

1RP-2726

**Termination
Request**

DATE:

April 19th, 2012

Rice Environmental Consulting & Safety

P.O. Box 5630 Hobbs, NM 88241

Phone 575.393.4411 Fax 575.393.0293

CERTIFIED MAIL

RETURN RECEIPT NO. 7008 1140 0001 3070 6266

April 19th, 2012

Mr. Edward Hansen

New Mexico Energy, Minerals, & Natural Resources

Oil Conservation Division, Environmental Bureau

1220 S. St. Francis Drive

Santa Fe, New Mexico 87505

RE: Termination Request

Apache Corporation

Lou Wortham #20 AD (1R0711-2726): UL/F sec. 11 T22S R37E

Mr. Hansen:

Apache Corporation (Apache) has retained Rice Environmental Consulting and Safety (RECS) to address potential environmental concerns at the above-referenced site. The site is located approximately 2.5 miles southeast of Eunice, New Mexico at UL/F, Sec. 11, T22S, R37E as shown on the Site Location Map (Figure 1). Groundwater at this site is located approximately +/-37 feet below ground surface (bgs).

On May 25th, 2011 six soil bores were installed at the site. The samples were field tested for chlorides and screened in the field for hydrocarbons with a photo-ionization detector. Representative samples from the bores were taken to a commercial laboratory for confirmation of chloride field numbers. Laboratory readings showed chloride numbers ranging from a high of 7,900 mg/kg at 18 ft bgs in SB-2 to a low of 16 mg/kg at the surface of SB-3.

Per the approval of the NMOCD District 1 Office, the site was excavated to 120 ft by 188 ft by 5 ft bgs. Two additional areas within the excavation were excavated to 21 ft bgs. These two areas surrounded SB-1 and SB-2 respectively and measured 10' x 10' each. At the base of these two excavations, liners were installed to inhibit the downward migration of chlorides. A one foot clay layer was placed at the base of the two excavations and a 20-mil reinforced poly liner was properly seated on top of the clay. Then the two excavations were backfilled to 5 ft bgs with clean imported caliche. On August 12th, 2011, a 20-mil reinforced poly liner was properly seated over the entire 120 ft by 188 ft excavation. The site was backfilled with clean, imported soil and contoured to the surrounding area. Soil amendments were added to the site and the site was seeded with a native vegetative mix on September 6th, 2011.

On August 9th, 2011, two monitor wells were installed at the site. MW-1, the source monitor well, was installed 35 ft south southeast of the excavation and MW-2, the up gradient monitor well, was installed 63 ft north northwest of the excavation. MW-1 has been sampled twice since its installation and MW-2 has been sampled three times since its installation (Figure 2). From the monitor well sampling conducted at the site, it is evident that chloride levels coming onto the site are higher than those leaving the site suggesting the site has an up gradient source of contamination. (Appendix A). Based on data found in the NMOCD website, there is evidence of an up gradient chloride contamination source which has impacted the surrounding area (Figure 3 and 4). These results indicate that this location and the surrounding area have pre-existing groundwater quality impairment, and that the effects of the Lou Wortham #20 AD are inconsequential. In addition, the liners installed at the site and the re-vegetation of the surface will inhibit chloride migration through the vadose zone to the aquifer. Since the up gradient monitor well shows higher chloride readings than the source well, and liners have been installed at the site which will inhibit chloride migration, the site will not contribute to the degradation of the aquifer. Therefore, RECS requests that the site be granted 'remediation termination' status of the regulatory file.

Upon NMOCD's approval of the Termination Request, both monitor wells will be plugged and abandoned with a 1-3% bentonite/concrete slurry with a three foot concrete cap.

RECS appreciates the opportunity to work with you on this project. Please call Hack Conder – RECS at (575) 393-9174 or Natalie Gladden – Apache Corp. (575) 394-1503 if you have any questions or wish to discuss the site.

Sincerely,



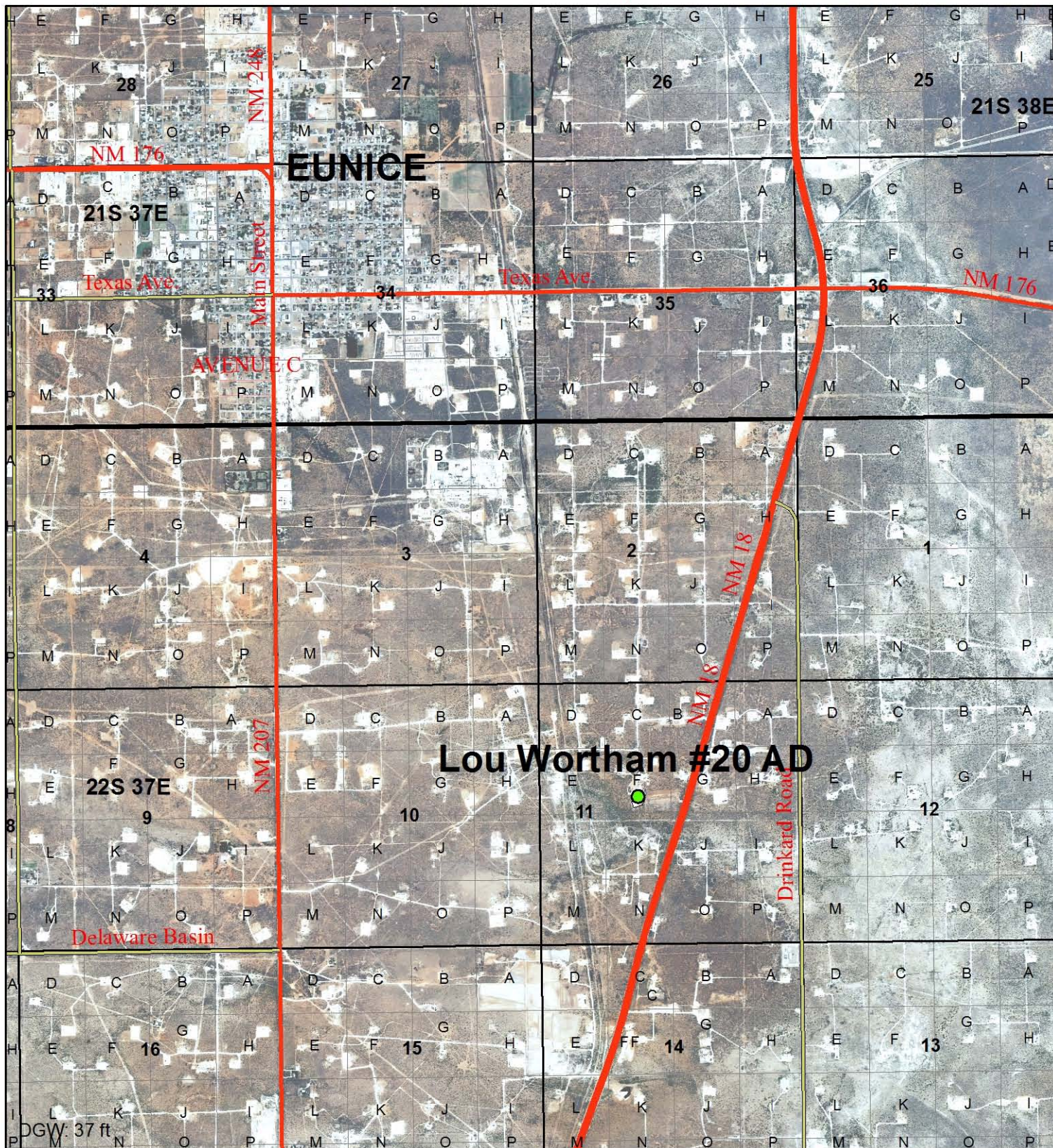
Lara Weinheimer
Project Scientist
RECS
(575) 441-0431

Attachments:

- Figure 1 – Site Location Map
- Figure 2 – Monitor Well Sampling Data
- Figure 3 – Up Gradient Chloride Contamination Source Map
- Figure 4 – Potentiometric Map
- Appendix A – Laboratory Confirmation

Figures

Site Map



Apache Lou Wortham #20 AD

NMOCD Case #: 1R0711-2726

LEGALS: UL/F sec. 11
T22S R37E

Figure 1

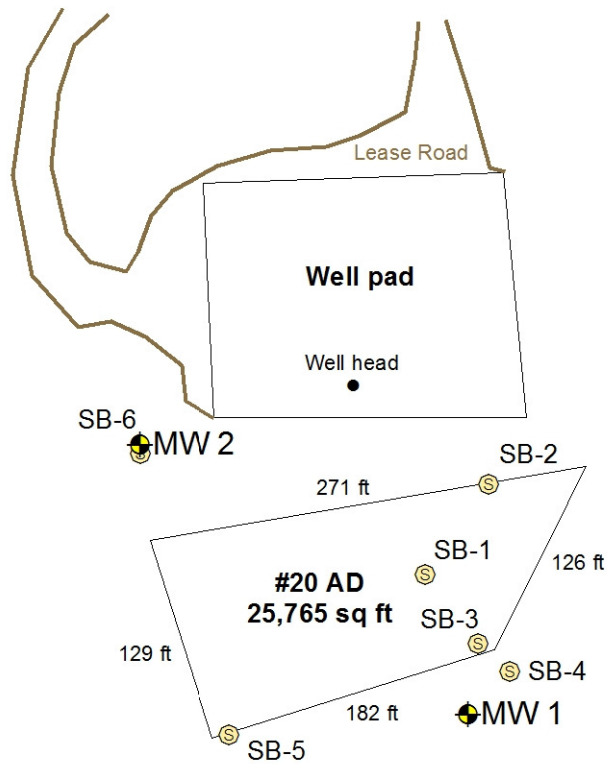


0 0.25 0.5 1
Miles

Drawing date: 8-18-11
Drafted by: L. Weinheimer

Monitor Well Sampling

MW	Depth to Water	Total Depth	Sample Date	CI
2	40.34	50.95	8/13/2011	18000
2	40.35	50.95	9/12/2011	17800
2	40.35	50.95	11/16/2011	18000



MW	Depth to Water	Total Depth	Sample Date	CI
1	39.67	80.78	9/12/2011	17400
1	39.69	80.78	11/16/2011	17000



Apache Lou Wortham #20 AD

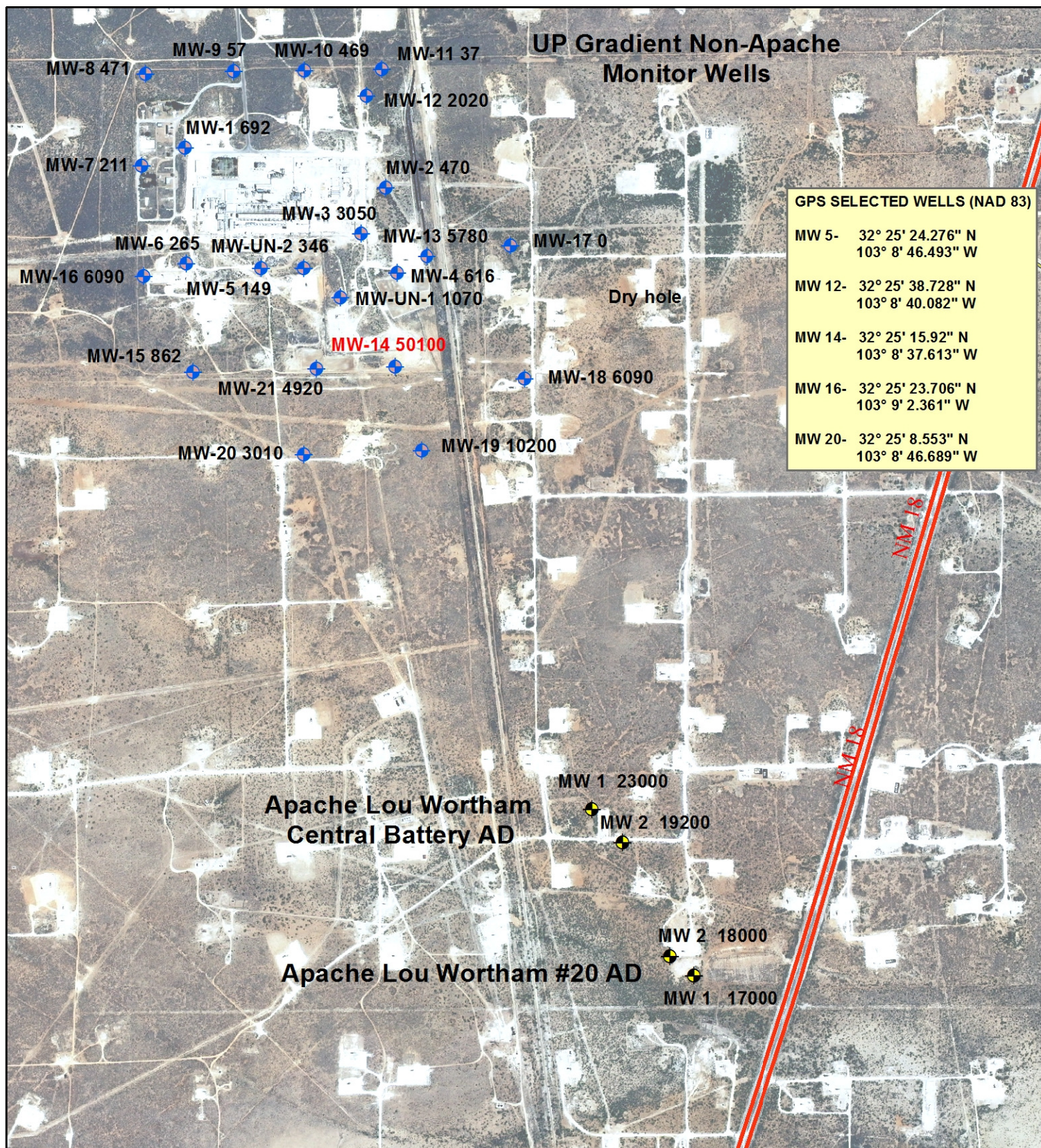
LEGALS: UL/F sec. 11
T22S R37E
NMOCD Case #: 1R0711-2726

Figure 2



0 37.5 75 150
Feet

Drawing date: 12-22-11
Drafted by: L. Weinheimer



Regional Chloride Concentrations

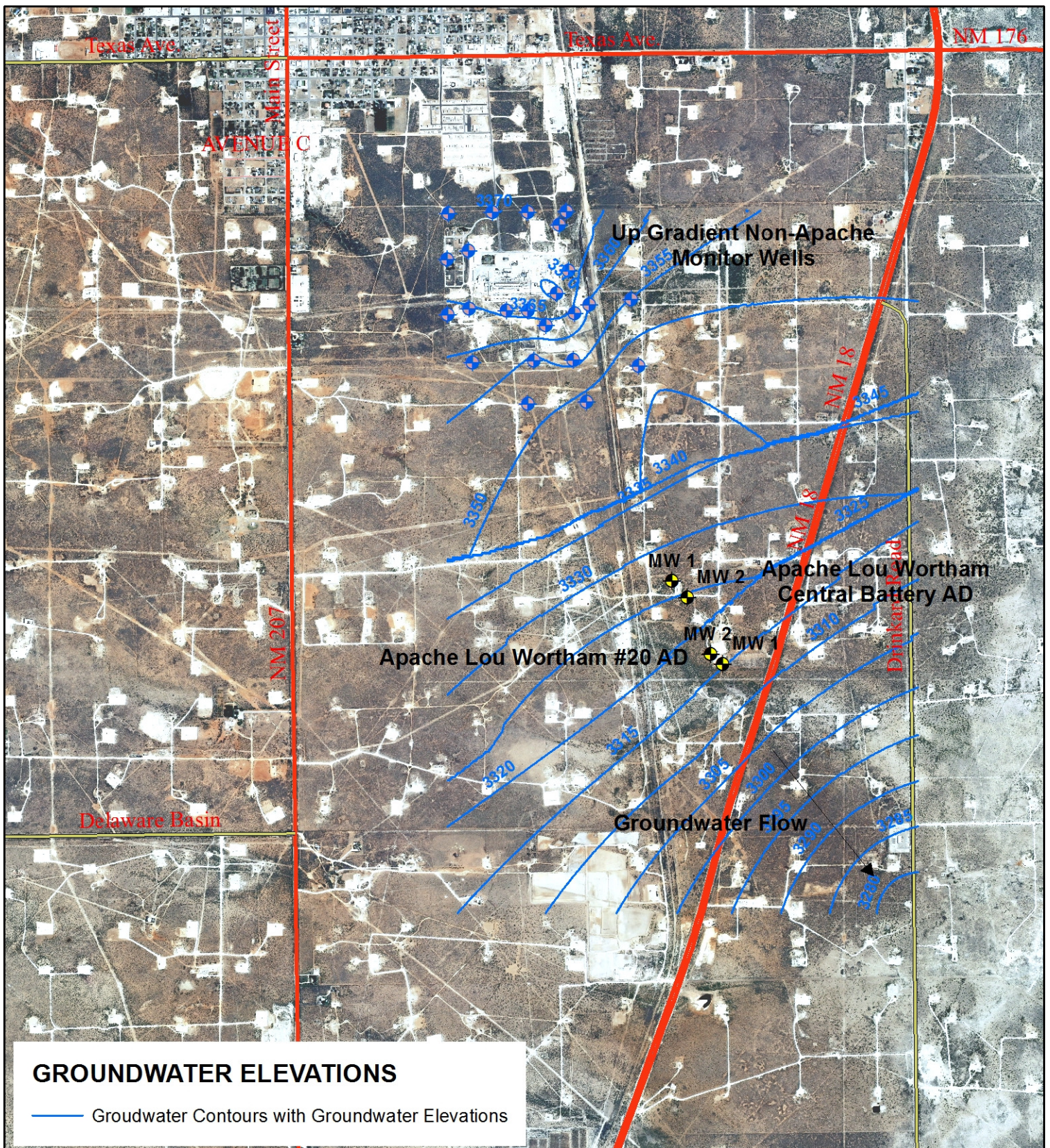
LEGALS: sec. 2, 3, 10 & 11
T22S R37E

Figure 3



0 500 1,000 2,000
Feet

Drawing date: 1-5-12
Drafted by: L. Weinheimer & T. Grieco



Regional Potentiometric Map

LEGALS: sec. 2, 3, 10 & 11
T22S R37E

Figure 4



0 875 1,750 3,500
Feet

Drawing date: 1-5-11
Drafted by: L. Weinheimer

Appendix A

Laboratory Confirmation

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

November 18, 2011

NATALIE GLADDEN

APACHE - EUNICE

P. O. BOX 1849

EUNICE, NM 88231

RE: APACHE LOU WORTHAM #20 AD

Enclosed are the results of analyses for samples received by the laboratory on 11/17/11 14:25.

Cardinal Laboratories is accredited through Texas NELAP for:

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

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

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

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

Received: 11/17/2011
Reported: 11/18/2011
Project Name: APACHE LOU WORTHAM #20 AD
Project Number: NONE GIVEN
Project Location: T22S-R37E-SEC11 UL-F ~ LEA CTY NM

Sampling Date: 11/16/2011
Sampling Type: Water
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Sample ID: MONITOR WELL #1 (H102506-01)

Chloride, SM4500Cl-B		mg/L		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	17000	4.00	11/18/2011	ND	104	104	100	3.77	

Sample ID: MONITOR WELL #2 (H102506-02)

Chloride, SM4500Cl-B		mg/L		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	18000	4.00	11/18/2011	ND	104	104	100	3.77	

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

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

Cardinal Laboratories

*=Accredited Analyte

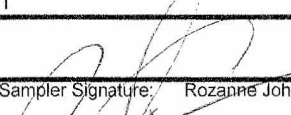
PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived 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

LAB Order ID #

Company Name: Apache		BILL TO Company: Apache		PO#
Project Manager: Hack Conder, Rice Env Consulting Safety		Address: (Street, City, Zip)		
Address: (Street, City, Zip) 122 W Taylor Street ~ Hobbs, New Mexico 88240		Phone#:		Fax#:
Phone #: (575) 393-9174		Fax #: (575) 397-1471		
Project #:		Project Name: Apache Lou Wortham #20 AD		
Project Location: T22S-R37E-Sec11 UL-F ~ Lea County New Mexico		Sampler Signature:  Rozanne Johnson (575)631-9310 rozanne@valornet.com		

ANALYSIS REQUEST

(Circle or Specify Method No.)

[illegible]

Relinquished by: <u>Rozanne Johnson</u>	Date: <u>11-17-2011</u>	Time: <u>14:25</u>	Received by: <u>Wadi Benson</u>	Date: <u>11/17/11</u>	Time: <u>14:25</u>
---	-------------------------	--------------------	---------------------------------	-----------------------	--------------------

Phone Results	Yes	No
Fax Results	Yes	No Additional Fax Number:

Relinquished by:	Date:	Time:	Received By: (Laboratory Staff)	Date:	Time:
------------------	-------	-------	---------------------------------	-------	-------

REMARKS:

Delivered By: (Circle One)	Sample Condition	CHECKED BY:
----------------------------	------------------	-------------

Sampler - UPS - Bus - Other: Cool Intact

Yes	Yes	Yes
No	No	No

(Initials) JA

Email Results to: hconder@riceswd.com
kiones@riceswd.com
twelnhelmer@rice-ecs.com
rozanne@valornet.com

#76