

AP - 46

# ANNUAL MONITORING REPORT

YEAR(S):  
2005

*January 9, 2005*

## 2005 Annual Groundwater Monitoring Report



**EME K-6 Junction Box Site  
T20S, R37E, Section 6, Unit Letter K  
Lea County, New Mexico  
NMOCD Case # 1R0427-88, AP-46**

**R. T. HICKS CONSULTANTS, LTD.**

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RETURN RECEIPT NO. 7099 3400 0017 1737 1797

January 9, 2006

Mr. Wayne Price

New Mexico Energy, Minerals, & Natural Resources Dept.

Oil Conservation Division, Environmental Bureau

1220 S. St. Francis Drive

Santa Fe, New Mexico 87505

RE: 2005 ANNUAL MONITORING WELL REPORT  
EME K-6 JUNCTION BOX SITE  
T20S-R37E-Section 6, Unit Letter k  
NMOCD CASE # 1R0427-88


Mr. Price:

R. T. Hicks Consultants, Ltd. takes this opportunity to submit the 2005 Annual Monitoring Well Report for the EME K-6 junction box site located in the Eunice Monument Eumont (EME) Salt Water Disposal (SWD) System. The Stage 1 Abatement Plan for this site was submitted to the NMOCD on October 14, 2005, and is administratively complete pending the on-going public notice procedures.

ROC is the service provider (operator) for the EME Salt Water Disposal System and has no ownership of any portion of pipeline, well, or facility. The EME SWD System is owned by a consortium of oil producers, System Partners, 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 at (423) 638-8740 or Kristin Farris Pope at (505) 393-9174.

Sincerely,



Gilbert J. Van Deventer, REM, PG, NMCS  
R. T. Hicks Consultants Ltd.

enclosures: Summary table & graphs, well sampling data forms. analytical results

cc: LBG, CDH, KFP, file

## TABLE AND GRAPH



**Table 1**  
**Summary of Groundwater Sampling Results**  
**EME K-6 Junction Box Site**

Monitoring Well	Sample Date	Depth to Groundwater (feet BTOC)	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylene (mg/L)
MW-1	01/25/02	37.20	<b>12,096</b>	---	<b>23,370</b>	<0.002	<0.002	0.002	0.006
	05/14/02	37.30	<b>12,000</b>	<b>3,960</b>	<b>26,700</b>	0.001	0.003	<0.001	0.004
	08/28/02	37.52	<b>13,796</b>	<b>4,086</b>	<b>29,180</b>	<0.002	<0.002	0.003	<0.006
	11/11/02	38.65	<b>12,200</b>	<b>3,780</b>	<b>26,400</b>	0.001	0.001	0.001	0.003
	02/27/03	37.78	<b>12,800</b>	<b>4,830</b>	<b>25,900</b>	0.001	0.001	0.001	0.003
	05/29/03	37.80	<b>12,400</b>	<b>3,880</b>	<b>27,000</b>	0.002	0.001	0.001	0.001
	08/21/03	37.90	<b>12,000</b>	<b>3,060</b>	<b>26,400</b>	0.003	<0.001	0.002	0.004
	11/19/03	38.17	<b>11,500</b>	<b>3,720</b>	<b>26,500</b>	0.003	0.001	<0.001	0.001
	02/18/04	38.40	<b>11,796</b>	<b>1,903</b>	<b>26,172</b>	0.003	<0.002	<0.002	<0.006
	05/27/04	37.60	<b>13,800</b>	<b>6,020</b>	<b>25,700</b>	0.001	<0.001	<0.001	0.001
	09/07/04	37.96	<b>11,500</b>	<b>3,640</b>	<b>24,600</b>	0.003	<0.001	0.001	0.003
	11/24/04	37.53	<b>10,800</b>	<b>4,140</b>	<b>23,900</b>	0.005	0.004	0.005	0.015
	02/09/05	36.54	<b>11,200</b>	<b>4,670</b>	<b>23,500</b>	0.003	<0.001	<0.001	0.002
	05/03/05	35.60	<b>11,200</b>	<b>4,230</b>	<b>25,400</b>	0.003	0.001	0.002	0.001
	08/11/05	34.89	<b>9,480</b>	<b>3,030</b>	<b>25,600</b>	0.002	0.001	0.003	0.002
	11/28/05	34.44	<b>10,500</b>	<b>3,560</b>	<b>23,600</b>	0.004	<0.001	0.004	0.002
WQCC Standards			250	600	1000	0.01	0.75	0.75	0.62

Total Dissolved Solids (TDS), chloride, sulfate, and BTEX concentrations listed in milligrams per liter (mg/L).  
Analyses performed by Environmental Lab of Texas (Odessa TX) or Cardinal Laboratories (Hobbs NM).  
Values in boldface type indicate concentrations exceed New Mexico Water Quality Commission (WQCC) standards.

**Figure 1**  
**TDS, Chloride, Sulfate, and Depth to Groundwater Values Versus Time Graph (MW-1)**



# **WELL SAMPLE DATA SHEETS**

## WELL SAMPLING DATA FORM

CLIENT: RICE Operating Company  
SYSTEM: EME System  
SITE LOCATION: K-6 Junction Box Site

WELL ID: MW-1

DATE: February 9, 2005

SAMPLER: Gil Van Deventer

PURGING METHOD: ☒ Hand Bailed ☐ Pump If Pump, Type: \_\_\_\_\_

SAMPLING METHOD: ☒ Disposable Bailer ☒ Direct from Discharge Hose ☐ Other: \_\_\_\_\_

DESCRIBE EQUIPMENT DECONTAMINATION METHOD BEFORE SAMPLING THE WELL:

☒ Gloves ☒ Alconox ☒ Distilled Water Rinse ☐ Other:

DISPOSAL METHOD OF PURGE WATER: ☐ Surface Discharge ☐ Drums ☒ Disposal Facility

TOTAL DEPTH OF WELL: 40.45 Feet

DEPTH TO WATER: 36.54 Feet

HEIGHT OF WATER COLUMN: 3.91 Feet

WELL DIAMETER: 2.0 Inch

2 Minimum gallons to purge 3 well volumes

4 Actual Gallons purged

TIME	VOLUME PURGED (GAL)	TEMP. °C	COND. mS/cm	pH			PHYSICAL APPEARANCE AND REMARKS
17:08	0	---	---	---			Began purging.
17:10	1	18.3	>20	6.63			
17:12	2	18.5	>20	6.60			
17:14	3	18.0	>20	6.60			
17:17	4	18.3	>20	6.60			
						17:20	Samples collected
0:09	:Total Time (hr:min)		4	:Total Vol (gal)		0.44	:Average Flow Rate (gal/min)

COMMENTS:

Hanna Model 98130 instrument used to obtain pH, conductivity, and temperature measurements.

Delivered samples to Environmental Lab of Texas for BTEX, Major Ions, and TDS analysis.

# WELL SAMPLING DATA FORM

CLIENT: RICE Operating Company  
SYSTEM: EME System  
SITE LOCATION: K-6 Junction Box Site

WELL ID: MW-1

DATE: May 3, 2005

SAMPLER: Gil Van Deventer

PURGING METHOD: ☒ Hand Bailed ☐ Pump If Pump, Type:

SAMPLING METHOD: ☒ Disposable Bailer ☒ Direct from Discharge Hose ☐ Other: \_\_\_\_\_

DESCRIBE EQUIPMENT DECONTAMINATION METHOD BEFORE SAMPLING THE WELL:

☒ Gloves ☒ Alconox ☒ Distilled Water Rinse ☐ Other:

DISPOSAL METHOD OF PURGE WATER: ☐ Surface Discharge ☐ Drums ☒ Disposal Facility

TOTAL DEPTH OF WELL: 40.45 Feet

DEPTH TO WATER: 35.60 Feet

HEIGHT OF WATER COLUMN: 4.85 Feet

WELL DIAMETER: 2.0 Inch

2 Minimum gallons to purge 3 well volumes

4 Actual Gallons purged

TIME	VOLUME PURGED (GAL)	TEMP. °C	COND. mS/cm	pH			PHYSICAL APPEARANCE AND REMARKS
12:00	0	—	—	—			Began purging.
12:02	1	17.3	27.04	6.37			
12:06	2	17.6	27.22	6.38			
12:13	3	17.4	23.23	5.64			
12:20	4	17.4	28.32	5.77			
						12:25	Samples collected
0:20	:Total Time (hr:min)		4	:Total Vol (gal)		0.20	:Average Flow Rate (gal/min)

COMMENTS:

Hanna Model 98130 instrument used to obtain pH, conductivity, and temperature measurements.

Delivered samples to Environmental Lab of Texas for BTEX, Major Ions, and TDS analysis.



# WELL SAMPLING DATA FORM

CLIENT: RICE Operating Company  
SYSTEM: EME System  
SITE LOCATION: K-6 Junction Box Site

WELL ID: MW-1  
DATE: August 11, 2005  
SAMPLER: Patrick Van Deventer

PURGING METHOD: ☒ Hand Bailed ☐ Pump If Pump, Type:

SAMPLING METHOD: ☒ Disposable Bailer ☒ Direct from Discharge Hose ☐ Other: \_\_\_\_\_

DESCRIBE EQUIPMENT DECONTAMINATION METHOD BEFORE SAMPLING THE WELL:

☒ Gloves ☒ Alconox ☒ Distilled Water Rinse ☐ Other:

DISPOSAL METHOD OF PURGE WATER: ☐ Surface Discharge ☐ Drums ☒ Disposal Facility

**TOTAL DEPTH OF WELL:**                    40.45    Feet

DEPTH TO WATER: 34.89 Feet

HEIGHT OF WATER COLUMN: 5.56 Feet

WELL DIAMETER: 2.0 Inch

**3 Minimum gallons to purge 3 well volumes**

4 Actual Gallons purged

TIME	VOLUME PURGED (GAL)	TEMP. °F	COND. mS/cm	pH			PHYSICAL APPEARANCE AND REMARKS
16:02	0	---	---	---			Began purging.
16:07	1	75.8	33.80	7.78			
16:11	2	70.9	35.68	7.82			
16:16	3	69.9	37.60	7.75			
16:20	4	70.7	37.84	7.76			
						16:25	Samples collected
0:18 :Total Time (hr:min)			4	:Total Vol (gal)		0.22	:Average Flow Rate (gal/min)

**COMMENTS:**

Hanna Model 98130 instrument used to obtain pH, conductivity, and temperature measurements.

Delivered samples to Environmental Lab of Texas for BTEX, Major Ions, and TDS analysis.

# WELL SAMPLING DATA FORM

CLIENT: RICE Operating Company  
 SYSTEM: EME  
 SITE LOCATION: K-6 Junction Box Site

WELL ID: MW-1  
 DATE: November 28, 2005  
 SAMPLER: Rozanne Johnson

PURGING METHOD: ☒ Hand Bailed ☐ Pump, Type: \_\_\_\_\_  
 SAMPLING METHOD: ☒ Disposable Bailer ☐ Direct from Discharge Hose ☐ Other: \_\_\_\_\_

DISPOSAL METHOD OF PURGE WATER: ☐ On-site Drum ☐ Drums ☒ SWD Disposal Facility

TOTAL DEPTH OF WELL: 40.45 Feet  
 DEPTH TO WATER: 34.44 Feet  
 HEIGHT OF WATER COLUMN: 6.01 Feet  
 WELL VOLUME: 1.0 Gal. 2 In. Well Diameter  
4 Gallons purged prior to sampling

TIME	TEMP. °C	COND. mS/cm	pH	PHYSICAL APPEARANCE AND REMARKS
12:10	18.6	33.43	6.86	Strong Sour Septic Smell / Clear to Gray Color
				Samples Collected
				BTEX (2-40ml VOA)
				Major Ions/TDS (1-1000ml Plastic)
0:00 :Total Time (hr:min)		:Average Flow Rate (gal/min)		

## Comments

Myron Model 6P instrument used to obtain pH, conductivity, and temperature measurements.

Delivered samples to Environmental Lab of Texas for BTEX, Major Ions and TDS analysis.

**LABORATORY REPORTS**

**AND**

**CHAIN OF CUSTODY DOCUMENTATION**

**(This information provided on compact disk)**