1R - 426-279

WORKPLANS

Date: 6-19-13

Hansen, Edward J., EMNRD

From: Lara Weinheimer <lweinheimer@rice-ecs.com>
Sent: Wednesday, June 19, 2013 10:59 AM
To: Hansen, Edward J., EMNRD
Cc: 'Hack Conder'; 'Katie Jones'; 'Laura Pena'
Subject: BD jct. C-23-1 (1R426-279) Corrective Action Plan (CAP) Addendum
Attachments: BD jct. C-23-1 (1R426-279) Corrective Action Plan (CAP) Addendum.pdf

Attached you will find the Corrective Action Plan (CAP) Addendeum for Rice Operating Company's BD jct. C-23-1 (1R426-279). I will follow with a hard copy in the mail (certified mail 7007 2560 0003 0320 5570).

If you have any questions regarding this submission, don't hesitate to contact Hack Conder (1-575-631-6432) or myself at (1-575-441-0431).

Thank you,

Lara

Lara Weinheimer
Project Scientist
419 West Cain
Hobbs, NM 88240
(575) 441-0431

Rice Environmental Consulting & Safety
P.O. Box 2948, Hobbs, NM 88241
Phone 575.393.2967

CERTIFIED MAIL
RETURN RECEIPT NO. 7007 2560 0003 0320 5570

June 19th, 2013

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

RE: **Corrective Action Plan (CAP) Addendum**
Rice Operating Company – BD SWD System
BD jct. C-23-1 (1R426-279): UL/C sec. 23 T22S R37E

Mr. Hansen:

RICE Operating Company (ROC) has retained Rice Environmental Consulting and Safety (RECS) to address potential environmental concerns at the above-referenced site in the BD Salt Water Disposal (SWD) system. ROC is the service provider (agent) for the BD SWD System and has no ownership of any portion of the pipeline, well, or facility. The system is owned by a consortium of oil producers, System Parties, who provide all operating capital on a percentage ownership/usage basis.

Background and Previous Work

The site is located approximately 4 miles southeast of Eunice, New Mexico at UL/C sec. 23 T22S R37E as shown on the Site Location Map (Figure 1). NM OSE records indicated that groundwater would likely be encountered at a depth of approximately 59 +/- feet. However, monitor well installation at the site shows that there is little to no groundwater at the site.

On March 20th, 2013, ROC submitted a Corrective Action Plan (CAP) to NMOCD which was approved on April 23rd, 2013. As part of CAP, RECS reported on the installation of two monitor wells at the site (Figure 2). The two monitor wells were installed at the site on February 12th, 2013. MW-1 was installed 71 ft southeast of the former junction box site and MW-2 was installed 92 ft northwest of the former junction box site. No sampling was conducted as MW-1 was installed. MW-2 was field sampled to determine background soil concentrations of chlorides and hydrocarbons. Representative samples from the bore were taken to a commercial laboratory for analysis. Background concentrations in MW-2 showed chloride values of 208 mg/kg at 25 ft bgs, 3,880 mg/kg at 45 ft bgs and 2,680 mg/kg at 50 ft bgs. GRO and DRO values at all depth were non-detect.

On February 18th, 2013, ARC Environmental arrived at the site to develop the two monitor wells. MW-1 was installed at a total depth of 75.60 feet, and had 0.69 gallons of water in the well 120 hours after being drilled. The well pumped at 0.25 gallons per minute until the well would no longer pump; this took less than two minutes. The well was then bailed dry with a bailer. The well recovered to a depth of 74.26 feet after 24 hours after pumping and bailing.

ARC Environmental determined that there is not a significant quantity of water to use as a representative sample for the site since the well cannot sustain pumping. During the installation of MW-2, red bed clay was encountered at a depth of 61 ft bgs, which delineates the bottom of the aquifer. When ARC Environmental attempted to develop MW-2, the well had no water to a depth of 75.98 ft
bgs.

There is little to no groundwater beneath the site which can be affected by the residual chlorides at the site. MW-1 has 0.69 gallons of water within the well bore.
MW-2 is dry. The rate of recharge in the aquifer is very slow due to the small rainfall amounts, the porosity of the formation consisting of low permeable rock and the presence of clay, which leave sediments that are thinly saturated or dry. Thus, there is little underground flow of water in the aquifer in this area (Appendix A).

According to the NMOCD approved CAP, ROC will prepare the site for seeding by tilling the site, adding soil amendments as necessary and seeding the site with a blend of native vegetation. Vegetation will act as an evapo-transpiration barrier that will also inhibit the downward migration of chlorides and hydrocarbons. Plants capture water through their roots and so reduce the amount of water infiltrating below the root zone. An existing clay liner installed from 6-5 ft bgs will also inhibit the downward migration of residual chlorides and hydrocarbons.

Corrective Action Plan Addendum

As an addendum to the CAP, RECS recommends that ROC plug and abandon MW-1 and MW-2 at the site. The wells will be plugged with a 1-3% bentonite/concrete slurry with a 3 ft concrete cap. Per a conversation between ROC and NMOCD on June 19, 2013, ROC will proceed with the plugging the two monitoring wells (MW-1 and MW-2) at this site.

Once the two wells have been plugged and abandoned and the site has been seeded, ROC will submit a request for 'remediation termination' status for the regulatory file.

RECS appreciates the opportunity to work with you on this project. Please call Hack Conder at (575) 393-9174 or me if you have any questions or wish to discuss the site.

Sincerely,

Lara Weinheimer
Project Scientist
RECS
(575) 441-0431

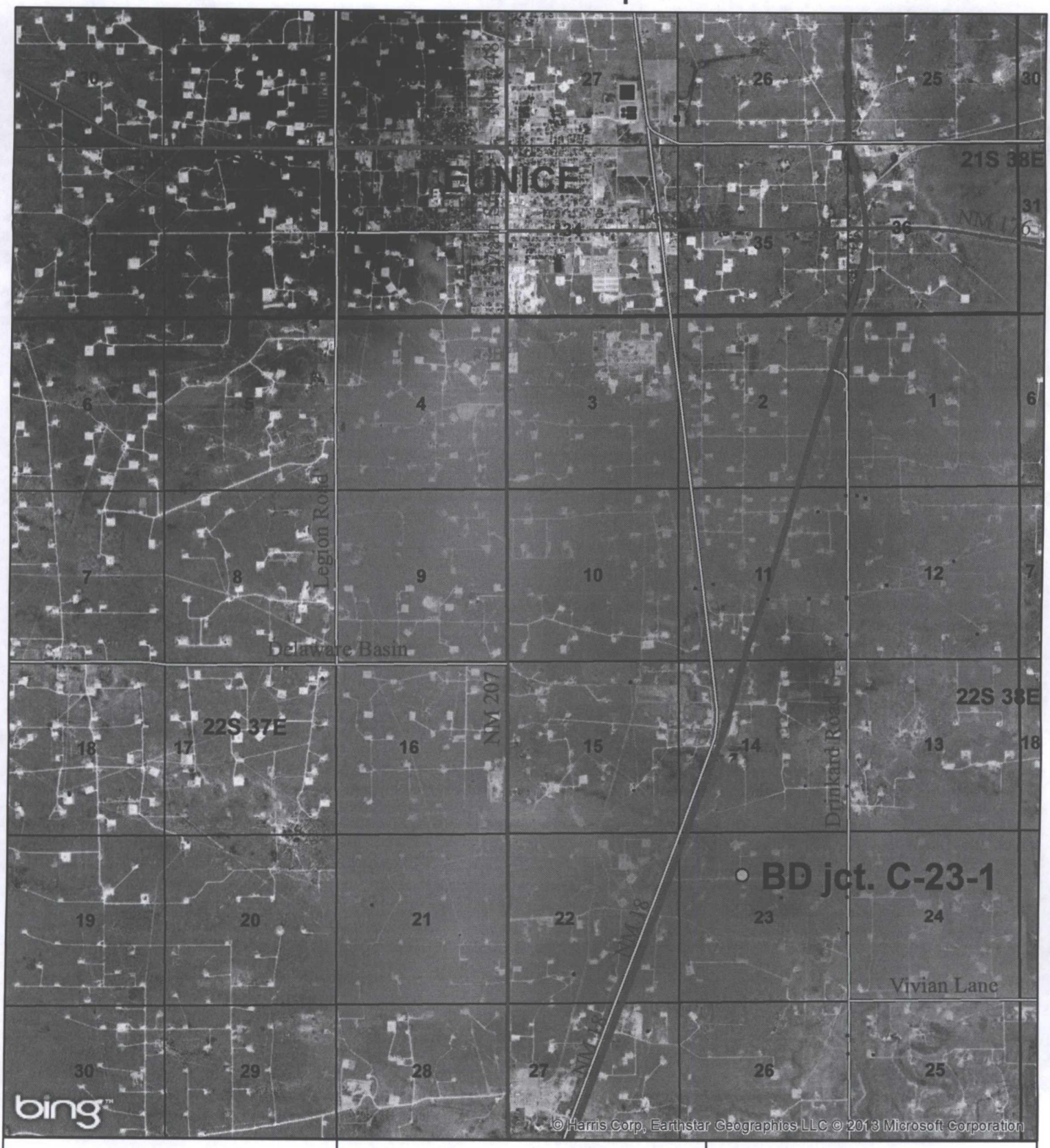
Attachments:

Figure 1 – Site Location Map
Figure 2 – MW Installation Map
Appendix A – Well Development Notes

Figures

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

Site Map



RICE ENVIRONMENTAL RECS CONSULTING & SAFETY, LLC

BD jct. C-23-1

LEGALS: UL/C sec. 23
T22S R37E

NMOCD Case #: 1R426-279

Figure 1

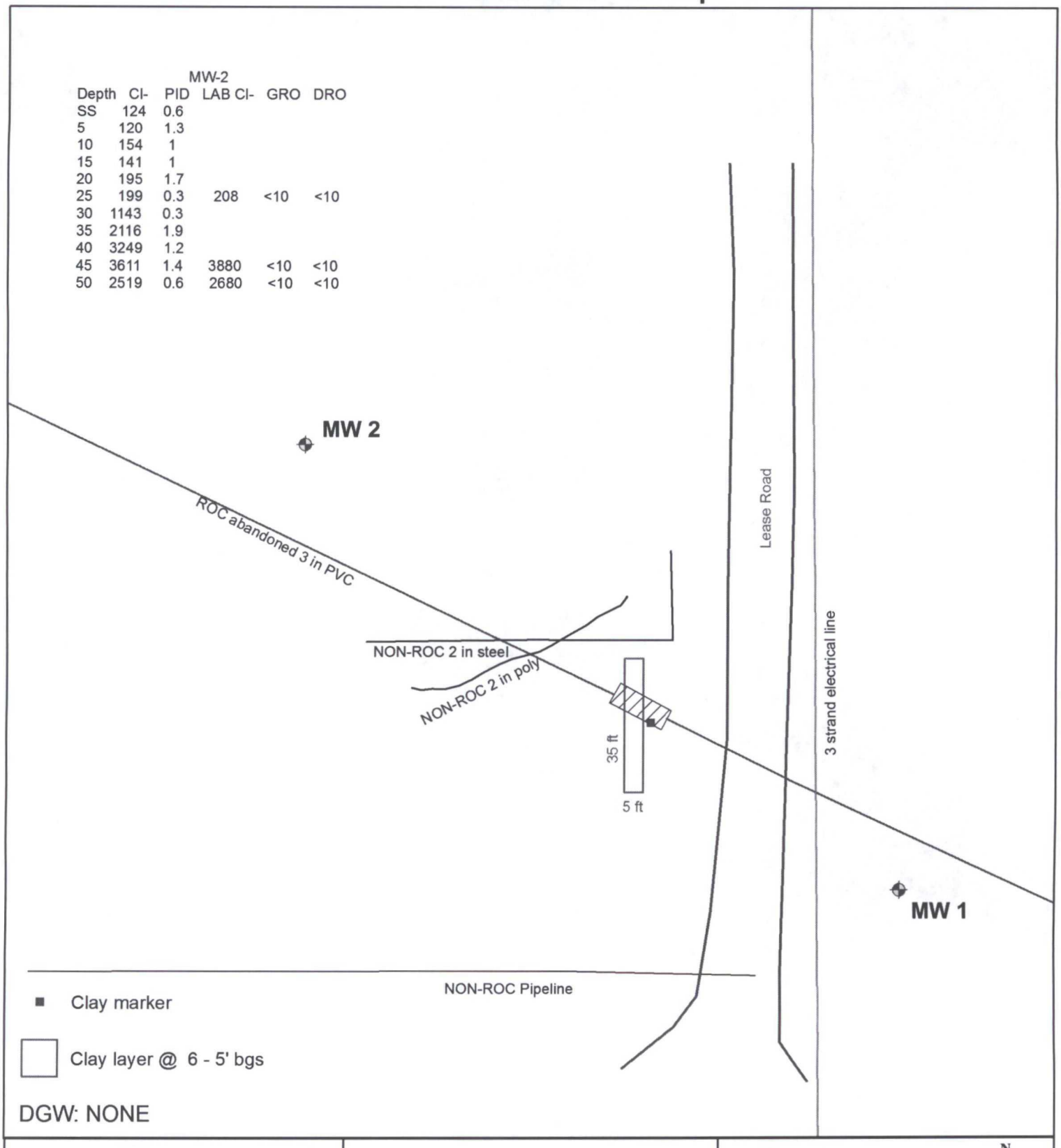
N W E S

0 0.3 0.6 1.2 Miles

Drawing date: 5-3-11
Drafted by: L. Weinheimer

MW Installation Map

Depth	Cl-	PID	MW-2 LAB Cl-	GRO	DRO
SS	124	0.6			
5	120	1.3			
10	154	1			
15	141	1			
20	195	1.7			
25	199	0.3	208	<10	<10
30	1143	0.3			
35	2116	1.9			
40	3249	1.2			
45	3611	1.4	3880	<10	<10
50	2519	0.6	2680	<10	<10



DGW: NONE

RICE ENVIRONMENTAL RECS CONSULTING & SAFETY, LLC

BD jct. C-23-1

LEGALS: UL/C sec. 23
T22S R37E

NMOCD Case #: 1R426-279

Figure 2

N W E S

0 25 50 Feet

Drawing date: 6/3/13
Drafted by: L. Weinheimer

Appendix A

Well Development Notes

RICE Environmental Consulting and Safety (RECS)
P.O. Box 2948 Hobbs, NM 88241
Phone 575.393.2967

Arc Environmental
P. O. Box 1772
Lovington, New Mexico 88260
(575) 631-9310
Rozanne Johnson ~ rozanne@valornet.com

February 18, 2013

WELL DEVELOPMENT NOTES

The following summarizes the field activities at the RICE BD Jct. C-23-1, Lea County T22S, R37E, Sec 23 Unit Letter C on February 18 and 19, 2013:

- There were two 2-inch monitor wells drilled at the site. A Solinist Water Level Meter was used to determine the depth to water prior to pumping and bailing the wells for development following drilling on February 13, 2013.
    - The meter indicated water within monitor well #1 at a depth of 71.25 with the total depth of the well of 75.60 feet, giving 4.35 feet (0.69 gallons) of water within the well bore 120 hours after being drilled. The well was pumped at 0.25 gallons per minute until the well would no longer pump; this took less than two minutes. The well was then bailed dry with a bailer. The well recovered to a depth of 74.26 feet after 24 hours of pumping and bailing. There is not a significant quantity of water to use as a representable sample for the site.
    - The meter indicated no water within the up gradient monitor well #2 at a depth of 75.98 feet.
- The site is located in the eastern Eunice Plain area of Lea County, which is underlain by a hard caliche surface and is covered by a thin layer of reddish-brown dune sand. The dominant vegetation is bear grass, mesquite and grama grass. Cattle ranchers and oil production activities currently use the area.
- In this arid region the rate of recharge is very slow due to small rainfall amounts, the porosity of the formation consisting of low permeable rock and a presence of clay, which leaves sediments that are thinly saturated or dry. There is little underground flow of water in the area, again due to the formation. It is not uncommon that there is no water in this area of Lea County.

Sincerely,
Arc Environmental

Rozanne Johnson
Rozanne Johnson

Electronic Copy: Hack Conder
Katie Jones