

1R - 426-35

# REPORTS

DATE:

2004

# RICE Operating Company

122 West Taylor • Hobbs, New Mexico 88240  
Phone: (505)393-9174 • Fax: (505) 397-1471

CERTIFIED MAIL

RETURN RECEIPT NO. 7002 2410 0000 4940 1763

January 21, 2005

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: **2004 MONITOR WELL REPORT/SAMPLING SUMMARY**  
**JCT. I-27, BD SWD SYSTEM**  
**UNIT 1, SEC. 27, T21S, R37E**

1R426-35

✓

case #

closed

1-3-06

Approved

DD WP

Mr. Price:

Rice Operating Company (ROC) takes this opportunity to submit the 2002 Monitor Well Report for the BD jct. I-27 site located in the Blinebry Drinkard (BD) Salt Water Disposal (SWD) System. One monitoring well was installed in 2003 during delineation as part of the Junction Box Upgrade Program. This well is sampled quarterly pursuant to NMOCD guidelines. In 2004, ROC and Arcadis G&M, Inc. (Arcadis) of Midland, Texas sampled the well. In 2005, Arcadis will sample the well and Environmental Lab of Texas of Odessa will continue to conduct analytical tests of the water samples.

Arcadis has been contracted by ROC to address groundwater concerns at this. NMOCD may expect the submission of an Investigation & Characterization Plan (ICP) this year.

ROC is the service provider (operator) for the BD Salt Water Disposal System and has no ownership of any portion of pipeline, well, or facility. The BD SWD System is owned by a consortium of oil producers, System 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.

RICE OPERATING COMAPANY

*Kristin Farris Pope*

Kristin Farris Pope  
Project Scientist

enclosures:      Summary table & graph  
                         Analytical results  
                         Map

cc: LBG, CDH, Arcadis, file, Rob Roy Industries,

Chris Williams  
NMOCD, District I Office  
1625 N. French Drive  
Hobbs, NM 88240

*/*

# BD jct. I-27

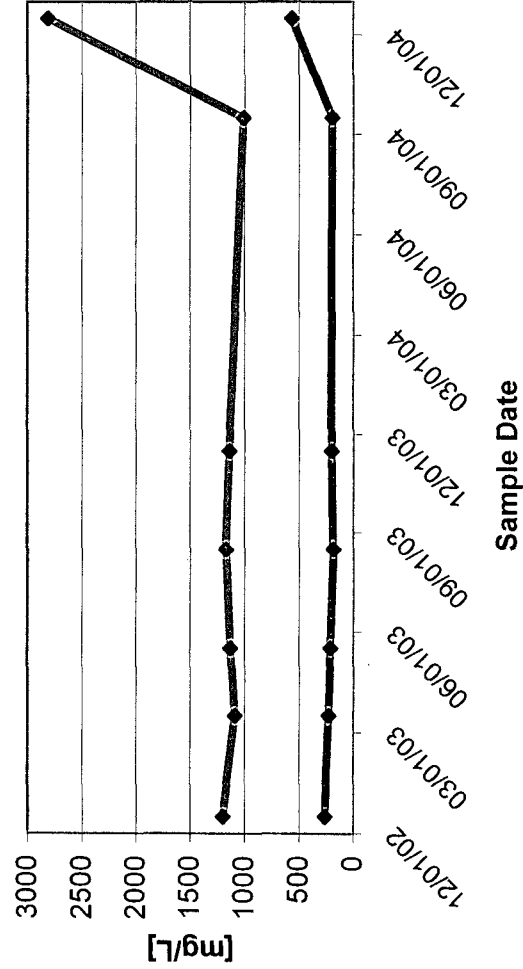
unit 'I', Sec. 27, T21S, R37E

All concentrations are in mg/L

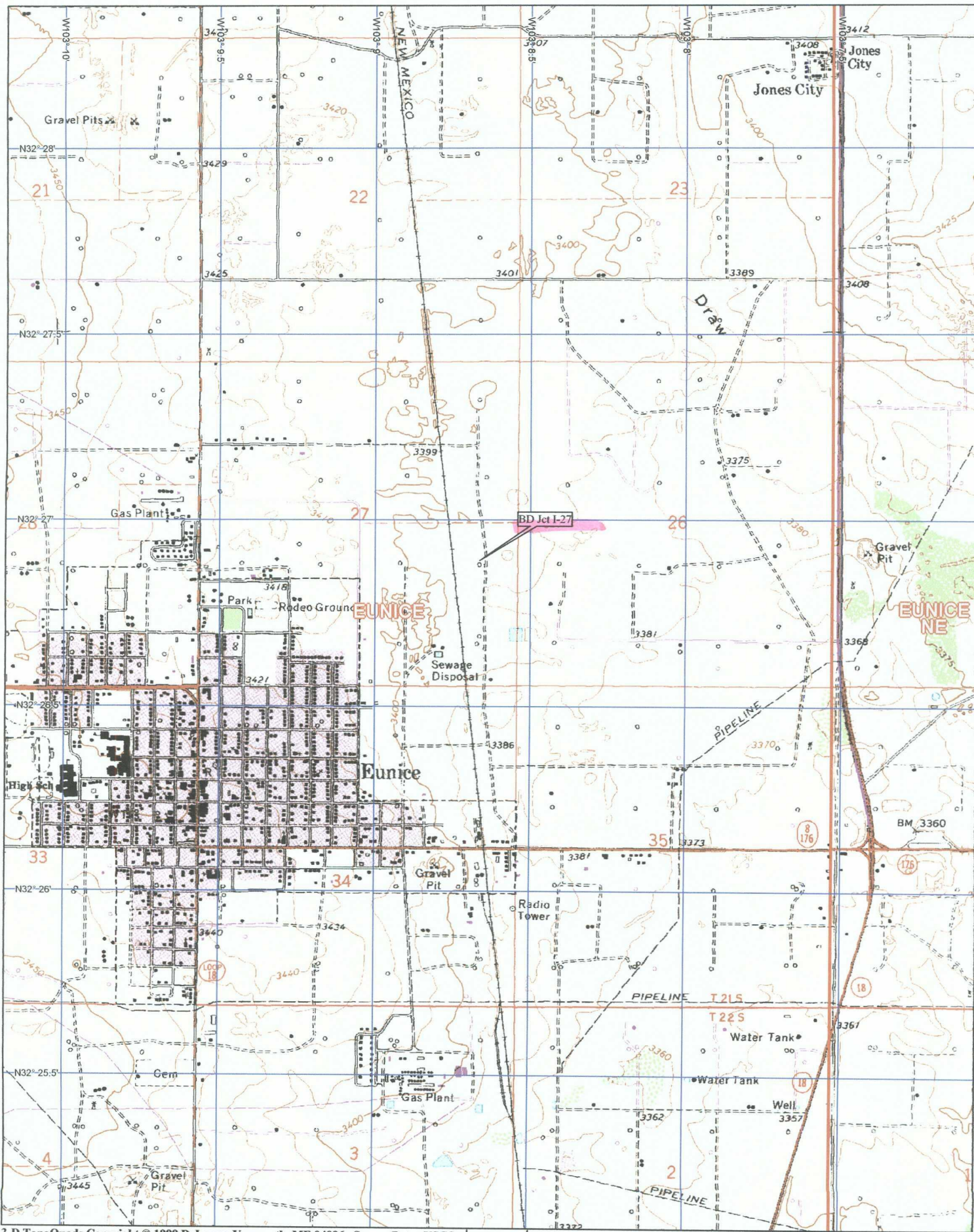
MW #	DEPTH TO WATER *	TOTAL DEPTH	WELL VOLUME	VOLUME PURGED	SAMPLE DATE	Cl <sup>-</sup>	TDS	BENZENE	TOLUENE	ETHYL BENZENE	TOTAL XYLENES	COMMENTS
1	48.39	51.10	0.434	1.45	12/2/02	266	1200	<0.001	<0.001	<0.001	<0.001	silty; bailer
1	46.92	51.01	0.659	1.90	3/24/03	230	1090	0.002	<0.001	<0.001	<0.001	
1	48.01	51.10	0.488	1.40	5/29/03	213	1130	<0.001	<0.001	<0.001	<0.001	
1	49.10	51.01	0.300	1.00	8/22/03	186	1170	<0.001	<0.001	<0.001	<0.001	
1	49.85	51.44	0.254	0.70	11/20/03	204	1140	<0.001	<0.001	<0.001	<0.001	
1	49.20	51.25	XXX	1.00	9/2/04	195	1010	<0.001	<0.001	<0.001	<0.001	
1	43.95	51.00	XXX	3.59	12/21/04	567	2810	<0.001	<0.001	<0.001	<0.001	

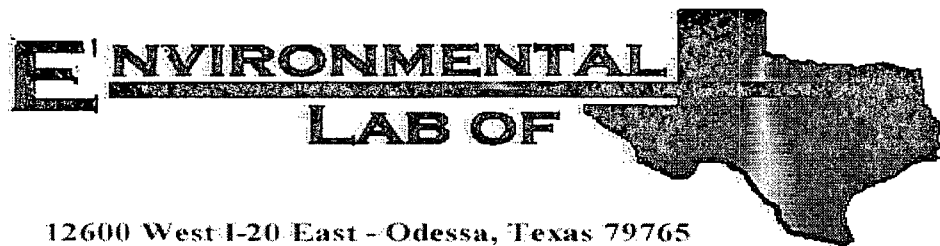
BD jct. I-27 Monitor Well

Chlorides Total Dissolved Solids (TDS)



\* Depth to water is measured from top of casing  
Casing is 2.875 ft





12600 West I-20 East - Odessa, Texas 79765

## Analytical Report

**Prepared for:**

Sharon Hall

ARCADIS

1004 N. Big Spring Street

Midland, TX 79701

Project: Jct. I-27/505

Project Number: Jct I-27/505

Location: Rice Operating/BD

Lab Order Number: 4I03011

Report Date: 09/19/04

ARCADIS  
1004 N. Big Spring Street  
Midland TX, 79701

Project: Jct. I-27/505  
Project Number: Jct I-27/505  
Project Manager: Sharon Hall

Fax: (432) 687-5401

**Reported:**  
09/19/04 11:22

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1	4I03011-01	Water	09/02/04 16:35	09/03/04 14:40

ARCADIS  
1004 N. Big Spring Street  
Midland TX, 79701

Project: Jct. I-27/505  
Project Number: Jct I-27/505  
Project Manager: Sharon Hall

Fax: (432) 687-5401

**Reported:**  
09/19/04 11:22

**Organics by GC**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>MW-1 (4103011-01) Water</b>									
Benzene	ND	0.00100	mg/L	1	EI41004	09/08/04	09/08/04	EPA 8021B	
Toluene	ND	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: <i>a,a,a</i> -Trifluorotoluene		101 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		88.0 %	80-120		"	"	"	"	



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Project: Jct. I-27/505  
Project Number: Jct I-27/505  
Project Manager: Sharon Hall

Fax: (432) 687-5401

Reported:  
09/19/04 11:22

**General Chemistry Parameters by EPA / Standard Methods**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>MW-1 (4I03011-01) Water</b>									
Carbonate Alkalinity	ND	0.100	mg/L	1	EI41608	09/03/04	09/03/04	EPA 310.2M	
Bicarbonate Alkalinity	380	2.00	"	"	"	"	"	"	
Hydroxide Alkalinity	ND	0.100	"	"	"	"	"	"	
Chloride	195	5.00	"	"	EI40805	09/07/04	09/07/04	EPA 325.3M	
Total Dissolved Solids	1010	5.00	"	"	EI41607	09/09/04	09/09/04	EPA 160.1	
Sulfate	240	2.50	"	5	EI41312	09/10/04	09/10/04	EPA 375.4	

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**Reported:**  
09/19/04 11:22

**Total Metals by EPA / Standard Methods**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>MW-1 (4103011-01) Water</b>									
Calcium	67.3	1.00	mg/L	100	EI41506	09/15/04	09/15/04	EPA 6010B	
Magnesium	58.5	0.0100	"	10	"	"	"	"	
Potassium	6.36	0.500	"	"	"	"	"	"	
Sodium	130	1.00	"	100	"	"	"	"	

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Reported:  
09/19/04 11:22

**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
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**Batch EI41004 - EPA 5030C (GC)**

**Blank (EI41004-BLK1)**

Prepared & Analyzed: 09/08/04

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	23.4		ug/l	20.0		117	80-120			
Surrogate: 4-Bromofluorobenzene	18.3		"	20.0		91.5	80-120			

**LCS (EI41004-BS1)**

Prepared: 09/08/04 Analyzed: 09/10/04

Benzene	93.0		ug/l	100		93.0	80-120			
Toluene	95.0		"	100		95.0	80-120			
Ethylbenzene	95.1		"	100		95.1	80-120			
Xylene (p/m)	196		"	200		98.0	80-120			
Xylene (o)	104		"	100		104	80-120			
Surrogate: a,a,a-Trifluorotoluene	16.7		"	20.0		83.5	80-120			
Surrogate: 4-Bromofluorobenzene	18.6		"	20.0		93.0	80-120			

**LCS Dup (EI41004-BSD1)**

Prepared: 09/08/04 Analyzed: 09/10/04

Benzene	96.3		ug/l	100		96.3	80-120	3.49	20	
Toluene	99.4		"	100		99.4	80-120	4.53	20	
Ethylbenzene	99.5		"	100		99.5	80-120	4.52	20	
Xylene (p/m)	206		"	200		103	80-120	4.98	20	
Xylene (o)	105		"	100		105	80-120	0.957	20	
Surrogate: a,a,a-Trifluorotoluene	18.0		"	20.0		90.0	80-120			
Surrogate: 4-Bromofluorobenzene	21.9		"	20.0		110	80-120			

**Calibration Check (EI41004-CCV1)**

Prepared & Analyzed: 09/08/04

Benzene	94.3		ug/l	100		94.3	80-120			
Toluene	95.8		"	100		95.8	80-120			
Ethylbenzene	102		"	100		102	80-120			
Xylene (p/m)	207		"	200		104	80-120			
Xylene (o)	105		"	100		105	80-120			
Surrogate: a,a,a-Trifluorotoluene	23.0		"	20.0		115	80-120			
Surrogate: 4-Bromofluorobenzene	18.6		"	20.0		93.0	80-120			

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Reported:  
09/19/04 11:22

**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
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**Batch EI41004 - EPA 5030C (GC)**

**Matrix Spike (EI41004-MS1)**

Source: 4I07001-01

Prepared: 09/08/04

Analyzed: 09/10/04

Benzene	97.5		ug/l	100	ND	97.5	80-120			
Toluene	101		"	100	ND	101	80-120			
Ethylbenzene	97.8		"	100	ND	97.8	80-120			
Xylene (p/m)	203		"	200	ND	102	80-120			
Xylene (o)	102		"	100	ND	102	80-120			
Surrogate: a,a,a-Trifluorotoluene	17.2		"	20.0		86.0	80-120			
Surrogate: 4-Bromofluorobenzene	20.9		"	20.0		104	80-120			

**Matrix Spike Dup (EI41004-MSD1)**

Source: 4I07001-01

Prepared: 09/08/04

Analyzed: 09/10/04

Benzene	99.0		ug/l	100	ND	99.0	80-120	1.53	20	
Toluene	101		"	100	ND	101	80-120	0.00	20	
Ethylbenzene	99.6		"	100	ND	99.6	80-120	1.82	20	
Xylene (p/m)	201		"	200	ND	100	80-120	1.98	20	
Xylene (o)	100		"	100	ND	100	80-120	1.98	20	
Surrogate: a,a,a-Trifluorotoluene	16.5		"	20.0		82.5	80-120			
Surrogate: 4-Bromofluorobenzene	19.3		"	20.0		96.5	80-120			

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Reported:  
09/19/04 11:22

**General Chemistry Parameters by EPA / Standard Methods - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EI40805 - General Preparation (WetChem)**

**Blank (EI40805-BLK1)**

Prepared & Analyzed: 09/07/04

Chloride	ND	5.00	mg/L
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**Matrix Spike (EI40805-MS1)**

Source: 4I07001-06

Prepared & Analyzed: 09/07/04

Chloride	1670	5.00	mg/L	500	1170	100	90-110
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**Matrix Spike Dup (EI40805-MSD1)**

Source: 4I07001-06

Prepared & Analyzed: 09/07/04

Chloride	1660	5.00	mg/L	500	1170	98.0	90-110	0.601	20
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**Reference (EI40805-SRM1)**

Prepared & Analyzed: 09/07/04

Chloride	4960		mg/L	5000		99.2	80-120
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**Batch EI41312 - General Preparation (WetChem)**

**Blank (EI41312-BLK1)**

Prepared & Analyzed: 09/10/04

Sulfate	ND	0.500	mg/L
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**Calibration Check (EI41312-CCV1)**

Prepared & Analyzed: 09/10/04

Sulfate	48.9		mg/L	50.0		97.8	80-120
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**Duplicate (EI41312-DUP1)**

Source: 4I03010-01

Prepared & Analyzed: 09/10/04

Sulfate	76.4	0.500	mg/L		74.6			2.38	20
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**Batch EI41607 - Filtration Preparation**

**Blank (EI41607-BLK1)**

Prepared & Analyzed: 09/09/04

Total Dissolved Solids	ND	5.00	mg/L
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Project: Jct. I-27/505  
Project Number: Jct I-27/505  
Project Manager: Sharon Hall

Fax: (432) 687-5401

Reported:  
09/19/04 11:22

**Total Metals by EPA / Standard Methods - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EI41506 - General Preparation (Metals)**

**Blank (EI41506-BLK1)**

Prepared & Analyzed: 09/15/04

Calcium	ND	0.0100	mg/L							
Magnesium	ND	0.00100	"							
Potassium	ND	0.0500	"							
Sodium	ND	0.0100	"							

**Blank (EI41506-BLK2)**

Prepared & Analyzed: 09/15/04

Calcium	ND	0.0100	mg/L							
Magnesium	ND	0.00100	"							
Potassium	ND	0.0500	"							
Sodium	ND	0.0100	"							

**Calibration Check (EI41506-CCV1)**

Prepared & Analyzed: 09/15/04

Calcium	2.03		mg/L	2.00		102	85-115			
Magnesium	2.04		"	2.00		102	85-115			
Potassium	1.75		"	2.00		87.5	85-115			
Sodium	1.79		"	2.00		89.5	85-115			

**Calibration Check (EI41506-CCV2)**

Prepared & Analyzed: 09/15/04

Calcium	1.93		mg/L	2.00		96.5	85-115			
Magnesium	2.02		"	2.00		101	85-115			
Potassium	1.76		"	2.00		88.0	85-115			
Sodium	1.77		"	2.00		88.5	85-115			

**Duplicate (EI41506-DUP1)**

Source: 4I03009-01

Prepared & Analyzed: 09/15/04

Calcium	281	1.00	mg/L		280			0.357	20	
Magnesium	110	0.100	"		111			0.905	20	
Potassium	8.18	0.500	"		8.31			1.58	20	
Sodium	359	1.00	"		365			1.66	20	

ARCADIS  
1004 N. Big Spring Street  
Midland TX, 79701

Project: Jct. I-27/505  
Project Number: Jct I-27/505  
Project Manager: Sharon Hall

Fax: (432) 687-5401

Reported:  
09/19/04 11:22

**Total Metals by EPA / Standard Methods - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EI41506 - General Preparation (Metals)**

Duplicate (EI41506-DUP2)		Source: 4110015-01			Prepared & Analyzed: 09/15/04					
Calcium	20.2	0.100	mg/L		20.2			0.00	20	
Magnesium	28.4	0.0100	"		28.6			0.702	20	
Potassium	16.4	0.500	"		16.6			1.21	20	
Sodium	103	0.100	"		103			0.00	20	



ARCADIS  
1004 N. Big Spring Street  
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Project: Jct. I-27/505  
Project Number: Jct I-27/505  
Project Manager: Sharon Hall

Fax: (432) 687-5401  
**Reported:**  
09/19/04 11:22

### Notes and Definitions

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: Raland K Tuttle Date: 9-18-04

Raland K. Tuttle, Lab Manager  
Celey D. Keene, Lab Director, Org. Tech Director  
Peggy Allen, QA Officer

Jeanne Mc Murrey, Inorg. Tech Director  
James L. Hawkins, Chemist/Geologist  
Sandra Biezugbe, Lab Tech.

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.

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

# Environmental Lab of Texas

## Variance / Corrective Action Report – Sample Log-In

Client: Archadis

Date/Time: 9-3-04

Order #: 4103011-01

Initials: RA

### Sample Receipt Checklist

Temperature of container/cooler?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	3.5 C
Shipping container/cooler in good condition?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
Custody Seals intact on shipping container/cooler?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Not present
Custody Seals intact on sample bottles?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Not present
Chain of custody present?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
Sample Instructions complete on Chain of Custody?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
Chain of Custody signed when relinquished and received?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
Chain of custody agrees with sample label(s)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
Container labels legible and intact?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
Sample Matrix and properties same as on chain of custody?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
Samples in proper container/bottle?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
Samples properly preserved?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
Sample bottles intact?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
Preservations documented on Chain of Custody?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
Containers documented on Chain of Custody?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
Sufficient sample amount for indicated test?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
All samples received within sufficient hold time?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
VOC samples have zero headspace?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Not Applicable

Other observations:

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### Variance Documentation:

Contact Person: - \_\_\_\_\_ Date/Time: \_\_\_\_\_ Contacted by: \_\_\_\_\_  
Regarding: \_\_\_\_\_

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Corrective Action Taken:

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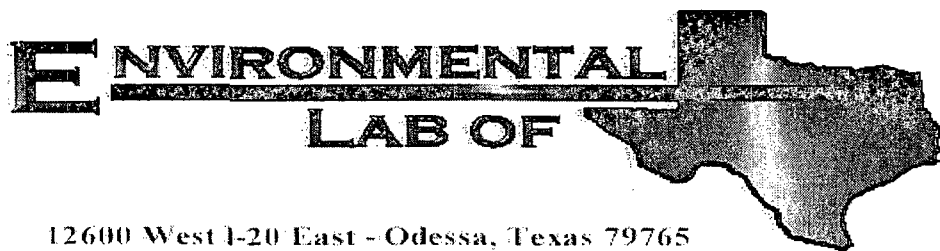


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12600 West I-20 East - Odessa, Texas 79765

## Analytical Report

**Prepared for:**

Sharon Hall

ARCADIS

1004 N. Big Spring Street

Midland, TX 79701

Project: Jct. I-27/ 505

Project Number: Jct I-27/505

Location: Rice Operating/ BD

Lab Order Number: 4L22011

Report Date: 12/30/04

-ARCADIS  
1004 N. Big Spring Street  
Midland TX, 79701

Project: Jct. I-27/ 505  
Project Number: Jct I-27/505  
Project Manager: Sharon Hall

Fax: (432) 687-5401

**Reported:**  
12/30/04 15:44

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1	4L22011-01	Water	12/21/04 15:30	12/21/04 18:00

ARCADIS  
1004 N. Big Spring Street  
Midland TX, 79701

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Fax: (432) 687-5401

Reported:  
12/30/04 15:44

**Organics by GC**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>MW-1 (4L22011-01) Water</b>									
Benzene	ND	0.00100	mg/L	1	EL43007	12/29/04	12/30/04	EPA 8021B	
Toluene	ND	0.00100	"	"	"	"	"	"	
Ethylbenzene	ND	0.00100	"	"	"	"	"	"	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	"	
Xylene (o)	ND	0.00100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		88.5 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.7 %	80-120		"	"	"	"	

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**Reported:**  
12/30/04 15:44

**General Chemistry Parameters by EPA / Standard Methods**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>MW-1 (4L22011-01) Water</b>									
<b>Total Alkalinity</b>	<b>306</b>	2.00	mg/L	1	EL42907	12/29/04	12/29/04	EPA 310.2M	
<b>Chloride</b>	<b>567</b>	5.00	"	"	EL42908	12/29/04	12/29/04	EPA 325.3M	
<b>Total Dissolved Solids</b>	<b>2810</b>	5.00	"	"	EL42301	12/22/04	12/23/04	EPA 160.1	
<b>Sulfate</b>	<b>283</b>	2.50	"	5	EL42909	12/29/04	12/29/04	EPA 375.4	

ARCADIS  
1004 N. Big Spring Street  
Midland TX, 79701

Project: Jct. I-27/ 505  
Project Number: Jct I-27/505  
Project Manager: Sharon Hall

Fax: (432) 687-5401

**Reported:**  
01/03/05 15:12

**Total Metals by EPA / Standard Methods**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>MW-1 (4L22011-01) Water</b>									
Calcium	<b>188</b>	1.00	mg/L	100	EL42302	12/23/04	12/23/04	EPA 6010B	
Magnesium	<b>139</b>	0.100	"	"	"	"	"	"	
Potassium	<b>8.47</b>	0.500	"	10	"	"	"	"	
Sodium	<b>211</b>	1.00	"	100	"	"	"	"	



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Reported:  
12/30/04 15:44

**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
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**Batch EL43007 - EPA 5030C (GC)**

**Blank (EL43007-BLK1)**

Prepared: 12/29/04 Analyzed: 12/30/04

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	90.9		ug/l	100		90.9	80-120			
Surrogate: 4-Bromofluorobenzene	80.2		"	100		80.2	80-120			

**LCS (EL43007-BS1)**

Prepared: 12/29/04 Analyzed: 12/30/04

Benzene	87.9		ug/l	100		87.9	80-120			
Toluene	88.5		"	100		88.5	80-120			
Ethylbenzene	97.5		"	100		97.5	80-120			
Xylene (p/m)	219		"	200		110	80-120			
Xylene (o)	111		"	100		111	80-120			
Surrogate: a,a,a-Trifluorotoluene	109		"	100		109	80-120			
Surrogate: 4-Bromofluorobenzene	119		"	100		119	80-120			

**Calibration Check (EL43007-CCV1)**

Prepared: 12/29/04 Analyzed: 12/30/04

Benzene	87.8		ug/l	100		87.8	80-120			
Toluene	89.0		"	100		89.0	80-120			
Ethylbenzene	95.3		"	100		95.3	80-120			
Xylene (p/m)	213		"	200		106	80-120			
Xylene (o)	104		"	100		104	80-120			
Surrogate: a,a,a-Trifluorotoluene	113		"	100		113	80-120			
Surrogate: 4-Bromofluorobenzene	116		"	100		116	80-120			

**Matrix Spike (EL43007-MS1)**

Source: 4L22009-05

Prepared: 12/29/04 Analyzed: 12/30/04

Benzene	88.6		ug/l	100	ND	88.6	80-120			
Toluene	85.4		"	100	ND	85.4	80-120			
Ethylbenzene	87.9		"	100	ND	87.9	80-120			
Xylene (p/m)	186		"	200	ND	93.0	80-120			
Xylene (o)	94.2		"	100	ND	94.2	80-120			
Surrogate: a,a,a-Trifluorotoluene	107		"	100		107	80-120			
Surrogate: 4-Bromofluorobenzene	119		"	100		119	80-120			

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Reported:  
12/30/04 15:44

**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
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**Batch EL43007 - EPA 5030C (GC)**

**Matrix Spike Dup (EL43007-MSD1)**

Source: 4L22009-05

Prepared: 12/29/04

Analyzed: 12/30/04

Benzene	92.9		ug/l	100	ND	92.9	80-120	4.74	20	
Toluene	86.0		"	100	ND	86.0	80-120	0.700	20	
Ethylbenzene	87.2		"	100	ND	87.2	80-120	0.800	20	
Xylene (p/m)	164		"	200	ND	82.0	80-120	12.6	20	
Xylene (o)	86.7		"	100	ND	86.7	80-120	8.29	20	
Surrogate: a,a,a-Trifluorotoluene	112		"	100		112	80-120			
Surrogate: 4-Bromofluorobenzene	117		"	100		117	80-120			

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Reported:  
12/30/04 15:44

**General Chemistry Parameters by EPA / Standard Methods - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EL42301 - 413.1**

**Blank (EL42301-BLK1)** Prepared: 12/22/04 Analyzed: 12/23/04

Total Dissolved Solids ND 5.00 mg/L

**Duplicate (EL42301-DUP1)** Source: 4L21010-01 Prepared: 12/22/04 Analyzed: 12/23/04

Total Dissolved Solids 590 5.00 mg/L 567 3.98 20

**Batch EL42907 - General Preparation (WetChem)**

**Blank (EL42907-BLK1)** Prepared & Analyzed: 12/29/04

Total Alkalinity ND 2.00 mg/L

**Duplicate (EL42907-DUP1)** Source: 4L22002-01 Prepared & Analyzed: 12/29/04

Total Alkalinity 181 2.00 mg/L 182 0.551 20

**Reference (EL42907-SRM1)** Prepared & Analyzed: 12/29/04

Carbonate Alkalinity 0.0501 mg/L 0.0500 100 80-120

**Batch EL42908 - General Preparation (WetChem)**

**Blank (EL42908-BLK1)** Prepared & Analyzed: 12/29/04

Chloride ND 5.00 mg/L

**Matrix Spike (EL42908-MS1)** Source: 4L21010-01 Prepared & Analyzed: 12/29/04

Chloride 390 5.00 mg/L 250 155 94.0 80-120

**Matrix Spike Dup (EL42908-MSD1)** Source: 4L21010-01 Prepared & Analyzed: 12/29/04

Chloride 394 5.00 mg/L 250 155 95.6 80-120 1.02 20

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Reported:  
12/30/04 15:44

**General Chemistry Parameters by EPA / Standard Methods - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EL42908 - General Preparation (WetChem)**

**Reference (EL42908-SRM1)**

Prepared & Analyzed: 12/29/04

Chloride	4960		mg/L	5000		99.2	80-120			
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**Batch EL42909 - General Preparation (WetChem)**

**Blank (EL42909-BLK1)**

Prepared & Analyzed: 12/29/04

Sulfate	ND	0.500	mg/L							
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**Calibration Check (EL42909-CCV1)**

Prepared & Analyzed: 12/29/04

Sulfate	48.9		mg/L	50.0		97.8	80-120			
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**Duplicate (EL42909-DUP1)**

Source: 4L21010-01

Prepared & Analyzed: 12/29/04

Sulfate	96.6	1.00	mg/L		99.8			3.26	20	
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Reported:  
01/03/05 15:12

**Total Metals by EPA / Standard Methods - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EL42302 - 6010B/No Digestion**

**Blank (EL42302-BLK1)**

Prepared & Analyzed: 12/23/04

Calcium	ND	0.0100	mg/L
Magnesium	ND	0.00100	"
Potassium	ND	0.0500	"
Sodium	ND	0.0100	"

**Calibration Check (EL42302-CCV1)**

Prepared & Analyzed: 12/23/04

Calcium	2.00		mg/L	2.00	100	85-115
Magnesium	2.28		"	2.00	114	85-115
Potassium	1.78		"	2.00	89.0	85-115
Sodium	1.92		"	2.00	96.0	85-115

**Duplicate (EL42302-DUP1)**

Source: 4L21010-01RE1 Prepared & Analyzed: 12/23/04

Calcium	55.1	0.100	mg/L	57.3	3.91	20
Magnesium	13.2	0.0100	"	13.0	1.53	20
Potassium	12.5	0.500	"	13.2	5.45	20
Sodium	105	1.00	"	112	6.45	20

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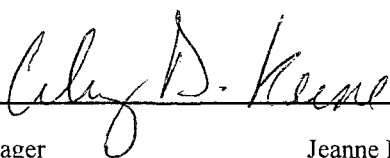
Fax: (432) 687-5401

**Reported:**  
12/30/04 15:44

### Notes and Definitions

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:



Date:

01/03/05

Raland K. Tuttle, Lab Manager  
Celey D. Keene, Lab Director, Org. Tech Director  
Peggy Allen, QA Officer

Jeanne Mc Murrey, Inorg. Tech Director  
James L. Hawkins, Chemist/Geologist  
Sandra Sanchez, Lab Tech.

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.

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

# Environmental Lab of Texas

## Variance / Corrective Action Report – Sample Log-In

Client: Arcadis

Date/Time: 12-21-04 @ 1800

Order #: 4L22011

Initials: JMM

### Sample Receipt Checklist

Temperature of container/cooler?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	1.0	C
Shipping container/cooler in good condition?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
Custody Seals intact on shipping container/cooler?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	<del>Not present</del>	
Custody Seals intact on sample bottles?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	<del>Not present</del>	
Chain of custody present?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
Sample Instructions complete on Chain of Custody?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
Chain of Custody signed when relinquished and received?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
Chain of custody agrees with sample label(s)	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
Container labels legible and intact?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
Sample Matrix and properties same as on chain of custody?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
Samples in proper container/bottle?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
Samples properly preserved?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
Sample bottles intact?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
Preservations documented on Chain of Custody?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
Containers documented on Chain of Custody?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
Sufficient sample amount for indicated test?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
All samples received within sufficient hold time?	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
VOC samples have zero headspace?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	Not Applicable	

Other observations:

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### Variance Documentation:

Contact Person: - \_\_\_\_\_ Date/Time: \_\_\_\_\_ Contacted by: \_\_\_\_\_

Regarding:

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Corrective Action Taken:

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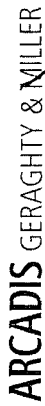
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Laboratory Task Order No./P.O. No.

# CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Project Number/Name CTI-27/505

Project Location	Rice Operating
	

Laboratory  
Environmental Lab of Texas

Kristin Farris Pope  
Project Manager

GC/ARCADIS
Sampler(s)/Affiliation

Sample ID/Location	Matrix	<del>Date/Time</del>	Time
		Sampled	Lab ID

[illegible]

Sample Matrix: L = Liquid; S = Solid; A = Air

Relinquished by: ABCADTS Organization: ABCADTS

Received by: Clara Muenster  
Organization: Env-Lab of TX

Relinquished by: \_\_\_\_\_ Organization: \_\_\_\_\_

Received by: \_\_\_\_\_ Organization: \_\_\_\_\_

Special Instructions/Remarks:

2010, 2011

**Delivery Method:** ☒ In Person

☐ Common Carrier☐ Lab Courier☐ Other

**SPECIFY**

SPECIFY

AG 05-0597