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## Annual GW Mon. REPORTS





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CERTIFIED MAIL RETURN RECEIPT NO. 7008 3230 0001 9310 8225

March 30, 2010

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

## Re: 2009 Annual Groundwater Summary Report & Project Status Report, Rice Operating Company, K-4 Release, BD SWD System, Unit K, Section 4, T-22-S. R-37-E. Lea County, New Mexico, NMOCD CASE #1R0459

## Mr. Hansen:

Tetra Tech Inc. (Tetra Tech) submits the following 2009 Annual Groundwater Summary Report for the Rice Operating Company (ROC), K-4 Release, located in the BD Salt Water Disposal System. This report consists of the following sections:

- 1. Tables summarizing all laboratory results and depths to groundwater at the site, including the current year (2009).
- 2. Graphs depicting the concentration of chlorides, total dissolved solids (TDS), and sulfates over time.

In November 2007, a pump test was performed on monitor well MW-1 to determine possible remediation options for recovery of chlorides in the well. Results indicated the well was able to generate 3 gallons per minute for 40 minutes without pumping dry. In addition, the chlorides decreased by approximately 30%. With the decrease in chlorides it was decided that instead of installing a pump and operating it for 24 hours, 7 days a week, that periodically, ROC would pump the well for several hours in order to enhance recovery. Beginning in September 2009, the well was pumped periodically for several hours and weekly for the months of October and November. Total recovery of chloride impacted water in 2009 was 2,575 gallons. The periodic pumping of the well will continue for 2010. In addition on July 17, 2009, a formal request was resubmitted to the NMOCD for suspension of further sampling of BTEX/Sulfate at the site. As of this report, a response has not been received from the NMOCD in regards to the suspension request.

ROC is the service provider (agent) for the BD Salt Water Disposal System and has no ownership of any portion of the pipeline, well or facility. The BD SWD system is owned



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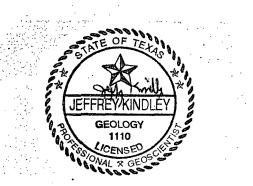
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by a consortium of oil producers, System Parties, who provide all operating capital on a percentage ownership/usage basis.

Thank you for your consideration of this annual summary information. If you have any questions, please contact me at (432) 682-4559, or Hack Conder of ROC at (575) 393-9174.



Respectfully Submitted, Tetra Tech, Inc.

Jeffrey Kindley, P.G.

Senior Project Manager

cc: Hack Conder –ROC Enclosures: Tables and Graphs

Clear no odor Clear no odo Clear no odor Comments Toluene Ethyl Benzene Total Xylenes Sulfate 152 148 339 159 124 195 106 148 143 123 113 131 157 <0.006 <0.006 <0.006 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.001 <0.001 <0.001 <0.002 <0.001</pre><0.001</pre><0.001</pre><0.001</pre> <0.002 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.002 <0.002 <0.001 <0.002 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 TDS Benzene Rice Operating Company Lea County, New Mexico <0.001 <0.002 <0.002 <0.002 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 BD K-4 Table 1 1040 2120 2100 1950 2028 1770 1880 1880 1590 1470 1560 1680 1380 1700 916 760 570 630 736 620 720 600 200 760 520 917  $\overline{O}$ 11/13/06 04/22/09 05/05/08 11/13/08 01/21/09 08/11/08 02/15/08 07/20/09 10/13/09 03/08/07 04/23/07 09/14/07 10/31/07 Sample Date Purged Volume ဓ္က ဓ 20 ଚ୍ଚଚ ဓ ဓ ဓ ഗ ပပ 9 က္တ Volume 1.40 1.40 1.40 7.60 8.20 8.40 8.40 8.40 7.60 8.30 8.30 8.30 8.40 Well 97.70 Depth 93.63 97.70 98.60 98.60 98.60 98.60 98.60 98.40 98.40 98.40 93.62 93.62 Total Depth to 84.99 84.96 86.06 86.06 85.93 85.49 Water 85.02 85.73 85.65 85.48 85.81 85.64 85.61 MM

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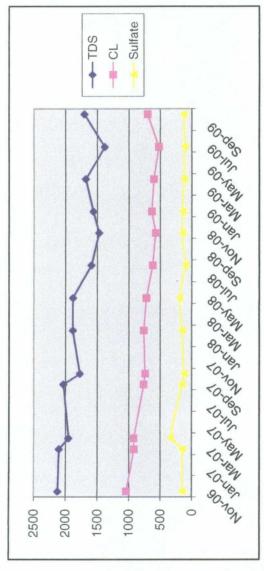
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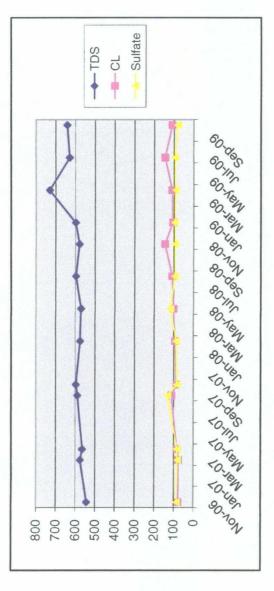
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	Sulfate Comments	85 Clear no odor	80.8 Clear no odor	83 Clear no odor	130 Clear no odor	82.7 Clear no odor	86.6 Clear no odor	117 Clear no odor	94 Clear no odor	93.7 Clear no odor	95.4 Clear no odor	89.8 Clear no odor	95.4 Clear no odor	78.9 Clear no odor	
	Total Xylenes	<0.001	<0.001	<0.001	<0.003	<0.006	<0.006	<0.006	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	
	Toluene Ethyl Benzene Total Xylenes Sulfate	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
	Toluene	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
Table 2 Rice Operating Company BD K-4 Lea County, New Mexico		<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
Table 2 erating C BD K-4 ntv. New	TDS E	542	574	564	588	596	574	570	596	578	598	730	628	641	·
e Oper B	ō	11	75.3	83.5	110	84	92	100	108	144	104	108	144	108	
Rio	Sample Date	11/13/06	03/08/07	04/23/07	09/14/07	10/31/07	02/15/08	05/05/08	08/11/08	11/13/08	01/21/09	04/22/09	07/20/09	10/13/09	
	Volume Purged	7	7	7	7	6	9	9	6	9	6	9	6	6	
	Well Volume	1.70	1.70	1.70	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	
	Total Depth	94.10	94.08	94.08	94.08	94.08	94.05	94.05	94.05	94.05	93.98	93.98	93.98	93.98	
	Depth to Water	83.35	83.28	83.25	83.12	83.11	82.97	82.81	82.86	82.75	82.77	82.69	82.61	82.58	
	ΜW	N	2	2	~	2	2	2	2	2	2	2	2	N	

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Graph 2 Rice Operating Company MW-2 BD K-4 Lea County, New Mexico



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Table 3 Rice Operating Company BD K-4		ea County, New Mexico	fate Comments		97.6 Clear no odor	103 Clear no odor	92.1 Clear no odor	151 Clear no odor	106 Clear no odor	110 Clear no odor	166 Clear no odor	117 Clear no odor	124 Clear no odor	116 Clear no odor	108 Clear no odor	107 Clear no odor	94.1 Clear no odor	
			Total Xvlenes Sulfate		<0.001 9	<0.001 1	<0.001 92	<0.003 1	<0.006 1	<0.006 1	<0.006 1	<0.003 1	<0.003 1	<0.003 1	<0.003 1	<0.003 1	<0.003 94	
			Toluene Ethyl Benzene	, ,	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
			Toluene		<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.001	<0,001	<0.001	<0.001	<0.001	<0.001	
	Company		CI TDS Benzene		<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
	ating ( 3D K-4	ty, Nev	TDS		622	678	674	710	689	668	710	691	711	713	730	718	688	
	e Oper	Coun	Ū		148	199	145	170	156	160	160	172	168	164	168	172	168	
	Rio	Le	Sample	Date	11/13/06	03/08/07	04/23/07	09/14/07	10/31/07	02/15/08	05/05/08	08/11/08	11/13/08	01/21/09	04/22/09	07/20/09	10/13/09	
			Volume	Purged	5	5	9	9	9	9	9	9	9	9	6	9	9	
			Well	Volume	1.30	1.30	1.30	1.30	1.30	1.30	1.40	1.30	1.40	1.30	1.40	1.40	1.40	
			Total	Depth	94.60	94.50	94.50	94.50	94.50	94.35	94.35	94.35	94.35	94.20	94.20	94.20	94.20	
			Depth to	Water	86.45	86.41	86.35	86.23	86.19	86.09	85.89	85.94	85.84	85.84	85.76	85.64	85.63	
			₹		ო	ო	ო	ო	ო	ო	ო	ო	ო	ო	ო	ო	ო	

Graph 3 Rice Operating Company MW-3 BD K-4 Lea County, New Mexico

