

1R - 426-03

Annual GW Mon. REPORTS

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2009



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

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Environmental

Subject: 2009 MONITOR WELL REPORT/SAMPLING SUMMARY
Jct. K-27 and Jct. K-27-1, BD SWD SYSTEM
Unit K, SEC. 27, T21S, R37E
NMOCD CASE #s 1R0426-02 and 1R0426-03

Date:
April 8, 2010

Contact:
Sharon E. Hall

Phone:
432 687-5400

Email:
shall@arcadis-us.com

Our ref:
MT000834.0001

Dear Mr. Hansen:

On behalf of Rice Operating Company (ROC), ARCADIS respectfully submits the 2009 Monitor Well Report for the BD Jct. K-27 and Jct. K-27-1 sites located in the Blinebry-Drinkard (BD) Salt Water Disposal (SWD) System.

One monitoring well was installed at each of two junction box locations (K-27-1 and K-27 North) on May 9 and 10, 2005 during delineation as part of the NMOCD approved ICP.

A letter informing NMOCD that due to their proximity to each other the sites would be combined as one site referred to as the K-27 site was submitted on June 12, 2006. The letter also informed NMOCD of our intent to drill 4 additional monitoring wells at the K-27 site. Approval to drill the monitor wells was received on July 18, 2007.

Monitor wells MW-2 through MW-5 were installed on July 24 and 25, 2006. All wells are sampled quarterly per NMOCD guidelines. The attached tables summarize the analytical results from groundwater samples collected from the monitor wells at the site.

Based on the widespread chloride impacts documented since the 1950s and the fact that the potential sources of additional impacts to groundwater (the junction boxes and impacted soil) at this site have been removed ROC requested closure of this site. On June 30, 2008 NMOCD requested an estimation of the chloride mass that has

Part of a bigger picture

contaminated the groundwater by the release at the former BD K-27 North and BD K-27-1 junction boxes and a plan for the removal of that chloride mass from the groundwater. The chloride mass estimation and remediation work plan was submitted to NMOCD on July 18, 2008. The work plan was approved on June 3, 2009.

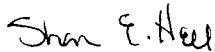
The approved work plan proposed installation of a groundwater recovery system at the former K-27-1 junction box location. As of year end 2009, 348,502 gallons of groundwater (448 kg of chloride mass) has been removed from the aquifer. ROC will continue operation of the recovery well until 595.71 kg of chloride mass has been removed.

ROC is the service provider (agent) for the BD Salt Water Disposal System and has no ownership of any portion of pipeline, well or facility. The BD SWD System is owned by a consortium of oil producers, System Parties, who provide all operating capital on a percentage ownership/usage basis.

Thank you for your consideration concerning this annual summary of groundwater monitoring information. If you have any questions, do not hesitate to contact me or Hack Conder at (575) 393-9174.

Sincerely,

ARCADIS.



Sharon E. Hall
Associate Vice President

Copies:
Hack Conder-ROC

Attachments:
MW Summary Tables
Monitor Well Location Figure

ROC BD Jct. K-27

MW	Depth to Water feet	Total Depth feet	Well Volume gallons	Volume Purged gallons	Sample Date	CI	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate
2	41.44	51.15	1.6	10	10/4/2006	543	1850	<0.001	<0.001	<0.001	<0.001	275
2	41.16	50.91	1.6	8	2/7/2007	576	1420	<0.001	<0.001	<0.001	<0.001	268
2	41.29	50.91	1.5	6	4/17/2007	604	1670	<0.001	<0.001	<0.001	<0.001	270
2	40.9	50.91	1.6	6	7/25/2007	581	2140	<0.001	<0.001	<0.001	<0.002	ND
2	41.05	50.91	1.6	6	10/3/2007	600	1879	<0.001	<0.001	<0.001	<0.003	270
2	41.3	50.61	1.5	6	1/10/2008	524	1676	<0.001	<0.001	<0.001	<0.003	266
2	41.58	50.61	1.4	6	4/2/2008	580	1690	<0.002	<0.002	<0.002	<0.006	260
2	42.13	50.61	1.4	6	7/14/2008	460	1540	<0.001	<0.001	<0.001	<0.003	216
2	42.25	50.61	1.3	6	10/7/2008	432	1530	<0.001	<0.001	<0.001	<0.003	252
2	41.79	50.78	1.4	6	1/15/2009	328	1210	<0.001	<0.001	<0.001	<0.003	202
2	42.01	51.78	1.6	6	4/21/2009	372	1280	<0.001	<0.001	<0.001	<0.003	197
2	42.46	51.78	1.5	6	7/16/2009	332	1220	<0.001	<0.001	<0.001	<0.003	181
2	42.36	51.78	1.5	6	10/6/2009	328	1200	<0.001	<0.001	<0.001	<0.003	155

All concentrations in milligrams per liter

ROC BD Jct. K-27

MW	Depth to Water feet	Total Depth feet	Well Volume gallons	Volume Purged gallons	Sample Date	CI	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate
3	43.71	52.5	1.4	6	10/4/2006	227	1480	<0.001	<0.001	<0.001	<0.001	324
3	43.38	52.36	1.4	6	2/7/2007	256	1300	<0.001	<0.001	<0.001	<0.001	327
3	43.51	52.36	1.4	6	4/17/2007	264	1340	<0.001	<0.001	<0.001	<0.001	314
3	43.02	53.36	1.5	6	7/25/2007	274	1420	<0.001	<0.001	<0.001	<0.002	XXX
3	43.24	52.36	1.5	6	10/3/2007	308	1500	<0.001	<0.001	<0.001	<0.003	352
3	43.6	52.16	1.4	6	1/10/2008	304	1444	<0.001	<0.001	<0.001	<0.003	398
3	43.96	52.16	1.3	6	4/2/2008	300	1440	<0.002	<0.002	<0.002	<0.006	453
3	44.58	52.16	1.2	6	7/14/2008	376	1400	<0.001	<0.001	<0.001	<0.003	329
3	44.74	52.16	1.2	6	10/7/2008	292	1500	<0.001	<0.001	<0.001	<0.003	513
3	44.24	51.95	1.2	6	1/15/2009	264	1350	<0.001	<0.001	<0.001	<0.003	329
3	44.54	51.95	1.2	6	4/21/2009	288	1400	<0.001	<0.001	<0.001	<0.003	329
3	44.92	51.95	1.1	6	7/16/2009	308	1470	<0.001	<0.001	<0.001	<0.003	334
3	44.96	51.95	1.1	5	10/6/2009	308	1470	<0.001	<0.001	<0.001	<0.003	305

All concentrations in milligrams per liter

ROC BD Jct. K-27

MW	Depth to Water feet	Total Depth feet	Well Volume gallons	Volume Purged gallons	Sample Date	CI	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate
4	37.42	45.3	1.3	6	10/4/2006	516	2020	<0.001	<0.001	<0.001	<0.001	540
4	36.94	45.15	1.3	6	2/7/2007	525	1860	<0.001	<0.001	<0.001	<0.001	577
4	36.92	45.15	1.3	6	4/17/2007	526	1940	<0.001	<0.001	<0.001	<0.001	556
4	36.33	45.15	1.4	6	7/25/2007	349	1930	<0.001	<0.001	<0.001	<0.002	XXX
4	36.7	45.15	1.4	6	10/3/2007	390	1938	<0.001	<0.001	<0.001	<0.003	579
4	37.11	45.1	1.3	6	1/10/2008	392	1950	<0.001	<0.001	<0.001	<0.003	632
4	37.55	45.1	1.2	6	4/2/2008	420	2000	<0.002	<0.002	<0.002	<0.006	699
4	38.28	45.1	1.1	6	7/14/2008	670	2440	<0.001	<0.001	<0.001	<0.003	553
4	38.61	45.1	1	6	10/7/2008	640	2390	<0.001	<0.001	<0.001	<0.003	664
4	38.03	45.01	1.1	5	1/15/2009	860	2700	<0.001	<0.001	<0.001	<0.003	607
4	38.83	45.46	1.1	6	4/21/2009	560	2110	<0.001	<0.001	<0.001	<0.003	557
4	39.11	45.46	1	6	7/16/2009	550	2070	<0.001	<0.001	<0.001	<0.003	499
4	39.34	45.46	1	6	10/6/2009	530	2040	<0.001	<0.001	<0.001	<0.003	406

All concentrations in milligrams per liter

ROC BD Jct. K-27

MW	Depth to Water feet	Total Depth feet	Well Volume gallons	Volume Purged gallons	Sample Date	CI	TDS	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Sulfate
5	31.84	39	1.1	5	10/4/2006	282	1950	<0.001	<0.001	<0.001	<0.001	551
5	32.55	38.94	1	4	2/7/2007	317	1730	<0.001	<0.001	<0.001	<0.001	677
5	35.09	44.05	5.8	20	4/17/2007	272	1890	<0.001	<0.001	<0.001	<0.001	591
5	31.97	38.94	1.1	5	7/25/2007	208	1700	<0.001	<0.001	<0.001	<0.002	XXX
5	32.35	38.94	1.1	5	10/3/2007	260	1799	<0.001	<0.001	<0.001	<0.003	632
5	33.13	38.9	0.9	5	1/10/2008	308	2026	<0.001	<0.001	<0.001	<0.003	726
5	33.13	38.9	0.9	5	4/2/2008	328	2120	<0.002	<0.002	<0.002	<0.006	680
5	33.14	38.9	0.9	5	7/14/2008	540	2030	<0.001	<0.001	<0.001	<0.003	473
5	34.38	38.9	0.7	5	10/7/2008	360	2130	<0.001	<0.001	<0.001	<0.003	803
5	33.84	39.01	0.8	5	1/15/2009	430	2370	<0.001	<0.001	<0.001	<0.003	774
5	34.51	39.02	0.7	5	4/21/2009	392	2240	<0.001	<0.001	<0.001	<0.003	737
5	34.89	39.02	0.7	5	7/16/2009	372	2210	<0.001	<0.001	<0.001	<0.003	702
5	34.83	39.02	0.7	5	10/6/2009	352	1990	<0.001	<0.001	<0.001	<0.003	545

All concentrations in milligrams per liter