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REPORTS

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RICE Operating Company 112 West Taylor • Hobbs, New Mexico 88240

Phone: (575) 393-9174 • Fax: (575) 397-1471

CERTIFIED MAIL RETURN RECEIPT NO. 7007 2560 0000 4569 8814

February 11, 2013

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Mr. Edward Hansen

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

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RE: Update Report – CAP Report for Groundwater Rice Operating Company – Vacuum SWD System Vacuum L-26 vent (1R425-66): Unit Letter L, Sec. 26, T17S, R35E

Mr. Hansen:

ROC is the service provider (agent) for the Vacuum 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 east of Buckeye, New Mexico in unit letter L, Sec. 26, T17S, R35E as shown on the Site Location Map (Figure 1). Groundwater sampling at the site indicates that groundwater is located at +/- 56 ft bgs.

In 2008, ROC conducted field investigation on the former junction box. Soil samples were collected at regular intervals, creating a 30 x 30 x 12 ft deep excavation. Based on this investigation, a 30x30-ft geo-synthetic liner was installed at approximately 4.5 to 5 ft bgs. The liner was padded with a six inches of blow sand both above and below. The excavation was backfilled with blended, excavated soil and contoured to the surrounding area. NMOCD was notified of potential groundwater impact on December 1, 2008, and a disclosure report was submitted with all the 2008 Junction Box Closures and Disclosures.

According to the Investigation and Characterization Plan (ICP), four soil bores were drilled at the site on May 10, 2010. Based on the results of these soil bores, an Initial Characterization Report and Corrective Action Plan was submitted to the NMOCD on September 14, 2010. A CAP Addendum was submitted to the NMOCD on April 1, 2011. The Addendum stated that a monitoring well (MW-1) was installed on November 15th, 2010. Based on the initial monitor well sampling results, additional monitoring wells would be installed to further delineate groundwater quality. In addition, ROC proposed the installation of a 64 ft x 63 ft, 20-mil reinforced polyethylene liner to further protect the groundwater. The excavation would be backfilled with soil containing a chloride concentration below 500 mg/kg and a PID (field) reading below 100 ppm. The site would then be seeded with a native seed mix. The ICP Report and CAP were approved by the NMOCD on April 4, 2011.

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Beginning on May 23, 2011, a 64 ft x 63 ft area was excavated to a depth of 5 feet below the surface (bgs), uncovering the existing 30 ft by 30 ft geo-synthetic liner that was installed in December 2008. The bottom of the excavation was padded with 6-inches of clean blow sand and a 20-mil reinforced polyethylene liner was installed at 4.5 feet bgs. A 6-inch pad of clean blow sand was placed above the liner to protect the liner from punctures. Pond bottom soil was used to backfill the excavation and blow sand was used to complete the backfill and to contour the site to the surrounding area. On July 15, 2011, soil amendments were added to the site and the site was seeded with a native vegetative mix. On August 2, 2011, an 'Initial CAP Report – Liner Installation' was submitted to NMOCD detailing the liner installation activities. On October 13, 2011, NMOCD granted the soil closure for this site, and required that ROC place additional monitoring wells at the site. Two additional monitoring wells were installed at the site on April 11, 2011. Each well has been sampled quarterly since installation.

On February 6, 2012, ROC submitted an 'Additional Groundwater Monitoring and Corrective Action Plan for Groundwater' to NMOCD which was approved on February 16, 2012. According to the CAP for Groundwater, MW-1 was plugged and replaced with a 4-inch well on July 9, 2012. MW-1 was plugged using a 1-3% bentonite/concrete slurry and a three foot concrete cap. MW-1R was installed six feet southeast of the former monitor well.

A recovery system was installed in MW-1R and groundwater removal began on July 26, 2012. Since recovery began, approximately 1,783 bbls of groundwater have been removed and utilized for pipeline and well maintenance. Chloride concentrations in MW-1R and MW-3 have decreased since groundwater recovery began (Table 1-3). ROC will continue removing groundwater and will continue quarterly sampling of the monitoring wells in 2013. At the end of 2013, ROC will evaluate the results of the groundwater recovery and submit recommendation to the NMOCD. ROC appreciates the opportunity to work with you on this project. Please call me at (575) 393-9174 if you have any questions or wish to discuss the site.

Sincerely, Rice Operating Company

Hack Conder Environmental Manager

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Site Location Map



Vacuum L-26 vent (1R425-66)

Table	e 1								
MW	Depth to	Sample	СІ	TDS	Benzene	Toluene	Ethyl	Total	Sulfate
	Water	Date					Benzene	Xylenes	
1	56.53	11/22/2010	940	2120	<0.001	<0.001	<0.001	<0.003	79.6
1	56.6	2/16/2011	960	2130	<0.001	< 0.001	<0.001	<0.003	64
1	56.7	6/4/2011	1040	2710	<0.001	< 0.001	<0.001	<0.003	64.7
1	56.79	8/31/2011	940	2440	<0.001	<0.001	< 0.001	<0.003	67
1	56.88	12/2/2011	920	2230	<0.001	<0.001	<0.001	<0.003	73.7
1	56.95	2/22/2012	970	1930	<0.001	<0.001	<0.001	<0.003	66.3
1	57.06	5/29/2012	710	1910	<0.001	<0.001	<0.001	<0.003	66.4
1	XXX	8/24/2012	116	551	<0.001	<0.001	<0.001	<0.003	63.6
1	XXX	11/15/2012	288	960	<0.001	< 0.001	< 0.001	<0.003	59.5

XXX: not measured

Table 2

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мw	Depth to	Sample	Cl	TDS	Benzene	Toluene	Ethyl	Total	Sulfate
	Water	Date					Benzene	Xylenes	
2	56.83	6/4/2011	32	457	<0.001	<0.001	<0.001	<0.003	37
2	56.93	8/31/2011	32	374	<0.001	<0.001	<0.001	<0.003	33.5
2	57.02	12/2/2011	36	405	<0.001	<0.001	<0.001	<0.003	40.8
2	57.09	2/22/2012	92	408	<0.001	<0.001	<0.001	<0.003	41.6
2	57.2	5/29/2012	28	411	<0.001	<0.001	<0.001	<0.003	41.4
2	57.44	8/24/2012	28	490	<0.001	< 0.001	< 0.001	< 0.003	27.7
2	54.48	11/15/2012	32	518	<0.001	< 0.001	<0.001	<0.003	20.3

Table 3

мw	Depth to	Sample	CI	TDS	Benzene	Toluene	Ethyl	Total	Sulfate
	Water	Date					Benzene	Xylenes	
3	56.14	6/4/2011	432	1210	<0.001	<0.001	<0.001	<0.003	69.1
3	52.24	8/31/2011	416	1250	<0.001	<0.001	<0.001	<0.003	47.3
3	56.34	12/2/2011	450	1330	<0.001	<0.001	<0.001	<0.003	56.8
3	56.4	2/22/2012	332	1330	<0.001	<0.001	<0.001	<0.003	54.9
3	56.57	5/29/2012	380	1220	<0.001	<0.001	<0.001	<0.003	57.4
3	56.74	8/24/2012	400	1220	<0.001	<0.001	<0.001	<0.003	48.9
3	56.77	11/15/2012	376	1240	<0.001	<0.001	<0.001	<0.003	48.7