1R - 426-286

REPORTS

DATE:

8-8-11

Rice Environmental Consulting & Safety
P.O. Box 5630 Hobbs, NM 88241
Phone 575.393.4411 Fax 575.393.0293

CERTIFIED MAIL
RETURN RECIEPT NO. 7007 2560 0003 0323 9186

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August 8th, 2011

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: **ICP REPORT**
Rice Operating Company – BD SWD System
BD jct. G-23 (1R426-286): UL/G 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/usage basis.

Background and Previous Work

The site is located approximately 4 miles south-east of Eunice, New Mexico at UL/G sec. 23 T22S R37E as shown on the Site Location Map (Figure 1). NM OSE records indicate that groundwater will likely be encountered at a depth of approximately 59 +/- feet.

In 2010, ROC initiated work on the former BD G-23 junction box. The site was delineated using a backhoe to form a 30 ft x 30 ft x 12 ft deep excavation and soil samples were screened at regular intervals for both hydrocarbons and chlorides. From the excavation, the four-wall composite and the bottom composite were taken to a commercial laboratory for analysis. Laboratory tests of the four-wall composite showed a chloride reading of 432 mg/kg and negligible gasoline range organics (GRO) reading and diesel range organics (DRO) reading. The bottom composite showed a chloride laboratory reading of 1,790 mg/kg and negligible GRO and DRO readings. The excavated soil was blended on site and a sample was taken to a commercial laboratory for analysis. The soil showed a chloride reading of 672 mg/kg and negligible GRO and DRO readings. The blended backfill was returned to the excavation to 6 ft below ground surface (bgs). At 6-5 ft bgs, a 1 ft clay layer was installed to inhibit downward migration of chlorides. A clay compaction test was conducted on March 1st, 2010. 156 yards of the remaining

backfill was transported to a NMOCD approved facility for disposal. Clean soil was imported into the site and blended with the remaining backfill from the excavation. Laboratory analysis of the blended backfill with imported clean soil showed a chloride reading of 480 mg/kg. The excavation was backfilled with the blended backfill and imported clean soil to ground surface.

The area was contoured to the surrounding landscape, seeded, and an identification plate was placed on the surface of the site to mark its location for future environmental considerations. NMOCD was notified of potential groundwater impact on February 21st, 2011 and a junction box disclosure report was submitted to NMOCD with all the 2010 junction box closures and disclosures.

ROC proposed additional investigative work at the site to determine if there was a potential for groundwater degradation from residual chlorides and/or hydrocarbons at the site.

Proposed Work Elements

ROC proposed additional investigative work at the site to determine if there was potential for groundwater degradation from residual chlorides and/or hydrocarbons at the site.

1. Conduct vertical and lateral delineation of residual soil hydrocarbons and chlorides
    a. Vertical sampling will be conducted until either one of the following criteria is met in the field.
        i. Three samples in which the chloride concentration decreases and the third sample has a chloride concentration of $\leq$ 250 ppm.
        ii. Three samples in which PID readings decrease and the third sample has a PID reading of $\leq$ 100 ppm.
        iii. The sampling reaches the capillary fringe.
    b. Lateral sampling will be conducted until the following criteria are met in the field.
        i. A decrease is observed in chloride concentrations between lateral bores at similar depths; and,
        ii. A chloride concentration of $\leq$ 250 ppm is observed in a lateral surface sample; or,
        iii. Safety concerns impede further lateral delineation.
2. If warranted, install a monitor well to provide direct measurement of the potential groundwater impact at the site. (All monitor wells will be installed by EPA, NMOCD, and industry standards.)
3. Evaluate the risk of groundwater impact based on the information obtained.

ICP Investigative Results

As part of the Investigation and Characterization Plan approved by NMOCD on June 9th, 2011, three soil bores were advanced through the former junction box site on July 12th, 2011. ROC personnel field tested the soil for chlorides and screened in the field with a photo-ionization detector (PID).

Based on the initial delineation results, RECS recommends the following: ROC will continue to delineate the soils surrounding the former junction box site. After delineating the soil, ROC will submit a report with recommendations for a path forward.

ROC 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

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 CONSULTING & SAFETY, LLC

RECS

BD jct. G-23

LEGALS: UL/G sec. 23
T22S R37E

NMOCD Case #: 1R426-286

Figure 1

N
W E
S

0 1,750 3,500 7,000
Feet

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

Hansen, Edward J., EMNRD

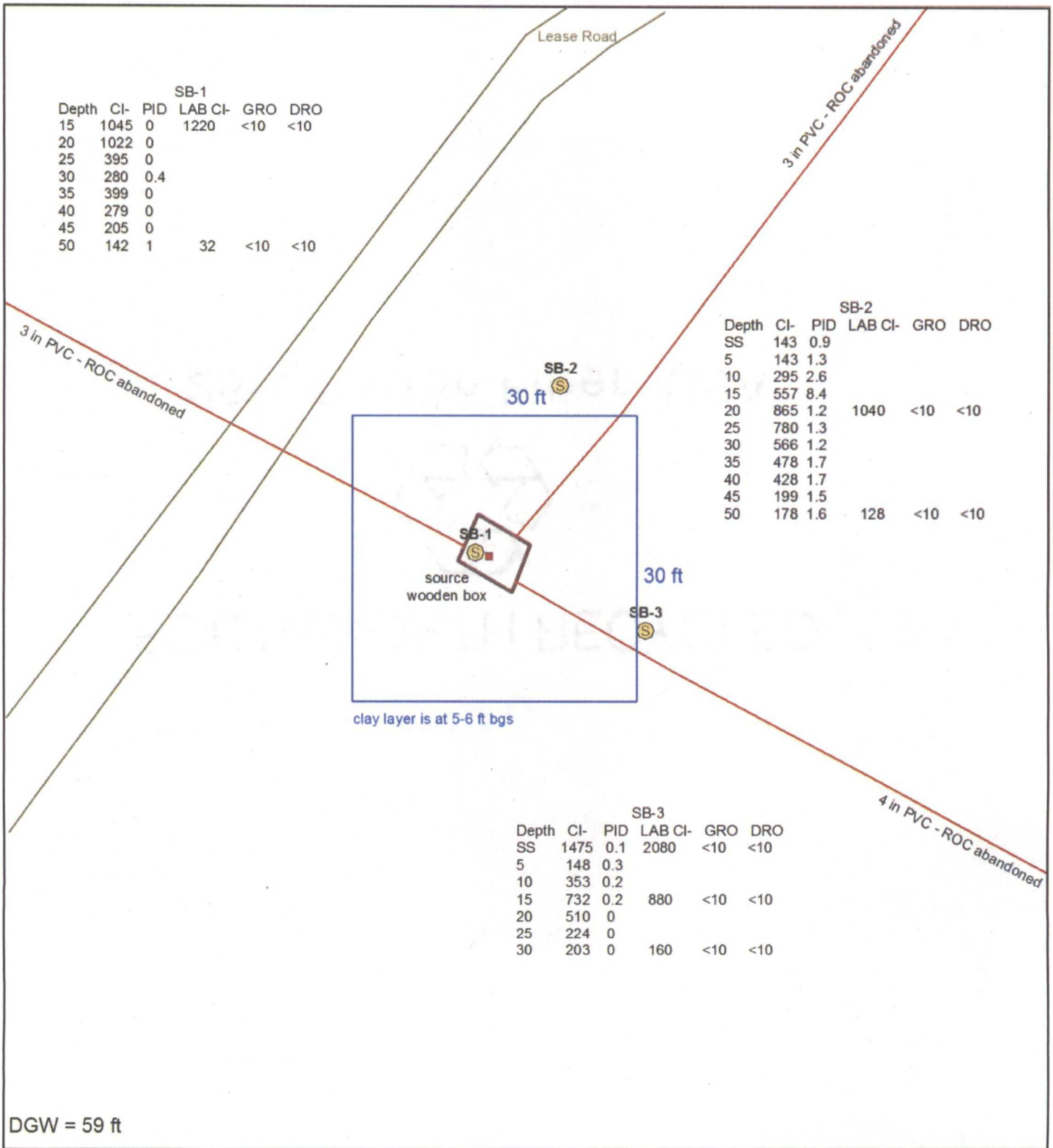
From: Hack Conder [hconder@riceswd.com]
Sent: Tuesday, September 20, 2011 1:57 PM
To: Hansen, Edward J., EMNRD
Cc: Lara Weinheimer; Katie Jones
Subject: FW: BD jct. G-23 soil bore plat
Attachments: BD jct. G-23 soil bore information.jpg

Mr. Hansen

Attached is the soil data for G-23 , We had some complications on the west with the lease road and unknown pipeline, however we do see a disconnect on the saturated zone. We will try and get more data from the west and south directions .

Thanks Hack

Soil bore installation



SB-1

Depth	Cl-	PID	LAB Cl-	GRO	DRO
15	1045	0	1220	<10	<10
20	1022	0			
25	395	0			
30	280	0.4			
35	399	0			
40	279	0			
45	205	0			
50	142	1	32	<10	<10

SB-2

Depth	Cl-	PID	LAB Cl-	GRO	DRO
SS	143	0.9			
5	143	1.3			
10	295	2.6			
15	557	8.4			
20	865	1.2	1040	<10	<10
25	780	1.3			
30	566	1.2			
35	478	1.7			
40	428	1.7			
45	199	1.5			
50	178	1.6	128	<10	<10

SB-3

Depth	Cl-	PID	LAB Cl-	GRO	DRO
SS	1475	0.1	2080	<10	<10
5	148	0.3			
10	353	0.2			
15	732	0.2	880	<10	<10
20	510	0			
25	224	0			
30	203	0	160	<10	<10

DGW = 59 ft

RICE ENVIRONMENTAL CONSULTING & SAFETY, LLC

BD jct. G-23

LEGALS: UL/G sec. 23
T22S R37E

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N W E S

0 5 10 20 Feet

Drawing date: 7-22-11
Drafted by: L. Weinheimer