

# ANNUAL MONITORING REPORT

YEAR(S): 2007



# Highlander Environment al COFP.VED

Midland, Texas

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CERTIFIED MAIL RETURN RECEIPT NO. 7002 3150 0005 0508 7720

March 17, 2008

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: 2007 Annual Groundwater Summary Report & Project Status Report, Rice Operating Company, Blinebry Drinkard (BD) SWD System Junction Box F-17, Unit F, Section 17, T-21-S, R-37-E, Lea County, New Mexico, NMOCD CASE #1R0426-14 (AP-47)

Dear Mr. Price:

Highlander Environmental Corp. (Highlander) takes this opportunity to submit the 2007 Annual Groundwater Summary Report for the Rice Operating Company (ROC), Blinebry Drinkard (BD) SWD System junction box F-17.

#### Background

As part of the ROC Junction Box Upgrade Workplan, starting on September 17, 2002, the junction box was removed and the Site was delineated vertically and horizontally with a backhoe. The Site was excavated to the approximate dimensions of 20 feet x 20 feet x 12 feet. Chloride impact was consistent vertically. No TPH impact was indicated.

During the excavation, an older junction box was discovered approximately 10 feet south of the existing location. On November 18, 2002, a soil boring was placed near this old box location and advanced to a depth of 75 feet. Chloride concentrations declined with depth, however, chloride impact to groundwater was observed.

Also on November 18, 2002, a 2 inch diameter monitor well was installed to a total depth of 85 feet. On December 13, 2002, ROC notified the NMOCD of groundwater impact, and on November 7, 2003 ROC submitted a Junction Box Disclosure Form to the NMOCD. Groundwater has been sampled and analyzed on a quarterly basis since June 2003. The

quarterly sampling has confirmed that there is no hydrocarbon impact to groundwater at this Site. The excavation was backfilled and the junction moved 45 feet south of the original site. The Site location is shown on Figure 1.

On March 17, 2005 an Investigation and Characterization Plan (ICP) was submitted to the NMOCD. On May 5, 2005, Daniel Sanchez with the NMOCD requested a Rule 19, Stage I Abatement Plan for this site. On July 12, 2005 a Stage I Abatement Plan was submitted to the NMOCD. The Stage I Abatement Plan approval was received, dated February 23, 2006.

#### **Stage 1 Abatement Plan Implementation**

As part of the Stage 1 Abatement Plan two additional monitor wells were proposed for the site. These two monitor wells (MW-2 and MW-3) were installed on March 22-23, 2006. The well locations are shown on Figure 3. MW-2 was placed down-gradient of MW-1 and MW-3 was placed up-gradient. The wells were developed and sampled on March 27, 2006.

Also as part of the Stage I Abatement Plan, a water well database search was performed to encompass a ½ mile radius around the site. ROC performed an internet search of the New Mexico Office of the State Engineer (OSE) and the United States Geologic Survey (USGS) databases for water wells within a ½ mile radius of the subject site.

#### **RULE 19 RELEASE REQUEST and SOIL WORK PLAN**

In a report to the NMOCD, dated August 10, 2006, ROC requested a release from additional Stage 1 and Stage 2 requirements and proposed to continue monitoring of the site. Additionally, ROC proposed to complete assessment and remediation of chloride impacted soils for closure under NMOCD approval. The horizontal extent of chloride impact to soils would be evaluated with a backhoe. Once evaluated, the soils will be excavated down below the root zone (minimum of 3.0' below ground surface) and an evapotranspiration barrier (non-compacted clay cap) will be placed into the excavation. The excavated soils will be evaluated for placement back into the excavation to ensure that it will sustain vegetative cover. Once completed, a closure report will be prepared and submitted for the soils portion of this investigation.

The New Mexico Oil Conservation Division Responded to the above-mentioned report on September 27, 2006, in an email memorandum. In that memorandum, the NMOCD stated that they required some additional data in order to continue evaluation of the request for Release from Rule 19. Specifically, the NMOCD requested an area map showing surrounding water wells, monitoring wells and any other sites that may have an impact on this site, and that ROC demonstrate that the groundwater gradient is accurate. A response letter with the requested data was submitted on December 27, 2006.

In a meeting between the NMOCD, Rice Operating and Highlander on July 18, 2007 and January 23, 2008, it was agreed the source of the chlorides appeared to be from an upgradient source based on groundwater gradient and chloride concentration maps. As such, it was agreed that Rice will reissue the original closure report with the request of no additional groundwater monitoring.

#### **Monitor Well Sampling**

The site monitor wells were sampled on February 6, April 16, July 23, and October 4, 2007. Prior to sampling, the wells were gauged for static water levels. The monitor well caps were opened and water level measurements were taken from the top of the casing. The measurements were taken to the nearest 0.01 feet.

The wells were then purged using a portable submersible pump. Approximately three casing volumes of water were purged from each well prior to sampling. The pump and associated tubing were decontaminated with a laboratory grade detergent and rinsed with deionized water. Cumulative water level measurements and purge volumes for the monitor wells are included in the Tables Section of this report.

The wells were also inspected for the presence of phase-separated hydrocarbons (PSH). Groundwater samples were collected as soon as possible after the groundwater returned to its static level. Groundwater samples were collected using clean disposable polyethylene bailers and disposable line. The samples were transferred into labeled and preserved containers provided by the laboratory. The samples were delivered under proper chain-of-custody control to Environmental Labs of Texas, Inc., Odessa, Texas and Cardinal Labs of Hobbs, New Mexico. The groundwater samples were analyzed for major anions, by methods 310.1, 9253 and 375.4, cations by method 6010B, Total Dissolved Solids (TDS) by method 160.1 and Benzene, Toluene, Ethylbenzene, and Xylene (BTEX) by method EPA 8021B. Copies of the laboratory reports are enclosed in Appendix A.

#### **Monitor Well Sample Results**

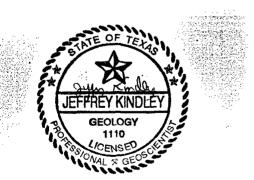
Monitor Well MW-2, down-gradient, has shown consistently low chloride concentrations ranging from 56 mg/L to 66.8 mg/L. The up-gradient well, MW-3 shows a fluctuation in the chloride concentration ranging from 830 mg/L to 1,490 mg/L and appears to indicate an up-gradient source of groundwater impact. In reviewing the historical data for MW-1 for the first 18 months of sampling, the chloride concentrations fluctuated between 177 mg/L and 886 mg/L. Then in January 2005, the chloride concentration jumped to 2,970 mg/L and has since ranged from 1,890 mg/L to 2,510 mg/L. Chloride concentrations decreased dramatically in MW-1 for the 3<sup>rd</sup> and 4<sup>th</sup> quarter sampling event (637 and 720 mg/L), respectively. Considering the concentration found in the upgradient monitor well, it appears that the impact to MW-1 may be affected by an up-gradient source of contamination.

In 2007, there were no BTEX constituents detected at or above reporting limits for any of the monitor wells. Cumulative analytical data is summarized in the Table Section of this report.

Midland, Texas

#### Conclusions

- 1. In 2007, there were no BTEX constituents detected at or above reporting limits for any of the monitor wells, and no BTEX has ever been detected in MW-1, nearest the junction box.
- 2. Chloride and total dissolved solid (TDS) concentrations from monitor wells MW-1 and upgradient MW-3 exceeded the New Mexico Water Quality Control Commission (WQCC) standards of 250 mg/L for chloride and 1000 mg/L for TDS in all sampling events.
- 3. Monitor Well MW-2, down-gradient, has shown consistently low chloride concentrations ranging from 56 mg/L to 66.8 mg/L. The up-gradient well, MW-3 has shown a fluctuation in chloride concentration ranging from 830 mg/L to 1,490 mg/L and appears to indicate an up-gradient source of groundwater impact. The historical data for MW-1, for the first 18 months of sampling, showed the chloride concentrations fluctuated between 177 mg/L and 886 mg/L. Then in January 2005, the chloride concentration jumped to 2,970 mg/L and has since ranged from 1,890 mg/L to 2,510 mg/L. Chloride concentrations decreased dramatically in MW-1 for the 3<sup>rd</sup> and 4<sup>th</sup> quarter sampling event (637 and 720 mg/L). Considering the concentration found in the upgradient monitor well, it appears that the impact to MW-1 may be at least somewhat affected by an up-gradient source of contamination.
- 4. Since it appears there is an upgradient source for the chloride concentrations, Rice will reissue the original closure report with the request of no additional groundwater monitoring.



Respectfully Submitted, HIGHLANDER ENVIRONMENTAL CORP.

Jeffrey Kindley, P.G. Senior Environmental Geologist

cc: ROC, Edward Hansen – NMOCD Enclosures: Figures, Tables, Laboratory Analysis

## FIGURES

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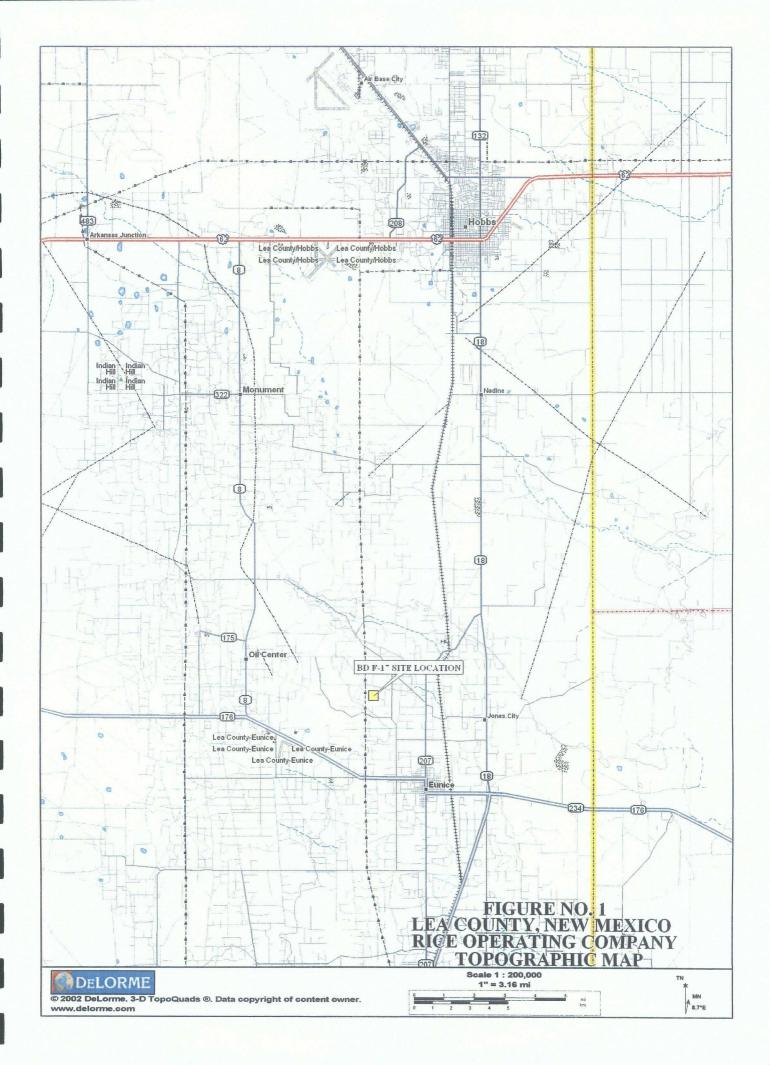
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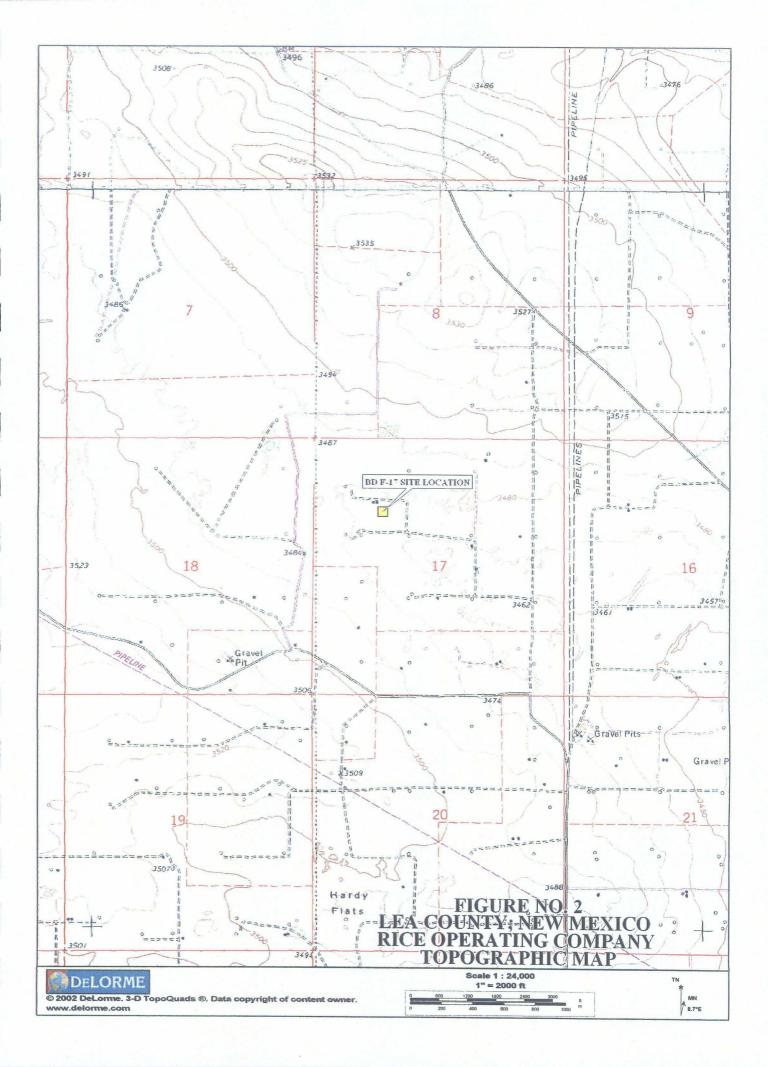
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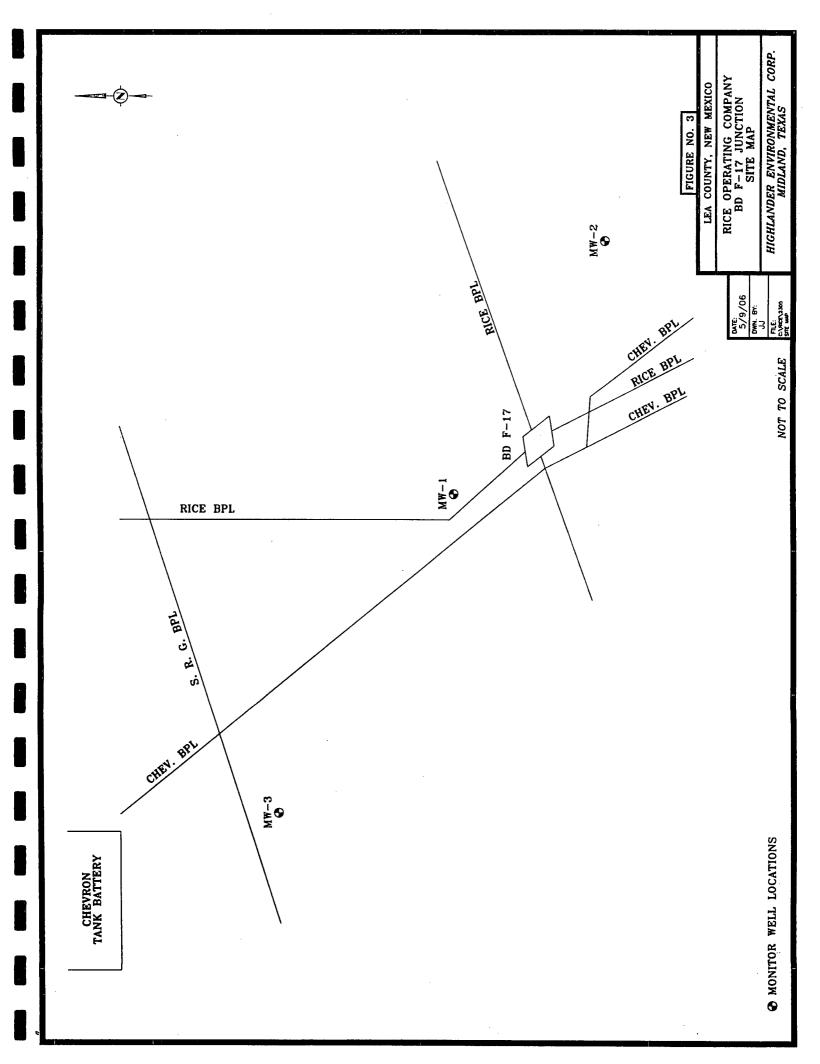
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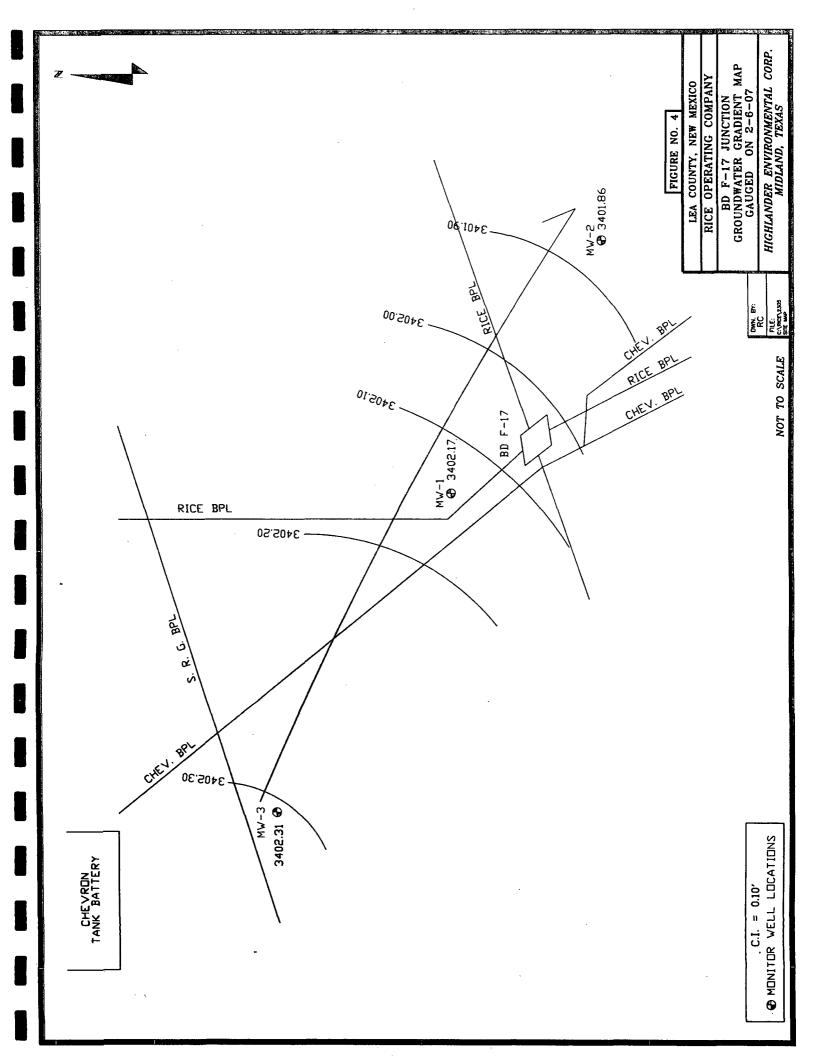
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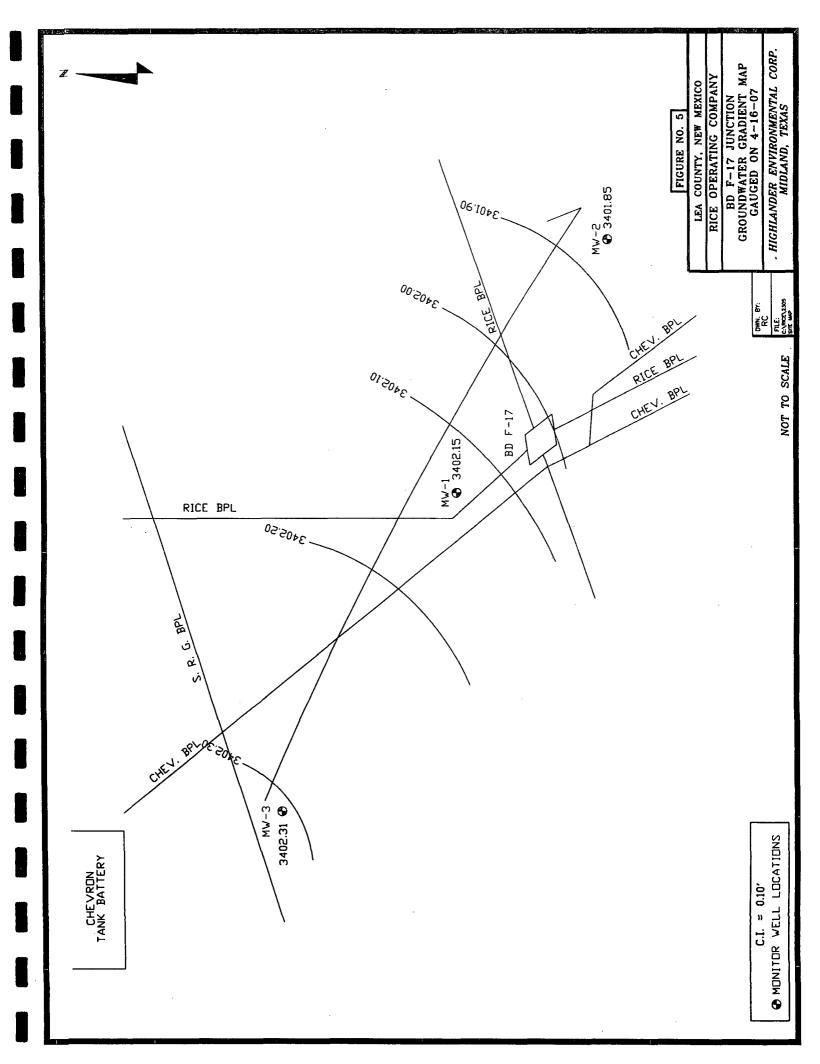
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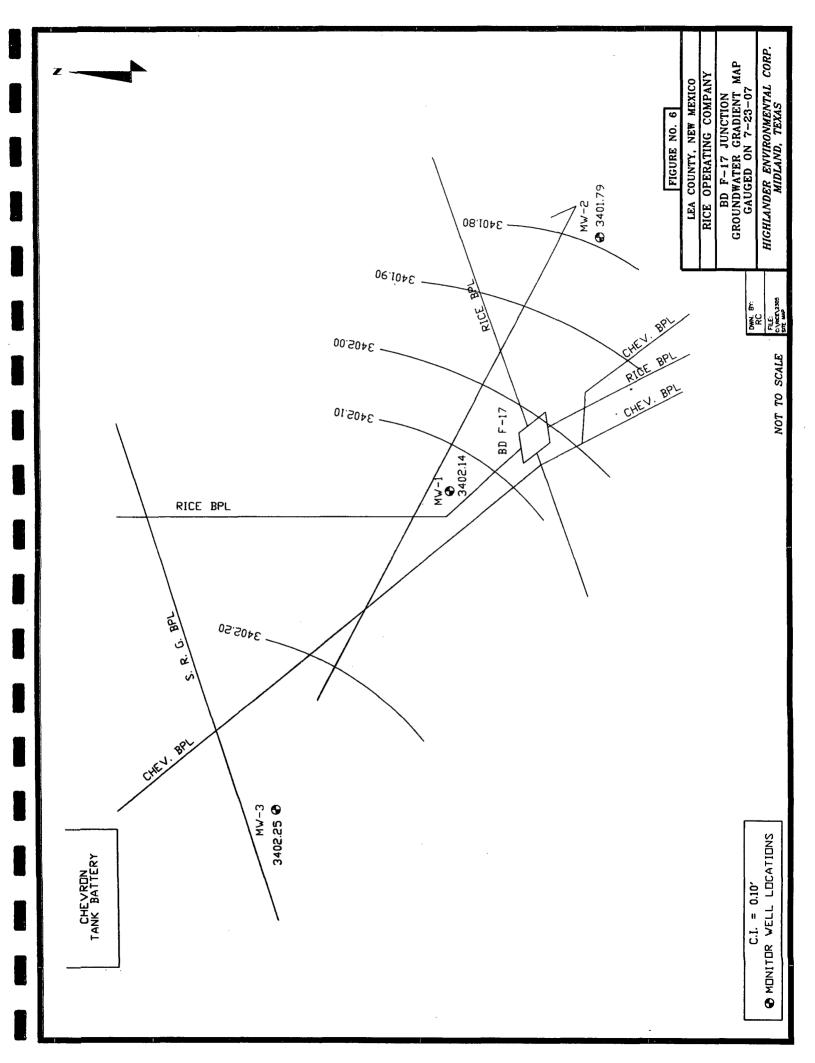


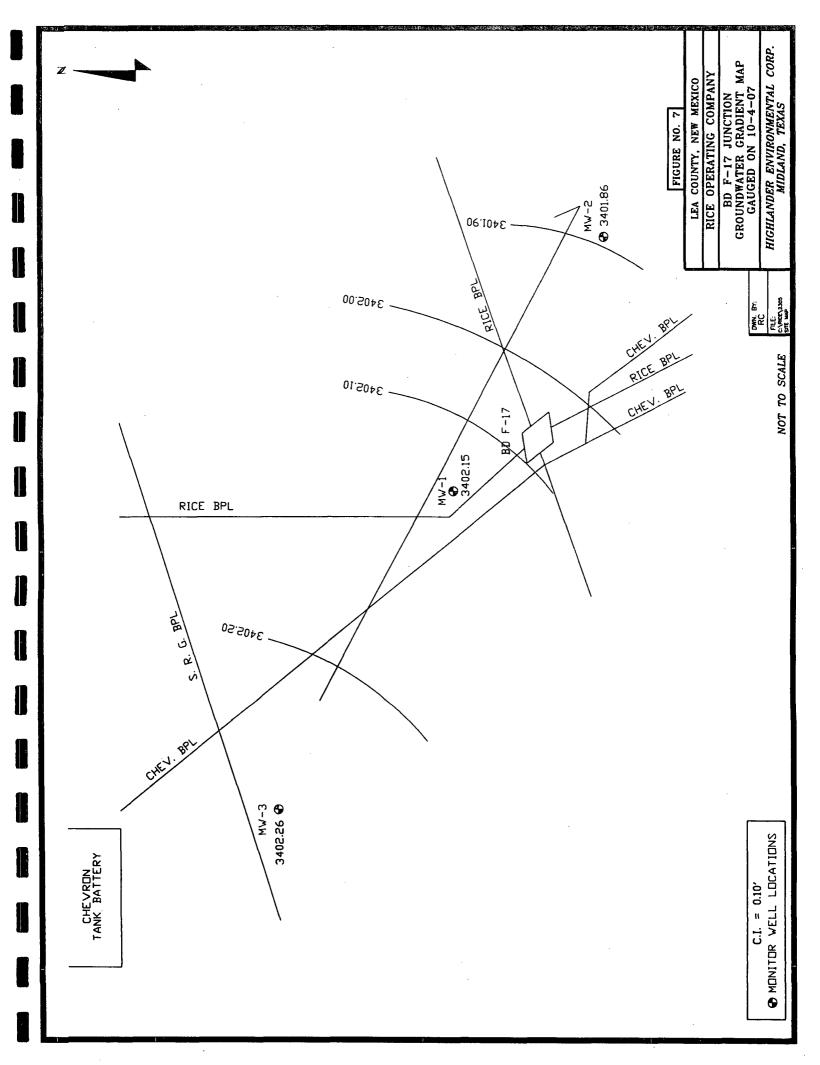












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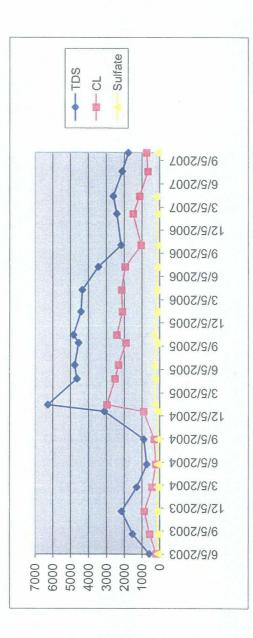
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	Comments						Lt brown		Re-sample					Silt to clear	Silt to clear	Clear	Clear	Clear	Clear	Clear	Clear		
	Sulfate	97.6	112	132	96.8	97.8	90.6	96.2	257	259	339	147	319		I	126			202		107		
	Toluene Ethyl Benzene Total Xylenes Sulfate	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.003		
	Ethyl Benzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		
	Toluene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		
Rice Engineering Operating F-17 Lea County, New Mexico	TDS Benzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		
neering F-17 nty, Nev	TDS	589	1540	2160	1300	726	896	3120	6280	4640	4770	4540	4830	4410	4340	3440	2170	2410	2610	2110	1765	I	
ce Engi ea Cou	ō	177	549	851	415	195	284	886	2970	2510	2310	1890	2400	2090	2130	1930	1020	1480	1110	637	720		
Ri	Sample Date	06/05/03	08/22/03	11/20/03	02/25/04	05/27/04	09/02/04	12/21/04	01/16/05	04/28/05	06/21/05	09/16/05	10/17/05	01/16/06	04/11/06	07/11/06	10/05/06	02/06/07	04/16/07	07/23/07	10/04/07		
	Volume	4 5	4.5	4.3	4.2	6.4	4.4	4.5	4.26	5.0	10.0	12.0	5.0	8.0	8.0	10.0	10.0	8.0	8.0	8.0	8.0		
	Well	1 5240	1.50	1.456	1.40	2.13	1.46	1.42	1.42	1.44	1.43	1.40	1.40	1.40	1.40	1.40	1.40	1.90	1.90	1.90	1.90		
	Total	85 20	85.12	84.85	84.48	85.12	84.60	84.00	84.07	84.20	84.15	84.20	84.20	84.20	84.20	84.20	84.20	87.35	87.35	87.35	87.35		
	Depth to	75.67	75.73	75.75	75.73	71.75	75.48	75.10	75.18	75.21	75.20	75.21	75.20	85.15	75.20	75.22	75.22	75.22	75.24	75.25	75.24		
	MM		-	-	-	-	-	-		-	-	-	-	-	-	-	-	•	-	+	-		

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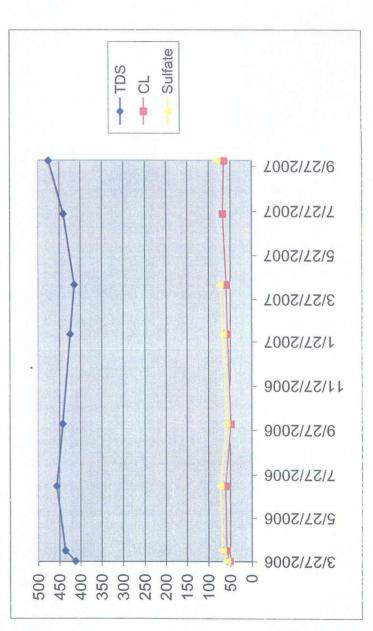
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Rice Engineering Operating F-17 Lea County, New Mexico MW-1

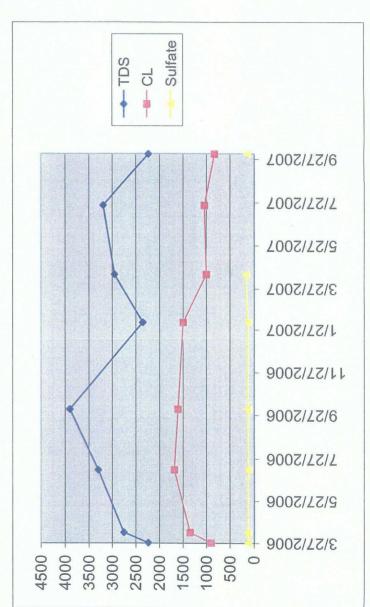


		Comments					59.2 Clear no odor	66.5 Clear no odor	74.2 Clear no odor	Sandy	80.5 Clear no odor
		Sulfate		58.4	68.2	73.3	59.2	66.5	74.2		80.5
		Total Xylenes		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.003
		Toluene Ethyl Benzene Total Xylenes Sulfate		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
		Toluene		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Rice Engineering Operating	Lea County, New Mexico	TDS Benzene		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
neering	nty, Nev	TDS		412	436	456	442	424	414	440	475
e Engir	ea Cour	U		50.8	57.9	60.5	47.6	56	58.5	66.8	64
Rio	Le	Sample	Date	03/27/06	04/11/06	07/11/06	10/05/06	02/06/07	04/16/07	07/23/07	10/04/07
		Volume	Purged	10.0	10.0	10.0	10.0	10.0	8.0	8.0	8.0
		Well	Volume	2.30	2.30	2.30	2.30	2.20	2.20	2.20	2.20
		Total	Depth	90.00	90.00	90.00	90.00	89.44	89.44	89.44	89.44
		Depth to	Water	75.55	75.90	75.60	75.62	75.61	75.62	75.68	75.61
		MM		2	2	2	2	2	2	2	2

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		Comments					Clear	Clear	Clear	Clear	Clear
		Sulfate		126	138	125	134	132	177		150
		Total Xylenes		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.003
		Toluene Ethyl Benzene Total Xylenes Sulfate		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
		Toluene I		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Rice Engineering Operating F-17	Lea County, New Mexico	TDS Benzene		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
leering F-17	ity, New	TDS		2240	2750	3300	3900	2350	2950	3190	830 2235
e Engin	ea Cour	Ū		901	1340	1680	1600	1490	666	1040 3190	830
Ric	Le	Sample	Date	03/27/06	04/11/06	07/11/06	10/05/06	02/06/07	04/16/07	07/23/07	10/04/07
		Volume	Purged		10.0	10.0	10.0	10.0	10.0	8.0	8.0
		Well	Volume	2.30	2.30	2.30	2.20	2.20	2.20	2.20	2.20
		Total	Depth	88.00	88.00	88.00	88.00	87.84	87.84	87.84	87.84
		Depth to	Water	73.91	73.93	73.91	73.95	73.92	73.92	73.98	73.97
		MM		3	3	3	3	3	3	3	3



## APPENDIX A

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A Xenco Laboratories Company

12600 West 1-20 East - Odessa, Texas 79765

# Analytical Report

**Prepared for:** 

Kristin Farris-Pope Rice Operating Co. 122 W. Taylor Hobbs, NM 88240

Project: BD Junction F-17 Project Number: None Given Location: T17S R37E Sec17 F ~ Lea County New Mexico

Lab Order Number: 7B09004

Report Date: 02/19/07

ſ	Rice Operating Co.	Project:	BD Junction F-17	Fax: (505) 397-1471
	122 W. Taylor	Project Number:	None Given	
	Hobbs NM, 88240	Project Manager:	Kristin Farris-Pope	
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#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Monitor Well #1	7B09004-01	Water	02/06/07 10:20	02-08-2007 16:50
Monitor Well #2	7B09004-02	Water	02/06/07 09:25	02-08-2007 16:50
Monitor Well #3	7B09004-03	Water	02/06/07 11:10	02-08-2007 16:50

Rice Operating Co. 122 W. Taylor	Project: BD Junction F-17 Project Number: None Given Project Manager: Kristin Farris-Pope	
Hobbs NM, 88240		

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Monitor Well #1 (7B09004-01) Water									
Benzene	ND	0.00100	mg/L	1	EB71210	02/12/07	02/13/07	EPA 8021B	
Toluene	ND	0.00100	н	"		н		•	
Ethylbenzene	ND	0.00100	n	n.	u	"	u	11	
Xylene (p/m)	ND	0.00100	"	0	"	"	н	п	
Xylene (o)	ND	0.00100	"	"	"	"	"	**	
Surrogate: a,a,a-Trifluorotoluene		84.8 %	80-12	0	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		82.0 %	80-12	0	"	"	"	n	
Monitor Well #2 (7B09004-02) Water			•						
Benzene	ND	0.00100	mg/L		EB71210	02/12/07	02/13/07	EPA 8021B	
Toluene	ND	0.00100	"	"	"	11	"	"	
Ethylbenzene	ND	0.00100	H	H	"	"	"		
Xylene (p/m)	ND	0.00100	**	"	u	"	n '	**	
Xylene (o)	ND	0.00100	"	"	11	"	н.	11	
Surrogate: a,a,a-Trifluorotoluene		83.6 %	80-12	20	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		80.8 %	80-12	0	"	"	"	"	
Monitor Well #3 (7B09004-03) Water									
Benzene	ND	0.00100	mg/L	1	EB71210	02/12/07	02/13/07	EPA 8021B	
Toluene	ND	0.00100		•	•	"	н	"	
Ethylbenzene	ND	0.00100	п	"		11	"	"	
Xylene (p/m)	ND	0.00100	11	н	н	11	"	"	
Xylene (o)	ND	0.00100	"	"	"		11	н	
Surrogate: a,a,a-Trifluorotoluene		82.8 %	80-12	20	"	"	n	"	
Surrogate: 4-Bromofluorobenzene		80.6 %	80-12	20	"	"	"	"	

Environmental Lab of Texas

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A Xenco Laboratories Company

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Environmental Lab of Texas.

Rice Operating Co. 122 W. Taylor Hobbs NM, 88240

#### Project: BD Junction F-17 Project Number: None Given Project Manager: Kristin Farris-Pope

#### General Chemistry Parameters by EPA / Standard Methods

#### **Environmental Lab of Texas**

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Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Monitor Well #1 (7B09004-01) Water									
Total Alkalinity	212	2.00	mg/L	1	EB71213	02/10/07	02/10/07	EPA 310.1M	
Chloride	1480	25.0	n	50	EB71202	02/12/07	02/13/07	EPA 300.0	
Total Dissolved Solids	2410	10.0	"	1	EB71003	02/09/07	02/10/07	EPA 160.1	
Sulfate	120	25.0	"	50	EB71202	02/12/07	02/13/07	EPA 300.0	
Monitor Well #2 (7B09004-02) Water									
Total Alkalinity	182	2.00	mg/L	1	EB71213	02/10/07	02/10/07	EPA 310.1M	
Chloride	56.0	5.00	"	10	EB71202	02/12/07	02/13/07	EPA 300.0	
Total Dissolved Solids	424	10.0	"	1	EB71003	02/09/07	02/10/07	EPA 160.1	
Sulfate	66.5	5.00	н	10	EB71202	02/12/07	02/13/07	EPA 300.0	
Monitor Well #3 (7B09004-03) Water									
Total Alkalinity	280	2.00	mg/L	I	EB71213	02/10/07	02/10/07	EPA 310.1M	
Chloride	1490	25.0	u	50	EB71202	02/12/07	02/13/07	EPA 300.0	
Total Dissolved Solids	2350	10.0		1	EB71003	02/09/07	02/10/07	EPA 160.1	
Sulfate	132	25.0		50	EB71202	02/12/07	02/13/07	EPA 300.0	

Environmental Lab of Texas

A Xenco Laboratories Company

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Environmental Lab of Texas.

Rice Operating Co.	Project:	BD Junction F-17	Fax: (505) 397-1471
122 W. Taylor	Project Number:	None Given	
Hobbs NM, 88240	Project Manager:	Kristin Farris-Pope	·

#### Total Metals by EPA / Standard Methods

#### **Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Monitor Well #1 (7B09004-01) Water									
Calcium	234	4.05	mg/L	50	EB70903	02/09/07	02/09/07	EPA 6010B	
Magnesium	118	1.80	"	"	н 1		۳,		
Potassium	10.1	0.600	н	10	"		Ħ	11	
Sodium	586	2.15	11	50	"		11	n	
Monitor Well #2 (7B09004-02) Water									
Calcium	41.8	0.810	mg/L	10	EB70903	02/09/07	02/09/07	EPA 6010B	
Magnesium	19.4	0.360	н	"		"	It	"	
Potassium	3.55	0.600	"	п	"		11	"	
Sodium	55.1	2.15	11	50	"	la I	11	**	
Monitor Well #3 (7B09004-03) Water									
Calcium	353	4.05	mg/L	50	EB70903	02/09/07	02/09/07	EPA 6010B	
Magnesium	148	1.80	"		"	n	*1	"	
Potassium	14.3	0.600	"	10	н	n	"	"	

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Environmental Lab of Texas

Sodium

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The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Environmental Lab of Texas.

Rice Operating Co.		Pr	oject: BD	Junction F-I	7				Fax: (505)	397-147
122 W. Taylor		Project Nu	mber: No	ne Given						
Hobbs NM, 88240		Project Mar	nager: Kr	istin Farris-Pe	ope					
	0	rganics by	GC - Q	uality Co	ontrol					
		Environm	iental L	ab of Tex	as					
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EB71210 - EPA 5030C (GC)										
Blank (EB71210-BLK1)				Prepared: 0	2/12/07 A	nalyzed: 02	2/13/07			
Benzene	ND	0.00100	mg/L							
Toluene	ND	0.00100	н							
Ethylbenzene	ND	0.00100	н							
Xylene (p/m)	ND	0.00100	"							
Xylene (o)	ND	0.00100	"							
Surrogate: a,a,a-Trifluorotoluene	42.1		ug/l	50.0		84.2	80-120			
Surrogale: 4-Bromofluorobenzene	44.1		"	50.0		88.2	80-120			
LCS (EB71210-BS1)				Prepared: 0	)2/12/07 A	nalyzed: 02	2/13/07			
Benzene	0.0473	0.00100	mg/L	0.0500		94.6	80-120		·····	
Toluene	0.0462	0.00100	••	0.0500		92.4	80-120		•	
Ethylbenzene	0.0424	0.00100	11	0.0500		84.8	80-120			
Xylene (p/m)	0.0971	0.00100	н	0.100		97.1	80-120			
Xylene (0)	0.0411	0.00100	н	0.0500		82.2	80-120			
Surrogate: a,a,a-Trifluorotoluene	42.9		ugʻl	50.0		85.8	80-120	·		
Surrogate: 4-Bromofluorobenzene	45.4		. "	50.0		90.8	80-120			
Calibration Check (EB71210-CCV1)				Prepared: (	)2/12/07 A	nalyzed: 02	2/14/07			
Benzene	54.3		ug/l	50.0		109	80-120			
Toluene	51.1			50.0		102	80-120			
Ethylbenzene	48.1		"	50.0		96.2	80-120			
Xylene (p/m)	93.3		0	100		93.3	80-120			
Xylene (0)	40.3		n	50.0		80.6	80-120			
Surrogate: a,a,a-Trifluorotoluene	50.2		"	50.0		100	80-120			
Surrogate: 4-Bromofluorohenzene	44.3		"	50.0		88.6	80-120			
Matrix Spike (EB71210-MS1)	Source: 7B09003-01 Prepared: 02/12/07 Analyzed: 02/14/					2/14/07				
Benzene	0.0448	0.00100	mg/L	0.0500	ND	89.6	80-120			
Toluene	0.0427	0.00100	"	0.0500	ND	85.4	80-120			
Ethylbenzene	0.0409	0.00100		0.0500	ND	81.8	80-120			
Xylene (p/m)	0.0831	0.00100	"	0.100	ND	83. I	80-120			
Xylene (0)	0.0406	0.00100.0	"	0.0500	ND	81.2	80-120			
Surrogate: a,a,a-Trifluorotoluene	42.5		ugʻl	50.0		85.0	80-120			
Surrogate: 4-Bromofluorobenzene	41.2		"	50.0		82.4	80-120			

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Rice Operating Co.	Project: BD Junction F-17	Fax: (505) 397-1471
122 W. Taylor	Project Number: None Given	
Hobbs NM, 88240	Project Manager: Kristin Farris-Pope	

#### **Organics by GC - Quality Control**

#### **Environmental Lab of Texas**

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch EB71210 - EPA 5030C (GC)

Matrix Spike Dup (EB71210-MSD1)	Sou	Source: 7B09003-01			2/12/07 A					
Benzene	0.0439	0.00100	mg/L	0.0500	ND	87.8	80-120	2.03	20	
Toluene	0.0420	0.00100	"	0.0500	ND	84.0	80-120	1.65	20	
Ethylbenzene	0.0417	0.00100	"	0.0500	ND	83.4	80-120	1.94	20	
Xylene (p/m)	0.0817	0.00100	"	0,100	ND	81.7	80-120	1.70	20	
Xylene (o)	0.0400	0.00100	н	0.0500	ND	80.0	80-120	1.49	20	
Surrogate: a,a,a-Trifluorotoluene	41.0		ug/l	50.0		82.0	80-120			
Surrogate: 4-Bromofluorobenzene	40.3		"	50.0		80.6	80-120			

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Rice Operating Co.Project:BD Junction F-17Fax: (505) 397122 W. TaylorProject Number:None Given									Fax: (505)	397-1471
Hobbs NM, 88240				istin Farris-Po	ope					
						da Oua	Lity Cond			
General Cr	1emistry Para	Environm				as - Qua	itty Con	1701		x
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
	Kesuit		Clifts		Kesuit				Lunt	
Batch EB71003 - Filtration Preparation										
Blank (EB71003-BLK1) Total Dissolved Solids	ND	10.0		Prepared: (	02/09/07 A	nalyzed: 02	/10/07			
Total Dissolved Solids	UNI	10.0	mg/L							
Duplicate (EB71003-DUP1)	Sou	rce: 7B09002-	01	Prepared: (	)2/09/07 A	nalyzed: 02	/10/07			
Fotal Dissolved Solids	852	10.0	mg/L		908			6.36	20	
Duplicate (EB71003-DUP2)	Sou	rce: 7B09006-	02	Prepared: (	)2/09/07 A	Analyzed: 02	/10/07			
T. 10: 1 10:11	1550	10.0						0.76	20	
Total Dissolved Solids	1550	10.0	mg/L		1420			8.75	20	
Total Dissolved Solids Batch EB71202 - General Preparation (V			mg/L		1420			8.73	20	
Batch EB71202 - General Preparation (V Blank (EB71202-BLK2)	WetChem)	•		Prepared: (		Analyzed: 02	2/13/07	8.75		
Batch EB71202 - General Preparation ( Blank (EB71202-BLK2) Chloride	WetChem)	0.500	mg/L	Prepared: (		Analyzed: 02	2/13/07	8.73		
Batch EB71202 - General Preparation (V Blank (EB71202-BLK2)	WetChem)	•		Prepared: (		Analyzed: 02	2/13/07	8.75		
Batch EB71202 - General Preparation ( Blank (EB71202-BLK2) Chloride Sulfate	WetChem)	0.500	mg/L		02/12/07 A	Analyzed: 02 Analyzed: 02		8.73	20	
Batch EB71202 - General Preparation ( Blank (EB71202-BLK2) Chloride Sulfate LCS (EB71202-BS1)	WetChem)	0.500	mg/L		02/12/07 A	)		8.75	20	
Batch EB71202 - General Preparation ( Blank (EB71202-BLK2) Chloride Sulfate LCS (EB71202-BS1) Chloride	WetChem) ND ND	0.500 0.500	ıng/L "	Prepared: (	02/12/07 A	Analyzed: 02	2/13/07	8. <i>13</i>	20	
Batch EB71202 - General Preparation ( Blank (EB71202-BLK2) Chloride	WetChem) ND ND 10.5	0.500 0.500 0.500	mg/L mg/L	Prepared: ( 10.0 10.0	02/12/07 A	Analyzed: 02	2/13/07 80-120 80-120	6.73		
Batch EB71202 - General Preparation ( Blank (EB71202-BLK2) Chloride Sulfate LCS (EB71202-BS1) Chloride Sulfate	WetChem) ND ND 10.5	0.500 0.500 0.500	mg/L mg/L	Prepared: ( 10.0 10.0	02/12/07 A	Analyzed: 02 105	2/13/07 80-120 80-120	6.75	20	
Batch EB71202 - General Preparation ( Blank (EB71202-BLK2) Chloride Sulfate LCS (EB71202-BS1) Chloride Sulfate Calibration Check (EB71202-CCV1) Sulfate	WetChem) ND ND 10.5 11.1	0.500 0.500 0.500	mg/L " mg/L "	Prepared: ( 10.0 10.0 Prepared: (	02/12/07 A	Analyzed: 02 105 111 Analyzed: 02	2/13/07 80-120 80-120 2/13/07	<b>0</b> , / <b>)</b>		
Batch EB71202 - General Preparation ( Blank (EB71202-BLK2) Chloride Sulfate LCS (EB71202-BS1) Chloride Sulfate Calibration Check (EB71202-CCV1)	WetChem) ND ND 10.5 11.1 10.1 10.3	0.500 0.500 0.500	mg/L " mg/L " mg/L	Prepared: ( 10.0 10.0 Prepared: ( 10.0 10.0	02/12/07 A	Analyzed: 02 105 111 Analyzed: 02 101	2/13/07 80-120 80-120 2/13/07 80-120 80-120	<b>0</b> , / <b>)</b>		
Batch EB71202 - General Preparation (V Blank (EB71202-BLK2) Chloride Sulfate LCS (EB71202-BS1) Chloride Sulfate Calibration Check (EB71202-CCV1) Sulfate Chloride Duplicate (EB71202-DUP1)	WetChem) ND ND 10.5 11.1 10.1 10.3	0.500 0.500 0.500 0.500	mg/L " mg/L " mg/L	Prepared: ( 10.0 10.0 Prepared: ( 10.0 10.0	02/12/07 A	Analyzed: 02 105 111 Analyzed: 02 101 103	2/13/07 80-120 80-120 2/13/07 80-120 80-120	3.39	20	
Batch EB71202 - General Preparation ( Blank (EB71202-BLK2) Chloride Sulfate LCS (EB71202-BS1) Chloride Sulfate Calibration Check (EB71202-CCV1) Sulfate Chloride Duplicate (EB71202-DUP1) Sulfate	WetChem) ND ND 10.5 11.1 10.1 10.3 Sou	0.500 0.500 0.500 0.500 0.500 rce: 7B09002-	mg/L " mg/L " mg/L " 01RE1	Prepared: ( 10.0 10.0 Prepared: ( 10.0 10.0	02/12/07 A	Analyzed: 02 105 111 Analyzed: 02 101 103	2/13/07 80-120 80-120 2/13/07 80-120 80-120		· · · · · · · · · · · · · · · · · · ·	
Batch EB71202 - General Preparation ( Blank (EB71202-BLK2) Chloride Sulfate LCS (EB71202-BS1) Chloride Sulfate Calibration Check (EB71202-CCV1) Sulfate Chloride	WetChem) ND ND 10.5 11.1 10.1 10.3 Sou 20.3 33.3	0.500 0.500 0.500 0.500 0.500 rce: 7B09002- 10.0	mg/L " mg/L " mg/L " <b>01RE1</b> mg/L "	Prepared: ( 10.0 10.0 Prepared: ( 10.0 10.0 Prepared: (	02/12/07 A 02/12/07 A 02/12/07 A 02/12/07 A 02/12/07 A 21.0 36.8	Analyzed: 02 105 111 Analyzed: 02 101 103	2/13/07 80-120 80-120 2/13/07 80-120 80-120 2/13/07	3.39	20	
Batch EB71202 - General Preparation ( Blank (EB71202-BLK2) Chloride Sulfate LCS (EB71202-BS1) Chloride Sulfate Calibration Check (EB71202-CCV1) Sulfate Chloride Duplicate (EB71202-DUP1) Sulfate Chloride	WetChem) ND ND 10.5 11.1 10.1 10.3 Sou 20.3 33.3	0.500 0.500 0.500 0.500 0.500 <b>rce: 7B09002</b> - 10.0 10.0	mg/L " mg/L " mg/L " <b>01RE1</b> mg/L "	Prepared: ( 10.0 10.0 Prepared: ( 10.0 10.0 Prepared: (	02/12/07 A 02/12/07 A 02/12/07 A 02/12/07 A 02/12/07 A 21.0 36.8	Analyzed: 02 105 111 Analyzed: 02 101 103 Analyzed: 02	2/13/07 80-120 80-120 2/13/07 80-120 80-120 2/13/07	3.39	20	

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Rice Operating Co. 122 W. Taylor Hobbs NM, 88240	2 W. Taylor Project Number: None Given									
General	Chemistry Parar	-		Standard Lab of Tey		ls - Qua	lity Con	trol		
<u> </u>	l				(as					
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EB71202 - General Preparatio	n (WetChem)									
Matrix Spike (EB71202-MS1)	Sourc	e: 7B09002-	01RE1	Prepared: 0	)2/12/07 At	nalyzed: 02	2/13/07			
Sulfate	256	10.0	mg/L	200	21.0	118	80-120			
Chloride	255	10.0	"	200	36.8	109	80-120			
Matrix Spike (EB71202-MS2)	Sourc	e: 7B09006-	02	Prepared: 0	)2/12/07 Ai	nalyzed: 02	2/13/07			
Sulfate	533	12.5	mg/L	250	268	106	80-120		,	
Chloride	845	12.5	"	250	576	108	80-120			
Batch EB71213 - General Preparatio	n (WetChem)									
Blank (EB71213-BLK1)				Prepared &	Analyzed:	02/10/07				
Fotal Alkalinity	ND	2.00	mg/L							
LCS (EB71213-BS1)				Prepared &	Analyzed:	02/10/07				
Bicarbonate Alkalinity	194	2.00	mg/L	200	_	97.0	85-115			
Duplicate (EB71213-DUP1)	Sour	e: 7B09002-	01	Prepared &	Analyzed:	02/10/07				
Total Alkalinity	226	2.00	ıng/L		228			0.881	20	
Reference (EB71213-SRM1)				Prepared &	Analyzed:	02/10/07				
Total Alkalinity	250		mg/L	250		100	90-110			

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Rice Operating Co.	
122 W. Taylor	
Hobbs NM, 88240	

Project: BD Junction F-17 Project Number: None Given Project Manager: Kristin Farris-Pope

#### Total Metals by EPA / Standard Methods - Quality Control

#### **Environmental Lab of Texas**

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch EB70903 - 6010B/No Digestion

Blank (EB70903-BLK1)				Prepared & Analyzed	02/09/07				
Calcium	ND	0,0810	mg/L						
Magnesium	ND	0.0360	"						
Potassium	ND	0.0600	*						
Sodium	ND	0.0430	"						
Calibration Check (EB70903-CCV1)				Prepared & Analyzed	l: 02/09/07				
Calcium	2.10		mg/L	2.00	105	85-115		· · · · · · · · · · · · · · · · · · ·	
Magnesium	2.17		"	2.00	108	85-115			
Potassium	1.73		"	2.00	86.5	85-115			
Sodium	1.78		"	2.00	89.0	85-115			
Duplicate (EB70903-DUP1)	Sour	ce: 7B09002-	01	Prepared & Analyzed	l: 02/09/07				
Calcium	139	4.05	mg/L	137			1.45	20	
Magnesium	25.4	0.360	0	26.3			3.48	20	
Potassium	2.51	0.600	и	2.58			2.75	20	
Sodium	108	2,15	11	110			1.83	20	

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Rice Opera 122 W. Tay Hobbs NM	vlor ·	Project Number:	BD Junction F-17 None Given Kristin Farris-Pope	Fax: (505) 397-1471
		Notes and De	finitions	
DET	Analyte DETECTED			
ND	Analyte NOT DETECTED at or above the reporting limit			
NR	Not Reported			
dry	Sample results reported on a dry weight basis			
RPD '	Relative Percent Difference			
LCS	Laboratory Control Spike			
MS	Matrix Spike			
Dup	Duplicate			

Report Approved By:

1.1272

Date: 2/19/2007

Brent Barron, Laboratory Director/Corp. Technical Director Celey D. Keene, Org. Tech Director Raland K. Tuttle, Laboratory Consultant James Mathis, QA/QC Officer Jeanne Mc Murrey, Inorg. Tech Director

This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

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+	432-563-1800 432-563-1713			~ Lea County New Mexico		🗌 TRRP 🛛 NPDES			51422	CONCRETERS (2010) CORR M.O.M. Total Dissolved Solids (PreSchedule) 24, 48 RUSH TAT (PreSchedule) 24, 48 TAT Warden (2010) Standard (2010) CONCRETERS (2010)	×	x           x						Ø¥	z z z 2000	(cal	
CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST	Phone: 432-563-1800 Fax: 432-563-1713	Project Name: BD Junction F-17	#	Project Loc: T21S R37E Sec17 F -	Ť	X Standard	, , ,	Analyze For. Triel I I		Cations (Ca. Mg, Na, K) Anions (Ci, SO4, Alkalinity) SAR / ESP / CEC Metals: As Ag Ba Cd Cr Pb Hg 5 Semivolatiles BTEX 60218(IEX-N 8260)		<	X X X				 aboratory Comments:	Sample Containers Intact? VOCs Free of Headspace?	Labels on container (s)	Sample Hand Delivered by Sampler/Client Rep. 7	Temperature Upon Receipt:
RECORD AND		Project Nam	Project #:	Project Lo	# O4	Report Format:			Matrix 8	100 X1 000 X1 1000 1X 1000 1001 1000 1000	2	GW		 			 	<u>; (0; &gt;</u>	Time 100	Time	Time
F CUSTODY	Ω, <sup>th</sup>				ļ	Ř	com		F	)y=Dihking yatet SL=Sludge Other ( Specify)		1 0	1 GW	 				_	Date	Date	つ Date
CHAIN O	12600 West I-20 East Odessa, Texas 79765					(505) 397-1471	rozanne@valornet.com		Preservation & # of Containers	HNO <sup>s</sup> Ice	X 2	X   2	X 2					rozanne@valornet.com			
		mo		<		Fax No: (5	e-mail: <u>ro</u>			Time Sampled ield Filtered iola #. of Containers		9:25 3	11:10 3					@riceswd.com			
		kpope@riceswd.com						1-1-11	2	Date Sampled	2/6/2007	2/6/2007	2/6/2007					mfranks@rices	Received by:	Received by:	Received by ELOT
() () ()		kpor	pany		88240		310		C	diqaD painnipas diqaD painnipas				 	-	 	 _	c	Time 4.50	Time	Time
Lad of lexas		Kristin Farris Pope	<b>RICE Operating Company</b>	122 W. Taylor Street	Hobbs, New Mexico 88240	(505) 393-9174	Rozanne Johnson (505)631-9310											kpope@riceswd.com	2-8-07 4	Date	Date
Environmental L		Project Manager: Kristin	Company Name RICE (	Company Address: 122 W	City/State/Zip: Hobbs	Telephone No: (505)	Sampler Signature: Rozanne		7607004	Elect D CODE	Monitor Well #1	Monitor Well #2	Monitor Well #3				uctions:	ase email to :	Ar	y:	у.
		Prc 2	ပိ	ပိ	Off	Tel	Sa	(lab use oniv)	ORDER #	(¥Ino e≳u del) # 8A.		~_07_ Mo	-03 Mo				 Special Instructions:		Bomiduishedy Rozanne John	Relinquished by.	Relinquished by.

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### Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

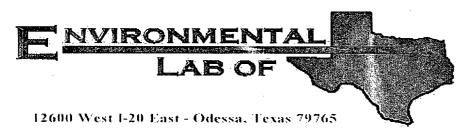
Client:	Rive op.
Date/ Time:	2/8/07 4:50
Lab ID # :	nB69004
Initials:	Cuf-

#### Sample Receipt Checklist

	· · · · · · · · · · · · · · · · · · ·			Client Initia
#1	Temperature of container/ cooler?	Yes	No	2,5 °C
#2	Shipping container in good condition?	Kes	No	
#3	Custody Seals intact on shipping container/ cooler?	Yes	No	Not Present
#4	Custody Seals intact on sample bottles/ container?	Yes	No	Not Present
<b>#</b> 5	Chain of Custody present?	¥es>	No	
#6	Sample instructions complete of Chain of Custody?	KE\$>	No	
#7	Chain of Custody signed when relinquished/ received?	fes	No	
#8	Chain of Custody agrees with sample label(s)?	Yes	No	ID written on Cont./ Lid
<b>#</b> 9	Container label(s) legible and Intact?	Xes	No	Not Applicable
<u>#1</u> 0	Sample matrix/ properties agree with Chain of Custody?	Fes	No	
#11	Containers supplied by ELOT?	Yes	No	
#12	Samples in proper container/ bottle?	(Yes	No	See Below
#13	Samples properly preserved?	Ves	No	See Below
#14	Sample bottles intact?	Yes	No	
#15	Preservations documented on Chain of Custody?	Yes	No	
#16	Containers documented on Chain of Custody?	Yes	No	
#17	Sufficient sample amount for indicated test(s)?	Ves	No	See Below
#18	All samples received within sufficient hold time?	YES	No	See Below
#19	Subcontract of sample(s)?	Yes	No	Not Applicable
#20	VOC samples have zero headspace?	Yes	No	Not Applicable

#### Variance Documentation

Contact:		Contacted by:	Date/ Time:
Regarding:			
			· · · · · · · · · · · · · · · · · · ·
Corrective Action Taken:			
		╼┲┲╼═╧╡╴╶╗╼═╧╪╡╡┩╷╴╺╕╗ <sup>┲</sup> ╧╡╷┲╍ <u>┲┲</u> ╧╘╶ <mark>╞╶╶</mark> ╍┶╧╝╝ <sup>╋</sup> ┥┍╴╺┲╍══╝┝╛╶╓╶╝╓╨═┾┱╖	
	· · · · · · · · · · · · · · · · · · ·	<u></u>	
Check all that Apply:		See attached e-mail/ fax Client understands and would like to p	proceed with analysis
		Cooling process had begun shortly af	



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# Analytical Report

Prepared for:

Kristin Farris-Pope Rice Operating Co. 122 W. Taylor Hobbs, NM 88240

Project: BD Jct. F-17 Project Number: None Given Location: T21S R37E Sec17 F ~ Lea County New Mexico

Lab Order Number: 7D18020

Report Date: 05/04/07

ĺ	Rice Operating Co.	Project:	BD Jct. F-17	Fax: (505) 397-1471
	122 W. Taylor	Project Number:	None Given	
	Hobbs NM, 88240	Project Manager:	Kristin Farris-Pope	

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Monitor Well # 1	7D18020-01	Water	04/16/07 10:10	04-18-2007 14:55
Monitor Well # 2	7D18020-02	Water	04/16/07 09:15	04-18-2007 14:55
Monitor Well # 3	7D18020-03	Water	04/16/07 11:20	04-18-2007 14:55

Rice Operating Co. 122 W. Taylor Hobbs NM, 88240	Project: BD Jct. F-17 Project Number: None Given Project Manager: Kristin Farris-Pope						Fax: (505) 397-1471		
<u> </u>		Org	ganics b	y GC		<u>.</u>			
		Environn			exas				
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Monitor Well # 1 (7D18020-01) Water							· • <b>••</b> •••		· · · · · · · · · · · · · · · · · · ·
Benzene	ND	0.00100	mg/L	1	ED72007	04/20/07	04/24/07	EPA 8021B	
Toluene	ND	0.00100		"	п	11	н	**	
Ethylbenzene	ND	0.00100	"	. "	п	**	"	17	
Xylene (p/m)	ND	0.00100	11	"	u	"	н	н	
Xylene (o)	ND	0.00100	ч	n		и	11	"	
Surrogate: a,a,a-Trifluorotoluene		117 %	80-120		"	"	"	п	
Surrogate: 4-Bromofluorobenzene		112 %	80-120		"	"	"	n	
Monitor Well # 2 (7D18020-02) Water									
Benzene	ND	0.00100	mg/L	1	ED72007	04/20/07	04/24/07	EPA 8021B	
Toluene	ND	0.00100	n	"	н	"		и	
Ethylbenzene	ND	0.00100	u	'n	n	n	33	"	
Xylene (p/m)	ND	0.00100		"	*	u	"	n	
Xylene (o)	ND	0.00100	"	н	*	и		"	
Surrogate: a,a,a-Trifluorotoluene		116 %	80-	120	"	n	"	"	
Surrogate: 4-Bromofluorobenzene		109 %	80	120	"	"	"	"	
Monitor Well # 3 (7D18020-03) Water									
Benzene	ND	0.00100	mg/L	I	ED72007	04/20/07	04/24/07	EPA 8021B	
Toluene	ND	0.00100	*1		11	"	н		
Ethylbenzene	ND	0.00100	"	."	"	н	11	n	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	н	
Xylene (o)	ND	0.00100	"	"	n	11	"	п	

121 %

112 %

80-120

80-120

"

"

"

"

Environmental Lab of Texas

Surrogate: a,a,a-Trifluorotoluene

Surrogate: 4-Bromofluorobenzene

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5-04

Rice Operating Co. 122 W. Taylor Hobbs NM, 88240

#### Project: BD Jct. F-17 Project Number: None Given Project Manager: Kristin Farris-Pope

#### General Chemistry Parameters by EPA / Standard Methods

#### **Environmental Lab of Texas**

							· · · ·		· · · · · · · · · · · · · · · · · · ·
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Monitor Well # 1 (7D18020-01) Water									
Total Alkalinity	216	2.00	mg/L	l	ED71913	04/19/07	04/19/07	EPA 310.1M	
Chloride	1110	25.0	"	50	ED72411	04/24/07	04/27/07	EPA 300.0	
Total Dissolved Solids	2610	10.0	n	1	ED72104	04/21/07	04/23/07	EPA 160.1	
Sulfate	202	25.0	11	50	ED72411	04/24/07	04/27/07	EPA 300.0	
Monitor Well # 2 (7D18020-02) Water									
Total Alkalinity	194	2.00	mg/L	1	ED71913	04/19/07	04/19/07	EPA 310.1M	
Chloride	58.5	5.00	"	10	ED72411	04/24/07	04/27/07	EPA 300.0	
Total Dissolved Solids	414	10.0	"	1	ED72104	04/21/07	04/23/07	EPA 160.1	
Sulfate	74.2	5.00	R	10	ED72411	04/24/07	04/27/07	EPA 300.0	
Monitor Well # 3 (7D18020-03) Water									
Total Alkalinity	248	2.00	mg/L	1	ED71913	04/19/07	04/19/07	EPA 310.1M	
Chloride	999	12.5	u.	25	ED72411	04/24/07	04/27/07	EPA 300.0	
Total Dissolved Solids	2950	10.0	р	1	ED72104	04/21/07	04/23/07	EPA 160.1	
Sulfate	177	12.5	"	25	ED72411	04/24/07	04/27/07	EPA 300.0	

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Rice Operating Co. 122 W. Taylor Hobbs NM, 88240

### Project: BD Jct. F-17 Project Number: None Given Project Manager: Kristin Farris-Pope

### Total Metals by EPA / Standard Methods

#### **Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
Monitor Well # 1 (7D18020-01) Water									
Calcium	229	4.05	mg/L	50	ED72703	04/27/07	04/27/07	EPA 6010B	
Magnesium	122	1.80	"	н	,,	**	п	"	
Potassium	8.29	0.600	9	10		"	н	. "	
Sodium	343	4.30	w	100	. "	"	n	u	
Monitor Well # 2 (7D18020-02) Water		U							
Calcium	42.6	0.810	mg/L	10	ED72703	04/27/07	04/27/07	EPA 6010B	
Magnesium	20.6	0.360	"	**	*	"	u		
Potassium	4.03	0.600	"	n	"	п	"	**	
Sodium	63.7	0.430		и		"	n	11	
Monitor Well # 3 (7D18020-03) Water									
Calcium	310	4.05	mg/L	50	ED72703	04/27/07	04/27/07	EPA 6010B	
Magnesium	136	1.80	"	۳	"	н	n	н	
Potassium	9.94	0.600		10		н	н	п	
Sodium	271	4.30	"	100	н		11	u	

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Rice Operating Co. 122 W. Taylor Hobbs NM, 88240

### Project: BD Jct. F-17 Project Number: None Given Project Manager: Kristin Farris-Pope

# **Organics by GC - Quality Control**

# **Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
				Level		76KEC			Lunt	
Batch ED72007 - EPA 5030C (GC)									<u></u>	
Blank (ED72007-BLK1)				Prepared: 0	4/20/07 Ai	nalyzed: 04	/24/07			
Benzene	ND	0.00100	mg/L							
Toluene	ND	0.00100	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00100	"							
Xylene (o)	ND	0.00100	"							
Surrogate: a,a,a-Trifluorotoluene	57.6		ug/l	50.0		115	80-120			
Surrogate: 4-Bromofluorobenzene	57.5		"	50.0		115	80-120			
LCS (ED72007-BS1)				Prepared: 0	04/20/07 A	nalyzed: 04	/24/07			
Benzene	0.0528	0.00100	mg/L	0.0500	···· -	106	80-120			
Toluene	0.0551	0.00100	"	0.0500		110	80-120			
Ethylbenzene	0.0567	0.00100	"	0.0500		113	80-120			
Xylene (p/m)	0.107	00100,0	"	0.100		107	80-120			
Xylene (0)	0.0574	0.00100	н	0.0500		115	80-120			
Surrogate: a,a,a-Trifluorotoluene	56.7		ug/l	50.0		113	80-120			
Surrogate: 4-Bromofluorobenzene	55.1		"	50.0		110	80-120			
Calibration Check (ED72007-CCV1)				Prepared: (	04/20/07 A	nalyzed: 04	/24/07			
Benzene	54.8		ug/l	50.0		110	80-120			
Toluene	55.1		n	50.0		110	80-120			
Ethylbenzene	56.5			50.0		113	80-120			
Xylene (p/m)	106		"	100		106	80-120			
Xylene (o)	57.1		11	50.0		114	80-120			
Surrogate: a,a,a-Trifluorotoluene	56.9		"	50.0		114	80-120			
Surrogate: 4-Bromofluorobenzene	53.1		"	50.0		106	80-120			
Matrix Spike (ED72007-MS1)	Sou	ırce: 7D18018-	-03	Prepared: (	)4/20/07 A	nalyzed: 04	/24/07			
Benzene	0.0552	0.00100	mg/L	0.0500	ND	110	80-120			
Toluene	0.0573	0.00100	н	0.0500	ND	115	80-120			
Ethylbenzene	0.0565	0.00100	11	0.0500	ND	113	80-120			
Xylene (p/m)	0.109	0.00100	"	0.100	ND	109	80-120			
Xylene (o)	0.0598	0.00100	"	0.0500	ND	120	80-120			
Surrogate: a,a,a-Trifluorotoluene	58.3		ug 1	50.0		117	80-120			
Surrogate: 4-Bromofluorobenzene	57.6		"	50.0		115	80-120			

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Rice Operating Co.	Project:	BD Jct. F-17	Fax: (505) 397-1471
122 W. Taylor	Project Number:	None Given	·
Hobbs NM, 88240	Project Manager:	Kristin Farris-Pope	

# **Organics by GC - Quality Control**

**Environmental Lab of Texas** 

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

### Batch ED72007 - EPA 5030C (GC)

Matrix Spike Dup (ED72007-MSD1)	Sou	rce: 7D18018-	03	Prepared: 0	4/20/07 A	nalyzed: 04	4/24/07			
Benzene	0.0549	0.00100	mg/L	0.0500	ND	110	80-120	0.00	20	
Toluene	0.0575	0.00100	"	0.0500	ND	115	80-120	0.00	20	
Ethylbenzene	0.0593	0.00100		0.0500	ND	119	80-120	5.17	20	
Xylene (p/m)	0.111	0.00100	"	0.100	ND	111	80-120	1.82	20	
Xylene (o)	0.0611	0.00100	п	0.0500	ND	122	80-120	1.65	20	QM-07
Surrogate: a,a,a-Trifluorotoluene	60.0		ug/l	50.0		120	80-120		~~~	
Surrogate: 4-Bromofluorobenzene	58.8		"	50.0		118	80-120			

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Rice Operating Co.		Pro	oject: BI	) Jct. F-17					Fax: (505)	397-1471
122 W. Taylor		Project Nu	•							
Hobbs NM, 88240				istin Farris-P	ope					
General	Chemistry Para	•		•		ls - Qua	lity Con	trol		
		Environm	ental I	Lab of Te	kas	``````````````````````````````````````				
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch ED71913 - General Preparatio	n (WetChem)									
Blank (ED71913-BLK1)				Prepared &	Analyzed:	04/19/07				
Total Alkalinity	ND	2.00	mg/L	·····						
LCS (ED71913-BS1)				Prepared &	Analyzed:	04/19/07				
Bicarbonate Alkalinity	176	2.00	mg/L	200		88.0	85-115			
Duplicate (ED71913-DUP1)	Sour	-ce: 7D18017-	01	Prepared &	Analyzed:	04/19/07				
Fotal Alkalinity	226	2.00	mg/L		232			2.62	20	
Reference (ED71913-SRM1)				Prepared &	2 Analyzed:	04/19/07				
Total Alkalinity	246		mg/L	250		98.4	90-110			
Batch ED72104 - Filtration Preparat	ion									
Blank (ED72104-BLK1)				Prepared: (	04/21/07 A	nalyzed: 04	/23/07			
Total Dissolved Solids	ND	10.0	mg/L							
Duplicate (ED72104-DUP1)	Sou	rce: 7D18020-	-03	Prepared: (	04/21/07 A	nalyzed: 04	1/23/07			
Total Dissolved Solids	2450	10.0	mg/L		2950	*		18.5	20	
Batch ED72411 - General Preparatio	n (WetChem)									
Blank (ED72411-BLK1)				Prepared &	& Analyzed	04/24/07				
Chloride	ND	0.500	mg/L							
Sulfate	ND	0.500								
Blank (ED72411-BLK2)				Prepared:	04/24/07 A	nalyzed: 04	4/27/07			
Chloride	ND	0.500	mg/L							
Sulfate	ND	0.500								

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# General Chemistry Parameters by EPA / Standard Methods - Quality Control

### **Environmental Lab of Texas**

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch ED72411 - General Preparation (V	VetChem)									
LCS (ED72411-BS1)				Prepared: 0	04/24/07 A	nalyzed: 04	1/27/07			
Sulfate	9.66	0.500	mg/L	10.0		96.6	80-120			
Chloride	9.02	0.500	11	10.0		90.2	80-120			
Calibration Check (ED72411-CCV1)				Prepared: (	)4/24/07 A	nalyzed: 04	1/27/07			
Sulfate	11.0		mg/L	10.0		110	80-120	,		
Chloride	8.05		н	10.0		80.5	80-120			
Duplicate (ED72411-DUP1)	Sou	ce: 7D23008-	01	Prepared: (	)4/24/07 A	nalyzed: 04	\$/27/07			
Sulfate	74.3	5.00	mg/L		74.0			0.405	20	
Chloride	187	5.00	н		187			0.00	20	
Duplicate (ED72411-DUP2)	Sou	rce: 7D18018	•06	Prepared: (	04/24/07 A	nalyzed: 04	<b>1</b> /27/0 <b>7</b>			
Chloride	361	12.5	mg/L		367			1.65	20	
Sulfate	492	12.5	"		490			0.407	20	
Matrix Spike (ED72411-MSI)	Sou	rce: 7D23008	-01	Prepared 8	k Analyzed:	04/24/07				
Chloride	291	5.00	mg/L	100	187	104	80-120			
Sulfate	166	5.00	n	100	74.0	92.0	80-120			
Matrix Spike (ED72411-MS2)	Sou	rce: 7D18018	-06	Prepared: (	04/24/07 A	nalyzed: 04	4/27/07			
Chloride	631	12.5	mg/L	250	367	106	80-120			
Sulfate	774	12.5	**	250	490	114	80-120			

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### Project: BD Jct. F-17 Project Number: None Given Project Manager: Kristin Farris-Pope

### Total Metals by EPA / Standard Methods - Quality Control

### **Environmental Lab of Texas**

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

# Batch ED72703 - 6010B/No Digestion

Blank (ED72703-BLK1)				Prepared & Analyz	ed: 04/27/07				
Calcium	ND	0.0810	mg/L						
Magnesium	ND	0.0360	н						
Potassium	ND	0,0600	· H						
Sodium	ND	0.0430	n						
Calibration Check (ED72703-CCV1)				Prepared & Analyz	ed: 04/27/07				
Calcium	1.90		mg/L	2.00	95.0	85-115			
Magnesium	2.07		"	2.00	104	85-115			
Potassium	1.98		"	2.00	99.0	85-115			
Sodium	2.29		. "	2.00	114	85-115			
Duplicate (ED72703-DUP1)	Sour	ce: 7D18014-	01	Prepared & Analyz	ed: 04/27/07				
Calcium	140	4.05	mg/L	133			5.13	20	
Magnesium	76.4	1.80	"	76.8			0.522	20	
Potassium	15.7	0.600	**	15.6			0.639	20	
Sodium	350	4.30		358			2.26	20	

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Rice Oper 122 W. T Hobbs Ni	•	Project: BD Jet. F-17 Project Number: None Given Project Manager: Kristin Farris-Pope	Fax: (505) 397-1471
		Notes and Definitions	
S-04	The surrogate recovery for this	sample is outside of established control limits due to a sample ma	atrix effect.
QM-07	The spike recovery was outside recovery.	acceptance limits for the MS and/or MSD. The batch was accept	ted based on acceptable LCS

ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis

RPD Relative Percent Difference

Analyte DETECTED

- LCS Laboratory Control Spike
- MS Matrix Spike
- Dup Duplicate

DET

Report Approved By:

Brent Barron, Laboratory Director/Corp. Technical Director Celey D. Keene, Org. Tech Director Raland K. Tuttle, Laboratory Consultant

Date:

James Mathis, QA/QC Officer Jeanne Mc Murrey, Inorg. Tech Director

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If you have received this material in error, please notify us immediately at 432-563-1800.

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Environmenta Project Manager: K Company Name Company Address: 1 Company Address: 1	al Lab of Texas CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST	Kristin Farris Pope kpope@riceswd.com	RICE Operating Company	122 W. Taylor Street Project Loc: T21S R37E Sec17 F ~ Lea County New Mexico	Hobbs, New Mexico 88240 Po#:	(505) 393-9174 [X Standard TRRP No. (505) 397-1471 Report Format: X Standard TRRP NPDES	Rozanne Johnson (505)631-9310 / / / e-mail: rozanne@valornet.com			Presenvation & # of Containers Malfrix 50	γι- ζομιφηο         34' τ           Λ6         20(iqz           (30         (30           6         (30           2         1X 1000           3' / 9' / 82(0)         (30           4' V[R3[01]Å)         (4)           5/ / 9' / 82         (1000           2         1X 1000           3' / 9' / 82         (1000           4' V[R3[01]Å)         (1000           1)         (1000           1)         (1000           2         1X 1000           1)         (1000           1)         (1000           1)         (1000           1)         (1000           1)         (1000           1)         (1000           1)         (1000           1)         (1000           1)         (1000           1)         (1000           1)         (1000           1)         (1000           1)         (1000           1)         (1000           1)         (1000           1)         (1000           1)         (1000           1)         (1000	Тоізі Г)ізсої         Кеділлі Д Сері         Колі Сана Санарі         Колі Санарі         Каларі         Каларі	4/16/2007 10:10 3 X 2 1 1 GW X X X X X X X X X X X	4/16/2007 9.15 3 X 2 1 K X X X X X X X X X X	4/16/2007 11:20 3 X 2 1 1 GW X X X X X X X			I to : kpope@riceswd.com matt@riceswd.com rozanne@valornet.com Kpope@riceswd.com matt@riceswd.com rozanne@valornet.com VOCs Free of Headspace?	Time Received by: Date Time Labels of container(s H + r-o7   2:1  Custody seals on con I O MandAnarco	Time Received by Cample Hand Deliver	Date     Time     Received by ELOT:       Date     Time     1 L P314       Marceline     1 L P314
	Environmental Lab of Texas	•	•	,		, ,		English and a second	~		eby 23 25 2 2 2	E E D D D D D D D D D D D D D D D D D D	onitor Well #1	onitor Well #2.	onitor Well #3			ase email to :	J Date	ay (24-18-07)	Date

# Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client:	Pice
Date/ Time:	4-18-07 2:55
Lab D # :	1018028
Initials	al

# Sample Receipt Checklist

				Client Initials
#1	Temperature of container/ cooler?	Tes	No	-1.0 °C
#2	Shipping container in good condition?	Yes	No	
#3	Custody Seals intact on shipping container/ cooler?	Ves	No	Not Present
#4	Custody Seals intact on sample bottles/ container?	Yes	No	Not Present
#5	Chain of Custody present?	Tes	No	
#6	Sample instructions complete of Chain of Custody?	Yes	No	
#7	Chain of Custody signed when relinquished/ received?	Yes	No	
#8	Chain of Custody agrees with sample label(s)?	Yes	No	ID written on Cont./ Lid
#9	Container label(s) legible and intact?	Yes	No	Not Applicable
#10	Sample matrix/ properties agree with Chain of Custody?	Yes	No	
#11	Containers supplied by ELOT?	Yes	No	
#12	Samples in proper container/ bottle?	Ves	No	See Below
#13	Samples properly preserved?	Yes	No	See Below
#14	Sample bottles intact?	Yes	No	
#15	Preservations documented on Chain of Custody?	YES	No	
#16	Containers documented on Chain of Custody?	Yeş	No	
#17	Sufficient sample amount for indicated test(s)?	Yes	No	See Below
#18	All samples received within sufficient hold time?	(Yeş	No	See Below
#19	Subcontract of sample(s)?	Yes	No	Not Applicable
#20	VOC samples have zero headspace?	Yes	No	Not Applicable

	Variance Documenta	ation
Contáct.	 Contacted by:	Date/ Time:
Regarding		
Corrective Action Taken:		
Check all that Apply:	See attached e-mail/ fax Client understands and would like Cooling process had begun shortl	y after sampling event

# Analytical Report 286626

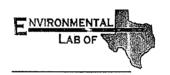
for

**Rice Operating Co.** 

**Project Manager: Kristin Pope** 

**BD** Junction F-17

# 13-AUG-07



12600 West I-20 East Odessa, Texas 79765

A Xenco Laboratories Company

NELAC certification numbers: Houston, TX E871002 - Miami, FL E86678 - Tampa, FL E86675

Houston - Dallas - San Antonio - Austin - Tampa - Miami - Latin America



13-AUG-07



Project Manager: Kristin Pope Rice Operating Co. 122 West Taylor Hobbs, NM 88240

Reference: XENCO Report No: 286626 BD Junction F-17 Project Address: T21S R37E Sec17 F ~ Lea County New Mexico

# Kristin Pope:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 286626. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 286626 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Brent Barron Odessa Laboratory Director

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# Certificate of Analysis Summary 286626 Rice Operating Co., Hobbs, NM





Project Name: BD Junction F-17

		Project N	ame: I	3D Junctio	n F-17			
Project Id:				Date	e Receivo	ed in Lab:	Jul-26-07	/ 02:15 pm
Contact: Kristin Pope					Rep	ort Date:	13-AUG	-07
Project Location: T21S R37E Sec17 F	F ~ Lea Count	y New M			Project I	Manager:	Brent Ba	rron, II
	Lab Id:	286626-0	01 ·	286626-0	02	286626-0	)03	
Analysis Requested	Field Id:	Monitor We	1#1	Monitor We	11 # 2	Monitor We	:11 # 3	
v .	Depth:							
	Matrix:	WATER	٤	WATE	ર	WATE	R 🗍	
	Sampled:	Jul-23-07 1	4:15	Jul-23-07 1	3:20	Jul-23-07 I	5:05	
Alkalinity by EPA 310.1	Extracted:							
Alkalinity by ELA 510.1	Analyzed:	Jul-27-07 I	4:45	Jul-27-07 I	4:45	Jul-27-07 1	14:45	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	
Alkalinity, Total (as CaCO3)		944	4.00	800	4.00	2500	4.00	
BTEX by EPA 8021B	Extracted:	Jul-27-07 1	3:38	Jul-27-07 I	3:38	Jul-27-07	13:38	
	Analyzed:	Jul-30-07 1	8:25	Jul-30-07 1	8:46	Jul-30-07	19:06	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	
Benzene		ND	0.0010	ND	0.0010	ND	0.0010	
Toluene		ND	0.0010	ND	0.0010	ND	0.0010	
Ethylbenzene		ND	0.0010	ND	0.0010	ND	0.0010	
m,p-Xylene		ND	0.0020	ND	0.0020	ND	0.0020	
o-Xylene		ND	0.0010	ND	0.0010	ND	0.0010	
Total Xylenes		ND		ND		ND		
Total BTEX		ND		ND		ND		
Inorganic Anions by EPA 300	Extracted:							
	Analyzed:	Jul-27-07 I	4:53	Jul-27-07 1	4:53	Jul-27-07	14:53	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	
Chloride		637	12.5	66.8	5.00	1040	25.0	
Metals per ICP by SW846 6010B	Extracted:	Jul-31-07 (	1	Jul-31-07 (		Jul-31-07		
	Analyzed:	Jul-31-07 1		Jul-31-07		Jul-31-07		
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	
Calcium			1.00	51.3	1.00	358	1.00	
Magnesium		95.3	0.100	22.8	0.100	160	0.100	
Potassium		6.85	2.00	3.60	2.00	10.9	2.00	
Sodium	Entre	252	. 5.00	57.8	5.00	241	5.00	
Residue, Filterable (TDS) by EPA	Extracted:	1.1 16 07 1	6.20	L.1.26.07	16.20	L.1.26.07	16.20	
160.1	Analyzed: Units/RL:	Jul-26-07 1		Jul-26-07		Jul-26-07		
	Units/KL:	mg/L	RL	mg/L	RL.	mg/L	RL	
Total dissolved solids		2110	5.00	440	5.00	3190	5.00	<u> </u>

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Brent Barron

Odessa Laboratory Director

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- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F RPD exceeded lab control limits.
- J The target analyte was positively identified below the MQL and above the SQL.
- U Analyte was not detected.
- L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- **H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K Sample analyzed outside of recommended hold time.

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# Form 2 - Surrogate Recoveries



# Project Name: BD Junction F-17

ork Order #: 286626			Project ID	):		
Lab Batch #: 701442	Sample: 286626-001 / SM	<sup>p</sup> Bat	ch: 1 Matri	x: Water		
Units: mg/L		SU	RROGATE RE	COVERY	STUDY	
BTEX by I Ana	EPA 8021B lytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene		0.0457	0.0500	91	80-120	
Lab Batch #: 701442	Sample: 286626-002 / SM	P Bat	ch: <sup>l</sup> Matri	x: Water		
Units: mg/L		· SU	RROGATE RE	COVERY S	STUDY	<u></u>
	EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Ana 4-Bromofluorobenzene	lytes	0.0466	0.0500	93	80-120	
	Sample: 286626-003 / SM			x: Water	30-120	
Lab Batch #: 701442 Units: mg/L	Sample: 280020-0037 SM		ch: <sup>1</sup> Matri RROGATE RE		STUDY	
	EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	lytes			[D]		
4-Bromofluorobenzene		0.0541	0.0500	108	80-120	
Lab Batch #: 701442	Sample: 286638-004 S / M	IS Ba	tch: 1 Matri	x: Water		
Units: mg/L	· · · · · · · · · · · · · · · · · · ·	SU	RROGATE RE	ECOVERY	STUDY	
	EPA 8021B lytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene		0.0524	0.0500	105	80-120	
Lab Batch #: 701442	Sample: 286638-004 SD /	MSD Ba	tch: <sup>1</sup> Matri	x: Water		
Units: mg/L		SU	RROGATE RI	ECOVERY	STUDY	
·	EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	lytes			[D]		
4-Bromofluorobenzene		0.0532	0.0500	106	80-120	

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis \*\*\* Poor recoveries due to dilution Surrogate Recovery [D] = 100 \* A / B All results are based on MDL and validated for QC purposes.



# Form 2 - Surrogate Recoveries



# **Project Name: BD Junction F-17**

Vork Order #: 286626		Project I	D:		
Lab Batch #: 701442 Sample: 497682-1-1	BKS / BKS Ba	tch: l Matr	ix: Water		
Units: mg/L	SU	RROGATE R	ECOVERY S	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes 4-Bromofluorobenzene	0.0410	0.0500		00.120	
4-bioinionioiobenzene	0.0410	0.0500	82	80-120	
Lab Batch #: 701442 Sample: 497682-1-	BLK / BLK Ba	tch: 1 Matr	ix: Water		
Units: mg/L	SU	RROGATE R	ECOVERY S	STUDY	
BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
· · · · · · · · · · · · · · · · · · ·					
4-Bromofluorobenzene	0.0451	0.0500	90	80-120	

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis
\*\*\* Poor recoveries due to dilution
Surrogate Recovery [D] = 100 \* A / B
All results are based on MDL and validated for QC purposes.





# **Project Name: BD Junction F-17**

Work Order #: 286626			Pro	oject ID:			
Lab Batch #: 701211 Date Analyzed: 07/27/2007		mple: 701211- pared: 07/27/20			x: Water at: WRU		
Reporting Units: mg/L	Ba	itch #: 1	BLANK /E	BLANK SPI	KE REC	OVERY S	TUDY
Alkalinity by EPA 310.1 Analytes		Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Alkalinity, Total (as CaCO3)		ND	400	340	85	80-120	
Lab Batch #: 701442 Date Analyzed: 07/30/2007 Reporting Units: mg/L	Date Prej	ample: 497682- pared: 07/27/20 atch #: 1	)07		x: Water st: CELKI KE REC		STUDY
BTEX by EPA 8021B Analytes		Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Benzene		ND	0.0500	0.0457	91	70-125	
Toluene		ND	0.0500	0.0468	94	70-125	
Ethylbenzene		ND	0.0500	0.0501	100	71-129	
m,p-Xylene	•	ND	0.1000	0.0898	90	70-131	
o-Xylene		ND	0.0500	0.0475	95	71-133	
Lab Batch #: 701264 Date Analyzed: 07/27/2007		ample: 701264- pared: 07/27/20			x: Water st: IRO		
Reporting Units: mg/L	Ba	atch #: 1	BLANK /I	BLANK SPI	KE REC	COVERY S	STUDY
Inorganic Anions by EPA 300 Analytes		Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Chloride		ND	10.0	9.94	99	90-110	

Blank Spike Recovery [D] = 100\*[C]/[B] All results are based on MDL and validated for QC purposes.

**BS / BSD Recoveries** 

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Project Name: BD Junction F-17

Work Order #: 286626 Lab Batch ID: 701350 Analyst: DAT

Date Prepared: 07/31/2007 Batch #: 1 Sample: 497762-1-BKS

Project ID: Date Analyzed: 07/31/2007 Matrix: Water

Units: mg/L		BLAN	K /BLANK S	SPIKE / E	LANK S	BLANK/BLANK SPIKE/BLANK SPIKE DUPLICATE RECOVERY STUDY	ICATE I	RECOVE	RY STUD	Y	
Metals per ICP by SW846 6010B	Blank Sample Result A	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[ <b>B</b> ]	[c]	<u>a</u>	[E]	Result [F]	[0]				
	QN.	1.00	1.02	102	1.0	1.05	105	ε	75-125	25	
	ŊŊ	1.00	1.13	113	1.0	1.12	112	-	75-125	25	
	DN	10.0	9.95	100	10.0	9.89	66	-	75-125	25	
	QN	11.0	10.8	86	11.0	10.7	67	-	75-125	25	

Relative Percent Difference RPD = 200\*[(D-F)/(D+F)] Blank Spike Recovery [D] = 100\*(C)/[B] Blank Spike Duplicate Recovery [G] = 100\*(F)/[E] All results are based on MDL and Validated for QC Purposes





Sector Sector Sector

**Project Name: BD Junction F-17** 

# Work Order #: 286626

Lab Batch #: 701264			Pro	oject ID:		
Date Analyzed: 07/27/2007	Date Prepared:	07/27/2007	1	Analyst:	IRO	
QC- Sample ID: 286626-003 S	Batch #:	1		Matrix:	Water	
Reporting Units: mg/L	MAT	RIX / MA	TRIX SPIKE	RECO	VERY STU	DY
Inorganic Anions by EPA 300	Parent Sample Result	Spike Added	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes	[A]	[ <b>B</b> ]	(*1	1-1		
Chloride	1040	500	1630	118	90-110	x

Matrix Spike Percent Recovery [D] = 100\*(C-A)/B Relative Percent Difference [E] = 200\*(C-A)/(C+B) All Results are based on MDL and Validated for QC Purposes

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Form 3 - MS / MSD Recoveries 

**Project Name: BD Junction F-17** 



Project ID:

1 Matrix: Water

Batch #:

QC- Sample ID: 286638-004 S Date Prepared: 07/27/2007

Date Analyzed: 07/31/2007

Work Order #: 286626 Lab Batch ID: 701442

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY CELKEE Analyst:

Reporting Units: mg/L		X	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY	E / MAT	RIX SPII	KE DUPLICA	TE RECO	<b>DVERY</b>	STUDY		
BTEX by EPA 8021B	Parent Sample Result	Spike Added	Spiked Sample Spiked Result Sample {C} %R	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	[Y]	[B]		[0]	E]		[C]				
Benzene	0.0309	0.0500	0.0808	100	0.0500	0.0774	93	7	70-125	25	
Toluene	0.0010	0.0500	0.0603	611	0.0500	0.0581	114	4	70-125	25	
Ethylbenzene	QN	0.0500	0.0633	127	0.0500	0.0613	123	3	71-129	25	
m,p-Xylene	0.0042	0.1000	0.1137	110	0.1000	0.1103	106	4	70-131	25	
o-Xylene	DN	0.0500	0.0609	122	0.0500	0.0591	118	3	71-133	25	
Lab Batch ID: 701350 Date Analyzed: 07/31/2007	QC- Sample ID: 286807-001 S Date Prepared: 07/31/2007	286807 07/31/2	-001 S 007	Ba An	Batch #: Analyst: ]	l Matri DAT	Matrix: Water				
Reporting Units: mg/L		Σ	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY	E / MAT	RIX SPII	KE DUPLICA	TE RECO	<b>DVERY</b>	STUDY		

		M	A I KIA SPINI		ILIS VIN	MAIKIA SPINE / MAIKIA SPINE DUFLICATE RECUVERT STUDI	TE KEC	JVEKI -	Iduis		
Metals per ICP by SW846 6010B	Parent Sample	Spike	Spiked Sample Spiked Result Sample S <sub>1</sub>	Spiked Sample		Duplicate S ke Spiked Sample 1	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
Analytes	Result [A]	Added [B]	<u>.</u>	8% [D]	걸臼	Result [F]	%R [G]	%	%R	%RPD	·····
Calcium	300	2.00	307	350	2.00	303	150	80	75-125	20	XF
Magnesium	9.93	2.00	12.1	109	2.00	12.0	104	5	75-125	20	
Potassium	15.1	20.0	39.1	120	20.0	38.9	119	1	75-125	20	
Sodium	4.39	22.0	28.3	109	22.0	27.5	105	4	75-125	20	

Matrix Spike Percent Recovery [D] = 100\*(C-A)/B Relative Percent Difference RPD = 200\*(D-G)/(D+G)

Matrix Spike Duplicate Percent Recovery [G] = 100\*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Natrative, EQL = Estimated Quantitation Limit

Page 10 of 13



# Sample Duplicate Recovery



# **Project Name: BD Junction F-17**

Work Order #: 286626

Lab Batch #: 701211		]	Project II	D:	
Date Analyzed: 07/27/2007 Date Pr	epared: 07/2	7/2007	Analy	st: WRU	
QC- Sample ID: 286139-012 D H	Batch #: 1		Matri	ix: Water	
Reporting Units: mg/L	SAMPLE	SAMPLE I	DUPLIC	ATE REC	OVERY
Alkalinity by EPA 310.1 Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
	2200				
Alkalinity, Total (as CaCO3)	2200	2200	0	20	
Lab Batch #: 701264					
Date Analyzed: 07/27/2007 Date Pr	•	27/2007	Analy	st: IRO	
QC Sample ID: 2000D0 000 D	Batch #: 1		-	ix: Water	
Reporting Units: mg/L	SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
Inorganic Anions by EPA 300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte		[15]			
Chloride	1040	1060	2	20	
Lab Batch #: 701255		. ·			
······································		26/2007	Analy	st: IRO	
Qo bumpie ist coolis of 2	Batch #:			ix: Water	
Reporting Units: mg/L	SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
Residue, Filterable (TDS) by EPA 160.1 Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Total dissolved solids	5020	5370	7	30	
					·
Lab Batch #: 701255					
Lab Batch #: 701255 Date Analyzed: 07/26/2007 Date Pr	epared: 07/2	26/2007	Analy	st: IRO	
Date Analyzed: 07/26/2007 Date Pr	epared: 07/2 Batch #: 1		-	rst: IRO ix: Water	
Date Analyzed: 07/26/2007 Date Pr	Batch #:		Matr	ix: Water	OVERY
Date Analyzed:         07/26/2007         Date Pr           QC- Sample ID:         286633-006 D         1	Batch #:	/ SAMPLE	Matr	ix: Water	OVERY Flag

Spike Relative Difference RPD 200 \* | (B-A)/(B+A) | All Results are based on MDL and validated for QC purposes. Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

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	Kristin Farris Pope	<b>RICE Operating Company</b>	122 W. Taylor Street	Hobbs, New Mexico 88240	(505) 393-9174	Rozanne Johnson (505)631-9310		~	ų į					ł				1	kpope@riceswd.com	$ \cdot $	1
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#### Environmental Lab of Texas Variance/ Corrective Action Report- Sample Log-In

Client:	Rice
Date/ Time.	7.26 07 215
Lab ID # :	286626
Initials:	

# Sample Receipt Checklist

#1 Temperature of container/ cooler?	(Tes)	No	1,5 °C
#2 Shipping container in good condition?	(es)	No	
#3 Custody Seals intact on shipping container/ cooler?	Yes)	No	Not Present
#4 Custody Seats intact on sample bottles/ container?	Yes	No	Not Present
#5 Chain of Custody present?	Yes)	No	
#6 Sample instructions complete of Chain of Custody?	Yes)	No	
#7 Chain of Custody signed when relinguished/ received?	Yes)	No	
#8 Chain of Custody agrees with sample label(s)?	Yes	No	ID written on Cont./ Lid
#9 Container label(s) legible and intact?	Yes)	No	Not Applicable
#10 Sample matrix/ properties agree with Chain of Custody	Yes	No	
#11 Containers supplied by ELOT?	Yes	No	
#12 Samples in proper container/ bottle?	Yes	No	See Below
#13 Samples properly preserved?	(es)	No	See Below
#14 Sample bottles intact?	Yes	No	
#15 Preservations documented on Chain of Custody?	Yes	No	
#16 Containers documented on Chain of Custody?	Yes	No	
#17 Sufficient sample amount for indicated test(s)?	Yes	No	See Below
#18 All samples received within sufficient hold time?	Ves	No	See Below
#19 Subcontract of sample(s)?	Yes	No	Not Applicable
#20 VOC samples have zero headspace?	Yes	No	Not Applicable

### Variance Documentation

Date/ Time:

Contact: Regarding.

\_\_\_\_\_

Corrective Action Taken:

Check all that Apply:

See attached e-mail/ fax

Contacted by:

Client understands and would like to proceed with analysis Cooling process had begun shortly after sampling event



PHONE (325) 673-7001 · 2111 BEECHWOOD · ABILENE, TX 79603

PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR RICE OPERATING COMPANY ATTN: KRISTIN FARRIS-POPE 122 W. TAYLOR STREET HOBBS, NM 88240 FAX TO: (575) 397-1471

Receiving Date: 10/05/07 Reporting Date: 10/12/07 Project Number: NOT GIVEN Project Name: BD JUNCTION F-17 Project Location: T21S R37E SEC17 F~LEA COUNTY, NM Sampling Date: 10/04/07 Sample Type: WATER Sample Condition: COOL & INTACT Sample Received By: SB Analyzed By: HM/KS

		Na	Ca	Mg	К	Conductivity	T-Alkalinity
LAB NUMBER	R SAMPLE ID	(mg/L)	(mg/L)	(mg/L)	(mg/L)	( <i>u</i> S/cm)	(mgCaCO <sub>3</sub> /L)
ANALYSIS D	ATE:	10/12/07	10/11/07	10/11/07	10/12/07	10/10/07	10/10/07
H13452-1	MONITOR WELL #1	259	164	79.9	6.10	2,740	184
H13452-2	MONITOR WELL #2	64	47.9	21.8	4.89	683	180
H13452-3	MONITOR WELL #3	225	246	107	10.4	3,200	232
Quality Contro	ol	NR	50.6	51.6	1.87	9,760	NR
True Value Q	С	NR	50.0	50.0	2.00	10,000	NR
% Recovery		NR	101	103	93.6	97.6	NR
Relative Perc	ent Difference	NR	< 0.1	1.6	5.7	0.1	NR
METHODS:		SM	3500-Ca-D	3500-Mg E	8049	120.1	310.1

		CI	SO4	$CO_3$	HCO3	pН	TDS
		(mg/L)	(mg/L)	(mg/L)	(mg/L)	(s.u.)	(mg/L)
ANALYSIS D	DATE:	10/11/07	10/11/07	10/10/07	10/10/07	10/10/07	10/11/07
H13452-1	MONITOR WELL #1	720	107	. 0	224	7.28	1,765
H13452-2	MONITOR WELL #2	64	80.5	0	220	7.54	475
H13452-3	MONITOR WELL #3	830	150	0	283	7.19	2,235
Quality Contr	rol	500	54.0	NR	1000	7.00	NR
True Value C	· · · · · · · · · · · · · · · · · · ·	500	50.0	NR	1000	7.00	NR
% Recovery		100	108	NR	100	100	NR
Relative Perce	cent Difference	< 0.1	16.8	NR	< 0.1	0.1	NR

SM4500-CI-B

METHODS:

Kinter Suploto

DIIA Date

150.1

160.1

310.1

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those to negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In hore boat shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, toss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above-stated reasons or otherwise.

375.4

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PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR RICE OPERATING COMPANY ATTN: KRISTIN FARRIS-POPE 122 WEST TAYLOR HOBBS, NM 88240 FAX TO: (505) 397-1471

Receiving Date: 10/05/07 Reporting Date: 10/10/07 Project Number: NOT GIVEN Project Name: BD JUNCTION F-17 Project Location: T21S R37E SEC17 F - LEA COUNTY, NM Sampling Date: 10/04/07 Sample Type: WATER Sample Condition: COOL & INTACT Sample Received By: SB Analyzed By: CK

LAB NUMBER	SAMPLE ID	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DAT	E	10/06/07	10/06/07	10/06/07	10/06/07
H13452-1	MONITOR WELL #1	< 0.001	<0.001	< 0.001	< 0.003
H13452-2	MONITOR WELL #2	< 0.001	<0.001	<0.001	< 0.003
H13452-3	MONITOR WELL #3	< 0.001	< 0.001	<0.001	< 0.003
		· ·			
Quality Control True Value QC		0.114	0.106	0.106	0.108
% Recovery		114	106.0	106.0	108.0
Relative Percen	t Difference	9.3	11.6	12.1	12.7

METHOD: EPA SW-846 8021B

Chemist

#### H13452b Rice

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Pag	CHAIN-OF-CUSTODY AND ANALYSIS REQUEST LAB Order ID #		ANALYSIS REQUEST	(Circle or Specify Method No.)						6н	3) 2) 2) 2) 2) 2) 2) 2) 2) 2) 2) 2) 2) 2)		123' Hq 3' K) 23' Hq 254 254 254 254 254 254 254 254 254 254	B/602 TX1005 / A A A B A B S A g A S I I es S A g A S I I es S A g A S I Voletiles S A g A S I A A A A S A A A A S A A A A S A A A A S A A A A	MIE TIBE 8021 TIBE 8021 PH 418.1/ PH 8270C AH 82	M 111 111 111 111 111 111 111 111						Phone Results Ves No	Yes		Email Results to: kpope@riceswd.com	Iweinheimer@riceswd.com	rozanne(@valornet.com	
	Cardinal Laboratories, Inc. CHAIN-OF-CUSTODY AND Laboratories	333-2476 Bill TO Commany	RICE Operating Company	Address. (Street, City, Zip)	Kristin Farris-Pope. Project Scientist	Phone#: Fax#.	New Mexico 88240 (505) 393-9174 (505)397-1471	Fax#,	(505) 397-1471 C	6н	Santuer Signifure: Rozanne Johnson (505)631-9310	Sec17 F ~ Lea County New Mexico - A A I rozanne@valornet.com	۵ 524 524 524 7770 7770 7770 7770 7770 7770 7770 77	NERS, NeRS, Note: N	200, 755, p 201, p			75 Monitor Well #3 G 3 X J 2 J 1 104 M3 X X H				Date: Time: Received by: Date: Time Phone Results Yes	Fax Results Ves No	Date: Time: Réceived By: (Laboratory Staff) Date: Time: REMARKS:		(Circle One) Sample Condition CHECKED BY:	- UPS - Bus - Other:	
	101 East Mé Me Tel (5	Company No	RICE Ope	Project Manager.	Kristin	Address:	122 W Tay	Phone #:	- 1	Project #:	Project Location:	T21S R37E		LAB #		11121102	CLCILI					Reimmistied by:	Rozannezemizson	Relinquiened by:		Delivered By:	Sampler	

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