AP - 64

GENERAL CORRESPONDENCE

DATE: 2006-2000

AP-64

Gen. Cor.

2006 - 2000

Price, Wayne, EMNRD

From: Price, Wayne, EMNRD
Sent: Friday, September 29, 2006 12:55 PM
To: Carolyn Haynes; Kristin Pope; Gil Van Deventer
Cc: Johnson, Larry, EMNRD; Sanchez, Daniel J., EMNRD
Subject: F-29 SWD 1R0218 Abatement Plan Required

After reviewing the most recent submittals it appears that groundwater contamination still exists at this site. The original discovery was in 1999 which means that over 6 years have transpired without any groundwater remediation. ROC has not provided sufficient information to determine if the contamination is from off-site. The facts indicated that vadose zone contamination i.e. salts may still be a source of contamination. The groundwater gradient has changed direction at least three times complicating the issue. Some of the Monitor wells on site still show chlorides levels above the groundwater standard. OCD has given ROC ample time to determine the source of the contamination. As a result of this OCD feels compelled that a comprehensive abatement plan pursuant to rule 19 be require for this site. Therefore, you are hereby ordered to submit a combined sage 1 and 2 which includes additional investigation and immediate groundwater restoration plan. Please submit this plan within 30 days of receipt of this E-mail. OCD is willing to approve any emergency measures in the mean time. Thank you for your cooperation.

T. HICKS CONSULTANTS, LTD.
Rio Grande Blvd NW ▲ Suite F-142 ▲ Albuquerque, NM 87104 ▲ 505.266.5004 ▲ Fax: 505.266-0745

March 30, 2005

Mr. Wayne Price
New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

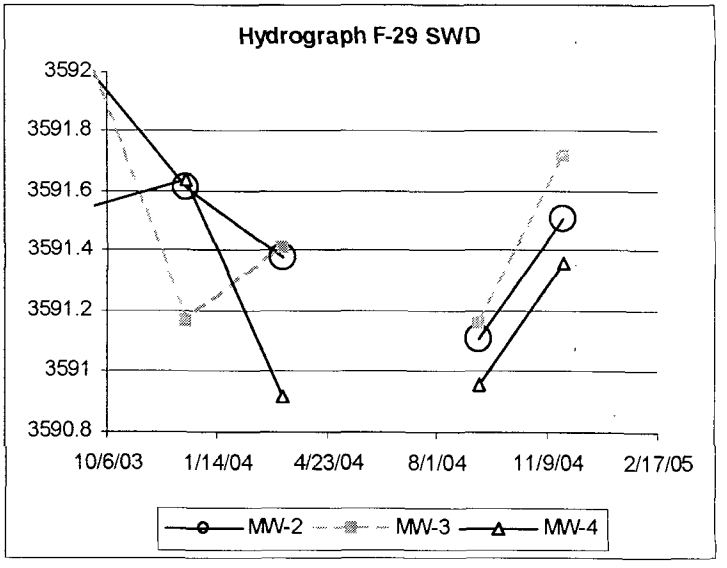
RE: NMOCD Case # 1R0218, F-29 SWD
Hobbs SWD System Abandonment
Potential Groundwater-Impacted Junction Box Sites

Dear Mr. Price

On February 3, 2005, we requested an extension of time to respond to the NMOCD request of December 6, 2004 regarding this site. As we continue to compile information relating to the five other sites in Section 29, we discovered several facts that cause us to request an additional time extension to address the NMOCD concerns. These facts are:

1. Ground water at the F-29 SWD site now flows southeast. The attached plates show the regional ground water flow, the ground water flow at the site and the location of the F-29 SWD site and the supply well of Texland Petroleum. The Texland well is consistently pumped for make-up water used in a waterflood. We believe this pumping has affected most of Section 29, but we need more data to determine the effect of the pumping. Before we move forward with any additional characterization at the F-29 SWD site, we would like to propose to complete monitor wells at several other sites listed in Table 1 in order to provide the larger view before we proceed at the smaller scale of F-29 SWD.

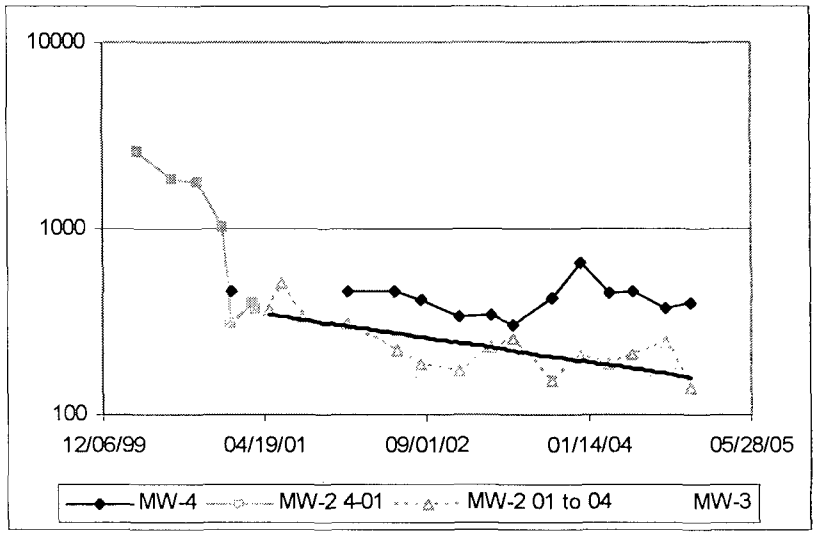
2. The attached figure shows that ground water flows east when MW-2 and MW-3 are the same elevation. When ground water in MW-2 is lower than MW-3, the ground water flow is to the southeast, which is consistent with the regional flow direction. We would like to examine more data over the next several quarters before determining how to proceed with additional characterization of F-29 SWD.



3. As the next figure shows, the chloride concentration of

ground water below the site is declining over time. However, observed 1999 irregularities in the original monitor well at the site (MW-1) may have affected the chemistry of MW-4.

We would like to collect some additional data to confirm the declining chloride concentration in MW-4 before we proceed with additional characterization.



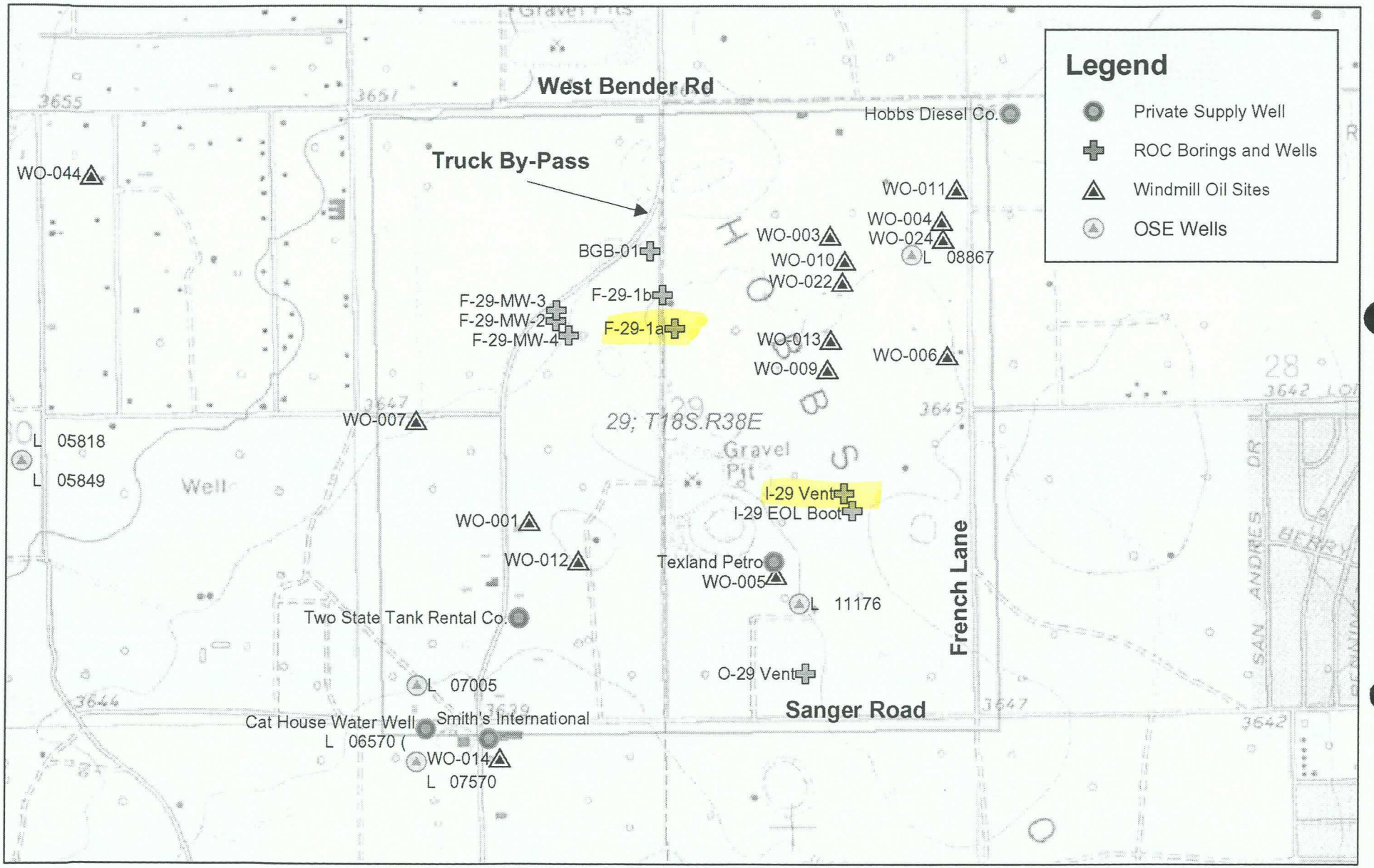
Please expect submissions from ROC that will request NMOCD approval of Investigation Characterization Plans for several other sites. Currently, we are selecting sites for characterization that will help us better understand the hydrogeologic conditions at and near the F-29 SWD site.

We ask for an extension of time that will allow us to provide NMOCD with a more regional analysis of the area potentially affected by the Hobbs Salt Water Disposal System and the F-29 SWD site. We will be prepared to fix a date for submission of a Corrective Action Plan for F-29 SWD when we submit the forthcoming ICPs for additional sites. We thank you in advance for your understanding and patience.

Sincerely,
R.T. Hicks Consultants, Ltd.

Randall T. Hicks
Principal

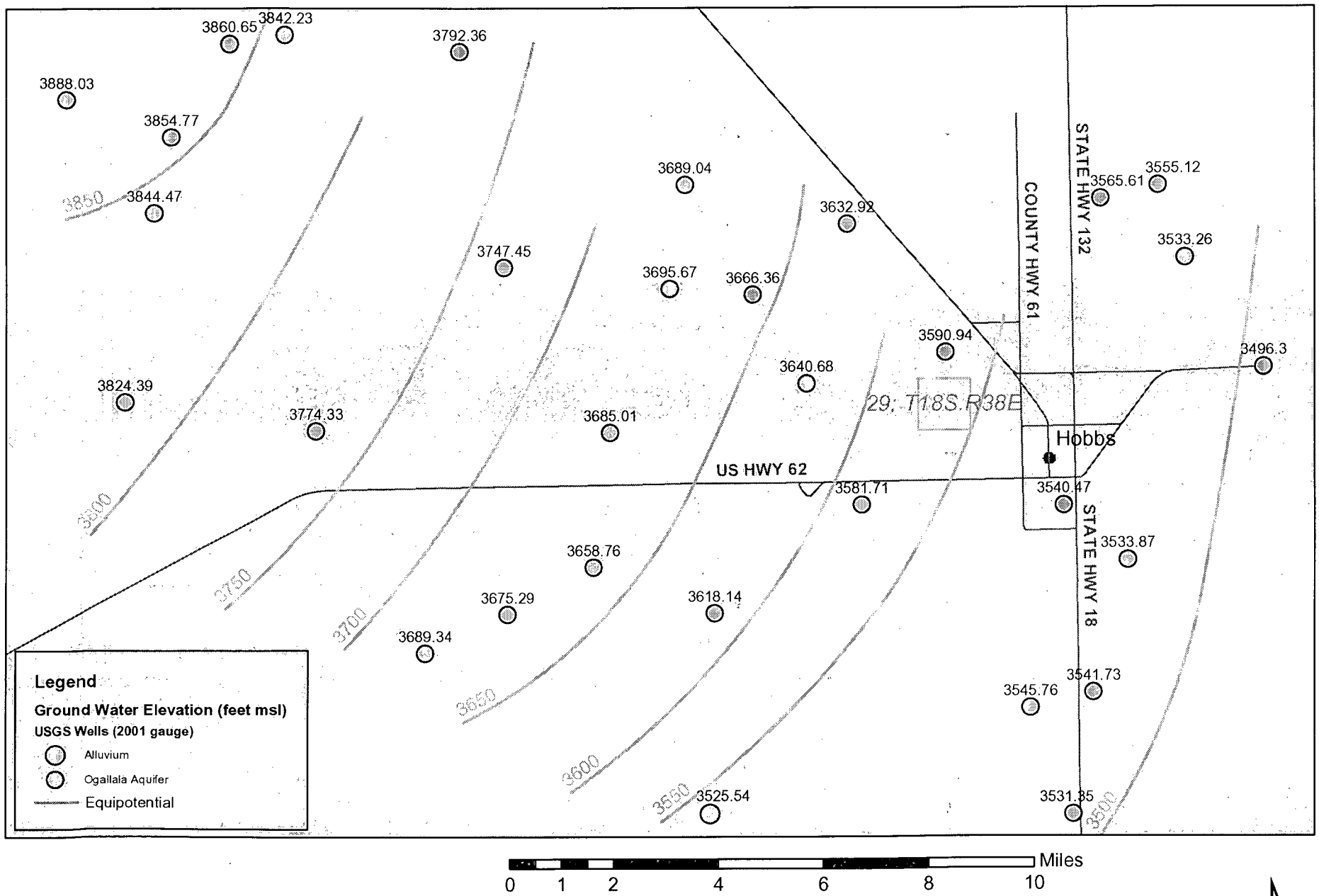
Copy:
Rice Operating Company



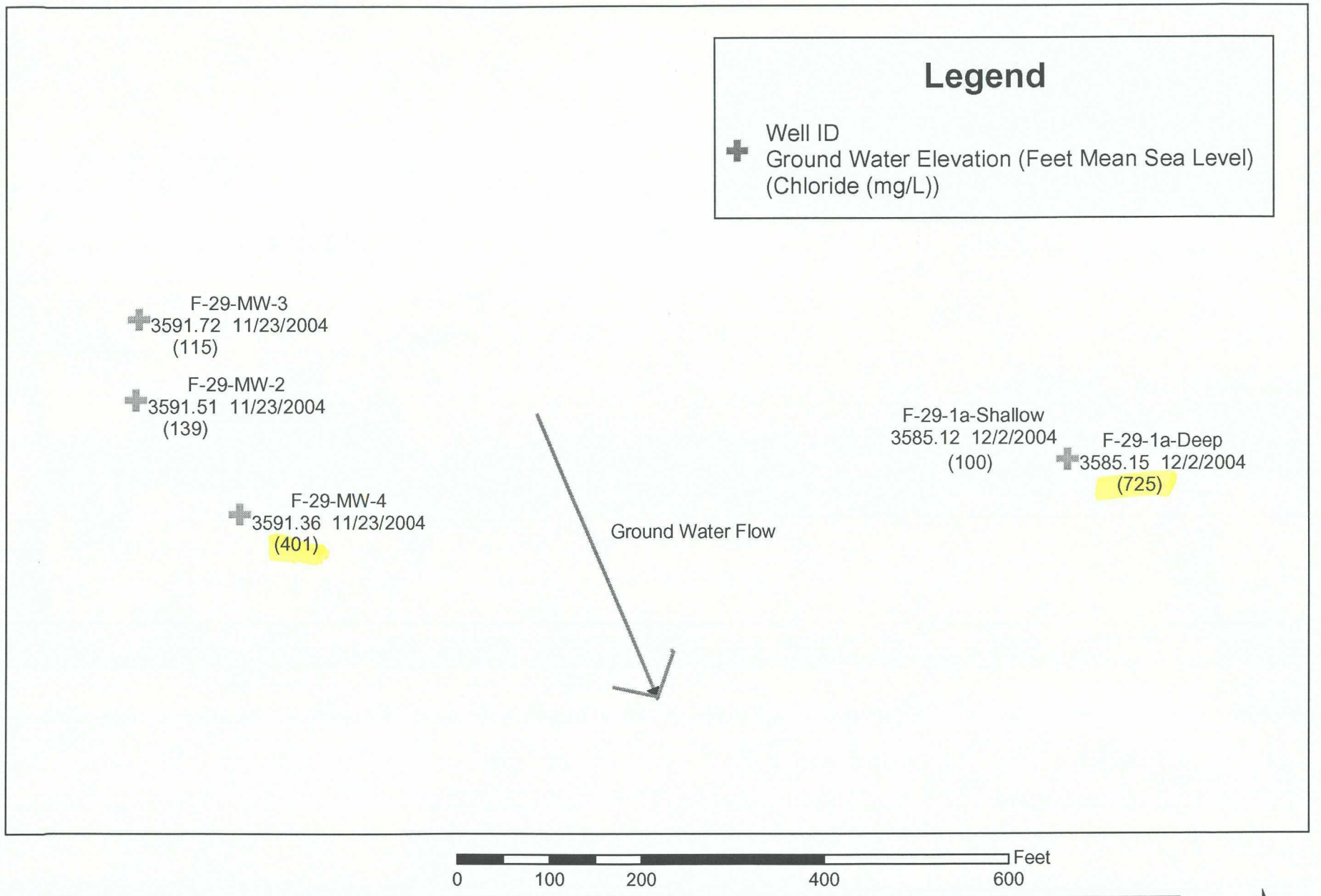
Source Map: USGS 7.5' Quad; Hobbs West

0 1,000 2,000 4,000 Feet

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Location of nearby wells with ground water data	Plate 2 DRAFT
	Rice Operating Company	February 2005



R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Potentiometric Suface Map (USGS 2001 Data)	Plate 4 DRAFT
	Rice Operating Company	February 2005



R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Chloride and Potentiometric Map - Hobbs SWD	Plate 7 DRAFT
	Rice Operating Company	February 2005

Price, Wayne

From: Price, Wayne
Sent: Tuesday, February 22, 2005 11:24 AM
To: 'Kristin Farris'; Price, Wayne
Cc: Carolyn Haynes
Subject: RE: F-29 SWD Case #1R0218

Your request for an extension is hereby approved.

Please be advised that NMOCD approval of this plan does not relieve (Rice Operating Company) of liability should their operations fail to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD approval does not relieve (Rice Operating Company) of responsibility for compliance with any other federal, state, or local laws and/or regulations.

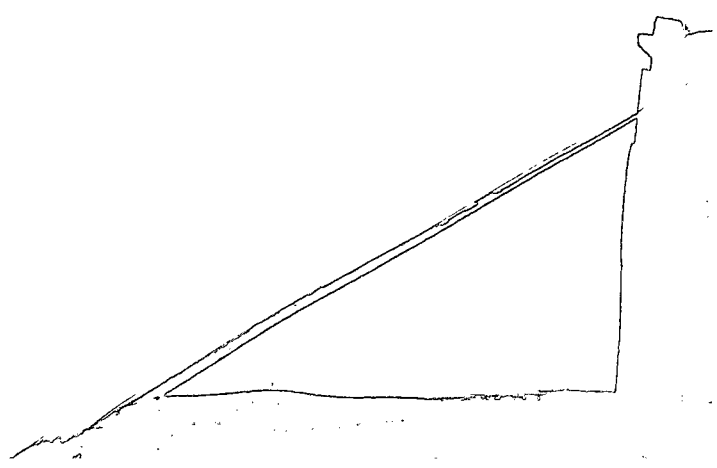
-----Original Message-----
From: Kristin Farris [mailto:enviro@leaco.net]
Sent: Monday, February 14, 2005 4:34 PM
To: Wayne Price
Cc: Carolyn Haynes
Subject: F-29 SWD Case #1R0218

Wayne:

Attached is a request for an extension for work at the Hobbs F-29 SWD site (T18S, R38E). We are in the process of a great deal of work with R.T. Hicks in Sec. 29 as part of the System Abandonment. A survey map is included that shows the proximity of the sites.

You can expect a copy of this submission via US Mail that will go out tomorrow. Thank you.

Kristin Farris Pope
Project Scientist
RICE Operating Company
Hobbs, NM 88240
(505) 393-9174



RICE Operating Company
122 West Taylor • Hobbs, New Mexico 88240
Phone: (505)393-9174 • Fax: (505) 397-1471

CERTIFIED MAIL
RETURN RECEIPT NO. 7002 2410 0000 4940 1909

February 14, 2005

Mr. Wayne Price
New Mexico Energy, Minerals, & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 S. St. Francis Drive
Santa Fe, New Mexico 87505

RE: EXTENSION REQUEST
F-29 SWD, HOBBS SWD SYSTEM
UNIT 'F', SEC. 29, T18S, R38E
NMOCD CASE # 1R0218

Mr. Price:

You emailed Rice Operating Company (ROC) on December 6, 2004 requesting more information on the Hobbs F-29 SWD site.

ROC is in the process of consolidating and evaluating a great deal of data from the field work that was performed in November 2004 by R.T. Hicks Consultants in Section 29 as part of the Hobbs System Abandonment and how this information could relate to the F-29 SWD site (see attached letter from R.T. Hicks).

Monitoring wells were drilled in unit "F" and "I" of section 29 in November of 2004. The F-29 SWD site and the new monitoring wells were surveyed by Basin Surveys in January and ROC received the completed survey map (enclosed) on February 11, 2005.

ROC requests an extension of the February 15, 2005 timeline specified in your December 6, 2004 email for this information to **March 31, 2005**.

The 2004 year-end monitoring report for the wells at this site will be forthcoming as an independent submission. ROC appreciates the consideration of the NMOCD concerning this extension request.

RICE OPERATING COMPANY

Kristin Farris Pope

Kristin Farris Pope
Project Scientist

cc: LBG, CDH, file

enclosures: Letter from R.T. Hicks
Survey map

R. T. HICKS CONSULTANTS, LTD.

901 Rio Grande Blvd NW ▲ Suite F-142 ▲ Albuquerque, NM 87104 ▲ 505.266.5004 ▲ Fax: 505.266-0745

February 14, 2005

Kristin Farris Pope
Rice Operating Company
Hobbs, New Mexico
Via Email

1R0414

RE: NMOCD Case # 1R0218, F-29 SWD
Hobbs SWD System Abandonment
Potential Groundwater-Impacted Junction Box Sites

Dear Kristin:

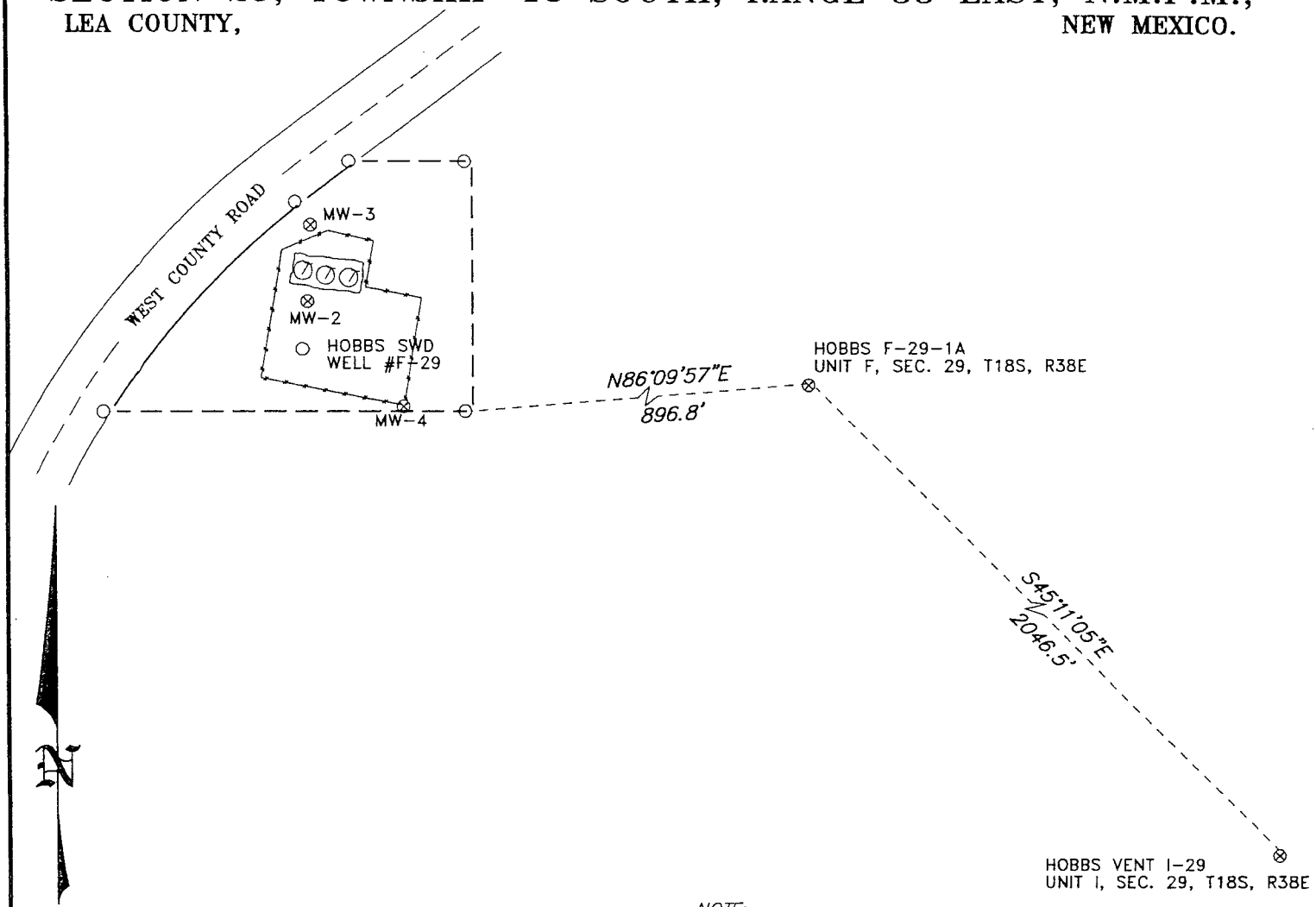
As you know, we are completing an investigation of environmental concerns at five locations within the Hobbs SWD System (see our workplan dated March 11, 2004). In November 2004, we constructed a dual completion monitoring well about 200 feet east (down gradient) of the F-29 SWD site (Case 1RO218). While ground water from the shallow monitoring well (at site F-29-1a) is below state ground water standards (see January 19, 2005 email and ground water notification) the deeper well exceeds ground water standards for chloride and TDS. Because of this finding and other scientific data that is currently under review, we advise you to ask NMOCD to grant an extension of time to respond to their December 6, 2004 email.

Although NMOCD has not established a submission date for the report on the five Section 29 sites, we are committed to submit a Corrective Action Plan for these sites by March 31, 2005. We plan to include the F-29 SWD site data in this submission. Although we are continuing to assemble the data for the report on the five sites, we suspect that our findings might eliminate the need for a monitoring well in the location originally proposed in the ROC letter of January 9, 2002. We suspect that the well at F-29-1a and the existing F-29 SWD well MW-4 will serve as monitoring wells down gradient from the former Redwood Tank site. On or before March 31, we will be able to render an opinion regarding the adequacy of MW-4 and MW-F-29-1A as down gradient monitoring wells for the former Redwood Tanks. A request of an extension of time to March 31, 2005 appears prudent.

Sincerely,
R.T. Hicks Consultants, Ltd.

Randall T. Hicks
Principal

SECTION 29, TOWNSHIP 18 SOUTH, RANGE 38 EAST, N.M.P.M.,
LEA COUNTY, NEW MEXICO.



NOTE:
ELEVATIONS ARE ON BLACK MARK ON NORTH SIDE OF PVC CASING.

NEW MEXICO STATE PLANE COORDINATES (NAD83)

WELL	NORTHING	EASTING	LATITUDE	LONGITUDE	ELEVATION
MW-2	627819.025	898021.191	N 32°43'14.0"	W 103°10'24.9"	3645.71'
MW-3	627908.779	898025.082	N 32°43'14.9"	W 103°10'24.8"	3645.76'
MW-4	627693.822	898134.408	N 32°43'12.7"	W 103°10'23.6"	3645.76'
HOBBS F-29-1A MARK ON NORTH SIDE OF NORTH 2" PVC	627753.789	899029.184	N 32°43'13.2"	W 103°10'13.1"	3648.89' 3645.5'-GRND
HOBBS F-29-1A MARK ON NORTH SIDE OF SOUTH 2" PVC	627753.579	899029.160	N 32°43'13.2"	W 103°10'13.1"	3648.76' 3645.5'-GRND
HOBBS VENT I-29 MARK ON NORTH SIDE OF 2" PVC	626311.386	900480.915	N 32°42'58.8"	W 103°09'56.3"	3650.65' 3647.6'-GRND

200 0 200 400 FEET

I HEREBY CERTIFY THAT THIS PLAT WAS PREPARED FROM FIELD NOTES OF AN ACTUAL SURVEY AND MEETS OR EXCEEDS ALL REQUIREMENTS FOR LAND SURVEYS AS SPECIFIED BY THIS STATE.

NEW MEXICO REGISTERED PROFESSIONAL LAND SURVEYOR 7977

GARY L. JONES N.M. P.S. No. 7977
TEXAS P.L.S. No. 5074

BASIN SURVEYS P.O. BOX 1786 HOBBS, NEW MEXICO

RICE OPERATING COMPANY

REF: MONITOR WELLS

MONITOR WELLS LOCATED IN
SECTION 29, TOWNSHIP 18 SOUTH, RANGE 38 EAST,
N.M.P.M., LEA COUNTY, NEW MEXICO.

W.O. Number: RICE	Drawn By: K. GOAD		
Date: 02-11-2005	Disk: KJG CD#4 - RICEB.DWG	Survey Date: VARIES	Sheet 1 of 1 Sheets

Price, Wayne

From: Kristin Farris [enviro@leaco.net]
Sent: Monday, February 14, 2005 4:34 PM
To: Wayne Price
Cc: Carolyn Haynes
Subject: F-29 SWD Case #1R0218

Wayne:

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CERTIFIED MAIL
RETURN RECEIPT NO. 7002 2410 0000 4940 1909

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RICE OPERATING COMPANY

Kristin Farris Pope

Kristin Farris Pope
Project Scientist

cc: LBG, CDH, file

enclosures: Letter from R.T. Hicks
Survey map

R. T. HICKS CONSULTANTS, LTD.

901 Rio Grande Blvd NW ▲ Suite F-142 ▲ Albuquerque, NM 87104 ▲ 505.266.5004 ▲ Fax: 505.266-0745

February 14, 2005

Kristin Farris Pope
Rice Operating Company
Hobbs, New Mexico
Via Email

RE: NMOCD Case # 1R0218, F-29 SWD
Hobbs SWD System Abandonment
Potential Groundwater-Impacted Junction Box Sites

Dear Kristin:

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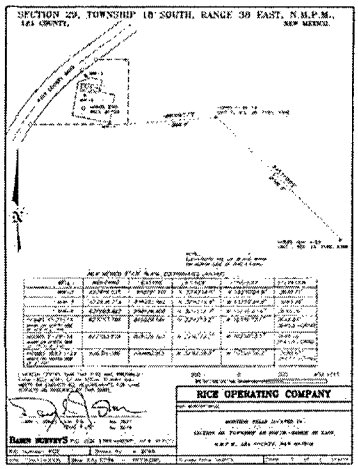
Sincerely,
R.T. Hicks Consultants, Ltd.

Randall T. Hicks
Principal


SECTION 29, TOWNSHIP 18 SOUTH, RANGE 30 EAST, N.M.P.M.,
EDDY COUNTY,
NEW MEXICO.
RICE OPERATING COMPANY

Price, Wayne

From: Price, Wayne
Sent: Monday, December 06, 2004 2:53 PM
To: 'Kristin Farris'; Price, Wayne
Cc: Carolyn Doran Haynes (E-mail)
Subject: RE: ROC F-29 SWD 29-18s-38e OCD Case # 1R0218

OCD has reviewed the file and hereby requires ROC to install the MW#5 that was proposed in ROC's letter dated Jan 29, 2002 and approved by OCD on Feb 01, 2002 via E-mail. Please sample and provide the analytical results of this well plus all of the other MW's associated with this site. Please provide this information by February 15, 2005. Please send results either by E-mail and hard copy and include a plot plan map.

-----Original Message-----
From: Kristin Farris [mailto:enviro@leaco.net]
Sent: Monday, December 06, 2004 1:32 PM
To: Price, Wayne
Subject: Re: ROC F-29 SWD 29-18s-38e

Here are the chemistry tables for the site. Please provide me with a fax number so I can fax you a map of the site.

Kristin

----- Original Message -----
From: "Price, Wayne" <WPrice@state.nm.us>
To: "'Kristin Farris'" <enviro@leaco.net>; "Price, Wayne" <WPrice@state.nm.us>
Sent: Thursday, December 02, 2004 3:25 PM
Subject: RE: ROC F-29 SWD 29-18s-38e

> Dear Kristin: I need a plot plan showing all monitor wells and a summary
> of
> the chlorides on those wells. Please send in mail or E-mail. I need this
> in order to evaluate closure.
>
> -----Original Message-----
> From: Kristin Farris [mailto:enviro@leaco.net]
> Sent: Monday, November 29, 2004 10:17 AM
> To: Price, Wayne
> Subject: Re: ROC F-29 SWD 29-18s-38e
>
>
> Here is the latest info. for the F-29 wells. Would you like me to fax you
> the map showing their locations? If so, I'll need the number.
>
> Kristin
>
> ----- Original Message -----
> From: "Price, Wayne" <WPrice@state.nm.us>
> To: "Carolyn Doran Haynes (E-mail)" <riceswd@leaco.net>; "Kristin Farris
> Pope (E-mail)" <enviro@leaco.net>
> Sent: Wednesday, November 24, 2004 3:36 PM
> Subject: ROC F-29 SWD 29-18s-38e
>
>
>> Please provide a plot plan showing all monitor wells and the last
>> chlorides
>> readings.

>>
>> Sincerely:
>>
>> Wayne Price
>> New Mexico Oil Conservation Division
>> 1220 S. Saint Francis Drive
>> Santa Fe, NM 87505
>> 505-476-3487
>> fax: 505-476-3462
>> E-mail: WPRICE@state.nm.us
>>
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Price, Wayne

From: Kristin Farris [enviro@leaco.net]
Sent: Monday, December 06, 2004 1:32 PM
To: Price, Wayne
Subject: Re: ROC F-29 SWD 29-18s-38e


Hobbs F-29.xls

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Kristin

----- Original Message -----
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Sent: Thursday, December 02, 2004 3:25 PM
Subject: RE: ROC F-29 SWD 29-18s-38e

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>
> Kristin
>
> ----- Original Message -----
> From: "Price, Wayne" <WPrice@state.nm.us>
> To: "Carolyn Doran Haynes (E-mail)" <riceswd@leaco.net>; "Kristin Farris
> Pope (E-mail)" <enviro@leaco.net>
> Sent: Wednesday, November 24, 2004 3:36 PM
> Subject: ROC F-29 SWD 29-18s-38e
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>> Sincerely:
>>
>> Wayne Price
>> New Mexico Oil Conservation Division
>> 1220 S. Saint Francis Drive
>> Santa Fe, NM 87505
>> 505-476-3487
>> fax: 505-476-3462
>> E-mail: WPRICE@state.nm.us
>>
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For more information please visit http://www.messagelabs.com/email
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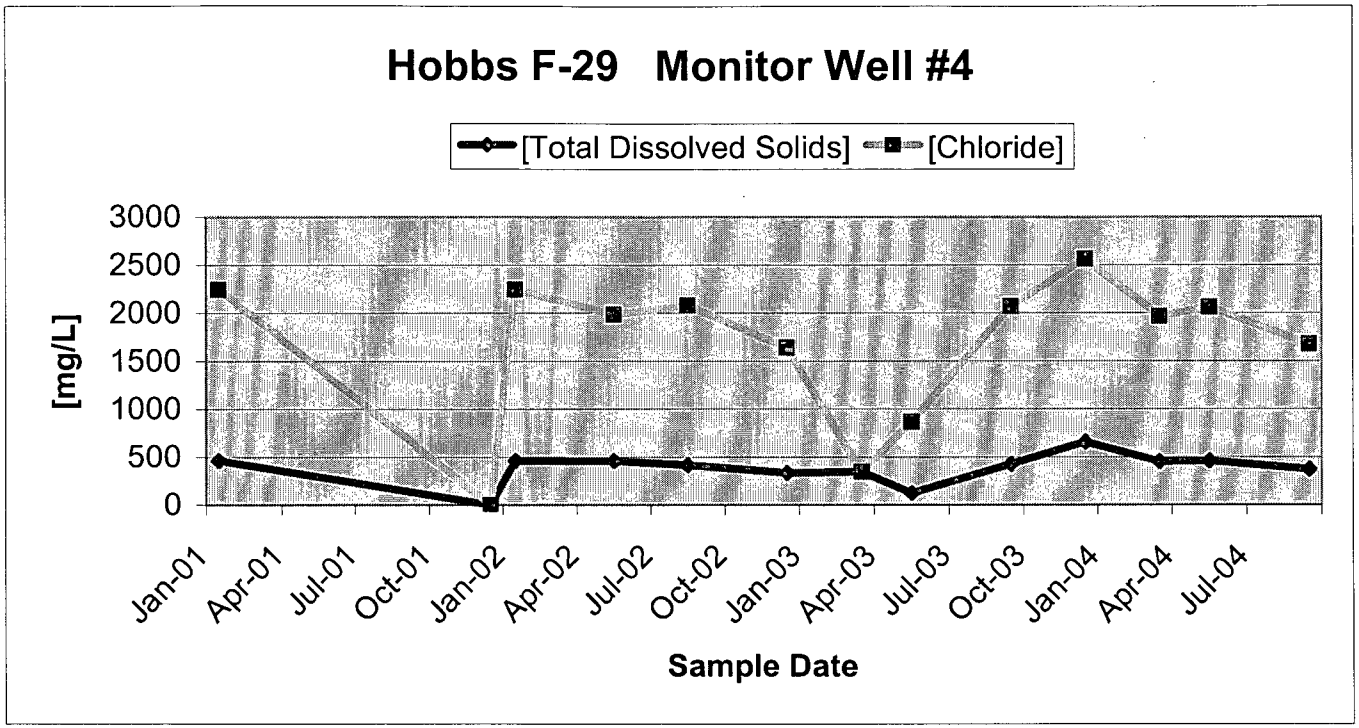
Hobbs F-29 SWD
unit 'F', Sec. 29, T18S, R38E

RICE *Operating Company*
Monitor Well Data Sheet

(ft) (gal) All concentrations are in mg/L

MW #	DEPTH TO WATER	TOTAL DEPTH	WELL VOLUME	VOLUME PURGED	SAMPLE DATE	Cl^-	TDS	BENZENE	TOLUENE	ETHYL BENZENE	TOTAL XYLENES	COMMENTS
4	XXX	XXX	XXX	XXX	01/04/01	464	1781	XXX	XXX	XXX	XXX	
4	51.51	57.91	XXX	XXX	12/29/01	XXX	XXX	XXX	XXX	XXX	XXX	
4	51.56	53.74	XXX	XXX	01/04/02	464	1781	XXX	XXX	XXX	XXX	
4	XXX	XXX	XXX	XXX	05/24/02	461	1520	<0.001	<0.001	<0.001	<0.001	
4	52.50	65.30	XXX	8.50	08/14/02	416	1660	<0.001	<0.001	<0.001	<0.001	
4	53.00	63.59	1.69	5.08	12/11/02	336	1302	0.003	<0.002	<0.002	<0.006	
4	53.41	63.31	1.58	4.75	03/21/03	346	XXX	<0.001	<0.001	<0.001	<0.001	
4	53.25	63.78	1.68	5.50	05/28/03	124	742	<0.001	<0.001	<0.001	<0.001	
4	54.21	62.46	1.34	4.03	09/22/03	425	1640	<0.001	<0.001	<0.001	<0.001	
4	54.12	63.11	1.46	4.39	12/18/03	660	1902	<0.002	<0.002	<0.002	<0.006	
4	54.84	62.55	1.250	3.77	03/15/04	452	1510	<0.001	<0.001	<0.001	<0.001	
4	XXX	XXX	XXX	XXX	05/27/04	461	1600	<0.001	<0.001	<0.001	<0.001	
4	54.80	62.30	1.20	3.60	09/08/04	372	1300	<0.001	<0.001	<0.001	<0.001	


Hobbs F-29 Monitor Well #4
[Total Dissolved Solids]
[Chloride]
[mg/L]
3000
2500
2000
1500
1000
500
0
Jan-01
Apr-01
Jul-01
Oct-01
Jan-02
Apr-02
Jul-02
Oct-02
Jan-03
Apr-03
Jul-03
Oct-03
Jan-04
Apr-04
Jul-04
Sample Date

Price, Wayne

From: Price, Wayne
Sent: Thursday, December 02, 2004 3:26 PM
To: 'Kristin Farris'; Price, Wayne
Subject: RE: ROC F-29 SWD 29-18s-38e

Dear Kristin: I need a plot plan showing all monitor wells and a summary of the chlorides on those wells. Please send in mail or E-mail. I need this in order to evaluate closure.

-----Original Message-----
From: Kristin Farris [mailto:enviro@leaco.net]
Sent: Monday, November 29, 2004 10:17 AM
To: Price, Wayne
Subject: Re: ROC F-29 SWD 29-18s-38e

Here is the latest info. for the F-29 wells. Would you like me to fax you the map showing their locations? If so, I'll need the number.

Kristin

----- Original Message -----
From: "Price, Wayne" <WPrice@state.nm.us>
To: "Carolyn Doran Haynes (E-mail)" <riceswd@leaco.net>; "Kristin Farris Pope (E-mail)" <enviro@leaco.net>
Sent: Wednesday, November 24, 2004 3:36 PM
Subject: ROC F-29 SWD 29-18s-38e

> Please provide a plot plan showing all monitor wells and the last
> chlorides
> readings.
>
> Sincerely:
>
> Wayne Price
> New Mexico Oil Conservation Division
> 1220 S. Saint Francis Drive
> Santa Fe, NM 87505
> 505-476-3487
> fax: 505-476-3462
> E-mail: WPRICE@state.nm.us
>
>
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>

Price, Wayne

From: Kristin Farris [enviro@leaco.net]
Sent: Monday, November 29, 2004 10:17 AM
To: Price, Wayne
Subject: Re: ROC F-29 SWD 29-18s-38e

Hobbs F-29.xls

Here is the latest info. for the F-29 wells. Would you like me to fax you the map showing their locations? If so, I'll need the number.

Kristin

----- Original Message -----
From: "Price, Wayne" <WPrice@state.nm.us>
To: "Carolyn Doran Haynes (E-mail)" <riceswd@leaco.net>; "Kristin Farris Pope (E-mail)" <enviro@leaco.net>
Sent: Wednesday, November 24, 2004 3:36 PM
Subject: ROC F-29 SWD 29-18s-38e

> Please provide a plot plan showing all monitor wells and the last
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> readings.
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> Wayne Price
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> Santa Fe, NM 87505
> 505-476-3487
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> E-mail: WPRICE@state.nm.us
>
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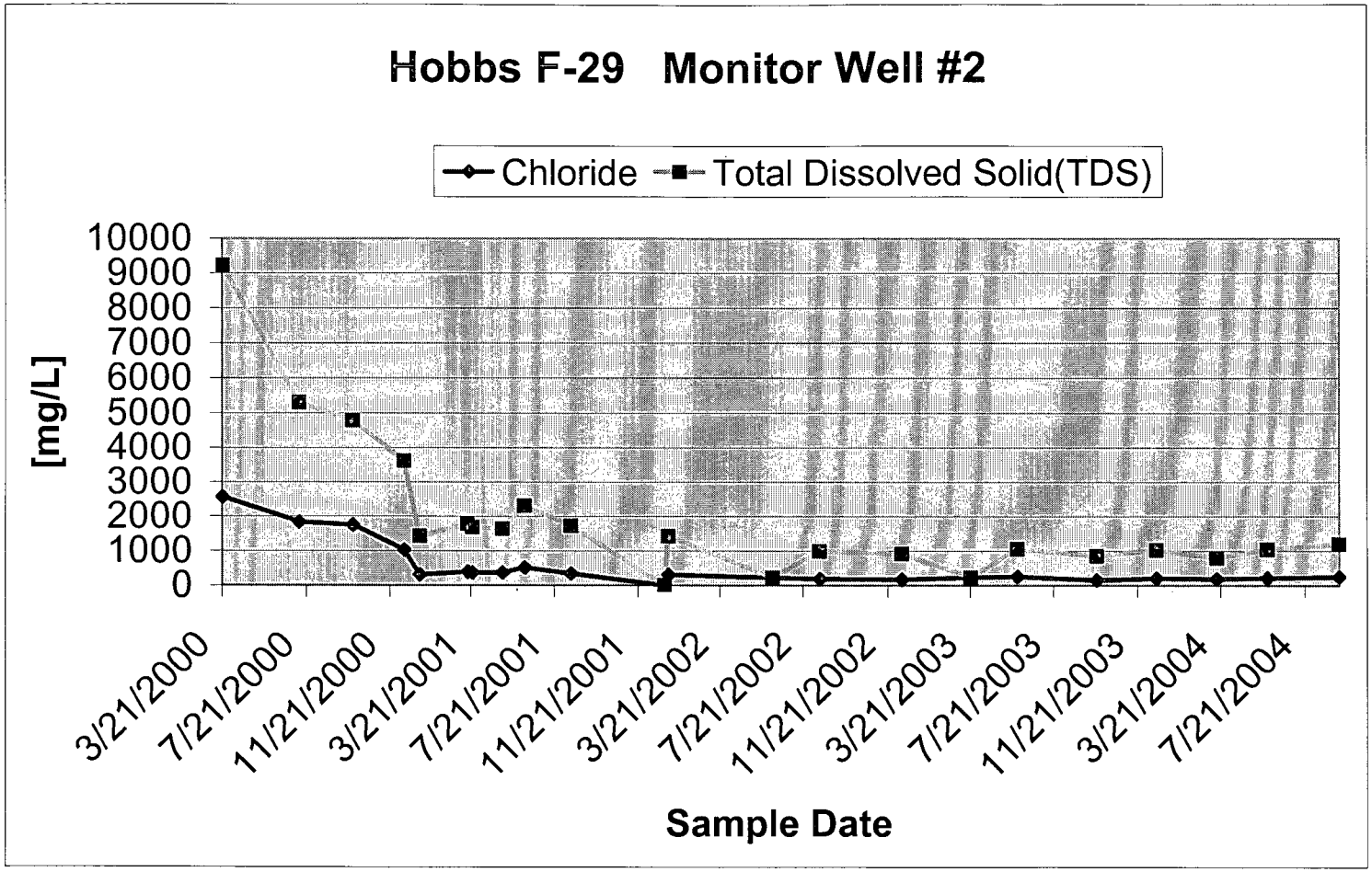
>

Hobbs F-29 SWD
unit 'F', Sec. 29, T18S, R38E

RICE *Operating Company*
Monitor Well Data Sheet

(ft) (gal) All concentrations are in mg/L

MW #	DEPTH TO WATER	TOTAL DEPTH	WELL VOLUME	VOLUME PURGED	SAMPLE DATE	Cl^-	TDS	BENZENE	TOLUENE	ETHYL BENZENE	TOTAL XYLENES	COMMENTS
2	XXX	XXX	XXX	XXX	3/21/00	2564	6660	XXX	XXX	XXX	XXX	
2	49.00	XXX	XXX	XXX	7/10/00	1829	3470	<0.002	<0.002	<0.002	<0.006	
2	49.26	XXX	XXX	XXX	9/27/00	1748	3032	<0.002	<0.002	<0.002	<0.006	
2	49.61	XXX	XXX	XXX	12/12/00	1027	2586	<0.002	<0.002	<0.002	<0.006	
2	XXX	XXX	XXX	XXX	1/4/01	308	1114	XXX	XXX	XXX	XXX	
2	XXX	XXX	XXX	XXX	3/16/01	396	1373	XXX	XXX	XXX	XXX	
2	XXX	XXX	XXX	XXX	3/23/01	368	1312	XXX	XXX	XXX	XXX	
2	XXX	XXX	XXX	XXX	5/7/01	365	1272	XXX	XXX	XXX	XXX	
2	XXX	XXX	XXX	XXX	6/8/01	513	1796	XXX	XXX	XXX	XXX	
2	XXX	XXX	XXX	XXX	8/14/01	340	1385	XXX	XXX	XXX	XXX	
2	51.13	59.41	XXX	XXX	12/29/01	XXX	XXX	XXX	XXX	XXX	XXX	
2	51.16	59.15	XXX	XXX	1/4/02	308	1114	XXX	XXX	XXX	XXX	
2	XXX	XXX	XXX	XXX	6/6/02	221	XXX	<0.001	<0.001	<0.001	<0.001	
2	52.07	59.93	XXX	20.50	8/14/02	186	806	<0.001	<0.001	<0.001	<0.001	
2	52.58	59.82	4.71	14.12	12/11/02	172	738	<0.002	<0.002	<0.002	<0.006	
2	52.94	59.76	4.43	13.29	3/21/03	230	XXX	<0.001	<0.001	<0.001	<0.001	
2	53.15	59.74	4.28	12.85	5/28/03	257	804	<0.001	<0.001	<0.001	<0.001	
2	53.71	69.77	10.48	31.46	9/22/03	151	700	<0.001	<0.001	<0.001	<0.001	
2	54.10	59.86	3.76	11.28	12/18/03	208	815	<0.002	0.003	<0.002	0.014	
2	54.33	59.89	3.63	10.89	3/15/04	186	607	<0.001	<0.001	<0.001	<0.001	
2	XXX	XXX	XXX	XXX	5/27/04	213	830	<0.001	<0.001	<0.001	<0.001	
2	54.60	59.80	3.38	10.14	9/8/04	248	946	0.00464	0.000412	0.000979	0.001199	


Hobbs F-29 Monitor Well #2
Chloride
Total Dissolved Solid(TDS)
[mg/L]
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
3/21/2000
7/21/2000
11/21/2000
3/21/2001
7/21/2001
11/21/2001
3/21/2002
7/21/2002
11/21/2002
3/21/2003
7/21/2003
11/21/2003
3/21/2004
7/21/2004
Sample Date

Price, Wayne

From: Price, Wayne
Sent: Wednesday, November 24, 2004 3:37 PM
To: Carolyn Doran Haynes (E-mail); Kristin Farris Pope (E-mail)
Subject: ROC F-29 SWD 29-18s-38e

Please provide a plot plan showing all monitor wells and the last chlorides readings.

Sincerely:

Wayne Price
New Mexico Oil Conservation Division
1220 S. Saint Francis Drive
Santa Fe, NM 87505
505-476-3487
fax: 505-476-3462
E-mail: WPRICE@state.nm.us

Price, Wayne

From: Price, Wayne
Sent: Friday, February 01, 2002 11:51 AM
To: 'riceswd@leaco.net'
Cc: Sheeley, Paul; Johnson, Larry
Subject: SWD F-29 OCD Case # 1R0218

Dear Ms. Haynes:

The OCD is in receipt of the SWD F-29 Groundwater Monitoring document dated January 29, 2002 requesting approval to perform additional investigations. Your request is hereby approved.

Please be advised that NMOCD approval of this plan does not relieve Rice Operating Company of liability should their operations fail to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD approval does not relieve Rice Operating Company of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Wayne Price
OCD Envr. Bureau

RICE Operating Company
122 West Taylor • Hobbs, New Mexico 88240
Phone: (505)393-9174 • Fax: (505) 397-1471

CERTIFIED MAIL
RETURN RECEIPT NO. 7000 1530 0005 9895 4497

January 29, 2002

Mr. Wayne Price
NM Energy and Minerals Dept.
OCD Environmental Bureau
1220 S. St. Francis Drive
Santa Fe, NM 87504

Re: SWD F-29 Facility – Groundwater Monitoring
NW/4, Unit Letter F, Sec. 29, T18S, R38E
Lea County, NM

Dear Mr. Price:

Rice Operating Company (ROC) appreciates your consideration and response concerning the groundwater monitoring at the F-29 SWD Facility.

ROC contracted with Safety and Environmental Solutions (SESI) of Hobbs, NM to conduct groundwater delineation and monitoring at the F-29 Facility Site. Enclosed with this letter is the monitor well installation report, fluid recovery report of F-29 Facility site activity and analytical results prepared by David Boyer of SESI, as well as a copy of previously submitted information.

All fluid produced from the monitor wells was measured for volume and then disposed into the SWD Well F-29 Facility, a commercial disposal well owned and operated by ROC.

ROC located two fresh-water wells in the area and found the water quality of both to be within WQCC standards for chlorides. The well 1100 feet southwest (inside Oxy Permian's production facility) tested to be 132 mg/kg chlorides in a field titration test, and the well 2200 feet southeast (at Texland's water supply facility) tested to be 60 mg/kg chlorides. (A map depicting these two wells in relationship to F-29 is attached. Laboratory water analysis results for the Texland well (to the southeast) is included but well logs and completion information are not available for either well.)

As stated in Mr. Boyer's report, it appears additional groundwater investigation must be performed at this facility in order to obtain conclusive data to determine groundwater flow

direction or what if any remedial action will be proposed. ROC proposes to complete MW-5 on the east side of the site as marked on the F-29 Facility map.

The monitor well MW-5 will be drilled, completed, developed and sampled pursuant to NMOCD guidelines. The groundwater will be tested for BTEX, pH, TDS, Conductivity, T-Alkalinity, and routine major cations and anions: Na, Ca, Mg, K, Cl, SO_4, CO_3, HCO_3. Upon receipt of the analytical results, ROC will contact the NMOCD for discussion of further action.

NMOCD will be notified in advance of any significant environmental activities at the F-29 site. This work will also be conducted through SESI and scheduled as soon as NMOCD approval is received.

If you have any questions or concerns, please call.

RICE OPERATING COMPANY

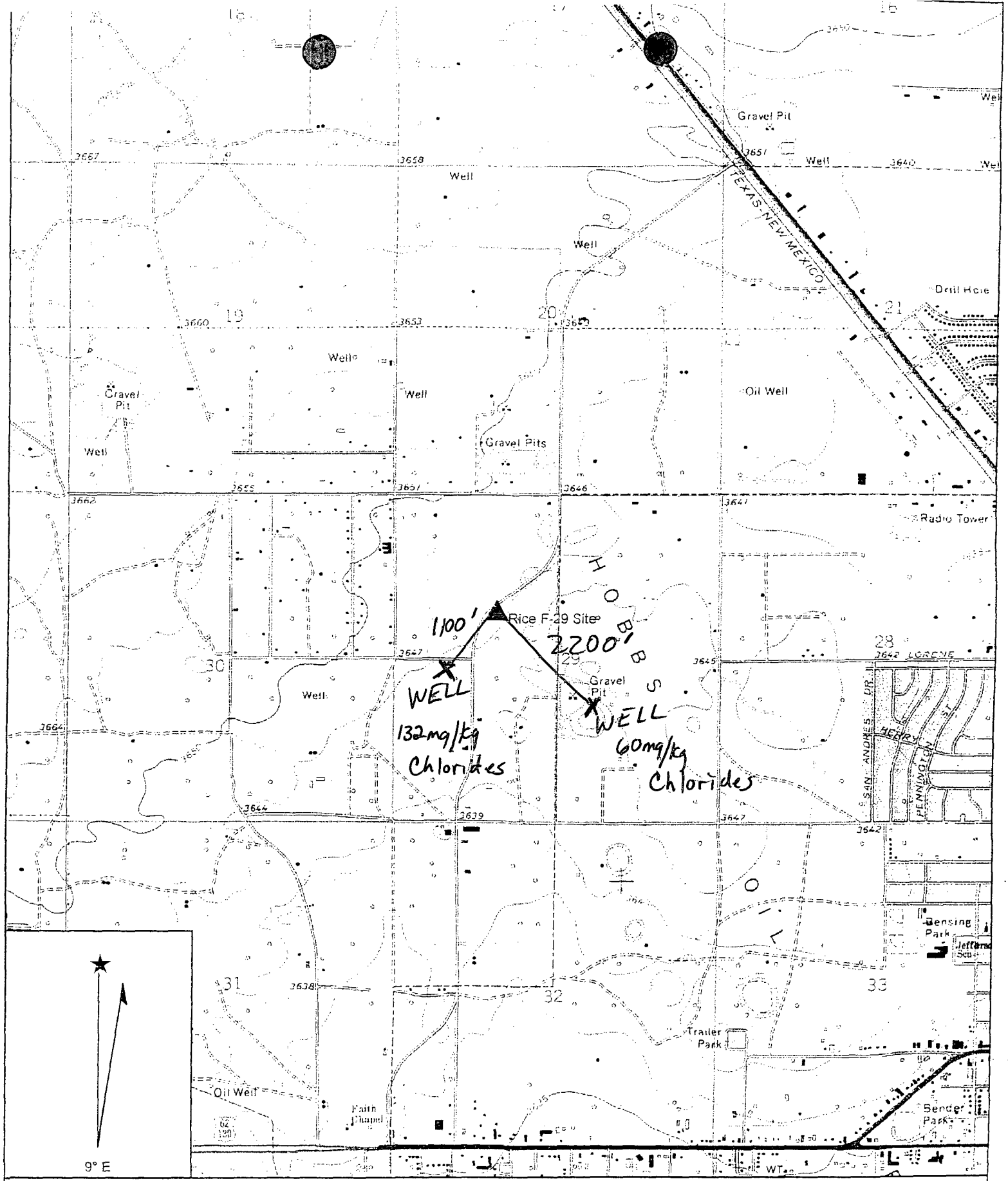
Carolyn Doran Haynes

Carolyn Doran Haynes
Engineering Manager

Attachments:
Map of Near-by Water Wells
Texland Water Well Analysis and CoC
Facility Site Map of Original Source Locations
Facility Site Map of MWs and Proposed MW-5
SESI Report of Monitor Well Installation
Previously submitted information (Sept 7, 2001)

cc: LBG, SC, DA, file,

Chris Williams
NMOCD Hobbs District 1
1625 N. French Drive
Hobbs, NM 88240

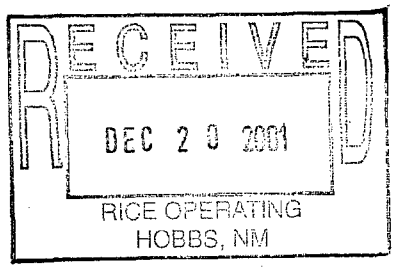


Name: HOBBS WEST
Date: 8/30/2001
Scale: 1 inch equals 2000 feet

Location: 032° 43' 17.1" N 103° 10' 23.0" W
Caption: Rice Operation Company
F-29 Monitor Well
Section 29, T19S, R38E

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240



ANALYTICAL RESULTS FOR
RICE OPERATING CO.
ATTN: DONNIE ANDERSON
122 W. TAYLOR
HOBBS, NM 88240
FAX TO:

Receiving Date: 12/14/01
Reporting Date: 12/18/01
Project Number: NOT GIVEN
Project Name: NOT GIVEN
Project Location: NOT GIVEN

Sampling Date: 12/14/01
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: AH

LAB NUMBER SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (mS/cm)	T-Alkalinity ($mgCaCO_3/L$)
ANALYSIS DATE:	12/17/01	12/17/01	12/17/01	12/17/01	12/17/01	12/17/01
H6350-1 TEXLAND SWD	20	80	22	2.91	623	194
Quality Control	NR	55	46	5.29	1489	NR
True Value QC	NR	50	50	5.00	1413	NR
% Accuracy	NR	110	92.0	106	105	NR
Relative Percent Difference	NR	1.6	4.0	0.4	0.3	NR
METHODS:		SM3500-Ca-D	3500-Mg E	8049	120.1	310.1

	Cl^- (mg/L)	SO_4 (mg/L)	CO_3 (mg/L)	HCO_3 (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:	12/17/01	12/17/01	12/17/01	12/17/01	12/17/01	12/18/01
H6350-1 TEXLAND SWD	60	57	0	237	8.02	406
Quality Control	930	50.95	NR	1011	7.00	NR
True Value QC	1000	50.00	NR	1000	7.00	NR
% Accuracy	93.0	102	NR	101	100	NR
Relative Percent Difference	1.2	2.7	NR	0	0	5.1
METHODS:	SM4500-Cl-B	375.4	310.1	310.1	150.1	160.1

Amy Hill
Chemist

12-18-01
Date

H6350

CARDINAL LABORATORIES, INC.

2111 Beechwood, Abilene, TX 79603 101 East Marland, Hobbs, NM 88240
(915) 673-7001 Fax (915) 673-7020 (505) 393-2326 Fax (505) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page____ of ____

Company Name: Rice Operating Co.	**BILL TO** PO #:
Project Manager: D. Anderson	Company: ROC
Address: 122 W Taylor	Attn: D. Anderson
City: Hobbs State: NM Zip: 88240	Address:
Phone #: 393-9174	City: Same
Fax #:	State: Zip:
Project #: Project Owner:	Phone #:
Project Name:	Fax #:
Project Location:	

LAB I.D. (FOR LAB USE ONLY)	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRES.: ACID:	ICE / COOL	OTHER :	SAMPLING: DATE	TIME	ANALYSIS REQUEST: Correlation
H6350-1	Texland SWD	X	1	X									12/14/01	1420	X

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 consequental 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.

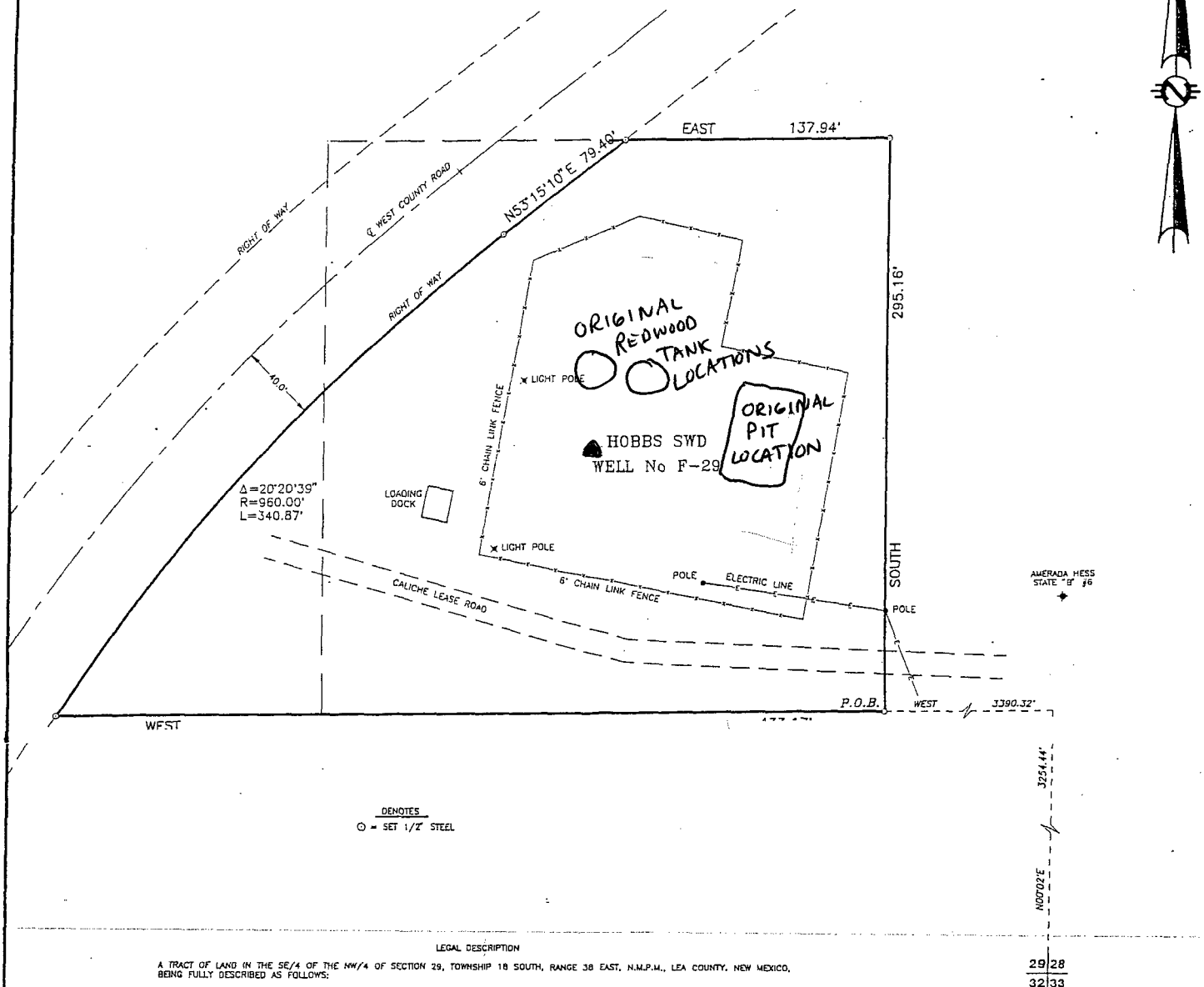
Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

Sampler Relinquished: D. Anderson	Date: 12/14/01 Time: 1507	Received By:	Phone Result ☐ Yes ☐ No Additional Fax #:
Relinquished By:	Date: Time:	Received By: (Lab Staff) Amy Hill	Fax Result: ☐ Yes ☐ No
Delivered By: (Circle One) Sampler - UPS - Bus - Other:		Sample Condition: Cool ☑ Yes ☐ No; Intact ☑ Yes ☐ No — CHECKED BY: (Initials)	REMARKS:

† Cardinal cannot accept verbal changes. Please fax written changes to 915-673-7020.

SECTION 29, TOWNSHIP 18 SOUTH, RANGE 38 EAST, N.M.P.M.,

LEA COUNTY, NEW MEXICO



DENOTES
⊙ = SET 1/2" STEEL

LEGAL DESCRIPTION

A TRACT OF LAND IN THE SE/4 OF THE NW/4 OF SECTION 29, TOWNSHIP 18 SOUTH, RANGE 38 EAST, N.M.P.M., LEA COUNTY, NEW MEXICO, BEING FULLY DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT BEING N.00°002'E. 3254.44 FEET AND WEST, 3390.32 FEET FROM SOUTHEAST CORNER OF SAID SECTION 29. THENCE WEST, 433.17 FEET TO A POINT ON THE EAST RIGHT OF WAY LINE OF WEST COUNTY ROAD BYPASS, ALSO A POINT ON A CURVE TO THE NORTHEAST. THENCE ALONG THIS CURVE (HAVING A CENTRAL ANGLE OF 20°20'39", A RADIUS OF 960.00 FEET AND A CHORD BEARING AND DISTANCE OF N.43°04'56"E., 339.08 FEET) A LENGTH OF 340.87 FEET; THENCE N.53°15'10"E., 79.40 FEET; THENCE EAST, 137.94 FEET; THENCE SOUTH, 295.16 FEET TO THE POINT OF BEGINNING. SAID TRACT CONTAINS 2.088 ACRES MORE LESS.

40 0 40 80 120 Feet

I HEREBY CERTIFY THAT THIS PLAT WAS PREPARED FROM FIELD NOTES OF AN ACTUAL SURVEY AND MEETS OR EXCEEDS ALL REQUIREMENTS FOR LAND SURVEYS AS SPECIFIED BY THIS STATE.

GARY L. JONES NEW MEXICO 7977 REGISTERED PROFESSIONAL LAND SURVEYOR

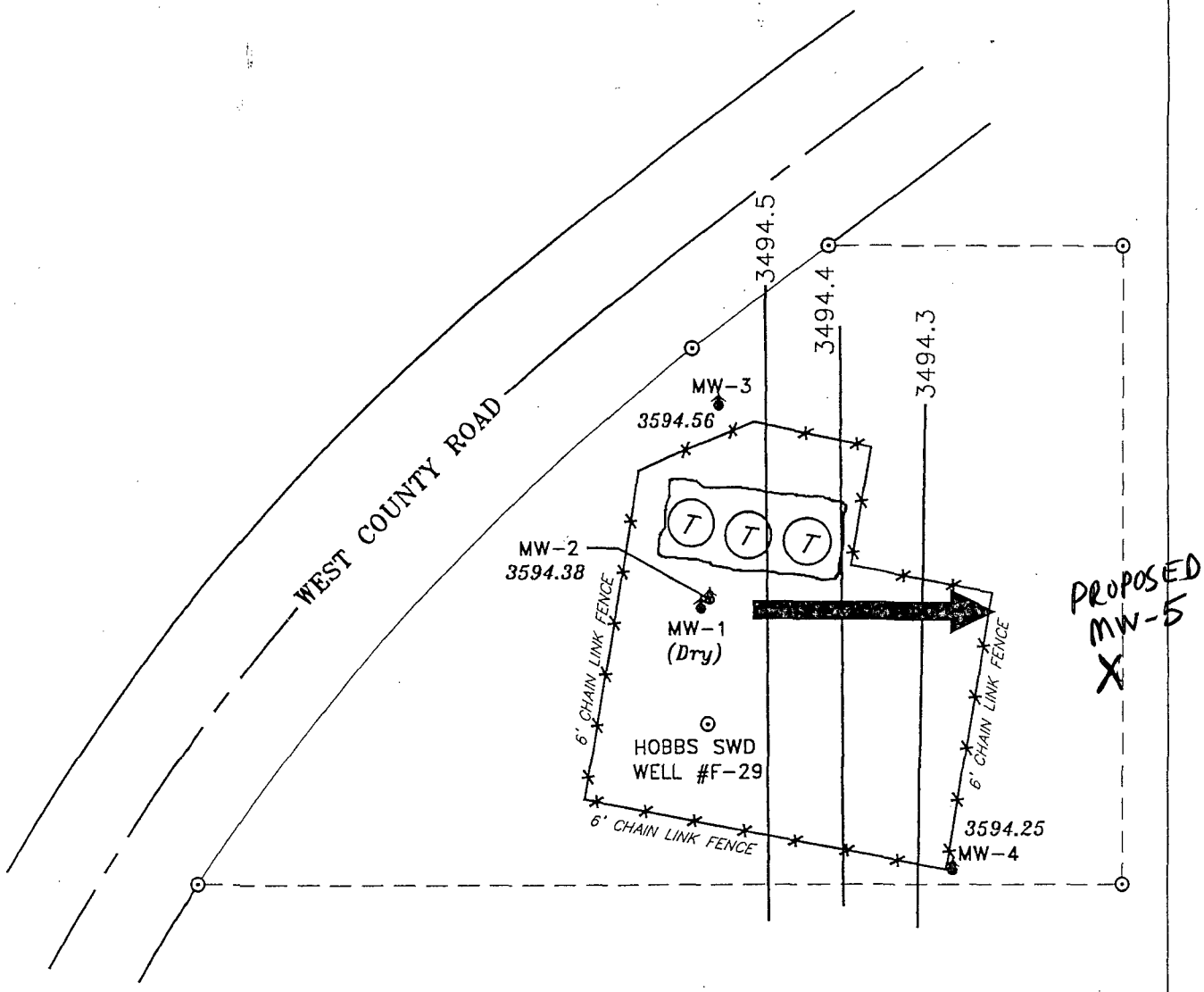
JOHN W. WEST, N.M. P.E. & P.S. No. 676
TEXAS P.L.S. No. 1138
RONALD J. EIDSON, N.M. L.S. No. 3239
TEXAS P.L.S. No. 1883
GARY L. JONES N.M. P.S. No. 7977

RICE ENGINEERING CORP.

A TRACT OF LAND LOCATED IN
SECTION 29, TOWNSHIP 18 SOUTH, RANGE 38 EAST,
N.M.P.M., LEA COUNTY, NEW MEXICO

JOHN WEST ENGINEERING CO.
CONSULTING ENGINEERS & SURVEYORS – HOBBS, NEW MEXICO

Surveyed By: CASON	Drawn By: HOLMES	Last Rev. Date:	Drawing Number
Date Begin: 8-20-93	Date: 8-27-93	Disk: JH No 51	D-819-1
Date End: 8-20-93	Approved By:	Sheet 1 of 1 Sheets	
W.O. Number: 93-11-1558	File Name: DRAWINGS\RICE1558		



LEGEND:

3494.5 GROUNDWATER CONTOUR
CONTOUR INTERVAL 0.1 FT.

HYDRAULIC GRADIENT 0.0029 FT/FT

GROUNDWATER FLOW DIRECTION

DRAWING TITLE
FIGURE 2
GROUNDWATER
POTENTIOMETRIC MAP
RICE F29 SWD
DECEMBER 29, 2001

RICE OPERATING COMPANY
HOBBS, NEW MEXICO

DRAWN BY	CHK'D BY	SCALE	
EJS	DB	1" = 80'-0"	
DATE	APPR BY	DRAWING NUMBER	REV.
1/22/02	-	RICE01.DWG	0

Rice Operating Company
Report of Monitor Well Installation
F-29 SWD Location
Section 29, T18S, R38E
Lea County, New Mexico

January 25, 2002

Prepared for:

Rice Operating Company
122 West Taylor
Hobbs, New Mexico 88240

By:

Safety & Environmental Solutions, Inc.
703 E. Clinton Suite 103
Hobbs, New Mexico 88240
(505) 397-0510

TABLE OF CONTENTS

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LIST OF APPENDICES

I. Background

Rice Operating Company (Rice) is the operator of a salt water disposal (SWD) injection well (F-29) located in Section 29, Township 18S, Range 38E, NMPM, Lea County, NM. The site is approximately ¾ mile north of Sanger St. on West County Road (Figure 1).

Safety & Environmental Solutions, Inc. (SESI) was originally engaged to perform sampling and data collection at a monitor well installed at the site. The purpose of the monitor well was to provide data on chloride concentrations in groundwater beneath the site, which previously included one or more redwood holding tanks, for submittal to the New Mexico Oil Conservation Division (OCD). Pumping and sampling of the monitor well was performed beginning in March 2000 and continued through July 2001 with the goal of determining whether the elevated chloride concentrations observed were localized in the immediate vicinity of the monitor well or more widespread.

During the last two weeks of July of 2001, the monitor well was pumped twice daily for a period of 20 to 30 minutes at a rate of 6 to 7 gallons per minute (gpm.). Although chloride concentrations decreased from 2,564 mg/l in March 2000 [1] to about 340 mg/L in late July 2001, the final concentration still remained above the groundwater standard of 250 mg/L. However, fluctuations in chloride measurements taken during pumping periods (250-480 mg/L) indicated the likelihood of a nearby source. The information collected during the pumping study was previously submitted to Rice in the "F-29 Monitor Well Fluid Recovery Report" dated August 29, 2001.

As a result of the information in the report showing the existence of elevated chloride concentrations in groundwater beneath the site, Rice contracted with SESI to install and sample two new monitoring wells. The new wells would determine groundwater flow direction and were to provide upgradient and downgradient water quality data.

II. Work Performed

Monitor Well Installation

Atkins Engineering Associates of Roswell installed two monitor wells at the facility on December 26, 2001. The locations chosen for the wells were thought to be upgradient and downgradient, respectively, based on assumed groundwater flow direction in the area of the facility. Drilling on the first well commenced at 8:30 a.m. and was completed at 10:45 a.m. The second well was started at 12:15 p.m. and completed at 3:30 p.m. Both wells were completed to a depth of 65 ft. Drilling encountered several thin zones of hard caliche and/or cemented sandstone in the top 50 ft. of sediments. However, the lithology below 50 ft. to total depth showed fine to very fine sand and this is the interval in which the wells were completed. Soil boring logs for the wells (designated MW-3 and MW-4) are presented in report Appendix A.

[1] This number is a laboratory-revised result from the original value of 3,382 mg/L.

Monitor Well Development and Sampling

The two new wells were developed to remove sediment on January 3 and 4, 2002. However the wells are sanding badly and additional development is scheduled to remove sediment. On January 4, 2002 the new and existing monitor well locations and elevations were surveyed by Basin Surveys of Hobbs. A copy of the survey is provided in the Appendix. Water level measurements were taken on December 29, 2001 and January 4, 2002. Water samples were taken on January 4 and analyzed for chloride and total dissolved solids by Cardinal Laboratories of Hobbs.

III. Results of the Groundwater Measurements and Water Quality Testing

Groundwater Flow Direction and Gradient

The results of groundwater measurements taken in late December and early January are shown below in Table 1. Depth to water beneath the site is approximately 51 ft. Groundwater potentiometric maps were prepared using the December 2001 and January 2002 water level measurements (Figures 2 and 3). Both maps show groundwater movement to be directly east with gradients of 0.0029 and 0.0031 ft./ft., respectively.

Table 1. Water Level Measurements and Groundwater Potentiometric Elevations, Rice F-29 SWD Location, Lea County, New Mexico

WELL NUMBER	DATE	CASING ELEVATION (ft.)	DEPTH TO WATER (ft.)	POTENTIO-METRIC ELEVATION (ft.)	WELL DEPTH (ft.)
MW–1	01/23/02	N/A	Dry	N/A	51.05
MW–2	12/29/01	3,645.71	51.13	3,594.38	59.41
	01/04/02	3,645.71	51.16	3,594.55	59.15
MW–3	12/29/01	3,645.76	51.20	3,594.56	60.95
	01/04/02	3,645.76	51.24	3,594.52	53.50
MW-4	12/29/01	3,645.76	51.51	3,594.25	57.91
	01/04/02	3,645.76	51.56	3,594.20	53.74

Groundwater Sampling Results

Laboratory results of the January groundwater sampling of the three useable monitor wells are presented in Table 2 together with results of earlier chloride and TDS results for MW-2. Copies of the analytical results are provided in report Appendix C. The results show chloride and TDS for both MW-2 and MW-4 exceeding New Mexico groundwater quality standards. Water quality in MW-3 is below the standard for chloride and just above that for TDS.

Table 2. Summary of F-29 Monitor Well Chemical Analyses for Chloride and TDS, March 2000 to January 2002.

Monitor Well	Date	Chloride (mg/L)	TDS (mg/L)
MW-2	03/21/00	2,564	6,660
MW-2	09/27/00	1,748	3,032
MW-2	12/12/00	1,027	2,586
MW-2	03/16/01	396	1,373
MW-2	03/23/01	368	1,312
MW-2	05/07/01	365	1,272
MW-2	06/08/01	513	1,796
MW-2	08/14/01	340	1,385
MW-2	01/04/02	308	1,114
MW-3 (north well)	01/04/02	136	1,013
MW-4 (south well)	01/04/02	464	1,781

IV. Summary of Results

Groundwater Flow Direction

Measurements of water levels following installation of two new monitor wells showed groundwater movement to be easterly instead of southeasterly as originally assumed. If a chloride source is assumed in the vicinity of MW-2, the placement of MW-4 does not provide a location for determining downgradient groundwater quality from that assumed source. Likewise, the placement of MW-3 does not provide a sample location for determining water quality upgradient of the assumed source.

With the available information, there is no way to know whether the easterly groundwater flow direction at the site is of current origin due to recent impacts of groundwater pumping east of the site, or has been present for some period of time due to groundwater withdrawals in the Hobbs area.

Water Quality Sampling

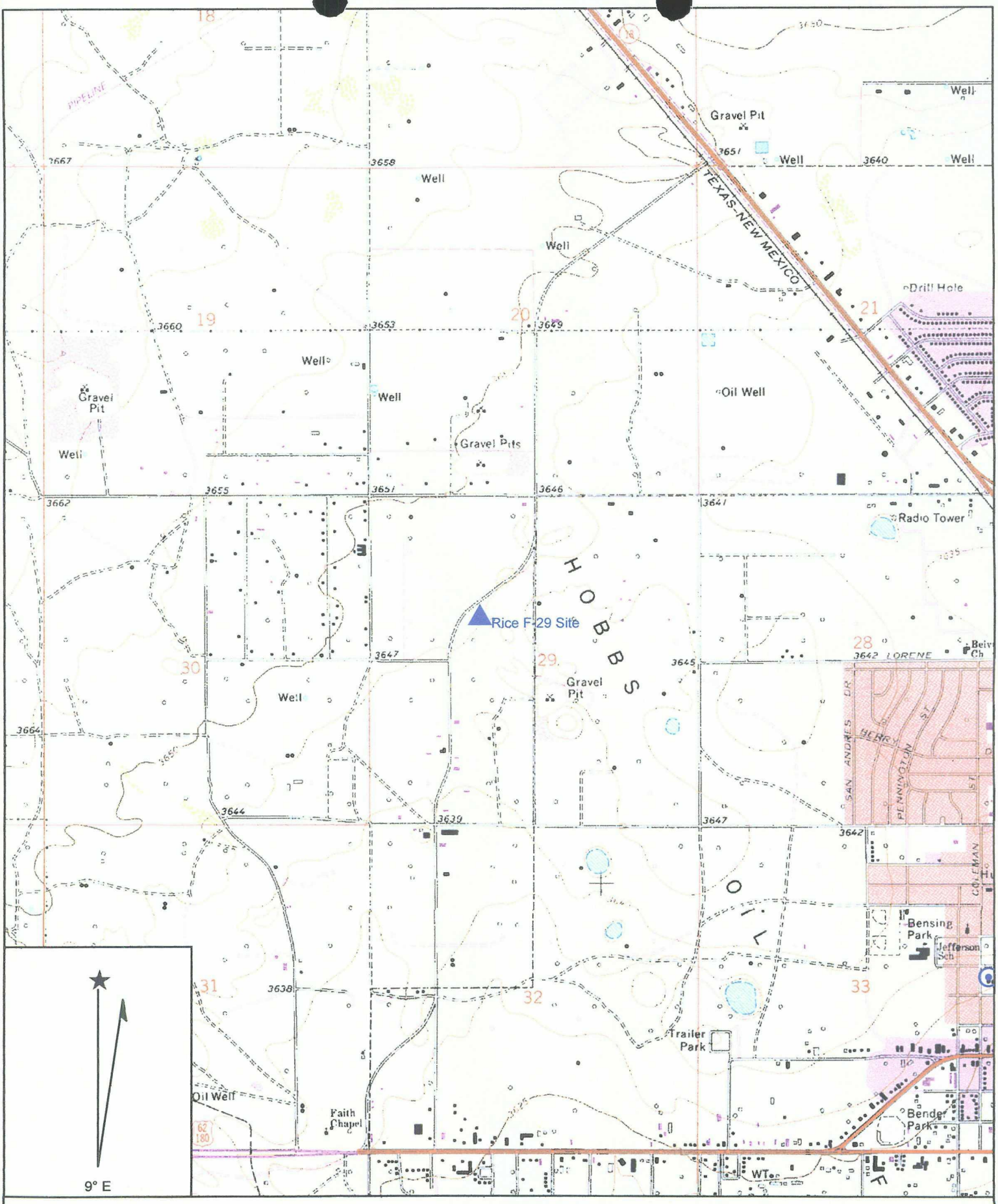
Given the direction of groundwater movement, the location of MW-4 is not hydraulically downgradient from the assumed source. Although the gradient may have shifted from southeast to easterly at some time in the past, there is no available data to indicate when such a change took place, or if it even occurred. Without that information the cause of elevated chloride concentration in MW-4 cannot be determined.

Future Investigation

Additional groundwater monitoring needs to be performed at a location downgradient from the assumed source. Given the subsurface configuration (zones of hard caliche above 50 ft. in depth), the only practical way to perform such investigation is the installation of an additional monitor well east of the assumed source. This will provide an additional measuring point to verify groundwater flow direction and will allow determination of current water quality conditions on the east side of the site. Following installation of this monitor well, all current and past data will be evaluated prior to making decisions on additional investigation or proposing remedial options.

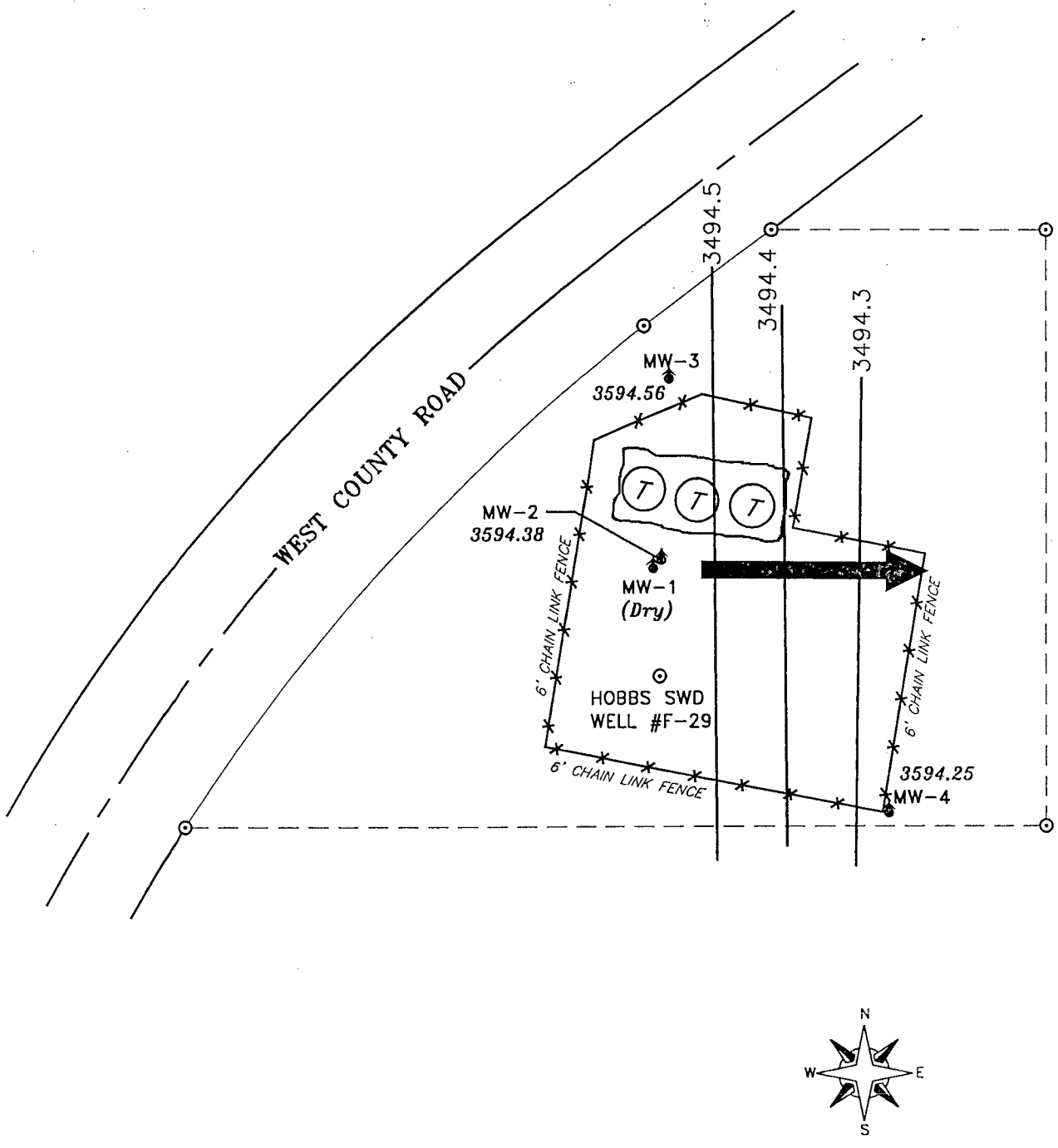
V. Report Figures

Figure 1. Vicinity Map



Name: HOBBS WEST
Date: 8/29/2001
Scale: 1 inch equals 2000 feet

Location: 032° 43' 14.8" N 103° 10' 19.1" W
Caption: Rice Operating Company
F-29 Monitor Well
Section 29, T19S, R38E



LEGEND:

3494.5 GROUNDWATER CONTOUR
CONTOUR INTERVAL 0.1 FT.

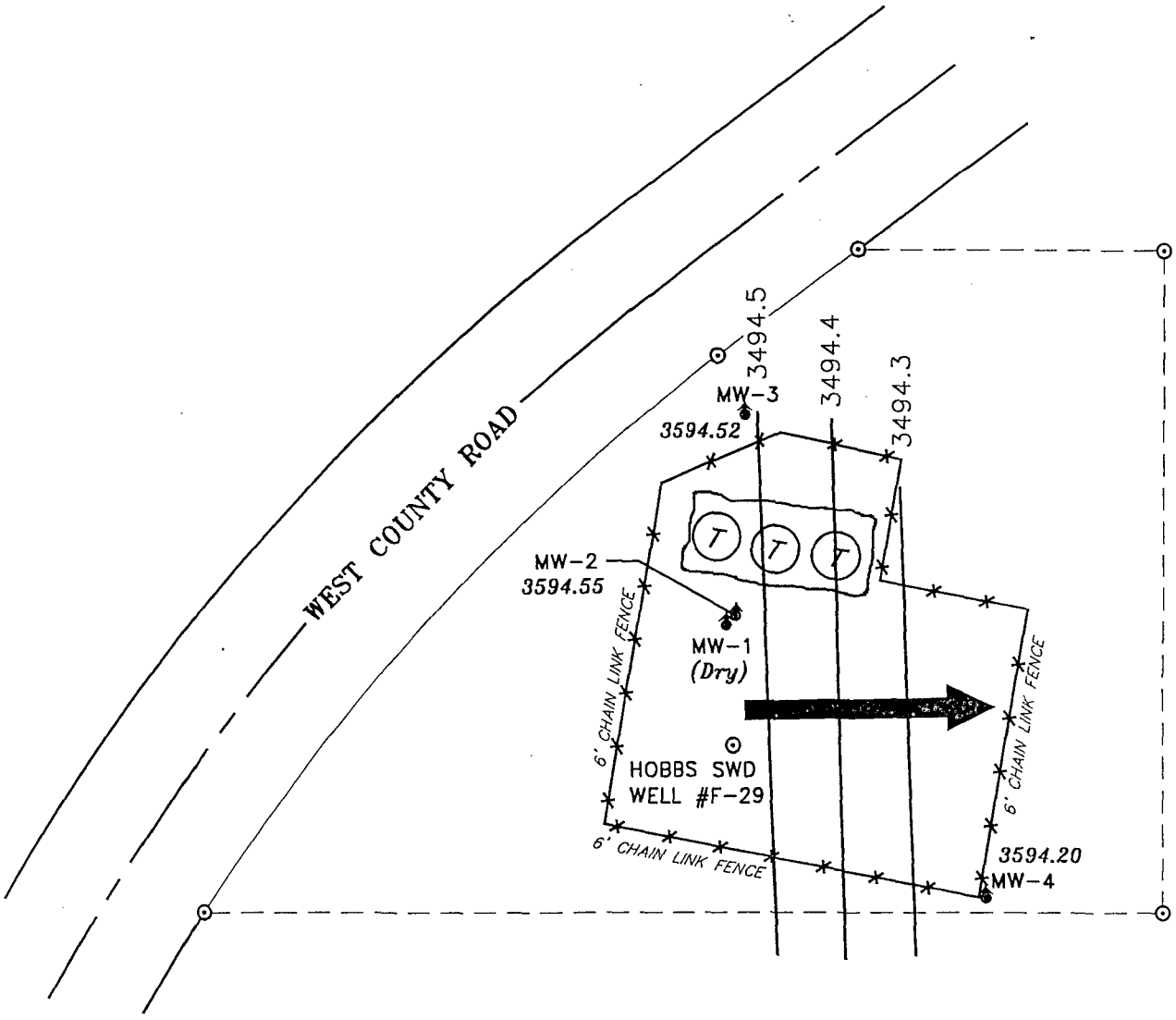
HYDRAULIC GRADIENT 0.0029 FT/FT

GROUNDWATER FLOW DIRECTION

DRAWING TITLE
FIGURE 2
GROUNDWATER
POTENTIOMETRIC MAP
RICE F29 SWD
DECEMBER 29, 2001

RICE OPERATING COMPANY
HOBBS, NEW MEXICO

DRAWN BY	CHK'D BY	SCALE	
EJS	DB	1" = 80'-0"	
DATE	APPR. BY	DRAWING NUMBER	REV.
1/22/02	–	RICE01.DWG	0



LEGEND:

3494.5 GROUNDWATER CONTOUR
CONTOUR INTERVAL 0.1 FT.

HYDRAULIC GRADIENT 0.0031 FT/FT

GROUNDWATER FLOW DIRECTION

DRAWING TITLE
FIGURE 3
GROUNDWATER
POTENTIOMETRIC MAP
RICE F29 SWD
JANUARY 4, 2002

RICE OPERATING COMPANY
HOBBS, NEW MEXICO

DRAWN BY	CHK'D BY	SCALE	
EJS	DB	1" = 80'-0"	
DATE	APPR BY	DRAWING NUMBER	REV.
1/22/02	–	RICE02.DWG	0

VI. Report Appendices

Appendix A
Monitor Well Boring Logs and Completion Details

Safety & Environmental Solutions, Inc.

LOG OF BORING MW-3

Hobbs F-29 SWD
New Monitor Well Installation

RICE OPERATING COMPANY
Hobbs, New Mexico

Date, Time Started:	: 12/26/01, 0830	Drilled By:	: Atkins Eng. Assoc.
Date Completed	: 12/26/01, 1045	Logged By:	: D.G. Boyer
Hole Diameter:	: 6 in.		
Drilling Method:	: Hollow-Stem Auger		
Sampling Method:	: Cuttings		

Sample Condition: Remoulded; Undisturbed; Lost; Rock Core

Sample Type: SS Split Spoon (18" or 24"); CB Core Barrel (2.5' or 5'); CT Auger Cuttings; NR No recovery

Depth in Feet	Sample Type	USCS	DESCRIPTION
0		ML	0-4 ft. SANDY SILT, brown to light gray, sand very fine grained, dry
5	CT	CA	CALICHE and caliche gravel, light gray
10		SM	SILTY SAND, very fine grained, light brown, some small pebbles, no odor
15	CT	CA	Thin zone CALICHE less than 1 ft. thick
		SM	SILTY SAND, very fine grained, light brown, some small pebbles
20		CA	Thin CALICHE less than 1 ft. thick
		SM	SILTY SAND, very fine grained, light brown
		CA	Thin CALICHE zone
25	CT	SP	SAND, very fine grained, uniform, light brown, dry
		CA	Thin CALICHE zone
30		SP	SAND, very fine, uniform ("sugar sand"). occasional caliche gravel
		CA/SS	CALICHE, hard, grading to soft 33-34 ft. 34-35 ft. CALICHE, hard, breakable with drill, gravel pieces to 1 in. (possible sandstone)
35	CT	CA	35-37 ft. SANDSTONE and/or CALICHE
		SP	SAND, fine to very fine grained ("sugar sand")
40		SS	SANDSTONE, hard
		SS/SP	43-44 ft. SANDSTONE, becoming soft 44-45 ft. SAND with sandstone lens
45	CT	SP	SAND, light brown, occasional small gravel
			SAND, light brown, fine to very fine, occasional sandstone lens
50			SAND, light brown, fine grained, becoming moist
55	CT		SAND, light brown, fine to very fine grained, clean, uniform
60			
	CT		SAND, light brown, fine to very fine grained, clean, uniform
65			

Notes:
Well drilled using Ingersoll-Rand A-300.
See MW-3 (Completion Details) for well completion information.
Water saturation at 55.1 ft.

01-25-2002 C:\Program Files\mtech532\Rice\MW-3.BOR

Safety & Environmental Solutions, Inc.

LOG OF BORING MW-4

Hobbs F-29 SWD
New Monitor Well Installation

RICE OPERATING COMPANY
Hobbs, New Mexico

Date, Time Started:	: 12/26/01, 1215	Drilled By:	: Atkins Eng. Assoc.
Date Completed	: 12/26/01, 1530	Logged By:	: D.G. Boyer
Hole Diameter:	: 6 in.		
Drilling Method:	: Hollow-Stem Auger		
Sampling Method:	: Cuttings		

Sample Condition: Remoulded; Undisturbed; Lost; Rock Core

Sample Type: SS Split Spoon (18" or 24"); CB Core Barrel (2.5' or 5'); CT Auger Cuttings; NR No recovery

Depth in Feet	Sample Type	USCS	DESCRIPTION
0	CT	ML	0-4 ft. SANDY SILT, brown to light gray, sand very fine grained, dry
5		CA	CALICHE and caliche gravel, light gray, very hard drilling
10			
15	CT	CA/SM	SILTY SAND and CALICHE with caliche gravels to 1"
20		SM	SILTY SAND, very fine grained, very hard drilling at 25 ft.
25	CT	SP	SAND, very fine grained with cemented caliche gravels.
30			SAND, easier drilling 28-30 ft.
		CA	CALICHE lens approx. 1 ft. thick
		SP	SAND
35	CT	CA/SS	CALICHE and/or SANDSTONE lens
		SP/SS	SAND, light brown, uniform, fine to very fine, occasional hard (sandstone?) lens, few gravels
40			SAND, light brown, uniform, fine to very fine
45	CT		
50		SP	SAND, brown, very fine grained, few fines, occasional pea-sized gravel
			SAND, soft drilling
55	CT		SAND, brown, fine to very fine grained, slightly moist, occasional caliche gravel
60			
65	CT		SAND, very fine grained, saturated

Notes:
Well drilled using Ingersoll-Rand A-300.
See MW-4 (*Completion Details*) for well completion information.
Water saturation at 53.72 ft.

01-25-2002 C:\Program Files\mtech532\Rice\MW-4.BOR

Safety & Environmental Solutions, Inc.

LOG OF WELL MW-3 (Completion Details)

Hobbs F-29 SWD
New Monitor Well Installation

RICE OPERATING COMPANY
Hobbs, New Mexico

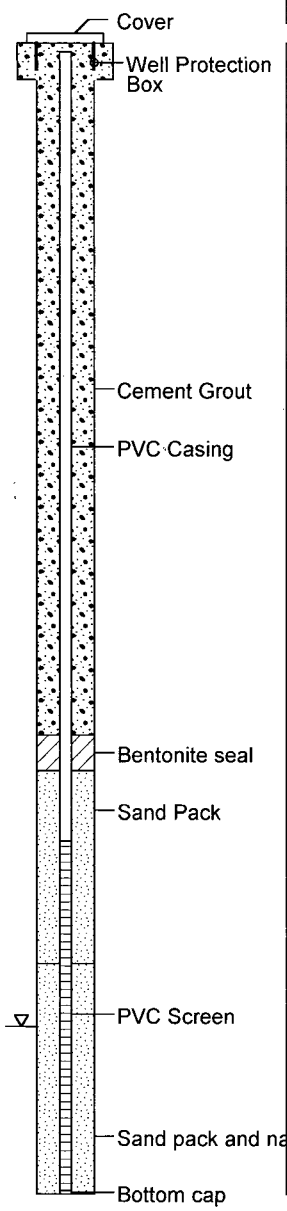
Date, Time Started:	: 12/26/01, 0830	Drilled By:	: Atkins Eng. Assoc.
Date Completed	: 12/26/01, 1045	Logged By:	: D.G. Boyer
Hole Diameter:	: 6 in.	Northing Coordinate	: 627908.779
Drilling Method:	: Hollow-Stem Auger	Easting Coordinate	: 898025.082
Sampling Method:	: Cuttings	Survey By	: Basin Surveys

Sample Condition: Remoulded; Undisturbed; Lost; Rock Core

Water Levels: Hydrocarbon Prod.; Water Level

Depth in Feet	Samples	USCS	GRAPHIC	DESCRIPTION
0		ML		0-4 ft. SANDY SILT, brown to light gray, sand very fine grained, dry
5		CA		CALICHE and caliche gravel, light gray
10		SM		SILTY SAND, very fine grained, light brown, some small pebbles
		CA		Thin zone CALICHE less than 1 ft. thick
15		SM		SILTY SAND, very fine grained, light brown
		CA		Thin CALICHE less than 1 ft. thick
20		SM		SILTY SAND, very fine grained, light brown
		CA		Thin CALICHE zone
		SP		SAND, very fine grained, light brown, dry
25		CA		Thin CALICHE zone
		SP		SAND, very fine, uniform ("sugar sand").
30		CA/SS		CALICHE, hard, grading to soft 33-34 ft. 34-35 ft. CALICHE, hard, possible sandstone
35		CA		35-37 ft. SANDSTONE and/or CALICHE
		SP		SAND, fine to very fine grained
40		SS		SANDSTONE, hard
		SS/SP		43-44 ft. SANDSTONE, becoming soft 44-45 ft. SAND with sandstone lens
45		SP		SAND, light brown, occasional small gravel
				SAND, light brown, fine to very fine, occasional sandstone lens
50				SAND, light brown, fine grained, becoming moist
55				SAND, light brown, fine to very fine grained, clean, uniform
60				SAND, light brown, fine to very fine grained, clean, uniform
65				

Well: MW-3
Elev.: 3,645.76 (TOC)



Well Construction Information

COMPLETION DATA

Hole Depth	: 65 ft. Below LS
TD Inside casing	: 60.95 ft. Below TOC

CASING, SCREEN & CAP

Material, joints	: PVC, threaded
Diameter	: 2 in. ID
Manufacturer	: Laibe Environmental
Screen type	: Slotted
Screen length	: 20 ft.
Screen opening	: 0.020 slot
Scrn. placement	: 45-65 ft. BLS
Bottom Cap	: 0.2 ft PVC
Protector Casing	: Flush-mount steel
Lock Key #	: Rice lock

SEALS & SAND PACK

Cement seal type	: Portland with 5% bentonite
Cem't placement	: 0 - 39 ft. BLS
Annular seal type	: Bentonite 3/8" chips
Seal placement	: 39-41 ft. BLS
Sand pack type	: 8-16 Oglebay silica sand mixture
Sand placement	: 41 - 52 ft. BLS

ELEVATIONS.

Ground elevation	: ____
Inner casing, lip	: ____
Outer casing, top	: ____

NOTES

WELL INSTALLATION:
12/26/01: Drilled to 65 feet. Saturated at 50-55 ft. Hole caved while pulling augers, native sand pack TD to 52 ft. Placed sand (5 bags) to 41 ft. Bentonite (1 bag Holeplug coarse grade Wyoming bentonite) to 39 ft. then mix grout and pump down hole to near surface. Hand mix Portland cement and cement flush-mount steel cover and make 3-4 ft. diameter concrete pad at surface.

WELL DEVELOPMENT:
01/03/04: Developed well on 1/3 and 1/4 but well sanding badly. Well needs additional development. Sampled 1/4/02 for Cl and TDS.

Notes:
Well drilled using Ingersoll-Rand A-300.
See Log of Boring MW-3 for detailed lithologic and drilling information
On 12/29/01DTW 51.20 ft., TD BTOC 60.95 ft.

01-25-2002 C:\Program Files\mtech532\Ricewells\MW-3 MW.BOR

Safety & Environmental Solutions, Inc.

LOG OF WELL MW-4 (Completion Details)

Hobbs F-29 SWD
New Monitor Well Installation

RICE OPERATING COMPANY
Hobbs, New Mexico

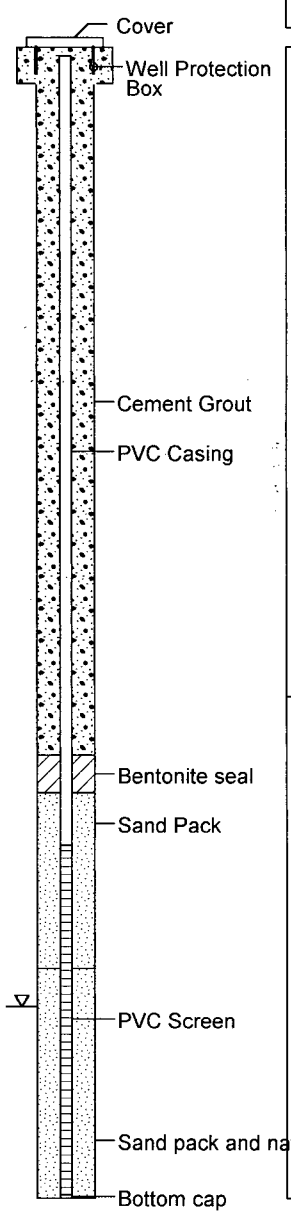
Date, Time Started:	: 12/26/01, 1215	Drilled By:	: Atkins Eng. Assoc.
Date Completed	: 12/26/01, 1530	Logged By:	: D.G. Boyer
Hole Diameter:	: 6 in.	Northing Coordinate	: 627693.822
Drilling Method:	: Hollow-Stem Auger	Easting Coordinate	: 898134.408
Sampling Method:	: Cuttings	Survey By	: Basin Surveys

Sample Condition: Remoulded; Undisturbed; Lost; Rock Core

Water Levels: Hydrocarbon Prod.; Water Level

Depth in Feet	Samples	USCS	GRAPHIC	DESCRIPTION
0		ML		0-4 ft. SANDY SILT, brown to light gray, sand very fine grained, dry
5		CA		CALICHE and caliche gravel, light gray, very hard drilling
10				
15		CA/SM		SILTY SAND and CALICHE with caliche gravels to 1"
20		SM		SILTY SAND, very fine grained, very hard drilling at 25 ft.
25		SP		SAND, very fine grained with cemented caliche gravels. SAND, easier drilling 28-30 ft.
30		CA SP		CALICHE lens approx. 1 ft. thick
35		CA/SS		SAND
				CALICHE and/or SANDSTONE lens
		SP/SS		SAND, light brown, uniform, fine to very fine, occasional hard (sandstone?) lens
40				SAND, light brown, uniform, fine to very fine
45				SAND, brown, very fine grained, few fines, occasional pea-sized gravel
50		SP		SAND, soft drilling
55				SAND, brown, fine to very fine grained, slightly moist, occasional caliche gravel
60				SAND, very fine grained, saturated
65				

Well: MW-4
Elev.: 3,645.76 (TOC)



Well Construction Information

COMPLETION DATA

Hole Depth	: 65 ft. Below LS
TD Inside casing	: 57.91 ft. Below TOC

CASING, SCREEN & CAP

Material, joints	: PVC, threaded
Diameter	: 2 in. ID
Manufacturer	: Laibe Environmental
Screen type	: Slotted
Screen length	: 20 ft.
Screen opening	: 0.020 slot
Scrn. placement	: 45-65 ft. BLS
Bottom Cap	: 0.2 ft PVC
Protector Casing	: Flush-mount steel
Lock Key #	: Rice lock

SEALS & SAND PACK

Cement seal type	: Portland with : 5% bentonite
Cem't placement	: 0 - 39 ft. BLS
Annular seal type	: Bentonite 3/8" chips
Seal placement	: 39.9-42 ft. BLS
Sand pack type	: 8-16 Oglebay silica : sand mixture
Sand placement	: 42 - 52 ft. BLS

ELEVATIONS.

Ground elevation	: ____
Inner casing, lip	: ____
Outer casing, top	: ____

NOTES

WELL INSTALLATION:
12/26/01: Drilled to 65 feet. Saturated at 50-55 ft. Hole caved while pulling augers, native sand pack TD to 52 ft. Placed sand (5 bags) to 42 ft. Bentonite (1 bag Holeplug coarse grade Wyoming bentonite) to 39.9 ft. then mix grout and pump down hole to near surface. Hand mix Portland cement and cement flush-mount steel cover and make 3-4 ft. diameter concrete pad at surface.

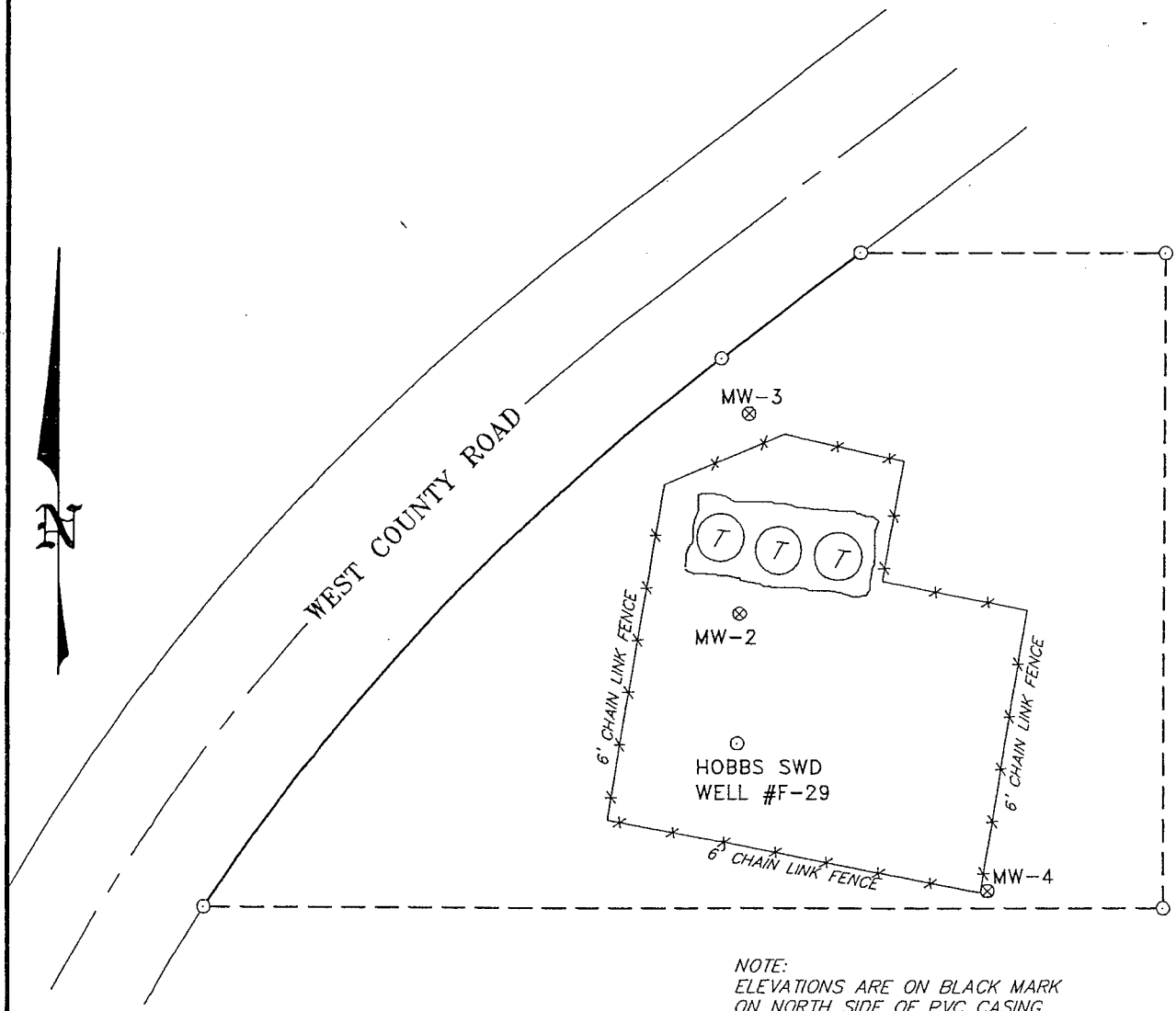
WELL DEVELOPMENT:
01/03/04: Developed well on 1/3 and 1/4 but well sanding badly. Well needs additional development. Sampled 1/4/02 for Cl and TDS.

Notes:
Well drilled using Ingersoll-Rand A-300.
See Log of Boring MW-4 for detailed lithologic and drilling information
On 12/29/01DTW 51.51 ft., TD BTOC 57.91 ft.

01-25-2002 C:\Program Files\mtech532\Ricewells\MW-4 MW.BOR

Appendix B
Copy of Rice F-29 Site Survey

SECTION 29, TOWNSHIP 18 SOUTH, RANGE 38 EAST, N.M.P.M.,
LEA COUNTY, NEW MEXICO.



NOTE:
ELEVATIONS ARE ON BLACK MARK
ON NORTH SIDE OF PVC CASING.

NEW MEXICO STATE PLANE COORDINATES (NAD83)

WELL	NORTHING	EASTING	LATITUDE	LONGITUDE	ELEVATION
MW-2	627819.025	898021.191	N 32°43'14.0"	W 103°10'24.9"	3645.71'
MW-3	627908.779	898025.082	N 32°43'14.9"	W 103°10'24.8"	3645.76'
MW-4	627693.822	898134.408	N 32°43'12.7"	W 103°10'23.6"	3645.76'

I HEREBY CERTIFY THAT THIS PLAT WAS PREPARED FROM FIELD NOTES OF AN ACTUAL SURVEY AND MEETS OR EXCEEDS ALL REQUIREMENTS FOR LAND SURVEYS AS SPECIFIED BY THIS STATE.

GARY L. JONES N.M. P.S. No. 7977
TEXAS P.L.S. No. 5074

REGISTERED PROFESSIONAL LAND SURVEYOR — GARY L. JONES — NEW MEXICO — 7977

80 0 80 160 FEET

BASIN SURVEYS P.O. BOX 1786 – HOBBS, NEW MEXICO

RICE OPERATING COMPANY

REF: MONITOR WELLS

MONITOR WELLS LOCATED IN
SECTION 29, TOWNSHIP 18 SOUTH, RANGE 38 EAST,
N.M.P.M., LEA COUNTY, NEW MEXICO.

W.O. Number: RICE	Drawn By: K. GOAD		
Date: 01-10-2002	Disk: KJG CD#4 – RICE.DWG	Survey Date: VARIES	Sheet 1 of 1 Sheets

Appendix C
Analytical Results

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: DAVE BOYER
703 E. CLINTON, STE. 103
HOBBS, NM 88240
FAX TO: (505) 393-4388

Receiving Date: 01/04/02
Reporting Date: 01/07/02
Project Number: NOT GIVEN
Project Name: RICE F-29
Project Location: HOBBS, NM

Sampling Date: 01/04/01
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: AH

LAB NUMBER	SAMPLE ID	TDS (mg/L)	Cl (mg/L)
ANALYSIS DATE:		01/07/02	01/04/02
H6390-1	MONITOR WELL #1	1114	308
H6390-2	NORTH WELL	1013	136
H6390-3	SOUTH WELL	1781	464
Quality Control		NR	1050
True Value QC		NR	1000
% Recovery		NR	105
Relative Percent Difference		5.1	3.0

METHODS: EPA 600/4-79-02	160.1	4500-Cl B*

*Std. Methods

Amy Hill
Chemist

1-7-02
Date

H6390

CARDINAL LABORATORIES, INC.

2111 Beechwood, Abilene, TX 79603 (915) 673-7001 Fax (915) 673-7020
101 East Marland, Hobbs, NM 88240 (505) 393-2326 Fax (505) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: SESI	BILL TO PO #:
Project Manager: Dave Boyer	Company: SAME
Address: 703 E. CLINTON, #103	Attn:
City: HOBBS State: NM Zip: 88240	Address:
Phone #: (505) 397-0510	City:
Fax #: (505) 393-4388	State: Zip:
Project #: Project Owner:	Phone #:
Project Name: Rice F-29	Fax #:
Project Location: Hobbs, NM	

FOR LAB USE ONLY				MATRIX							PRES.			SAMPLING		ANALYSIS REQUEST	
LAB I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID:	ICE / COOL	OTHER:	DATE	TIME	Chlorides	TDS
H6390-1	Monitor Well #1	G	1	✓							✓		1-4		✓	✓
-2	North well	G	1	✓							✓		1-4		✓	✓
-3	South well	G	1	✓							✓		1-4		✓	✓

Sampler Relinquished: Robert Huskey	Date: 1-4-02 Time: 10:15A	Received By:	Phone Result ☐ Yes ☐ No Additional Fax #:
Relinquished By:	Date: 1-4-02 Time:	Received By: (Lab Staff) Amy Hill	Fax Result: ☐ Yes ☐ No REMARKS:
Delivered By: (Circle One) Sampler - UPS - Bus - Other:		Sample Condition Cool: ☑ Yes ☐ No Intact: ☐ Yes ☐ No	CHECKED BY: (Initials)

† Cardinal cannot accept verbal changes. Please fax written changes to 915-673-7020.

RICE Operating Company
122 West Taylor • Hobbs, New Mexico 88240
Phone: (505)393-9174 • Fax: (505) 397-1471

CERTIFIED MAIL
RETURN RECEIPT NO. 7099 3220 0001 9928 4591

September 7, 2001

Mr. Wayne Price
NM Energy and Minerals Dept.
OCD Environmental Bureau
1220 S. St. Francis Drive
Santa Fe, NM 87504

Re: SWD F-29 Facility – Groundwater Monitoring
NW/4, Unit Letter F, Sec. 29, T18S, R38E
Lea County, NM

Dear Mr. Price:

Rice Operating Company (ROC) appreciates your consideration and response concerning the groundwater monitoring at the F-29 SWD Facility.

A brief background review: this facility operated with below-grade redwood tanks and an emergency overflow pit until 1999 when the facility was upgraded with fiberglass tanks and the overflow pit was closed. Site vertical delineation revealed that salt impact was arrested at 40' BGS at the west-redwood tank and 30' BGS at the east-redwood tank. The initial water analysis indicated no saltwater impact to the groundwater. ROC agreed to sample the monitor well for two years because an unexplained TPH pocket was found 40' BGS at the west-redwood location. (A full report of the delineation and closure activities was submitted to NMOCD June 25, 1999.)

A quarterly monitoring schedule was initiated and MW-1 was discovered to be full of sand, and the water analysis indicated an elevated chloride concentration. ROC received permission to complete an alternate well, MW-2, which also exhibited elevated chloride concentration. ROC verbally notified the NMOCD Santa Fe Office of this occurrence on August 1, 2000 and through email on September 11, 2000. After discussion on August 1, it was suggested that ROC drill and complete an up-gradient well to reference the groundwater quality in the area. ROC contacted the adjacent landowner, Mr. Gary Schubert of Grimes Land Company, for permission to drill and complete a monitor well, but Mr. Schubert respectfully declined permission.

As result of discussion with NMOCD in March 2001 of the F-29 Facility Annual Monitoring Report, ROC contracted with Safety & Environmental Solutions, Inc. (SESI) to "pump and

dispose" to attempt to remove the elevated-chloride groundwater in MW-2. A reduction in TDS concentration from 3470 ppm to 1385 ppm was realized from a purge of 18,355 gallons. At several points during the intensified effort (daily purge and test July 16 through July 30), the groundwater chloride concentration fell to 223ppm, below the WQCC level (250ppm). Enclosed with this letter is the fluid recovery report of F-29 Facility site activity and analytical results prepared by David Boyer of SESI.

Because the groundwater chloride concentration has fluctuated between 223 and 480ppm, depending on purge volume, ROC would like to expand the groundwater investigation with an up-gradient monitor well and a down-gradient monitor well, as depicted on the attached facility site map. Both of these wells will be located within the ROC property boundaries. All fluid produced from the monitor wells will be measured for volume and then disposed into the SWD Well F-29 Facility, a commercial disposal well owned and operated by ROC.

The monitor wells will be completed pursuant to NMOCD guidelines and sampled pursuant to NMOCD specifications for BTEX, pH, TDS, Conductivity, T-Alkalinity, and routine major cations and anions: Na, Ca, Mg, K, Cl, SO_4, CO_3, HCO_3. Upon receipt of the analytical results, ROC will contact the NMOCD for discussion of further action.

ROC would like to reiterate that this location is surrounded by the Occidental Permian North Hobbs Waterflood Unit and is adjacent to the historical "Windmill Oil Company" production and recovery area. ROC believes that because extensive vertical delineation results at this facility revealed salt-water impact to the vadose zone was arrested before groundwater was contacted, the elevated chloride and TDS concentrations are most likely the result of off-site historical events consistent with seventy-plus years of petroleum production.

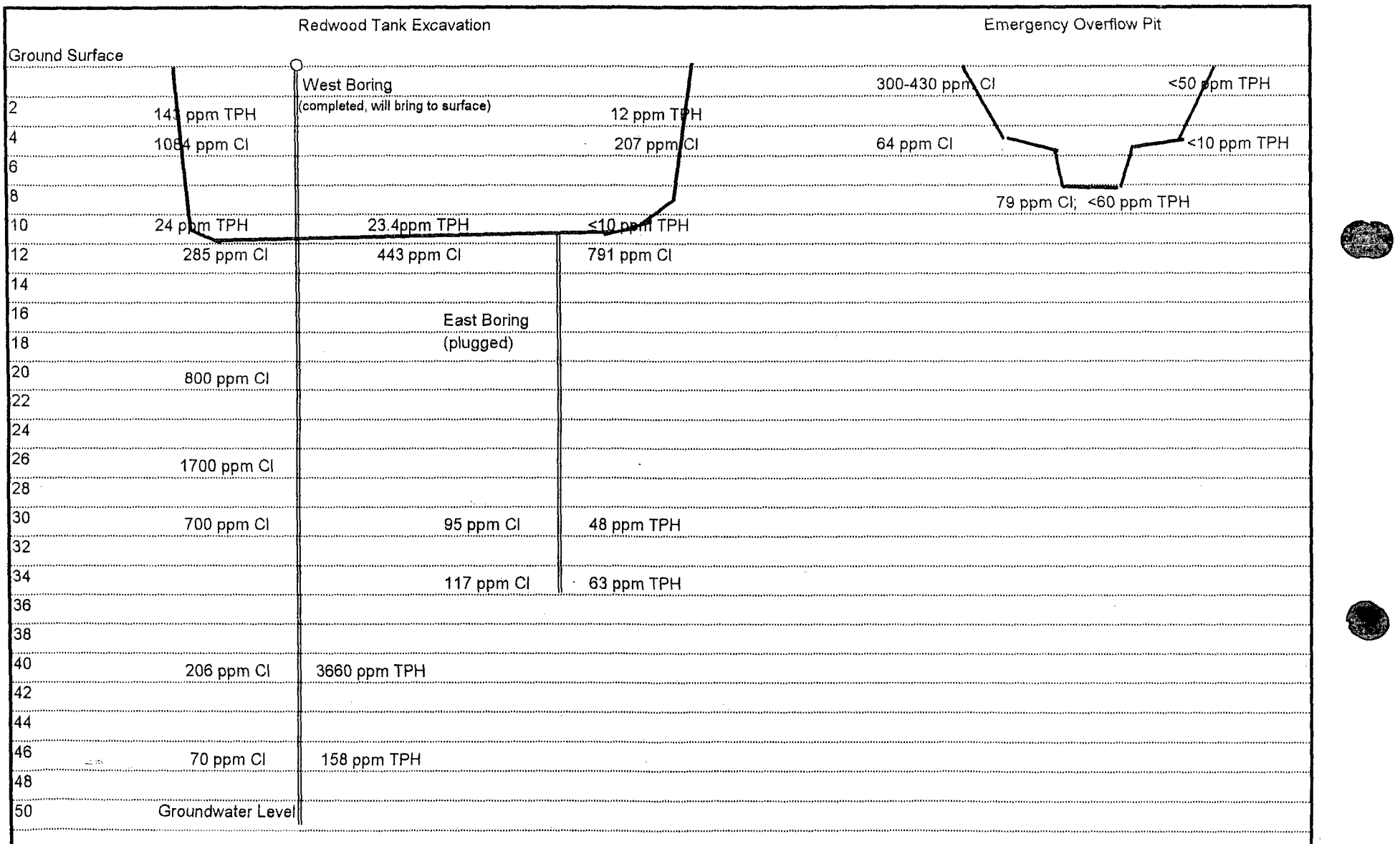
If you have any questions, please call. ROC looks forward to your reply.

RICE OPERATING COMPANY

Carolyn Doran Haynes

Carolyn Doran Haynes
Operations Engineer

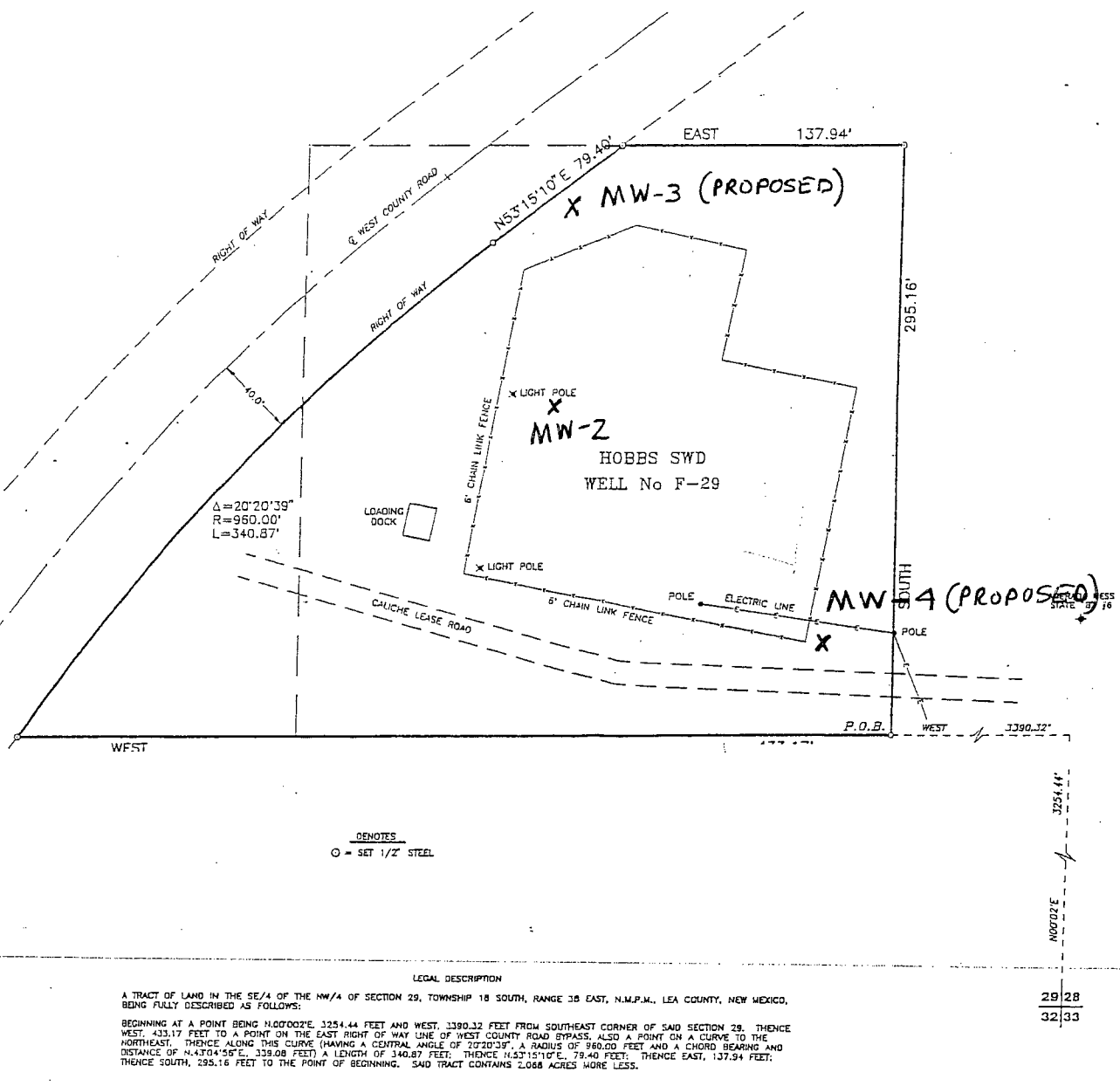
cc: LBG, file, Chris Williams
NMOCD Hobbs District 1
1625 N. French Drive
Hobbs, NM 88240



Rice Operating Company 122 West Taylor Hobbs, NM 88240 (505) 393-9174	Chloride and TPH Delineation	Redwood Tank Excavation and Emergency Overflow Pit SWD Well F-29 Unit Letter F, Sec 29-T18S-R38E Lea County, New Mexico

SECTION 29, TOWNSHIP 18 SOUTH, RANGE 38 EAST, N.M.P.M.,

LEA COUNTY, NEW MEXICO



DENOTES
⊙ = SET 1/2" STEEL

LEGAL DESCRIPTION

A TRACT OF LAND IN THE SE/4 OF THE NW/4 OF SECTION 29, TOWNSHIP 18 SOUTH, RANGE 38 EAST, N.M.P.M., LEA COUNTY, NEW MEXICO, BEING FULLY DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT BEING N.00°002'E. 3254.44 FEET AND WEST, 3390.32 FEET FROM SOUTHEAST CORNER OF SAID SECTION 29. THENCE WEST, 433.17 FEET TO A POINT ON THE EAST RIGHT OF WAY LINE OF WEST COUNTY ROAD BYPASS, ALSO A POINT ON A CURVE TO THE NORTHEAST. THENCE ALONG THIS CURVE (HAVING A CENTRAL ANGLE OF 20°20'39", A RADIUS OF 960.00 FEET AND A CHORD BEARING AND DISTANCE OF N.43°04'55"E., 339.08 FEET) A LENGTH OF 340.87 FEET; THENCE N.53°15'10"E., 79.40 FEET; THENCE EAST, 137.94 FEET; THENCE SOUTH, 295.16 FEET TO THE POINT OF BEGINNING. SAID TRACT CONTAINS 2.068 ACRES MORE LESS.

29 | 28
32 | 33

40 0 40 80 120 Feet

I HEREBY CERTIFY THAT THIS PLAT WAS PREPARED FROM FIELD NOTES OF AN ACTUAL SURVEY AND MEETS OR EXCEEDS ALL REQUIREMENTS FOR LAND SURVEYS AS SPECIFIED BY THIS STATE.

GARY L. JONES NEW MEXICO 7977 REGISTERED PROFESSIONAL LAND SURVEYOR

JOHN W. WEST, N.M. P.E. & P.S. No. 676
TEXAS P.L.S. No. 1138
RONALD J. EIDSON, N.M. L.S. No. 3239
TEXAS P.L.S. No. 1883
GARY L. JONES N.M. P.S. No. 7977

RICE ENGINEERING CORP.

A TRACT OF LAND LOCATED IN
SECTION 29, TOWNSHIP 18 SOUTH, RANGE 38 EAST,
N.M.P.M., LEA COUNTY, NEW MEXICO

JOHN WEST ENGINEERING CO.
CONSULTING ENGINEERS & SURVEYORS – HOBBS, NEW MEXICO

Surveyed By: CASON	Drawn By: HOLMES	Last Rev. Date:	Drawing Number
Date Begin: 8-20-93	Date: 8-27-93	Disk: JH No 51	D-819-1
Date End: 8-20-93	Approved By:	Sheet 1 of 1 Sheets	
W.O. Number: 93-11-1558	File Name: DRAWINGS\RICE1558		

Send original copy by certified mail to: TDLR, P.O. Box 12157, Austin, TX 78711

ATTENTION OWNER: *Confidentiality Privilege Notice on reverse side of Well Owner's copy (pink)*

State of Texas
WELL REPORT

Texas Department of Licensing & Regulation
P.O. Box 12157
Austin, TX 78711
512-463-7880

1) OWNER: Rice Operating Co. (Name) ADDRESS: 122 W. Taylor (Street or RFD) Hobbs (City) NM (State) 88240 (Zip)

2) ADDRESS OF WELL'S LOCATION: Long. _____ Lat. _____
County Lea W. Co. Rd. (Street, RFD or other) Hobbs (City) NM (State) 88240 (Zip) GRID # _____

3) TYPE OF WORK (Check):
☒ New Well ☐ Deepening ☐ Reconditioning ☐ Plugging

4) PROPOSED USE (Check): ☒ Monitor ☐ Environmental Soil Boring ☐ Domestic ☐ Industrial ☐ Irrigation ☐ Injection ☐ Public Supply ☐ De-watering ☐ Testwell
If Public Supply well, were plans submitted to the TNRCC? ☐ Yes ☐ No

5)

6) WELL LOG:
Date Drilling:
Started 7/10/00
Completed 7/10/00

DIAMETER OF HOLE

Dia.. (in.)	From (ft.)	To (ft.)
7	Surface	65

7) DRILLING METHOD (Check): ☐ Driven ☒ Air Rotary ☐ Mud Rotary ☐ Bored ☐ Air Hammer ☐ Cable Tool ☐ Jetted ☐ Other _____

N

From (ft.)	To (ft.)	Description and color of formation material
		MW-1R
0	10	Caliche/Sand - Tan (Fill)
10	65	Caliche/Sand - Tan

8) Borehole Completion (Check): ☐ Open Hole ☐ Straight Wall ☐ Underreamed ☒ Gravel Packed ☐ Other 16/30 Filter Sand
If Gravel Packed give interval from 28 ft. to 65 ft.

CASING, BLANK PIPE, AND WELL SCREEN DATA:

Dia. (in.)	New or Used	Steel, Plastic, etc. Perf., Slotted, etc. Screen Mfg., if commercial	Setting (ft.) From	Setting (ft.) To	Gage Casting Screen
4	N	PVC Solid	0	30	
4	N	PVC Slotted	30	60	0.010

(Use reverse side of Well Owner's copy, if necessary)

9) CEMENTING DATA
Cemented from 0 ft. to 10 ft. No. of sacks used 10
Bentonite from 10 ft. to 28 ft. No. of sacks used 5
Method used Slurry
Cemented by Harrison & Cooper, Inc.
Distance to septic system field lines or other concentrated contamination _____ ft.
Method of verification of above distance _____

13) ☐ Well plugged within 48 hours

Casing left in well: From (ft)	Casing left in well: To (ft)	Cement/bentonite placed in well: From (ft)	Cement/bentonite placed in well: To (ft)	Sacks used:

14) TYPE PUMP:
☐ Turbine ☐ Jet ☐ Submersible ☐ Cylinder
☐ Other: _____
Depth to pump bowls, cylinder, jet, etc., _____ ft.

10) SURFACE COMPLETION
☒ Specified Surface Slab Installed
☐ Specified Steel Sleeve Installed
☐ Pitless Adapter Used
☐ Approved Alternative Procedure Used

15) WELL TESTS:
Type test: ☐ Pump ☐ Bailer ☐ Jetted ☐ Estimated
Yield: _____ gpm with _____ ft. drawdown after _____ hrs

11) WATER LEVEL
Static level 49 ft. below land surface Date 7/10/00
Artesian Flow _____ gpm. Date _____

16) WATER QUALITY:
Did you knowingly penetrate any strata which contained undesirable constituents?
☐ Yes ☒ No If yes, submit "REPORT OF UNDESIRABLE WATER"
Type of water? _____ Depth of strata _____
Was chemical analysis made? ☐ Yes ☒ No

12) PACKERS: Type Depth

I certify that I drilled this well (or the well was drilled under my direct supervision) and that each and all of the statements herein are true and correct. I understand that failure to complete items 1 thru 16 will result in the log(s) being returned for completion and resubmittal.

COMPANY NAME Claiborne Harrison (Type or Print) WELL DRILLER'S LICENSE NO. NM WD-1271

ADDRESS 7202 66th St. (Street or RFD) Lubbock (City) TX (State) 79407 (Zip)

(Signed) _____ (Licensed Well Driller) (Signed) _____ (Registered Driller Trainee)

Please attach electric log, chemical analysis, and other pertinent information, if available.

SUMMARY OF WATER SAMPLE ANALYTICAL RESULTS 1999 - 2000
RICE OPERATING COMPANY SWD WELL F-29 SITE

Well Name	Date Sampled	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylenes (ppm)	Total BTEX (ppm)	TDS (mg/l)	Chloride (mg/l)
NMWQCC Standards		0.010	0.750	0.750	0.620	N/A	1,000	250
MW-1	03/05/99	<0.002	<0.002	<0.002	<0.006	<0.012		194
MW-1	03/21/2000	<0.002	<0.002	<0.002	<0.006	<0.012	**6600**	**2564**
MW-2	07/14/2000	<0.002	<0.002	<0.002	<0.006	<0.012	**3470**	**1829**
MW-2	09/27/2000	<0.002	<0.002	<0.002	<0.006	<0.012	**3032**	**1748**
MW-2	12/12/2000	<0.002	<0.002	<0.002	<0.006	<0.012	**2586**	**1027**

Analysis was performed by Cardinal Laboratories in Hobbs, New Mexico.

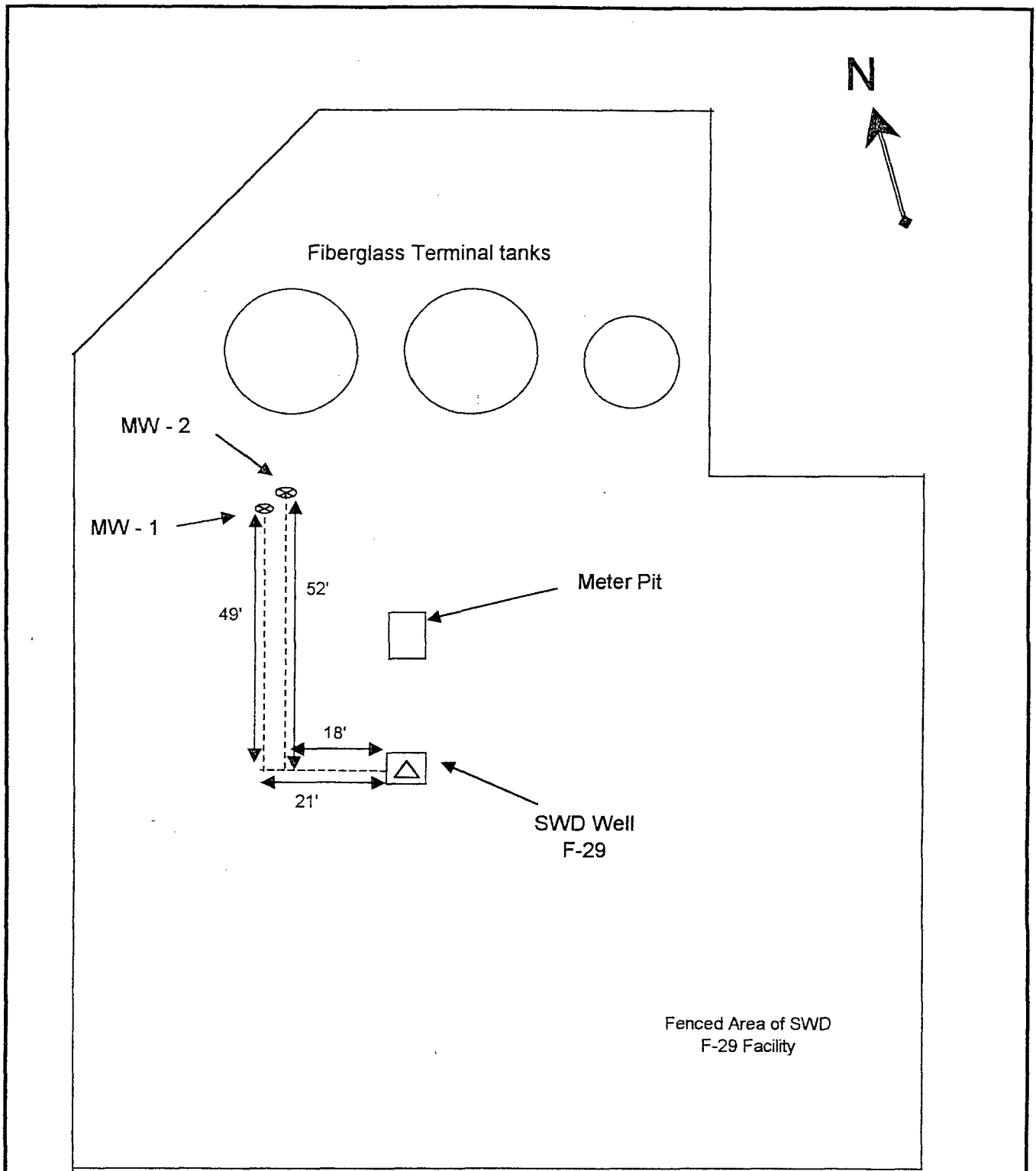
Benzene, toluene, eythlbenzene, and xylene (BTEX); total dissolved solids (TDS); and chlorjde analyses were conducted using EPA Methods 8020, 160.1, and 352.3, respectively.

Results presented in bold print exceed NMWQCC human health standards for ground water.

All results are reported in milligrams per liter (mg/l); parts per million (ppm).

SUMMARY OF GROUNDWATER MEASUREMENTS by QUARTER
RICE OPERATING COMPANY SWD WELL F-29 SITE

Well	Date Gauged	Depth to Water	Water Elevation	Casing Elevation	Surface Elevation	LNAPL Thickness
MW-1	03/05/99	50.00				0.00
MW-1	03/21/2000	49.89	50.11	100.00		0.00
MW-2	07/10/2000	49.00				0.00
MW-2	09/27/2000	49.26	50.74	100.00	98.5	0.00
MW-2	12/12/2000	49.61	50.39	100.00	98.5	0.00



Rice Operating Company 122 West Taylor Hobbs, NM 88240 (505) 393-9174	Monitor Well Location	SWD Facility F-29 Unit Letter F, Sec 29-T18S-R38E Lea County, New Mexico

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
RICE OPERATING CO.
ATTN: F.WESLEY ROOT
122 W. TAYLOR
HOBBS, NM 88240
FAX TO:

Receiving Date: 03/05/99
Reporting Date: 03/06/99
Project Owner: RICE OPERATING
Project Name: SWD F-29
Project Location: 29-T18S-R38E, LEA CO., NM

Sampling Date: 03/05/99
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: BC

LAB NO.	SAMPLE ID	Cl⁻ (mg/L)	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE:		03/05/99	03/05/99	03/05/99	03/05/99	03/05/99
H4046-1	B-1	194	<0.002	<0.002	<0.002	<0.006
Quality Control		1335	0.089	0.095	0.092	0.276
True Value QC		1319	0.100	0.100	0.100	0.300
% Recovery		101	88.9	94.6	91.5	92.0
Relative Percent Difference		1.5	3.5	4.6	4.0	5.1

METHODS: Cl⁻ - Std. Methods 4500-Cl⁻B; BTEX - EPA SW-846 8260

Chemist

3/6/99
Date

H4046.XLS

CARDINAL LABORATORIES, INC.

2111 Beechwood, Abilene, TX 79603 (915) 673-7001 Fax (915) 673-7020
101 East Marland, Hobbs, NM 88240 (505) 393-2326 Fax (505) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name:	Rice Operating Company
Project Manager:	F. Wesley Root
Address:	122 West Taylor
City:	Hobbs State: NM Zip: 88240
Phone #:	505 393-9174
Fax #:	
Project #:	Project Owner: Rice Operating
Project Name:	SWD F-29
Project Location:	29-T18S-R38E, Lea Co, NM

BILL TO PO #:

Company:	Rice Operating
Attn:	F. Wesley Root
Address:	122 West Taylor
City:	Hobbs
State:	NM Zip: 88240
Phone #:	505-393-9174
Fax #:	

FOR LAB USE ONLY				MATRIX						PRES.			SAMPLING		ANALYSIS REQUEST	
LAB I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID:	ICE / COOL	OTHER :	DATE	TIME	BTEX	Chloride
H46046-1	B-1	G	2	V							V		3-5-99	12:15	V	
	B-1	G	1	V							V		3-5-99	12:15		V

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.

Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

Sampler Relinquished: F. Wesley Root	Date: 3-5-99 Time: 12:45	Received By:	Phone Result ☐ Yes ☐ No Additional Fax #:
Relinquished By:	Date: Time:	Received By: (Lab Staff)	Fax Result: ☐ Yes ☐ No
Delivered By: (Circle One) Sampler - UPS - Bus - Other:		Sample Condition Cool ☒ Yes ☐ No Intact ☒ Yes ☐ No	CHECKED BY: (Initials)

REMARKS:

† Cardinal cannot accept verbal changes. Please fax written changes to 915-673-7020.

Rice Operating Company
F-29 Monitor Well Fluid Recovery Report
Section 29, T19S, R38E
Lea County, New Mexico

August 29, 2001

Prepared for:

Rice Operating Company
122 W. Taylor
Hobbs, New Mexico 88240

By:

Safety & Environmental Solutions, Inc.
703 E. Clinton, Suite 102
Hobbs, New Mexico 88240
(505) 397-0510

TABLE OF CONTENTS

I. Background

Safety & Environmental Solutions, Inc. (SESI) was engaged to perform sampling and data collection on a Rice Operating SWD System Well. The well is referred to as the F-29 monitor well. The subject area is located in Section 29, Township 19 S Range 38 E in Lea County, New Mexico. (See Figure 1. Location Map).

II. Work Performed

The well was scheduled for pumping by SESI for 8-hour periods every other day with a small capacity (~1 gpm) submersible pump. The fluid recovered from the well was placed in a holding provided by Rice Operating Company. Due to equipment problems, the pumping schedule was not met in June. Beginning in mid-July, a larger submersible pump capable of pumping 7-10 gpm was utilized. On July 31, generator and wiring problems prevented pumping that day. Due to an August 1 OCD deadline, no further pumping was performed. Table 1 provides the pumping record for July including field measurement of chloride concentrations using Hach Quantabs. A total of 3,280 gallons of fluid was removed during the current test period ending July 31. An approximate total of 18,355 gallons has been removed since the beginning of the pumping period on March 9, 2001.

On August 14, 2001 a SESI technician performed sampling of the well. Samples were taken from the well after pumping a short period with the repaired generator. The samples were obtained and placed in appropriate containers, preserved and transported under chain of custody to Cardinal Laboratories of Hobbs, New Mexico for analysis. The analysis performed on these samples was for detection of Major Cations and Anions. (See Analytical Results)

III. Analytical Results

Comparison tables of the analytical data are provided in Table 2 to show the differences before and after pumping fluid from the F-29 well. Analysis of the groundwater samples performed by Cardinal Laboratories are compared and summarized as shown in the table. A negative number indicates a decrease in constituent concentration from the previous sampling date.

The final sampling on August 14 shows chloride concentration (340 mg/L) exceeding the NM Water Quality Control Commission (WQCC) groundwater standard[1] (250 mg/L) by 90 mg/L. Although the chloride concentration exceeds the standard, it has decreased by an order of magnitude from sampling conducted in March of 2000. Figure 2 shows the decline in concentration from March 2000 to August 2001. The decline stopped and became generally asymptotic beginning in March of this year.

1 The NM Oil Conservation Division (OCD) utilizes the NM WQCC groundwater standards in administration of OCD rules and regulations.

In July, heavy pumping of the monitor well did not substantially change the concentration of chloride in the well and might have caused a slight increase (Figure 3). The fact that daily pumping could cause chloride concentration to fluctuate between 250 and 480 mg/L as it did on July 29 indicates the likelihood of a nearby source.

IV. Report Tables, Figures and Laboratory Results

Table 1. July 2001 Rice F-29 Monitor Well Pumping

Date	Sample Time	Tank Start (ft)	Tank Finish (ft)	Difference (ft.)	Approx. Volume Change (gal)	Time Pumped (min)	Avg. Pumping Rate (gpm)	Avg. Chloride (ppm)
07/05/01	--	--	--	--	410	8 hr	0.85	--
07/06/01	--	1.92	2.14	0.22	336	8 hr	0.7	--
07/16/01	12:00 PM	2.14	2.88	0.74 (?)	--	20	--	--
07/19/01	12:45 PM	--	--	--	--	--	--	333
07/20/01	8:36 AM	6.23	6.08	0.15	229	22	10.4	298
07/20/01	7:24 PM	7.12	6.99	0.13	198	25	7.9	298
07/21/01	10:24 AM	7.47	7.34	0.13	198	25	7.9	359
07/22/01	12:34 PM	7.35	7.26	0.09	137	20	6.9	258
07/23/01	8:49 AM	7.26	7.18	0.08	122	20	6.1	258
07/23/01	5:34 PM	7.18	7.09	0.09	137	20	6.9	321
07/24/01	8:29 AM	7.09	7.02	0.07	107	15	7.1	384
07/25/01	7:26 AM	7.03	6.96	0.07	107	16	6.7	414
07/26/01	7:20 AM	7.37	7.26	0.11	168	25	6.7	321
07/26/01	7:34 AM	--	--	--	--	--	--	445
07/27/01	7:07 AM	6.89	6.75	0.14	214	30	7.1	288
07/27/01	7:15 AM	--	--	--	--	--	7.0	249, 258
07/27/01	7:24 AM	--	--	--	--	--	--	398
07/27/01	7:34 AM	--	--	--	--	--	--	480
07/29/01	10:17 AM	7.24	7.02	0.22	336	60	5.6	384
07/29/01	10:25 AM	--	--	--	--	--	--	429
07/29/01	10:34 AM	--	--	--	--	--	--	223
07/29/01	10:44 AM	--	--	--	--	--	--	357
07/29/01	10:54 AM	--	--	--	--	--	--	258
07/29/01	11:04 AM	--	--	--	--	--	--	223
07/29/01	11:14 AM	--	--	--	--	--	--	398
07/29/01	7:20 PM	7.01	6.88	0.13	198	30	6.6	429
07/29/01	7:29 PM	--	--	--	--	--	--	278
07/29/01	7:39 PM	--	--	--	--	--	--	398
07/30/01	6:55 AM	7.53	7.41	0.12	183	30	6.1	298
07/30/01	7:04 AM	--	--	--	--	--	--	333
07/30/01	1:42 PM	--	--	--	--	--	--	462
07/30/01	7:20 PM	7.41	7.28	0.13	198	30	6.6	429
07/30/01	7:29 PM	--	--	--	--	--	--	370
07/30/01	7:39 PM	--	--	--	--	--	--	345
		July Total Volume Pumped:			**3,280**			
Tank strapped 7/25. Circumference 50.65 ft., radius 8.06 ft., area 204.12 ft^2								

Table 2. Summary of F-29 Chemical Analyses December 2000 to August 2001

F-29 Monitor Well	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (µmhos/cm)	T-Alkalinity (mg $CaCO_3$/L)
December 12, 2000	500	250	51	15.16	4,239	246
March 16, 2001	167	142	49	12.65	2,146	228
Change	-333	-108	-2	-2.51	-2,093	-18
	Cl (mg/L)	**SO_4 (mg/L)**	**CO_3 (mg/L)**	**HCO_3 (mg/L)**	**pH (s.u.)**	**TDS (mg/L)**
December 12, 2000	1,027	127	0	300	7.32	2,586
March 16, 2001	396	221	0	279	7.32	1,373
Change	-631	94	0	-21	0	-1,213

F-29 Monitor Well	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (µmhos/cm)	T-Alkalinity (mg $CaCO_3$/L)
March 16, 2001	167	142	49	12.65	2,146	228
March 23, 2001	226	142	41	11.00	1,823	228
Change	59	0	-8	-1.65	-323	0
	Cl (mg/L)	**SO_4 (mg/L)**	**CO_3 (mg/L)**	**HCO_3 (mg/L)**	**pH (s.u.)**	**TDS (mg/L)**
March 16, 2001	396	221	0	279	7.32	1,373
March 23, 2001	368	271	0	279	6.98	1,312
Change	-28	50	0	0	-0.34	-61

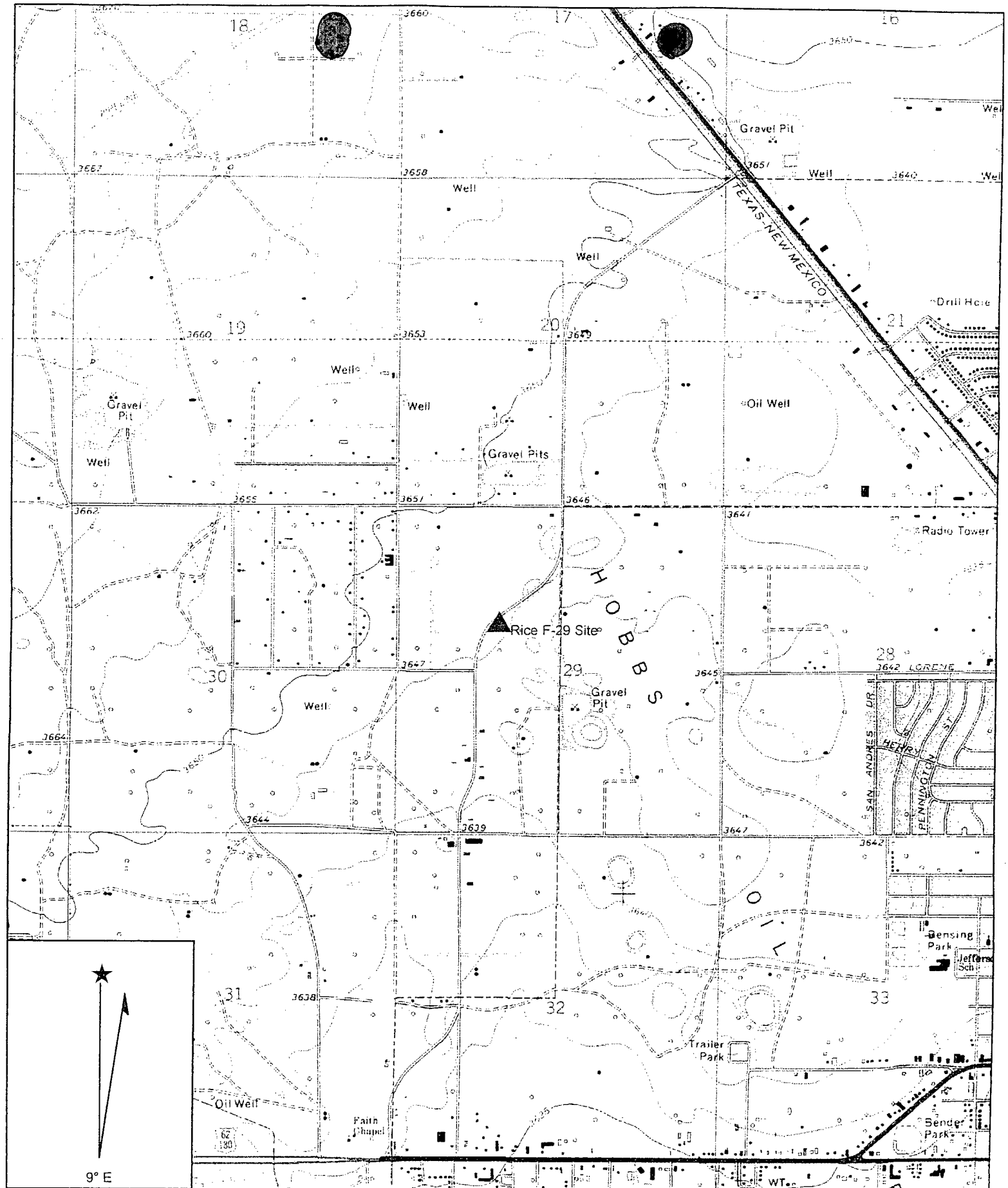
F-29 Monitor Well	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (µmhos/cm)	T-Alkalinity (mg $CaCO_3$/L)
March 23, 2001	226	142	41	11.00	1,823	228
May 7, 2001	219	139	37	9.31	1,846	230
Change	-7	-3	-4	-1.69	23	2
	Cl (mg/L)	**SO_4 (mg/L)**	**CO_3 (mg/L)**	**HCO_3 (mg/L)**	**pH (s.u.)**	**TDS (mg/L)**
March 16, 2001	368	271	0	279	6.98	1,312
May 7, 2001	365	234	0	280	7.01	1,272
Change	-3	-37	0	1	0.03	-40

Table 2. Summary of F-29 Chemical Analyses December 2000 to August 2001 (concluded)

F-29 Monitor Well	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (µmhos/cm)	T-Alkalinity (mg $CaCO_3$/L)
May 7, 2001	219	139	37	9.31	1,846	230
June 8, 2001	256	184	37	14.3	2,289	243
Change	37	45	0	4.99	443	13
	Cl^- (mg/L)	**SO_4 (mg/L)**	**CO_3 (mg/L)**	**HCO_3 (mg/L)**	**pH (s.u.)**	**TDS (mg/L)**
May 7, 2001	365	234	0	280	7.01	1,272
June 8, 2001	513	212	0	297	6.92	1,796
Change	148	-22	0	17	-0.09	524

F-29 Monitor Well	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (µmhos/cm)	T-Alkalinity (mg $CaCO_3$/L)
June 8, 2001	256	184	37	14.3	2,289	243
August 14, 2001	171	124	31	7.46	1,854	217
Change	-85	-60	-6	-6.8	-435	-26
	Cl^- (mg/L)	**SO_4 (mg/L)**	**CO_3 (mg/L)**	**HCO_3 (mg/L)**	**pH (s.u.)**	**TDS (mg/L)**
June 8, 2001	513	212	0	297	6.92	1,796
August 14, 2001	340	133	0	264	6.76	1,385
Change	-173	-79	0	-33	-0.16	-411

Figure 1
Location Map



Name: HOBBS WEST
Date: 8/30/2001
Scale: 1 inch equals 2000 feet

Location: 032° 43' 17.1" N 103° 10' 23.0" W
Caption: Rice Operation Company
F-29 Monitor Well
Section 29, T19S, R38E

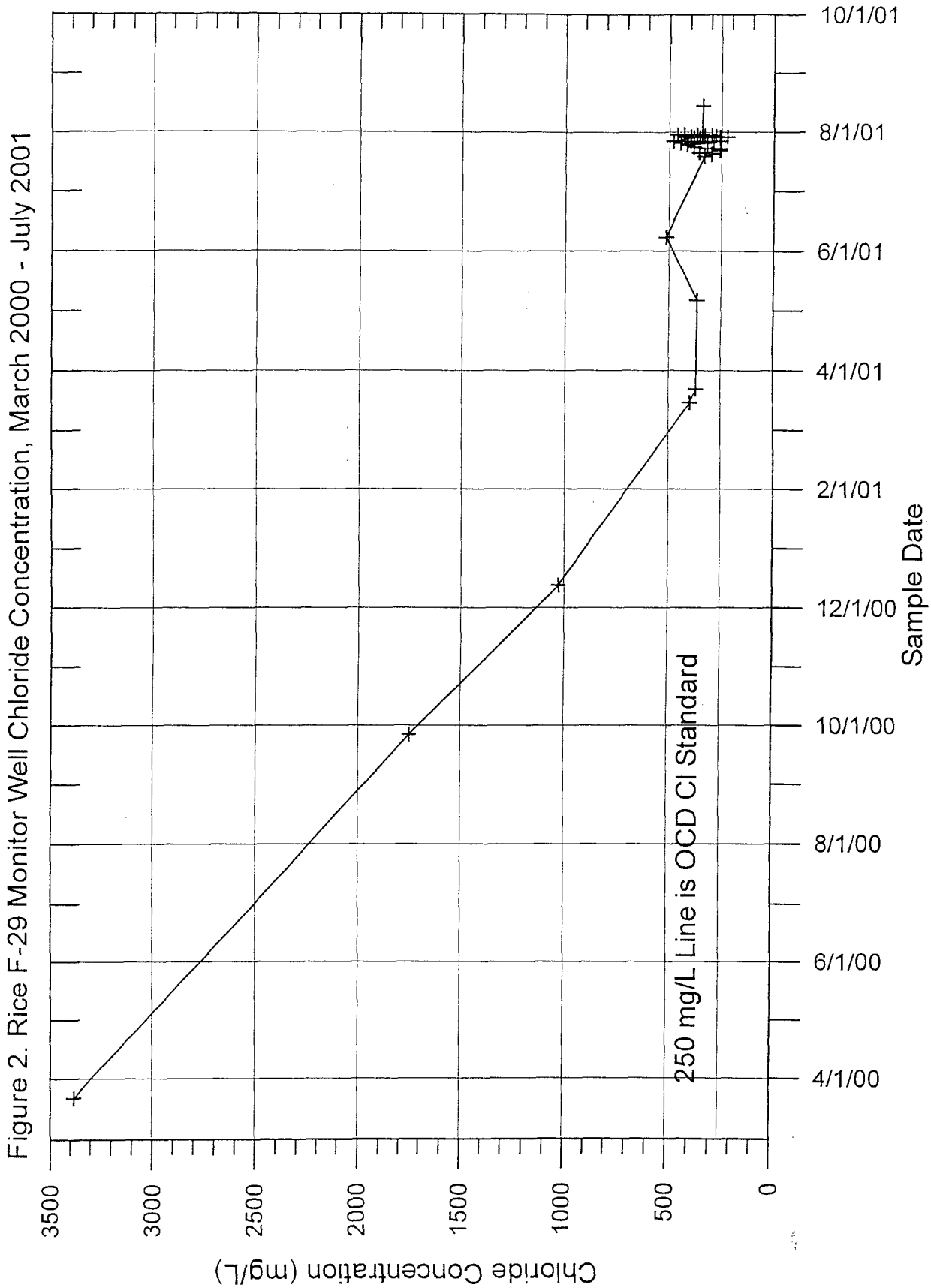


Figure 2. Rice F-29 Monitor Well Chloride Concentration, March 2000 - July 2001
Chloride Concentration (mg/L)
3500
3000
2500
2000
1500
1000
500
0
Sample Date
10/1/01
8/1/01
6/1/01
4/1/01
2/1/01
12/1/00
10/1/00
8/1/00
6/1/00
4/1/00
250 mg/L Line is OCD Cl Standard

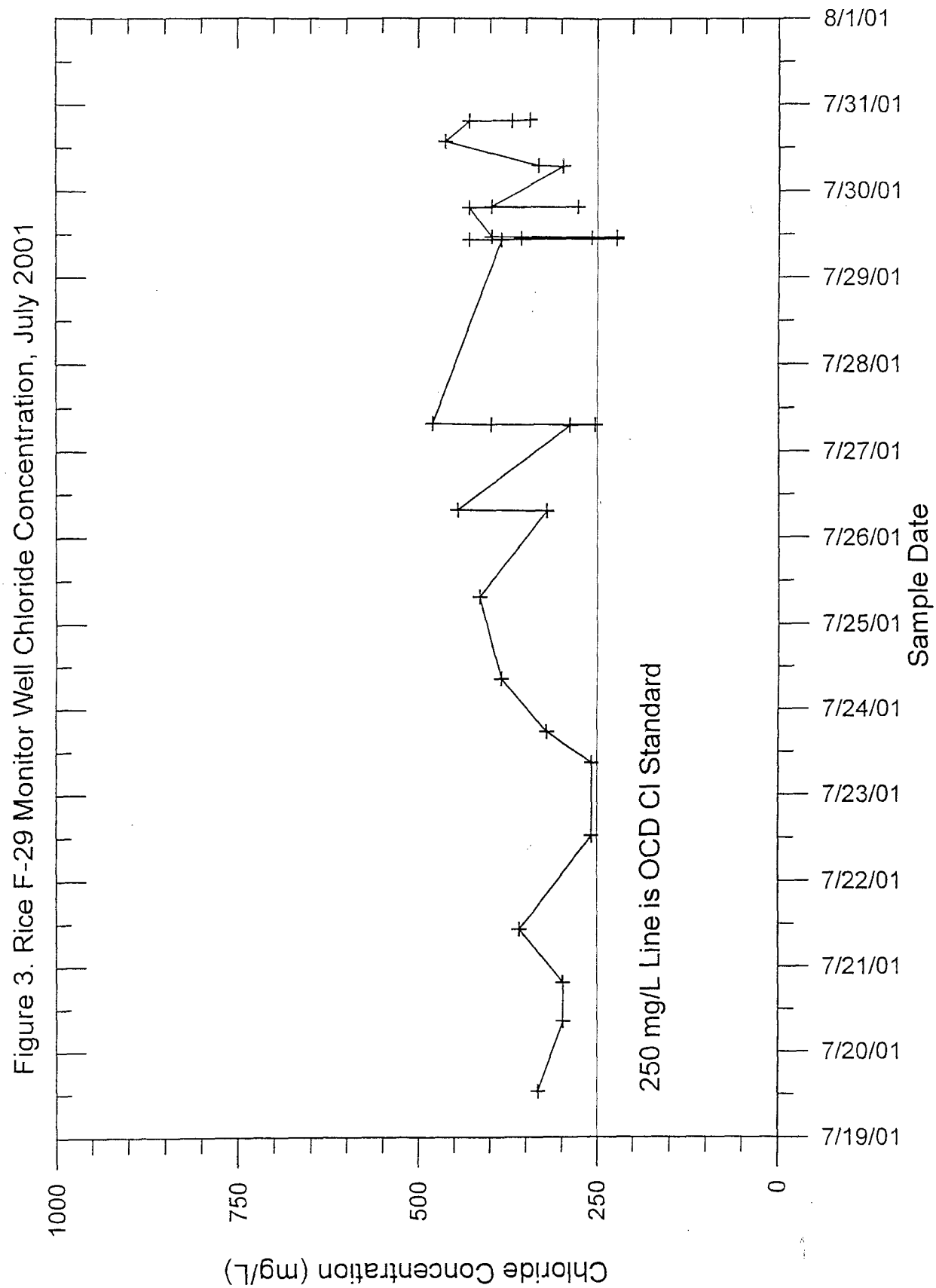


Figure 3. Rice F-29 Monitor Well Chloride Concentration, July 2001
Chloride Concentration (mg/L)
1000
750
500
250
0
250 mg/L Line is OCD Cl Standard
Sample Date
8/1/01
7/31/01
7/30/01
7/29/01
7/28/01
7/27/01
7/26/01
7/25/01
7/24/01
7/23/01
7/22/01
7/21/01
7/20/01
7/19/01

Copies of Laboratory Analytical Results

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: BOB ALLEN
703 E. CLINTON, STE 103
HOBBS, NM 88240
FAX TO: (505) 393-4388

Receiving Date: 08/14/01
Reporting Date: 08/16/01
Project Owner: RICE
Project Name: F-29
Project Location: WEST COUNTY ROAD

Sampling Date: 08/14/01
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: GP
Analyzed By: AH

LAB NUMBER SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (u S/cm)	T-Alkalinity ($mgCaCO_3/L$)
ANALYSIS DATE:	08/15/01	08/15/01	08/15/01	08/15/01	08/15/01	08/15/01
H6077-1 WATER WELL	171	124	31	7.46	1854	217
Quality Control	1.076	47	44	5.02	1489	NR
True Value QC	1.000	50	50	5.00	1413	NR
% Recovery	108	94.9	88.5	100	105	NR
Relative Percent Difference	1.5	8.5	13.6	5.2	0.3	NR
METHODS:	273.1	3500-Ca-D	3500-Mg E	8049	120.1	310.1

LAB NUMBER SAMPLE ID	Cl^- (mg/L)	SO_4 (mg/L) 8/15/01	CO_3 (mg/L)	HCO_3 (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:	08/15/01	05/12/00	08/15/01	08/15/01	08/15/01	08/15/01
H6077-1 WATER WELL	340	133	0	264	6.76	1385
Quality Control	1001	51.06	NR	1011	6.86	NR
True Value QC	1000	50.00	NR	1000	7.00	NR
% Recovery	100	102	NR	101	98.0	NR
Relative Percent Difference	6.5	0	NR	0	0.6	NR
METHODS:	SM4500-Cl-B	375.4	310.1	310.1	150.1	160.1

Chemist

8-16-01
Date

H6077.XLS

CARDINAL LABORATORIES, INC.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

2111 Beechwood, Abilene, TX 79603 (915) 673-7001 Fax (915) 673-7020
101 East Marland, Hobbs, NM 88240 (505) 393-2326 Fax (505) 393-2476

Page 1 of 1

Company Name: SESI	BILL TO PO #:
Project Manager:	Company: SAME
Address: 703 E. CLINTON, #103	Attn:
City: HOBBS State: NM Zip: 88240	Address:
Phone #: (505) 397-0510	City:
Fax #: (505) 393-4388	State: Zip:
Project #: Project Owner: RICE	Phone #:
Project Name: F-29	Fax #:
Project Location: West County Rd.	

ANALYSIS REQUEST: Major Cations & Anions

FOR LAB USE ONLY LAB I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRES.: ACID:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	Major Cations & Anions
46077-1	WATER WELL		1	X							X		8-14-01	10:30 AM	X

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.

Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

Sampler Relinquished:	Date:	Received By:	Phone Result ☐ Yes ☐ No Additional Fax #:
	Time:		Fax Result: ☐ Yes ☐ No
Relinquished By: Robert Hasbrey	Date: 8-14-01	Received By: (Lab Staff)	REMARKS:
	Time: 1135 PM		
Delivered By: (Circle One) Sampler - UPS - Bus - Other:		Sample Condition Cool: ☑ Yes ☐ No Intact: ☑ Yes ☐ No	CHECKED BY: (Initials)

† Cardinal cannot accept verbal changes. Please fax written changes to 915-673-7020.

Price, Wayne

From: Price, Wayne
Sent: Wednesday, November 14, 2001 1:57 PM
To: 'riceswd@gte.net'
Cc: Sheeley, Paul; Johnson, Larry
Subject: Rice F-29 OCD Case #1R0218 Groundwater Monitor Plan

Contacts: Carolyn Doran Haynes


GWINVAP1.DOC

Tracking:

Recipient	Delivery
'riceswd@gte.net'	
Sheeley, Paul	Delivered: 11/14/01 1:57 PM
Johnson, Larry	Delivered: 11/14/01 1:57 PM

NEW MEXICO ENERGY, MINERALS and
NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON
Governor
Jennifer A. Salisbury
Cabinet Secretary

Lori Wrotenbery
Director
Oil Conservation Division

November 14, 2001

E-Mail

Carolyn Doran Haynes
Operations Engineer
Rice Operating Company
122 West Taylor
Hobbs, New Mexico 88240

Re: SWD F-29 Facility Groundwater Monitoring
NW/4, UL F, Sec 29-T18s_R38e

Dear Ms. Haynes:

The New Mexico Oil Conservation Division (OCD) is in receipt of the Rice Operating Company's groundwater monitoring plan dated September 07, 2001. The plan is hereby approved with the following additional conditions:

1. Rice Operating Company will notify the OCD Santa Fe office and the OCD District office at least 72 hours in advance of all scheduled activities such that the OCD has the opportunity to witness the events and/or split samples during OCD's normal business hours.

2. Rice Operating Company shall submit the results of the investigation to the OCD Santa Fe Office **by January 31, 2002** with a copy provided to the OCD Hobbs District Office and shall include the following investigative information:

   a. A description of all investigation, remediation and monitoring activities, which have occurred including conclusions and recommendations.

   b. A geologic/lithologic log and well completion diagram for each monitor well.

   c. A water table potentiometric map showing the location of the leaks and spills, excavated areas, monitor wells, and any other pertinent site features as well as the direction and magnitude of the hydraulic gradient.

   d. Isopleth maps for contaminants of concern, which were observed during the investigations.

   e. Summary tables of all ground water quality sampling results and copies of all laboratory analytical data sheets and associated QA/QC data taken within the past year.

   f. The quantity and disposition of all recovered product and/or wastes generated.

Please be advised that NMOCD approval of this plan does not relieve Rice Operating Company of liability should their operations fail to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD approval does not relieve Rice Operating Company of responsibility for compliance with any other federal, state, or local laws and/or regulations.

If you have any questions please do not hesitate to contact me at 505-476-3487 or E-mail WPRICE@state.nm.us.

Sincerely,

electronic signature

Wayne Price-Engineer

cc: OCD Hobbs Office

Attachments-

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

February 9, 2000

CERTIFIED MAIL
RETURN RECEIPT NO. Z 142 564 940

Carolyn Doran Haynes
Rice Operating Company
122 West Taylor
Hobbs, New Mexico 88240

Re: Pit Remediation and Closure Report
Emergency Overflow Pit (Permit No. H-64)
Below-Ground Redwood Tank Excavation
SWD F-29 Facility
NW/4, Unit Letter F, Sec 29, Ts18s, R38e
Lea County, NM

Dear Ms. Haynes:

The New Mexico Oil Conservation Division (NMOCD) is in receipt of Rice Operating Companys (ROC) closure report dated November 04, 1999. The NMOCD hereby approves of the closure activities that have taken place as of to date. In order for NMOCD to issue final closure approval for this site ROC shall provide the following information.

1. Please provide documentation showing the permanent marker and deed recording specifics pursuant to your June 25,1999 proposal.

2. Please provide NMOCD with an anticipated schedule for sampling the monitor well and a commitment to notify NMOCD 48 hours in advance so as NMOCD has an opportunity to spilt samples. At the end of the two-year sampling plan ROC should then request closure.

Please be advised that NMOCD approval of this site does not relieve ROC of liability should their operations fail to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD approval does not relieve ROC of responsibility for compliance with any other federal, state, or local laws and/or regulations.

If you require any further information or assistance please do not hesitate to write or call me at (505-827-7155).

Sincerely Yours,

Wayne Price-Pet. Engr. Spec.
Environmental Bureau

cc: OCD Hobbs office

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- ☐ Complete items 1 and/or 2 for additional services. Complete items 3, 4a, and 4b.
- ☐ Print your name and address on the reverse of this form so that we can return this card to you.
- ☐ Attach this form to the front of the mailpiece, or on the back if space does not permit.
- ☐ Write *"Return Receipt Requested"* on the mailpiece below the article number.
- ☐ The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

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2. ☐ Restricted Delivery

3. Article Addressed to:

RICE OPERATING CO.
122 WEST TAYLOR
HOBBS, NEW MEXICO 88240
ATT: MS. HAYNES

4a. Article Number

Z 142 564 940

4b. Service Type

- ☒ Registered
- ☐ Express Mail
- ☐ Return Receipt for Merchandise
- ☒ Certified
- ☐ Insured
- ☐ COD

7. Date of Delivery

2/14/00

5. Received By: *(Print Name)*

Angie Slate

6. Signature *(Addressee or Agent)*

Angie Slate

8. Addressee's Address *(Only if requested and fee is paid)*

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Santa Fe, NM 87505