctadecane			119 %	57.6-158						


**Sample ID: W. WALL S. END (H101958-10)**

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	112	16.0	09/15/2011	ND	448	112	400	0.00		
TPH 8015M			mg/kg		Analyzed By: ab					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	09/18/2011	ND	176	88.1	200	1.38		
DRO >C10-C28	<10.0	10.0	09/18/2011	ND	177	88.7	200	1.97		
Surrogate: 1-Chlorooctane			127 %	55.5-154						
Surrogate: 1-Chlorooctadecane			120 %	57.6-158						

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Celey D. Keene, Lab Director/Quality Manager



# CARDINAL LABORATORIES

101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603  
(505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325) 673-7020

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Apache				<b>BILL TO</b>				ANALYSIS REQUEST																				
Project Manager: Natalie Gladden				P.O. #:				<div style="display: flex; flex-direction: column; align-items: center;"> <div>Chlorides</div> <div>TPH 8015 M</div> <div>BTEX</div> <div>Texas TPH</div> <div>Complete Cations/Anions</div> <div>TDS</div> </div>																				
Address:				Company:																								
City: State: NM Zip:				Attn:																								
Phone #: Fax #:				Address:																								
Project #: Project Owner:				City:																								
Project Name: Warm State AC2 #18 A.O.				State: Zip:																								
Project Location: 19 #				Phone #:																								
Sampler Name: Oak Harris				Fax #:																								
FOR LAB USE ONLY				MATRIX		PRESERV.		SAMPLING																				
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME														
H10958																												
1	N. Wall Center	G	1			✓				✓			9-14-11	9:00	✓	✓												
2	N. Wall E. End	G	1			✓				✓			9-14-11	9:05	✓	✓												
3	N. Wall W. End	G	1			✓				✓			9-14-11	9:10	✓	✓												
4	E. Wall S. End	G	1			✓				✓			9-14-11	9:15	✓	✓												
5	S. Wall Center	G	1			✓				✓			9-14-11	9:20	✓	✓												
6	S. Wall E. End	G	1			✓				✓			9-14-11	9:25	✓	✓												
7	E. Wall N. End	G	1			✓				✓			9-14-11	9:30	✓	✓												
8	S. Wall W. End	G	1			✓				✓			9-14-11	9:35	✓	✓												
9	W. Wall N. End	G	1			✓				✓			9-14-11	9:40	✓	✓												
10	W. Wall S. End	G	1			✓				✓			9-14-11	9:45	✓	✓												

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Relinquished By:	Date: 9-15-11 Time: 2:30	Received By:	Phone Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Add'l Phone #:
Relinquished By:	Date: 9/15/11 Time: 3:20	Received By:	Fax Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Add'l Fax #:
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition Cool Intact -50° <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No	CHECKED BY:	REMARKS: email results Natalie.Gladden@usa.apachecorp.com; Zconder@rice-ecs.com; Bbaker@rice-ecs.com; hconder@rice-ecs.com; Lweinheimer@rice-ecs.com * project name changed as per Natalie.	

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

#26

9/20/11

**Analytical Results For:**

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

 Received: 09/15/2011  
 Reported: 09/22/2011  
 Project Name: WARN STATE AC 2 #19 A.D.  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 09/14/2011  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: S. W. CORNER BTTM (H101964-01)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	192	16.0	09/16/2011	ND	448	112	400	3.64	
TPH 8015M		mg/kg		Analyzed By: ab					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	09/19/2011	ND	177	88.7	200	2.85	
DRO >C10-C28	<10.0	10.0	09/19/2011	ND	177	88.7	200	3.47	
Surrogate: 1-Chlorooctane		113 %	55.5-154						
Surrogate: 1-Chlorooctadecane		104 %	57.6-158						

**Sample ID: N. E. CORNER BTTM (H101964-02)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	176	16.0	09/16/2011	ND	448	112	400	3.64	
TPH 8015M		mg/kg		Analyzed By: ab					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	09/19/2011	ND	177	88.7	200	2.85	
DRO >C10-C28	<10.0	10.0	09/19/2011	ND	177	88.7	200	3.47	
Surrogate: 1-Chlorooctane	119 %	55.5-154							
Surrogate: 1-Chlorooctadecane	115 %	57.6-158							

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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: 09/15/2011  
 Reported: 09/22/2011  
 Project Name: WARN STATE AC 2 #19 A.D.  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 09/14/2011  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: CENTER BTM (H101964-03)**

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>304</b>	16.0	09/16/2011	ND	448	112	400	3.64	
TPH 8015M			mg/kg		Analyzed By: ab				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	09/19/2011	ND	177	88.7	200	2.85	
DRO >C10-C28	<10.0	10.0	09/19/2011	ND	177	88.7	200	3.47	

Surrogate: 1-Chlorooctane 116 % 55.5-154

Surrogate: 1-Chlorooctadecane 114 % 57.6-158

**Sample ID: S. E. CORNER BTM (H101964-04)**

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>176</b>	16.0	09/16/2011	ND	448	112	400	3.64	
TPH 8015M			mg/kg		Analyzed By: ab				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	09/19/2011	ND	177	88.7	200	2.85	
DRO >C10-C28	<10.0	10.0	09/19/2011	ND	177	88.7	200	3.47	

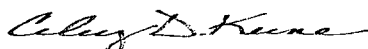
Surrogate: 1-Chlorooctane 132 % 55.5-154

Surrogate: 1-Chlorooctadecane 125 % 57.6-158

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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: 09/15/2011  
 Reported: 09/22/2011  
 Project Name: WARN STATE AC 2 #19 A.D.  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 09/14/2011  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: N. W. CORNER BTTM (H101964-05)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	272	16.0	09/16/2011	ND	448	112	400	3.64	
TPH 8015M		mg/kg		Analyzed By: ab					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	09/19/2011	ND	177	88.7	200	2.85	
DRO >C10-C28	<10.0	10.0	09/19/2011	ND	177	88.7	200	3.47	

Surrogate: 1-Chlorooctane 122 % 55.5-154

Surrogate: 1-Chlorooctadecane 117 % 57.6-158

**Sample ID: MIDDLE CENTER (H101964-06)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	210	16.0	09/16/2011	ND	448	112	400	0.00	
TPH 8015M		mg/kg		Analyzed By: ab					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	09/19/2011	ND	177	88.7	200	2.85	
DRO >C10-C28	<10.0	10.0	09/19/2011	ND	177	88.7	200	3.47	


Surrogate: 1-Chlorooctane 142 % 55.5-154

Surrogate: 1-Chlorooctadecane 136 % 57.6-158

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



# CARDINAL LABORATORIES

101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603

(505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325) 673-7020

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 6 of 6

Company Name: Apache		<b>BILL TO</b>		<b>ANALYSIS REQUEST</b>																				
Project Manager: Natalie Gladden		P.O. #:		<div style="display: flex; justify-content: space-around;"> <div>Chlorides</div> <div>TPH 8015 M</div> <div>BTEX</div> <div>Texas TPH</div> <div>Complete Cations/Anions</div> <div>TDS</div> </div>																				
Address:		Company:																						
City: State: NM Zip:		Attn:																						
Phone #: Fax #:		Address:																						
Project #: Project Owner:		City:																						
Project Name: <i>Warr State AC 2 #18 A.D.</i>		State: Zip:																						
Project Location: <i>19</i> *		Phone #:																						
Sampler Name: <i>Dak Harris</i>		Fax #:																						
FOR LAB USE ONLY																								
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX					PRESERV.		SAMPLING													
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME										
<i>H1019164</i>																								
	<i>1 S.W. Corner BHM</i>	<i>G-1</i>				<i>✓</i>				<i>✓</i>			<i>9-14-11</i>	<i>11:00</i>	<i>✓</i>	<i>✓</i>								
	<i>2 N.E. Corner BHM</i>	<i>G-1</i>				<i>✓</i>				<i>✓</i>			<i>9-14-11</i>	<i>11:05</i>	<i>✓</i>	<i>✓</i>								
	<i>3 Center BHM</i>	<i>G-1</i>				<i>✓</i>				<i>✓</i>			<i>9-14-11</i>	<i>11:10</i>	<i>✓</i>	<i>✓</i>								
	<i>4 S.E. Corner BHM</i>	<i>G-1</i>				<i>✓</i>				<i>✓</i>			<i>9-14-11</i>	<i>11:15</i>	<i>✓</i>	<i>✓</i>								
	<i>5 N.W. Corner BHM</i>	<i>G-1</i>				<i>✓</i>				<i>✓</i>			<i>9-14-11</i>	<i>11:20</i>	<i>✓</i>	<i>✓</i>								
	<i>6 Midale Center</i>	<i>G-1</i>				<i>✓</i>				<i>✓</i>			<i>9/14/11</i>	<i>11:25</i>	<i>✓</i>	<i>✓</i>								

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Relinquished By: <i>Dak Harris</i>	Date: <i>9/13/11</i>	Received By: <i>Jodi Benson</i>	Phone Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Add'l Phone #:
Time: <i>4:35</i>	Date:	Received By:	Fax Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS:	
Time:			email results	
Delivered By: (Circle One)	Sample Condition	CHECKED BY:	Natalie.Gladden@usa.apachecorp.com;	
Sampler - UPS - Bus - Other:	Cool <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Intact <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<i>[Signature]</i>	Zconder@rice-ecs.com; Bbaker@rice-ecs.com;	
			hconder@rice-ecs.com; Lweinheimer@rice-ecs.com	
			* Project name changed as per Natali's	

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

#26

9/20/11.

# Appendix D

## Groundwater Study

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

Apache

Company

Warn State A/C #19 AD

site name

F

6

18S

35E

Unit Letter

Section

Township

Range

Groundwater Depth: 100 ft

Compiled by: Amy C. Ruth

Date: 5/1/2012

Comments:

○ = Wells of unknown use (USGS)

● = Non-production wells  
(commercial, sanitation, stock)

☆ = Subject Site

T17S R34E	○ <sub>123'</sub> 36 ○ <sub>116'</sub>	● <sub>106'</sub> 31 Industrial ○ <sub>95'</sub>	○ <sub>86'</sub> 32	T17S R35E
T18S R34E	○ <sub>123'</sub> 1	☆ <sub>104'</sub> 6 ○ <sub>79'</sub> ○ <sub>101'</sub>	5 ○ <sub>66'</sub>	T18S R35E
	12 ○ <sub>111'</sub>	7 ○ <sub>98'</sub> ○ <sub>87'</sub>	8 ○ <sub>78'</sub>	



# New Mexico Office of the State Engineer

## Currently Active Points of Diversion

(with Ownership Information)

(acre ft per annum)					(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest) (NAD83 UTM in meters)											
WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Grant	Source	q q q					X	Y	
									6416	4	Sec	Tws	Rng			
<u>L 04247</u>	L	SRO		0 TEXACO, INC.	LE	<u>L 04247</u>			1	1	30	17S	35E	640119	3631386*	
					LE	<u>L 04247 X</u>			3	1	30	17S	35E	640125	3630983*	
					LE	<u>L 04247 X3</u>			3	3	30	17S	35E	640138	3630176*	
<u>L 04247 A</u>	L	IND	1400	INTREPID MINING NM LLC	LE	<u>L 04247 POD5</u>		Shallow	1	3	31	17S	35E	640156	3628964*	
					LE	<u>L 04247 POD6</u>		Shallow	2	1	3	31	17S	35E	640255	3629063*
<u>L 12951</u>	L	PUB		0 LEA COUNTY	LE	<u>L 04247 POD5</u>		Shallow	1	3	31	17S	35E	640156	3628964*	

**Record Count:** 6

**POD Search:**

**POD Number:** L 04247

**Sorted by:** File Number

\*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

## Water Column/Average Depth to Water

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

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

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

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

(In feet)

POD Number	POD Code	Subbasin	County	Q 64	Q 16	Q 4	Sec	Tws	Range	X	Y	Depth Well	Depth Water	Water Column
L 04247 POD5	L		LE	1	3	31	17S	35E		640156	3628964*	235	95	140
L 04247 POD6	L		LE	2	1	31	17S	35E		640255	3629063*	232	117	115
L 07695	L		LE	3	4	32	17S	35E		642554	3628586*	198	85	113

Average Depth to Water: **99 feet**

Minimum Depth: **85 feet**

Maximum Depth: **117 feet**

**Record Count: 3**

**PLSS Search:**

**Section(s): 31, 32**

**Township: 17S**

**Range: 35E**

\*UTM location was derived from PLSS - see Help

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# New Mexico Office of the State Engineer

## Water Column/Average Depth to Water

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

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

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

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

(In feet)

POD Number	POD Code	Subbasin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
L 04250	L	LE		05	18S	35E				642378	3627565*	112	60	52
L 04591	L	LE		4 2	05	18S	35E			642970	3627785*	130	75	55
L 04664	L	LE		2 3	05	18S	35E			642171	3627371*	140	70	70
L 04777	L	LE		1 2 2	07	18S	35E			641279	3626653*	145	85	60
L 04778	L	LE		2 1	07	18S	35E			640575	3626545*	150	75	75
L 04794	L	LE		4	07	18S	35E			641200	3625540*	150	95	55
L 04796	L	LE		4 4 3	06	18S	35E			640667	3626847*	150	95	55
L 04906	L	LE		3	07	18S	35E			640415	3625532*	155	87	68
L 04975	L	LE		2 2 3	07	18S	35E			640688	3625837*	152	105	47
L 07119	L	LE		1 1 1	06	18S	35E			640068	3628255*	233	95	138
L 07119 S	L	LE		1 2 1	06	18S	35E			640445	3628259*	233	95	138

Average Depth to Water: **85 feet**

Minimum Depth: **60 feet**

Maximum Depth: **105 feet**

**Record Count: 11**

**PLSS Search:**

**Section(s): 5, 6, 7, 8**

**Township: 18S**

**Range: 35E**

\*UTM location was derived from PLSS - see Help

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# New Mexico Office of the State Engineer

## Water Column/Average Depth to Water

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

(R=POD has  
been replaced,  
O=orphaned,

C=the file is (quarters are 1=NW 2=NE 3=SW 4=SE)

closed) (quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

POD Number	POD Code	Subbasin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
L 04160	L		LE	3	3	01	18S	34E		638585	3626911*	165	100	65
L 04851	L		LE	4	2	12	18S	34E		639801	3626130*	155	95	60
L 05079	L		LE	1	3	12	18S	34E		638604	3625702*	159	76	83

Average Depth to Water: **90 feet**

Minimum Depth: **76 feet**

Maximum Depth: **100 feet**

Record Count: 3

PLSS Search:

Section(s): 1, 12

Township: 18S

Range: 34E

\*UTM location was derived from PLSS - see Help

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# New Mexico Office of the State Engineer

## Water Column/Average Depth to Water

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

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

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

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

(In feet)

POD Number	POD Code	Subbasin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
L 05003	L	LE		1	36	17S	34E			638742	3629538*	135	105	30

Average Depth to Water: **105 feet**

Minimum Depth: **105 feet**

Maximum Depth: **105 feet**

**Record Count: 1**

**PLSS Search:**

**Section(s): 36**

**Township: 17S**

**Range: 34E**

\*UTM location was derived from PLSS - see Help

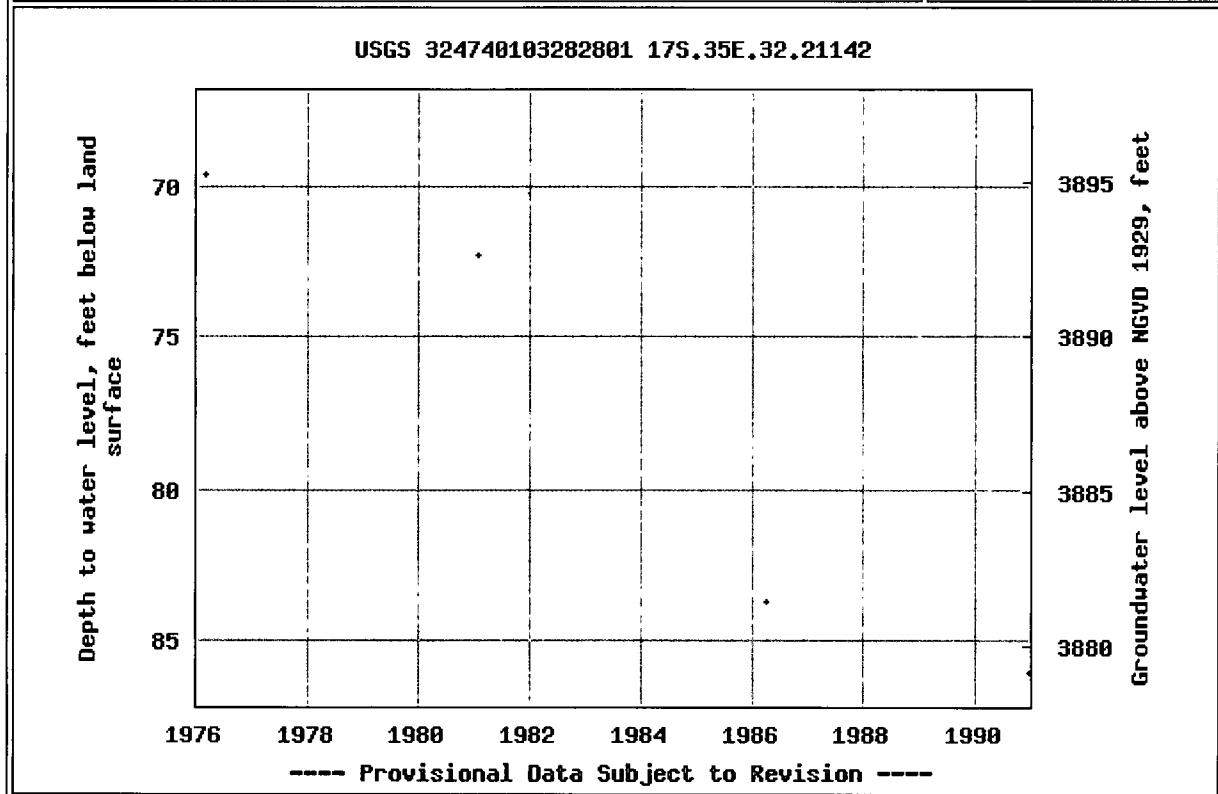
The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

**USGS 324740103282801 17S.35E.32.21142**

Available data for this site

Groundwater: Field measurements

Lea County, New Mexico  
Hydrologic Unit Code 12080003  
Latitude 32°47'51", Longitude 103°28'39" NAD27  
Land-surface elevation 3,965.00 feet above NGVD29  
This well is completed in the Ogallala Formation  
(121OGLL) local aquifer.

**Output formats**[Table of data](#)[Tab-separated data](#)[Graph of data](#)[Reselect period](#)

**USGS 324737103301401 17S.34E.36.224112**

Available data for this site

Groundwater: Field measurements

[ GO ]

Lea County, New Mexico  
Hydrologic Unit Code 13070007  
Latitude 32°47'48", Longitude 103°30'24" NAD27  
Land-surface elevation 3,993.00 feet above NGVD29  
This well is completed in the Ogallala Formation  
(121OGLL) local aquifer.

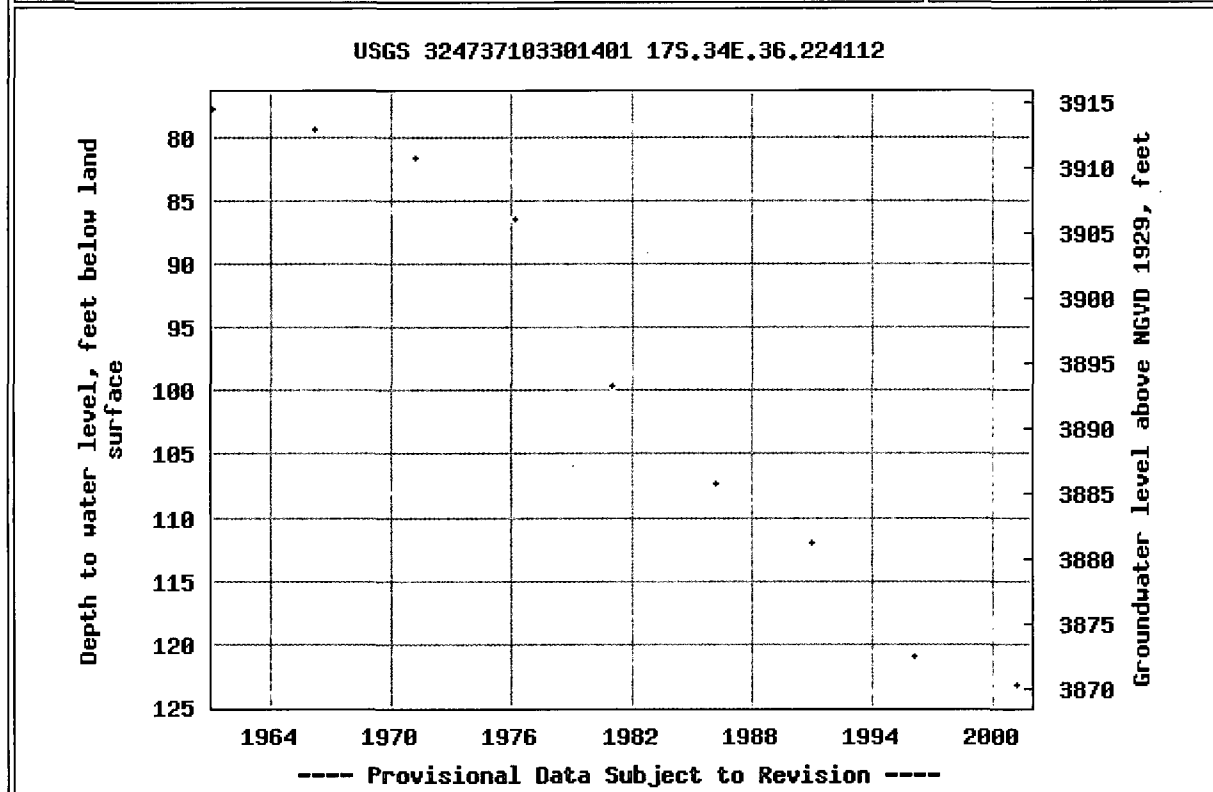
**Output formats**

Table of data

Tab-separated data

Graph of data

Reselect period

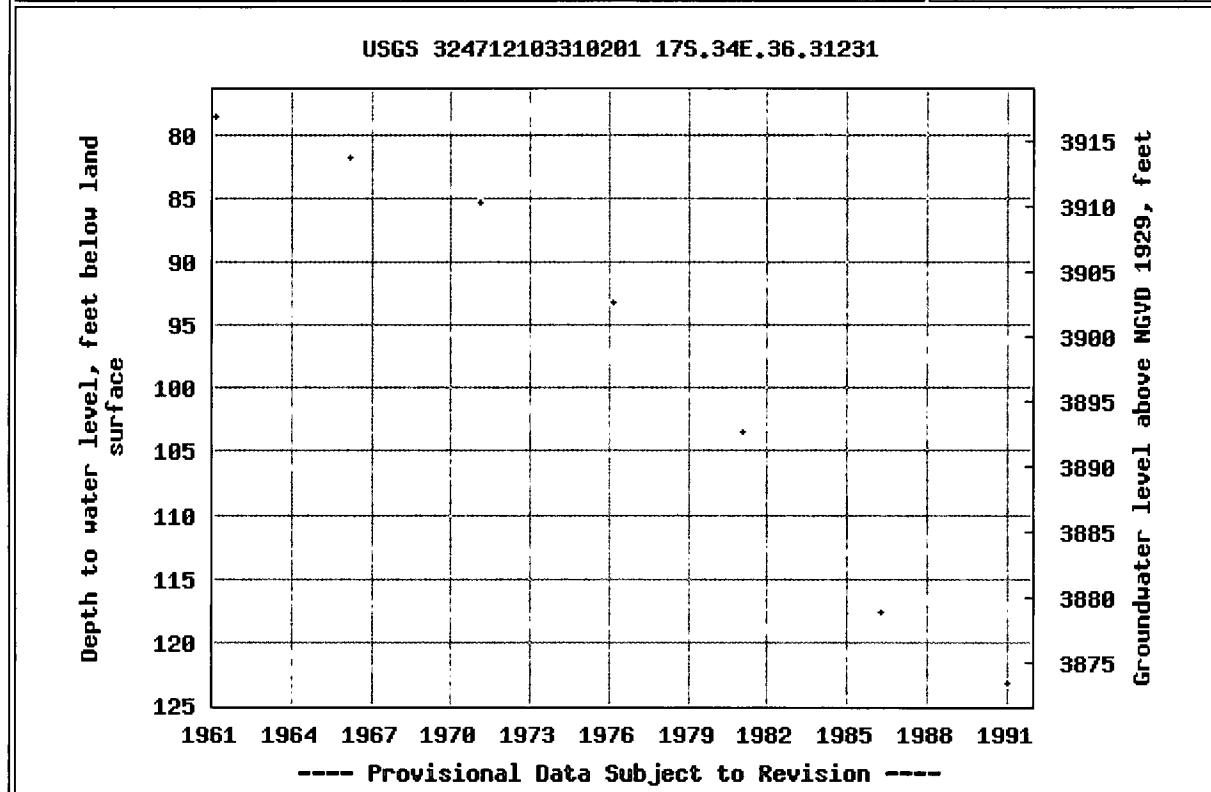


**USGS 324712103310201 17S.34E.36.31231**

Available data for this site

Groundwater: Field measurements

Lea County, New Mexico  
 Hydrologic Unit Code 13070007  
 Latitude 32°47'25", Longitude 103°31'11" NAD27  
 Land-surface elevation 3,996.00 feet above NGVD29  
 This well is completed in the Ogallala Formation  
 (121OGLL) local aquifer.

**Output formats**[Table of data](#)[Tab-separated data](#)[Graph of data](#)[Reselect period](#)

**USGS 324657103292801 17S.35E.31.43411**

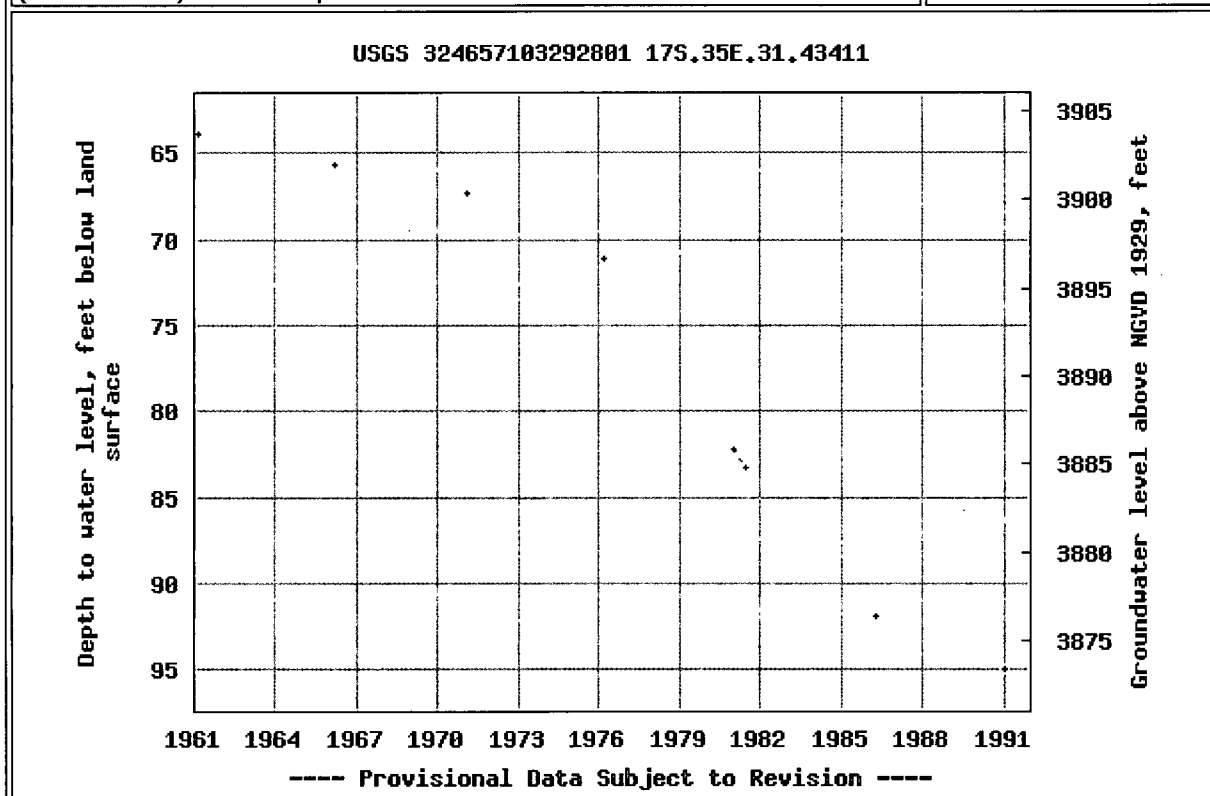
Available data for this site

Groundwater: Field measurements



[ GO ]

Lea County, New Mexico  
Hydrologic Unit Code 13070007  
Latitude 32°47'08", Longitude 103°29'38" NAD27  
Land-surface elevation 3,968.00 feet above NGVD29  
The depth of the well is 146 feet below land surface.  
This well is completed in the Ogallala Formation  
(121OGLL) local aquifer.

**Output formats**[Table of data](#)[Tab-separated data](#)[Graph of data](#)[Reselect period](#)

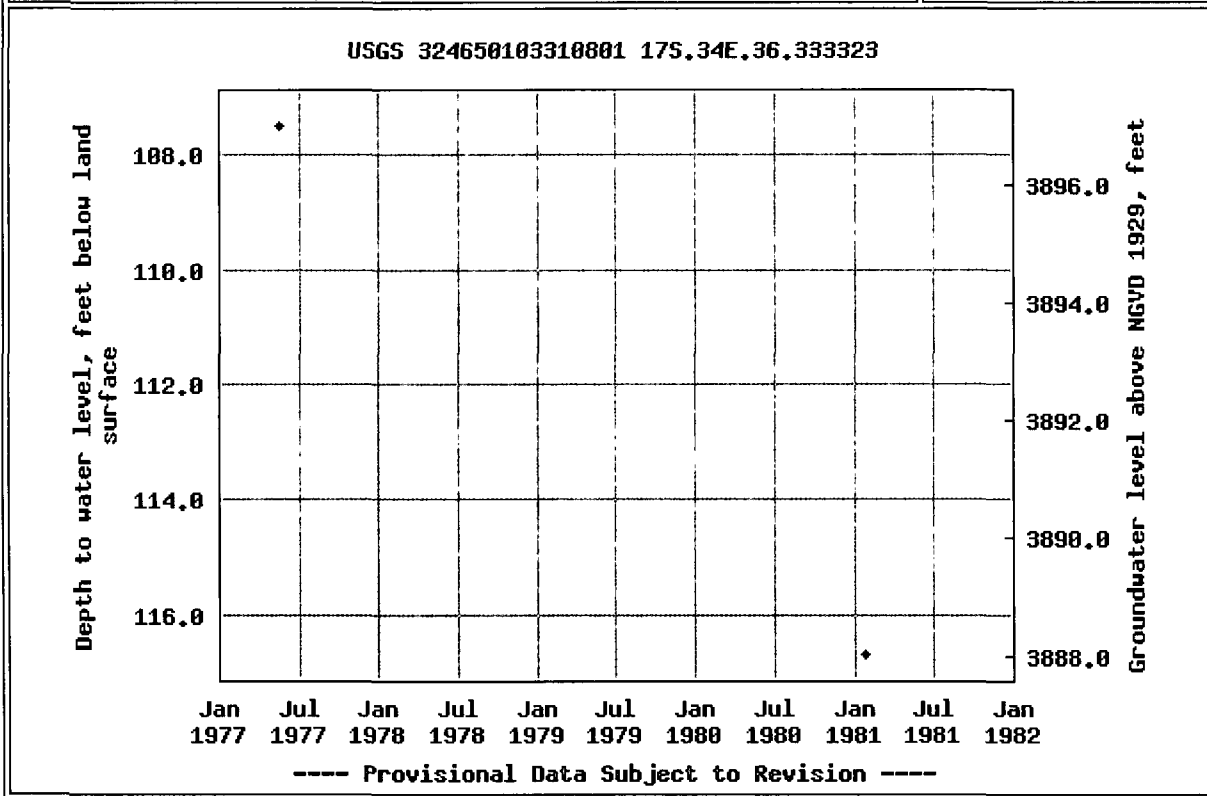
**USGS 324650103310801 17S.34E.36.333323**

Available data for this site

Groundwater: Field measurements

[GO]

Lea County, New Mexico  
Hydrologic Unit Code --  
Latitude 32°47'05", Longitude 103°31'17" NAD27  
Land-surface elevation 4,004.60 feet above NGVD29  
The depth of the well is 230 feet below land surface.  
This well is completed in the Ogallala Formation  
(121OGLL) local aquifer.

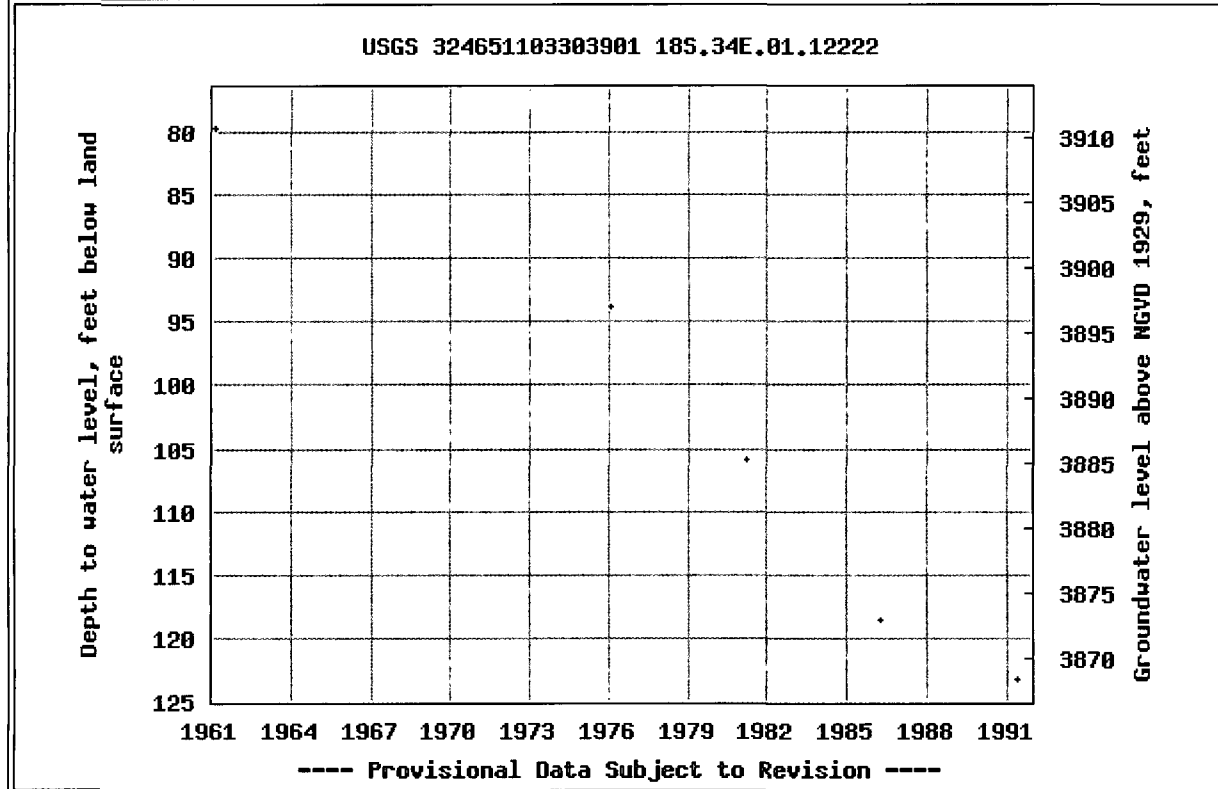
**Output formats**[Table of data](#)[Tab-separated data](#)[Graph of data](#)[Reselect period](#)

**USGS 324651103303901 18S.34E.01.12222**

Available data for this site

Groundwater: Field measurements

Lea County, New Mexico  
 Hydrologic Unit Code 13070007  
 Latitude 32°47'02", Longitude 103°30'50" NAD27  
 Land-surface elevation 3,991.00 feet above NGVD29  
 This well is completed in the Ogallala Formation  
 (121OGLL) local aquifer.

**Output formats**[Table of data](#)[Tab-separated data](#)[Graph of data](#)[Reselect period](#)

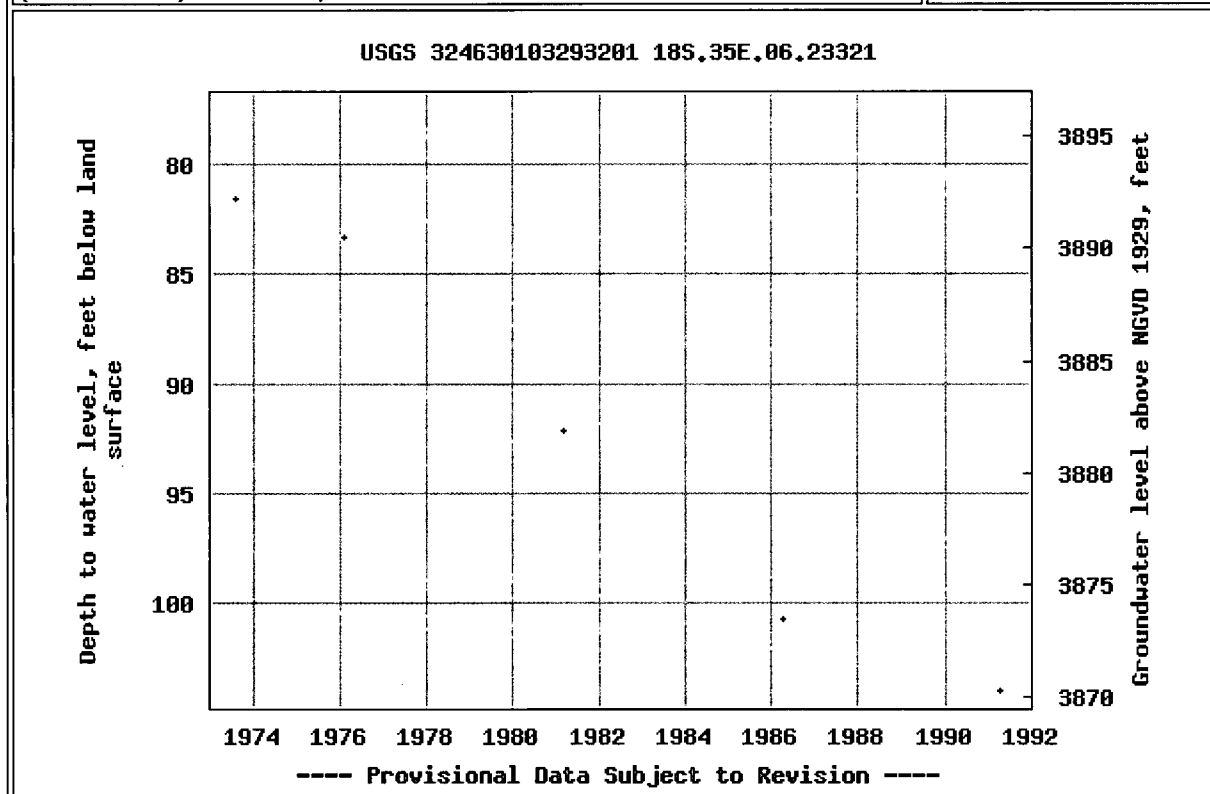


**USGS 324630103293201 18S.35E.06.23321**

Available data for this site

Groundwater: Field measurements

Lea County, New Mexico  
Hydrologic Unit Code 13070007  
Latitude 32°46'42", Longitude 103°29'43" NAD27  
Land-surface elevation 3,974.00 feet above NGVD29  
The depth of the well is 147 feet below land surface.  
This well is completed in the Ogallala Formation  
(121OGLL) local aquifer.

**Output formats**[Table of data](#)[Tab-separated data](#)[Graph of data](#)[Reselect period](#)

**USGS 324622103292101 18S.35E.06.42113**

Available data for this site

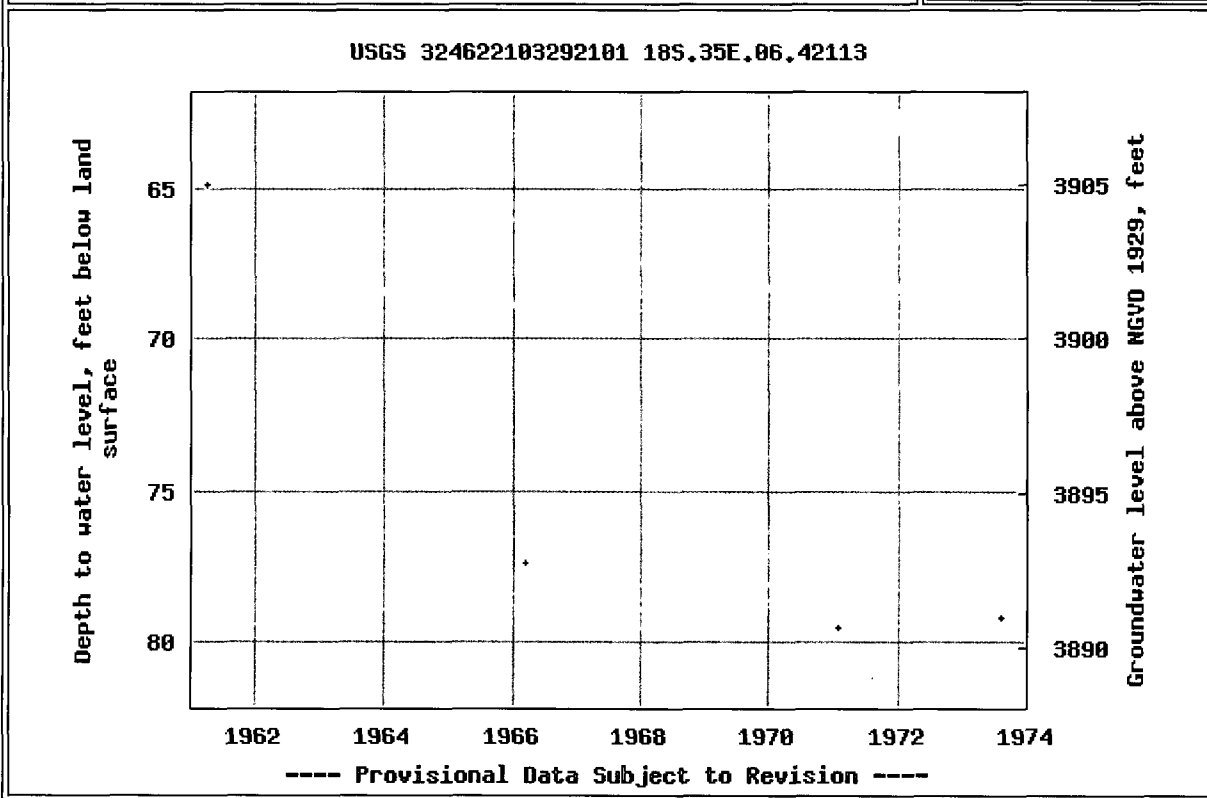
Groundwater: Field measurements

Lea County, New Mexico

Hydrologic Unit Code 13070007

Latitude 32°46'34", Longitude 103°29'31" NAD27

Land-surface elevation 3,970.00 feet above NGVD29

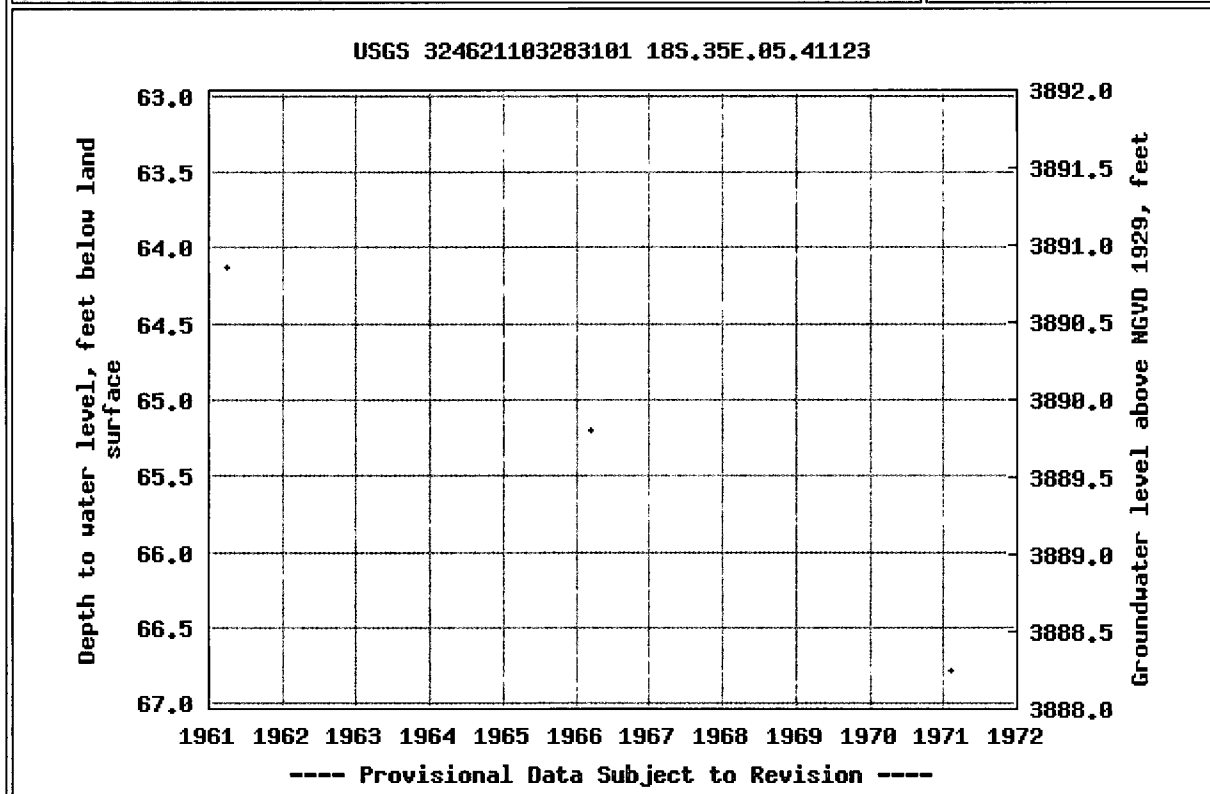
This well is completed in the Ogallala Formation  
(121OGLL) local aquifer.**Output formats**[Table of data](#)[Tab-separated data](#)[Graph of data](#)[Reselect period](#)

**USGS 324621103283101 18S.35E.05.41123**

Available data for this site

Groundwater: Field measurements

Lea County, New Mexico  
Hydrologic Unit Code 13070007  
Latitude 32°46'34", Longitude 103°28'41" NAD27  
Land-surface elevation 3,955.00 feet above NGVD29  
The depth of the well is 112 feet below land surface.  
This well is completed in the Ogallala Formation  
(121OGLL) local aquifer.

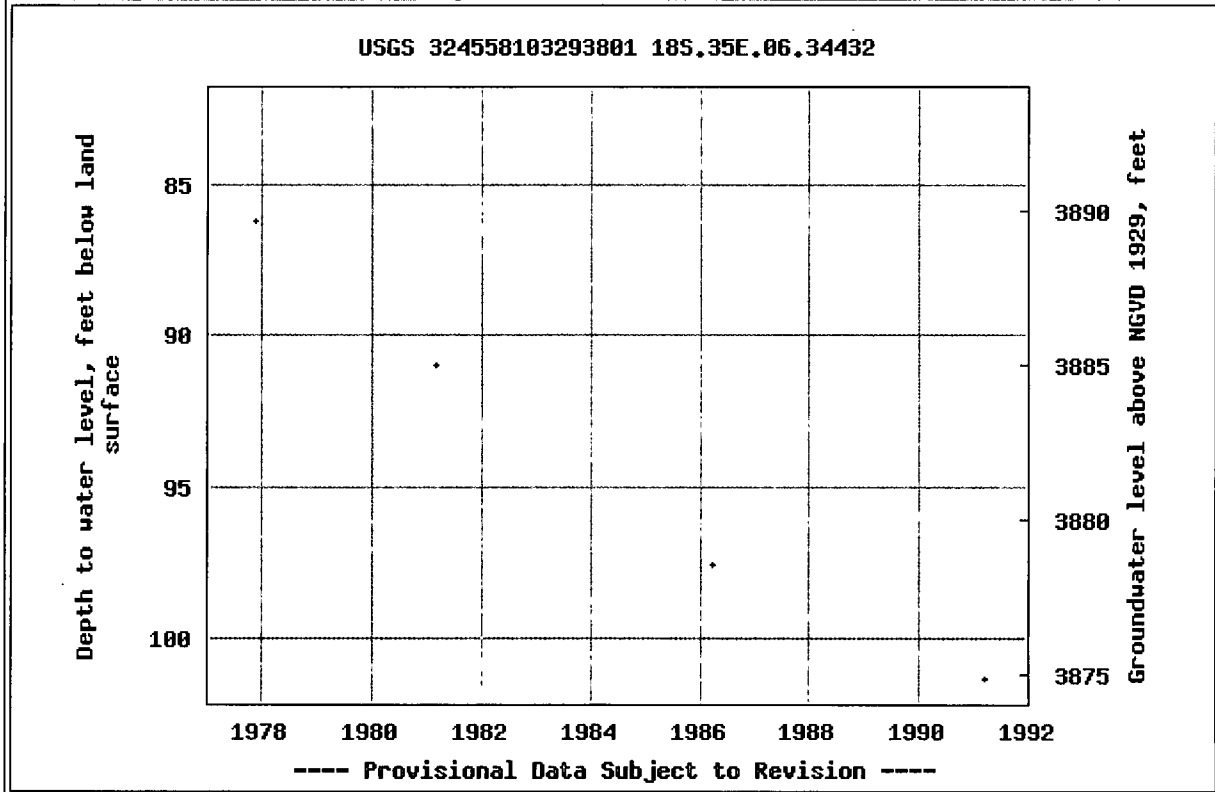
**Output formats**[Table of data](#)[Tab-separated data](#)[Graph of data](#)[Reselect period](#)

**USGS 324558103293801 18S.35E.06.34432**

Available data for this site

Groundwater: Field measurements

Lea County, New Mexico  
Hydrologic Unit Code --  
Latitude 32°46'13", Longitude 103°29'52" NAD27  
Land-surface elevation 3,976.00 feet above NGVD29  
The depth of the well is 150 feet below land surface.  
This well is completed in the Ogallala Formation  
(121OGLL) local aquifer.

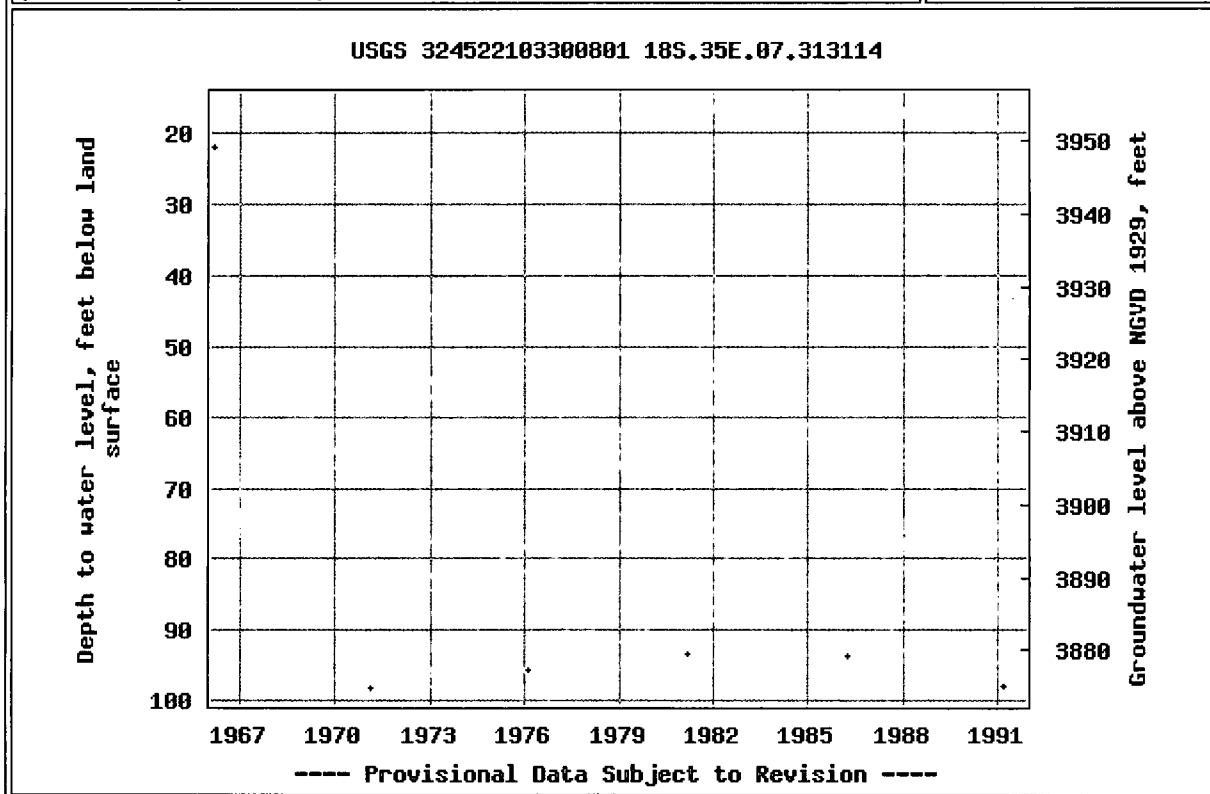
**Output formats**[Table of data](#)[Tab-separated data](#)[Graph of data](#)[Reselect period](#)

**USGS 324522103300801 18S.35E.07.313114**

Available data for this site

Groundwater: Field measurements

Lea County, New Mexico  
Hydrologic Unit Code 13070007  
Latitude 32°45'37", Longitude 103°30'17" NAD27  
Land-surface elevation 3,972.00 feet above NGVD29  
The depth of the well is 212 feet below land surface.  
This well is completed in the Ogallala Formation  
(121OGLL) local aquifer.

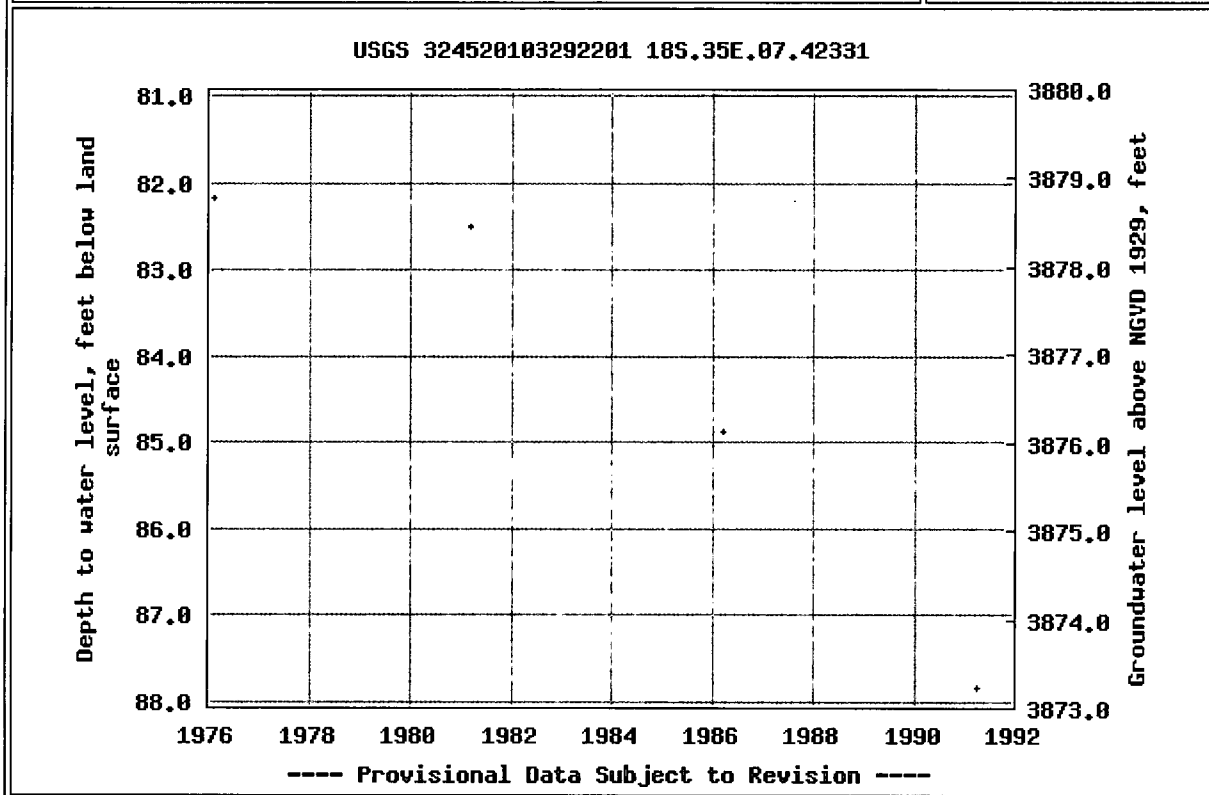
**Output formats**[Table of data](#)[Tab-separated data](#)[Graph of data](#)[Reselect period](#)

**USGS 324520103292201 18S.35E.07.42331**

Available data for this site

Groundwater: Field measurements

Lea County, New Mexico  
Hydrologic Unit Code 13070007  
Latitude 32°45'34", Longitude 103°29'31" NAD27  
Land-surface elevation 3,961.00 feet above NGVD29  
The depth of the well is 207 feet below land surface.  
This well is completed in the Ogallala Formation  
(121OGLL) local aquifer.

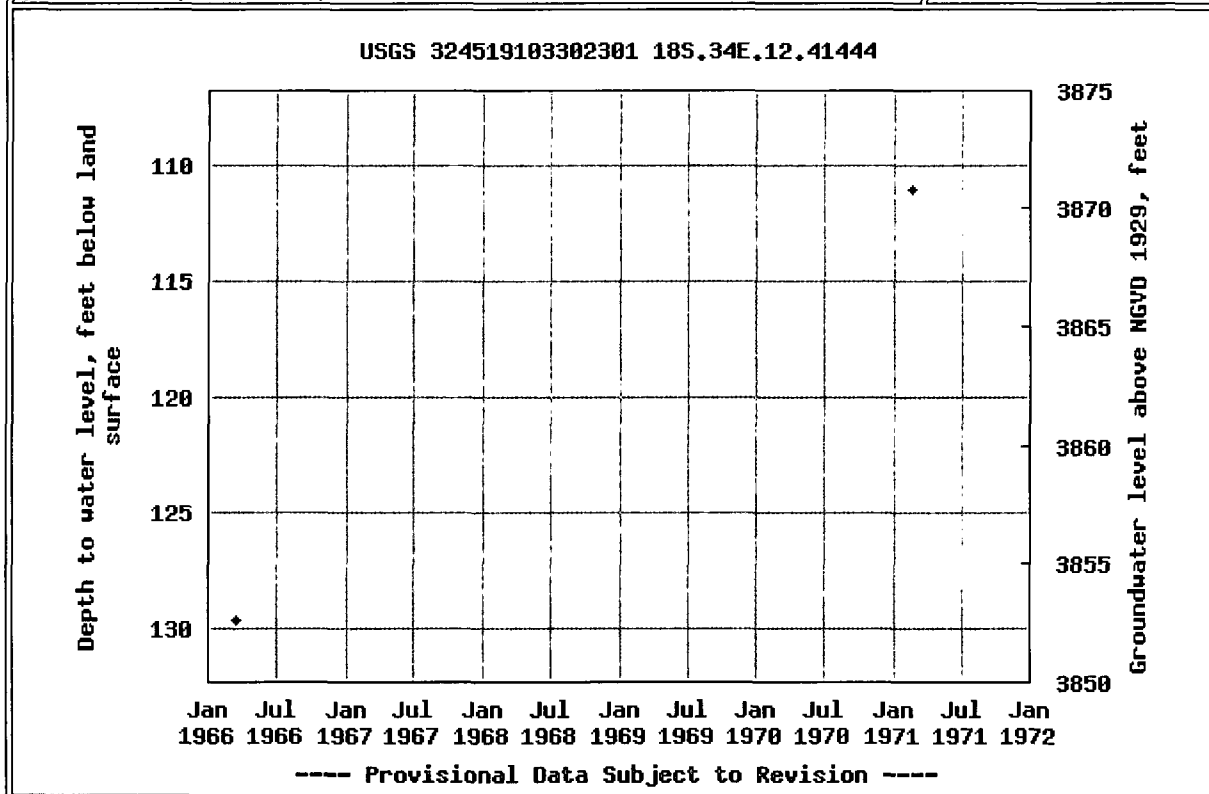
**Output formats**[Table of data](#)[Tab-separated data](#)[Graph of data](#)[Reselect period](#)

**USGS 324519103302301 18S.34E.12.41444**

Available data for this site

Groundwater: Field measurements

Lea County, New Mexico  
Hydrologic Unit Code 13070007  
Latitude 32°45'32", Longitude 103°30'34" NAD27  
Land-surface elevation 3,982.00 feet above NGVD29  
The depth of the well is 204 feet below land surface.  
This well is completed in the Ogallala Formation  
(121OGLL) local aquifer.

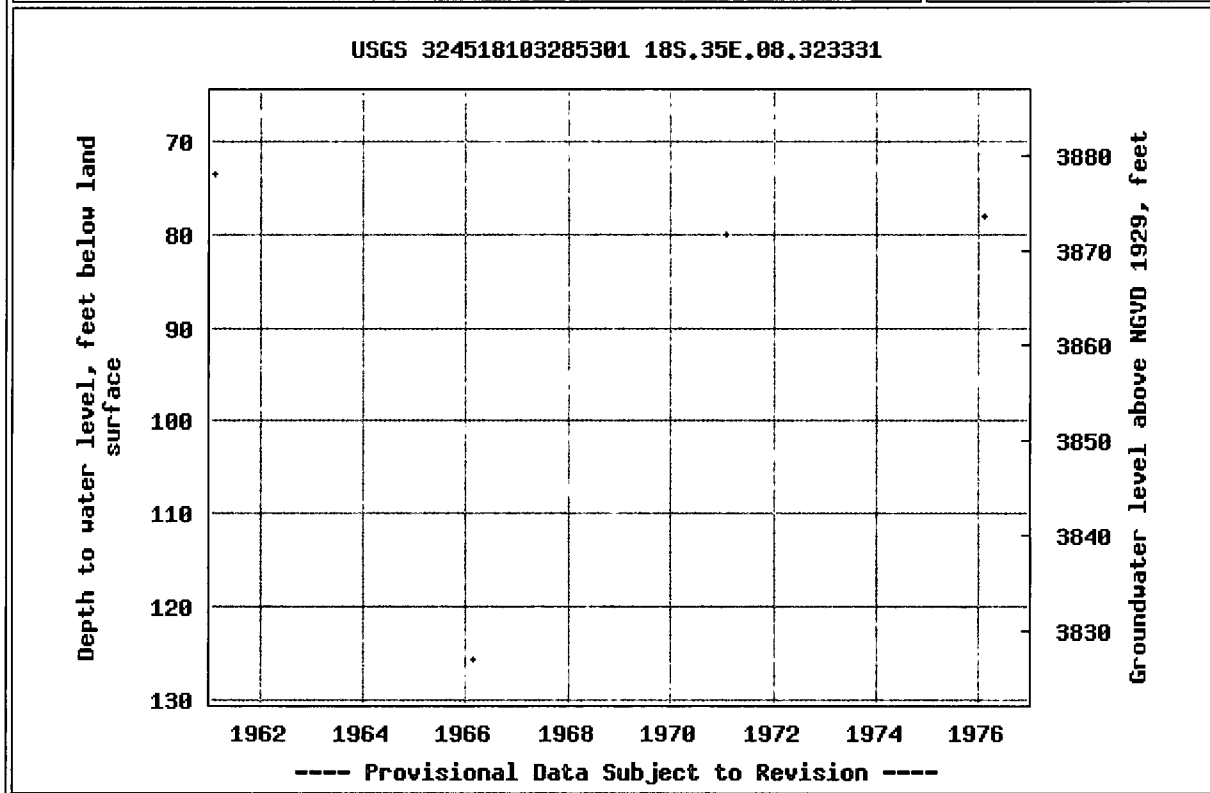
**Output formats**[Table of data](#)[Tab-separated data](#)[Graph of data](#)[Reselect period](#)

**USGS 324518103285301 18S.35E.08.323331**

Available data for this site

Groundwater: Field measurements

Lea County, New Mexico  
Hydrologic Unit Code 13070007  
Latitude 32°45'32", Longitude 103°29'00" NAD27  
Land-surface elevation 3,952.00 feet above NGVD29  
The depth of the well is 216 feet below land surface.  
This well is completed in the Ogallala Formation  
(121OGLL) local aquifer.

**Output formats**[Table of data](#)[Tab-separated data](#)[Graph of data](#)[Reselect period](#)



# Appendix E

Final Form 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

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 Corp.	Contact	Natalie Gladden
Address	P.O. Box 1849, Eunice, NM, 88231	Telephone No.	(575) 390-4186
Facility Name	Warn State A/C #19	Facility Type	Production Well

Surface Owner	Mineral Owner	State of NM	Lease No.	30-025-31927
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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
F	6	18S	35E	2010	FNL	2230	FWL	Lea

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

**NATURE OF RELEASE**

Type of Release	Produced Water	Volume of Release	10 bbl	Volume Recovered	1 bbl
Source of Release	Flow line leak	Date and Hour of Occurrence	09/6/11	Date and Hour of Discovery	09/6/11
Was Immediate Notice Given?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?			
By Whom?	Date and Hour				
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.\*

dnw = 104'

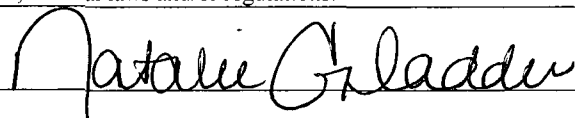
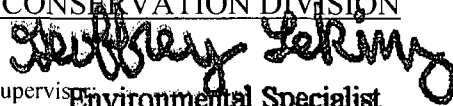
Describe Cause of Problem and Remedial Action Taken.\*

Flow line leak. Fluid was recovered and location back-dragged until one-call cleared.

Describe Area Affected and Cleanup Action Taken.\*

The leak affected an area of pasture land. Impacted soils were removed to a NMOCD approved disposal facility. Representative soil samples were collected from the excavation and sent to a commercial laboratory for chloride and TPH confirmation. The excavation was backfilled with clean soil and contoured to the surrounding area.

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: EH&S Environmental Tech	Approval Date: 11/9/12	Expiration Date: —
E-mail Address: Natalie.gladden@apachecorp.com	Conditions of Approval: —	Attached <input type="checkbox"/>
Date: 11/9/12 Phone: (575) 390-4186	VFP-06-14-3082	

\* Attach Additional Sheets If Necessary