

# Red River

## Environmental Laboratory and Consulting Company

Analytical Laboratory - Environmental Consulting - Permit Application and Compliance

### Certificate of Analysis

ODEQ ID # 9953

To: MR. TONY CLYDE

TULSA DISTRICT CORPS OF ENGINEERS  
1645 S 101st EAST AVE  
TULSA, OK 74128-4609

Project #: W912BV-07-P0189

Date Received: 10/31/2008

Project Name: WATER QUALITY MONITORING

Report Date: 11/20/2008

Lab Number	Sample Identification	Date Sampled	Analysis Date	Time	Analized By	Parameter	Q	Results	Units	MDL	SQL	Method
200804451	GAGE # 07331000					METALS-TUL-D:						
		10/31/2008	11/5/2008	10:50	JL	Dissolved Arsenic	U	BDL	mg/L	0.009	0.009	200.7/6010B
			11/5/2008		JL	Dissolved Barium		0.137	mg/L	0.0006	0.0006	200.7/6010B
			11/5/2008		JL	Dissolved Cadmium	U	BDL	mg/L	0.0009	0.0009	200.7/6010B
			11/5/2008		JL	Dissolved Chromium	U	BDL	mg/L	0.0009	0.0009	200.7/6010B
			11/5/2008		JL	Dissolved Copper		0.031	mg/L	0.0003	0.0003	200.7/6010B
			11/5/2008		JL	Dissolved Iron	U	BDL	mg/L	0.0008	0.0008	200.7/6010B
			11/5/2008		JL	Dissolved Lead	U	BDL	mg/L	0.009	0.009	200.7/6010B
			11/5/2008		JL	Dissolved Manganese	U	BDL	mg/L	0.0001	0.0001	200.7/6010B
			11/5/2008		JL	Dissolved Nickel	U	BDL	mg/L	0.0069	0.0069	200.7/6010B
			11/5/2008		JL	Dissolved Silver	U	BDL	mg/L	0.0003	0.0003	200.7/6010B
			11/5/2008		JL	Dissolved Zinc		0.008	mg/L	0.0006	0.0006	200.7/6010B
200804451	GAGE # 07331000					METALS-TULSA:						
		10/31/2008	11/5/2008	17:30	JL	Arsenic, Total		0.055	mg/L	0.009	0.009	200.7/6010B
			11/5/2008		JL	Barium, Total		0.159	mg/L	0.0006	0.0006	200.7/6010B
			11/5/2008		JL	Cadmium, Total	U	BDL	mg/L	0.0009	0.0009	200.7/6010B
			11/5/2008		JL	Chromium, Total	U	BDL	mg/L	0.0009	0.0009	200.7/6010B
			11/5/2008		JL	Copper, Total		0.274	mg/L	0.0003	0.0003	200.7/6010B
			11/5/2008		JL	Iron, Total		0.271	mg/L	0.0008	0.0008	200.7/6010B
			11/5/2008		JL	Lead, Total	U	BDL	mg/L	0.009	0.009	200.7/6010B
			11/5/2008		JL	Manganese, Total		0.101	mg/L	0.0001	0.0001	200.7/6010B
			11/5/2008		JL	Nickel, Total		0.008	mg/L	0.0069	0.0069	200.7/6010B
			11/5/2008		JL	Silver, Total	U	BDL	mg/L	0.0003	0.0003	200.7/6010B
			11/5/2008		JL	Zinc, Total		0.025	mg/L	0.0006	0.0006	200.7/6010B
		11/6/2008		10:00	op	Mercury, Dissolved	<	0.0002	mg/l	0.0002	0.0002	EPA_245.1
		11/6/2008		10:00	op	Mercury	<	0.0002	mg/l	0.0002	0.0002	EPA_245.1
		11/13/2008		15:43	OL	Selenium, Dissolved	<	0.00093	mg/l	0.00093	0.00093	EPA_7440
		11/13/2008		8:18	OL	Selenium	<	0.00093	mg/l	0.00093	0.00093	EPA_7740

*Susie Southwell*

Laboratory Authorized Signature



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# Certificate of Analysis

ODEQ ID # 9953

To: MR. TONY CLYDE

TULSA DISTRICT CORPS OF ENGINEERS  
1645 S 101st EAST AVE  
TULSA, OK 74128-4609

Project #: W912BV-07-P0189  
Project Name: WATER QUALITY MONITORING

Date Received: 10/31/2008  
Report Date: 11/20/2008

Lab Number	Sample Identification	Date Sampled	Analysis Date	Time	Analized By	Parameter	Q	Results	Units	MDL	SQL Method
200804451	GAGE # 07331000	10/31/2008	11/5/2008	17:30	JL	Silicon Dioxide (silica)		12.8	mg/l	0.006	0.006 200.7/6010B
200804451	GAGE # 07331000					SALTS-TULSA:					
		10/31/2008	11/6/2008	13:01	JL	Calcium, Dissolved		192	mg/L	0.0039	0.0039 200.7/6010B
			11/6/2008		JL	Magnesium, Dissolved		70.7	mg/L	0.0006	0.0006 200.7/6010B
			11/6/2008		JL	Phosphorus, Total		0.21	mg/L	0.0096	0.0096 200.7/6010B
			11/6/2008		JL	Potassium, Dissolved		6.4	mg/L	0.0009	0.0009 200.7/6010B
			11/6/2008		JL	Sodium, Dissolved		78.6	mg/L	0.0018	0.0018 200.7/6010B
			11/6/2008	13:01	JL	Total Hardness		771	mg/l	0.06	0.06 200.7/6010B
			11/3/2008	10:10	OP	Total Alkalinity		192	mg/l	2	2 EPA_310.1
			11/4/2008	9:00	OP	Chloride		56.5	mg/l	0.383	0.383 EPA 9253
			10/31/2008	13:27	JL	Dissolved Oxygen		11.2	mg/l	0.1	0.1 EPA_360.1
			11/19/2008	11:30	MY	Fluoride	J	0.74	mg/L	0.04	0.04 SM4500F-D
			11/4/2008	15:25	OP	Nitrate/nitrite As Nitroge	U	BDL	mg/l	1.2	1.2 EPA 353.3
			10/31/2008	13:27	JL	pH		7.3	s.u.		EPA_150.1
			11/3/2008	10:00	BS	Sulfate		700	mg/l	1.2	1.2 ASTM D516-9
			11/4/2008	11:00	MY	Total Dissolved Solids		1250	mg/l	5.5	5.5 SM 2540C
			11/13/2008	12:30	OP	Total Kjeldahl Nitrogen	J	0.84	mg/l	0.4	0.4 EPA_351.3M
			11/4/2008	9:00	MY	Total Suspended Solids		114	mg/l	1.7	1.7 ASTM 3977-9
			11/3/2008	13:00	MY	Turbidity		90.4	NTU	0.078	0.078 EPA_180.1
200804452	GAGE # 07331600					METALS-TUL-D:					
		10/31/2008	11/5/2008	10:50	JL	Dissolved Arsenic	U	BDL	mg/L	0.009	0.009 200.7/6010B
			11/5/2008		JL	Dissolved Barium		0.137	mg/L	0.0006	0.0006 200.7/6010B
			11/5/2008		JL	Dissolved Cadmium	U	BDL	mg/L	0.0009	0.0009 200.7/6010B
			11/5/2008		JL	Dissolved Chromium	U	BDL	mg/L	0.0009	0.0009 200.7/6010B
			11/5/2008		JL	Dissolved Copper		0.033	mg/L	0.0003	0.0003 200.7/6010B
			11/5/2008		JL	Dissolved Iron	U	BDL	mg/L	0.0008	0.0008 200.7/6010B
			11/5/2008		JL	Dissolved Lead	U	BDL	mg/L	0.009	0.009 200.7/6010B
			11/5/2008		JL	Dissolved Manganese	U	BDL	mg/L	0.0001	0.0001 200.7/6010B
			11/5/2008		JL	Dissolved Nickel	U	BDL	mg/L	0.0069	0.0069 200.7/6010B

*Susie Southwell*

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Table with columns: Lab Number, Sample Identification, Date Sampled, Analysis Date, Analyzed Time, By, Parameter, Q Results, Units, MDL, SQL Method. Contains data for Lab 200804452 and 200804452, including various chemical analyses like Dissolved Silver, Zinc, Arsenic, Barium, Cadmium, Chromium, Copper, Iron, Lead, Manganese, Nickel, Silver, Zinc, Mercury, Selenium, and Salts.

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200804452	GAGE # 07331600	10/31/2008	11/4/2008	15:25	OP	Nitrate/nitrite As Nitroge	U	BDL	mg/l	1.2	1.2	EPA 353.3
			10/31/2008	12:05	JL	pH		7.3	s.u.			EPA_150.1
			11/3/2008	10:00	BS	Sulfate		480	mg/l	1.2	1.2	ASTM D516-9
			11/4/2008	11:00	MY	Total Dissolved Solids		916	mg/l	5.5	5.5	SM 2540C
			11/13/2008	12:30	OP	Total Kjeldahl Nitrogen	U	BDL	mg/l	0.4	0.4	EPA_351.3M
			11/4/2008	9:00	MY	Total Suspended Solids		11.5	mg/l	1.7	1.7	ASTM 3977-9
			11/3/2008	13:00	MY	Turbidity		9.8	NTU	0.078	0.078	EPA_180.1
200804453	GAGE # 07316000					METALS-TUL-D:						
		10/31/2008	11/5/2008	10:50	JL	Dissolved Arsenic	U	BDL	mg/L	0.009	0.009	200.7/6010B
			11/5/2008		JL	Dissolved Barium		0.169	mg/L	0.0006	0.0006	200.7/6010B
			11/5/2008		JL	Dissolved Cadmium	U	BDL	mg/L	0.0009	0.0009	200.7/6010B
			11/5/2008		JL	Dissolved Chromium	U	BDL	mg/L	0.0009	0.0009	200.7/6010B
			11/5/2008		JL	Dissolved Copper		0.06	mg/L	0.0003	0.0003	200.7/6010B
			11/5/2008		JL	Dissolved Iron		0.232	mg/L	0.0008	0.0008	200.7/6010B
			11/5/2008		JL	Dissolved Lead	U	BDL	mg/L	0.009	0.009	200.7/6010B
			11/5/2008		JL	Dissolved Manganese		0.086	mg/L	0.0001	0.0001	200.7/6010B
			11/5/2008		JL	Dissolved Nickel	U	BDL	mg/L	0.0069	0.0069	200.7/6010B
			11/5/2008		JL	Dissolved Silver	U	BDL	mg/L	0.0003	0.0003	200.7/6010B
			11/5/2008		JL	Dissolved Zinc		0.028	mg/L	0.0006	0.0006	200.7/6010B
200804453	GAGE # 07316000					METALS-TULSA:						
		10/31/2008	11/5/2008	17:30	JL	Arsenic, Total		0.053	mg/L	0.009	0.009	200.7/6010B
			11/5/2008		JL	Barium, Total		0.179	mg/L	0.0006	0.0006	200.7/6010B
			11/5/2008		JL	Cadmium, Total	U	BDL	mg/L	0.0009	0.0009	200.7/6010B
			11/5/2008		JL	Chromium, Total	U	BDL	mg/L	0.0009	0.0009	200.7/6010B
			11/5/2008		JL	Copper, Total		0.24	mg/L	0.0003	0.0003	200.7/6010B
			11/5/2008		JL	Iron, Total		0.608	mg/L	0.0008	0.0008	200.7/6010B
			11/5/2008		JL	Lead, Total	U	BDL	mg/L	0.009	0.009	200.7/6010B
			11/5/2008		JL	Manganese, Total		0.105	mg/L	0.0001	0.0001	200.7/6010B
			11/5/2008		JL	Nickel, Total	U	BDL	mg/L	0.0069	0.0069	200.7/6010B

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Table with columns: Lab Number, Sample Identification, Date Sampled, Analysis Date, Analyzed Time, By, Parameter, Q Results, Units, MDL, SQL Method. Contains data for samples 200804453 and 200804454.

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Lab Number	Sample Identification	Date Sampled	Analysis Date	Time	Analized By	Parameter	Q	Results	Units	MDL	SQL Method
200804454	GAGE # 07312100	10/30/2008	11/5/2008		JL	Dissolved Chromium	U	BDL	mg/L	0.0009	0.0009 200.7/6010B
			11/5/2008		JL	Dissolved Copper		0.044	mg/L	0.0003	0.0003 200.7/6010B
			11/5/2008		JL	Dissolved Iron		0.013	mg/L	0.0008	0.0008 200.7/6010B
			11/5/2008		JL	Dissolved Lead	U	BDL	mg/L	0.009	0.009 200.7/6010B
			11/5/2008		JL	Dissolved Manganese	U	BDL	mg/L	0.0001	0.0001 200.7/6010B
			11/5/2008		JL	Dissolved Nickel	U	BDL	mg/L	0.0069	0.0069 200.7/6010B
			11/5/2008		JL	Dissolved Silver	U	BDL	mg/L	0.0003	0.0003 200.7/6010B
			11/5/2008		JL	Dissolved Zinc		0.015	mg/L	0.0006	0.0006 200.7/6010B
200804454	GAGE # 07312100					METALS-TULSA:					
		10/30/2008	11/5/2008	17:30	JL	Arsenic, Total	U	BDL	mg/L	0.009	0.009 200.7/6010B
			11/5/2008		JL	Barium, Total		0.138	mg/L	0.0006	0.0006 200.7/6010B
			11/5/2008		JL	Cadmium, Total	U	BDL	mg/L	0.0009	0.0009 200.7/6010B
			11/5/2008		JL	Chromium, Total	U	BDL	mg/L	0.0009	0.0009 200.7/6010B
			11/5/2008		JL	Copper, Total		0.267	mg/L	0.0003	0.0003 200.7/6010B
			11/5/2008		JL	Iron, Total		0.036	mg/L	0.0008	0.0008 200.7/6010B
			11/5/2008		JL	Lead, Total	U	BDL	mg/L	0.009	0.009 200.7/6010B
			11/5/2008		JL	Manganese, Total		0.019	mg/L	0.0001	0.0001 200.7/6010B
			11/5/2008		JL	Nickel, Total	U	BDL	mg/L	0.0069	0.0069 200.7/6010B
			11/5/2008		JL	Silver, Total	U	BDL	mg/L	0.0003	0.0003 200.7/6010B
			11/5/2008		JL	Zinc, Total		0.017	mg/L	0.0006	0.0006 200.7/6010B
			11/20/2008	14:00	OP	Mercury, Dissolved	U	BDL	mg/l	0.0002	0.0002 EPA_245.1
			11/6/2008	10:00	op	Mercury	<	0.0002	mg/l	0.0002	0.0002 EPA_245.1
			11/13/2008	15:52	OL	Selenium, Dissolved	<	0.00093	mg/l	0.00093	0.00093 EPA_7440
			11/13/2008	8:18	OL	Selenium	<	0.00093	mg/l	0.00093	0.00093 EPA_7740
			11/5/2008	17:30	JL	Silicon Dioxide (silica)		6.2	mg/l	0.006	0.006 200.7/6010B
200804454	GAGE # 07312100					SALTS-TULSA:					
		10/30/2008	11/6/2008	13:01	JL	Calcium, Dissolved		259	mg/L	0.0039	0.0039 200.7/6010B
			11/6/2008		JL	Magnesium, Dissolved		80.3	mg/L	0.0006	0.0006 200.7/6010B
			11/6/2008		JL	Phosphorus, Total		0.15	mg/L	0.0096	0.0096 200.7/6010B
			11/6/2008		JL	Potassium, Dissolved		20.2	mg/L	0.0009	0.0009 200.7/6010B

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Report Date: 11/20/2008

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200804454	GAGE # 07312100	10/30/2008	11/6/2008		JL	Sodium, Dissolved		1280	mg/L	0.0018	0.0018 200.7/6010B			
			11/6/2008	13:01	JL	Total Hardness		1000	mg/l	0.06	0.06 200.7/6010B			
			11/3/2008	10:10	OP	Total Alkalinity		100	mg/l	2	2 EPA_310.1			
			11/4/2008	12:15	OP	Chloride		1225	mg/l	0.383	0.383 EPA 9253			
			10/30/2008	12:10	JL	Dissolved Oxygen		8.6	mg/l	0.1	0.1 EPA_360.1			
			11/19/2008	11:30	MY	Fluoride	J	1.02	mg/L	0.04	0.04 SM4500F-D			
			11/4/2008	15:25	OP	Nitrate/nitrite As Nitroge	U	BDL	mg/l	1.2	1.2 EPA 353.3			
			10/30/2008	12:10	JL	pH		7.5	s.u.		EPA_150.1			
			11/3/2008	10:00	BS	Sulfate		850	mg/l	1.2	1.2 ASTM D516-9			
			11/4/2008	11:00	MY	Total Dissolved Solids		3450	mg/l	5.5	5.5 SM 2540C			
			11/13/2008	12:30	OP	Total Kjeldahl Nitrogen	U	BDL	mg/l	0.4	0.4 EPA_351.3M			
			11/4/2008	9:00	MY	Total Suspended Solids		9	mg/l	1.7	1.7 ASTM 3977-9			
			11/3/2008	13:00	MY	Turbidity		7.3	NTU	0.078	0.078 EPA_180.1			
			200804455	GAGE # 07311900	10/30/2008	METALS-TUL-D:								
11/5/2008	10:50	JL				Dissolved Arsenic	U	BDL	mg/L	0.009	0.009 200.7/6010B			
11/5/2008		JL				Dissolved Barium		0.102	mg/L	0.0006	0.0006 200.7/6010B			
11/5/2008		JL				Dissolved Cadmium	U	BDL	mg/L	0.0009	0.0009 200.7/6010B			
11/5/2008		JL				Dissolved Chromium	U	BDL	mg/L	0.0009	0.0009 200.7/6010B			
11/5/2008		JL				Dissolved Copper		0.049	mg/L	0.0003	0.0003 200.7/6010B			
11/5/2008		JL				Dissolved Iron	U	BDL	mg/L	0.0008	0.0008 200.7/6010B			
11/5/2008		JL				Dissolved Lead	U	BDL	mg/L	0.009	0.009 200.7/6010B			
11/5/2008		JL				Dissolved Manganese		0.03	mg/L	0.0001	0.0001 200.7/6010B			
11/5/2008		JL				Dissolved Nickel	U	BDL	mg/L	0.0069	0.0069 200.7/6010B			
11/5/2008		JL				Dissolved Silver	U	BDL	mg/L	0.0003	0.0003 200.7/6010B			
11/5/2008		JL				Dissolved Zinc		0.027	mg/L	0.0006	0.0006 200.7/6010B			
200804455	GAGE # 07311900	10/30/2008				METALS-TULSA:								
						11/5/2008	17:30	JL	Arsenic, Total		0.029	mg/L	0.009	0.009 200.7/6010B
			11/5/2008		JL	Barium, Total		0.091	mg/L	0.0006	0.0006 200.7/6010B			
			11/5/2008		JL	Cadmium, Total	U	BDL	mg/L	0.0009	0.0009 200.7/6010B			

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200804455	GAGE # 07311900	10/30/2008	11/5/2008		JL	Chromium, Total	U	BDL	mg/L	0.0009	0.0009	200.7/6010B
			11/5/2008		JL	Copper, Total		0.262	mg/L	0.0003	0.0003	200.7/6010B
			11/5/2008		JL	Iron, Total		0.039	mg/L	0.0008	0.0008	200.7/6010B
			11/5/2008		JL	Lead, Total	U	BDL	mg/L	0.009	0.009	200.7/6010B
			11/5/2008		JL	Manganese, Total		0.037	mg/L	0.0001	0.0001	200.7/6010B
			11/5/2008		JL	Nickel, Total	U	BDL	mg/L	0.0069	0.0069	200.7/6010B
			11/5/2008		JL	Silver, Total	U	BDL	mg/L	0.0003	0.0003	200.7/6010B
			11/5/2008		JL	Zinc, Total		0.039	mg/L	0.0006	0.0006	200.7/6010B
			11/20/2008	14:00	OP	Mercury, Dissolved	U	BDL	mg/l	0.0002	0.0002	EPA_245.1
			11/6/2008	10:00	op	Mercury	<	0.0002	mg/l	0.0002	0.0002	EPA_245.1
			11/13/2008	15:55	OL	Selenium, Dissolved	<	0.00093	mg/l	0.00093	0.00093	EPA_7440
			11/13/2008	8:18	OL	Selenium	<	0.00186	mg/l	0.00093	0.00186	EPA_7740
			11/5/2008	17:30	JL	Silicon Dioxide (silica)		4.4	mg/l	0.006	0.006	200.7/6010B
200804455	GAGE # 07311900					SALTS-TULSA:						
		10/30/2008	11/6/2008	13:01	JL	Calcium, Dissolved		454	mg/L	0.0039	0.0039	200.7/6010B
			11/6/2008		JL	Magnesium, Dissolved		101	mg/L	0.0006	0.0006	200.7/6010B
			11/6/2008		JL	Phosphorus, Total		0.23	mg/L	0.0096	0.0096	200.7/6010B
			11/6/2008		JL	Potassium, Dissolved		25.2	mg/L	0.0009	0.0009	200.7/6010B
			11/6/2008		JL	Sodium, Dissolved		2790	mg/L	0.0018	0.0018	200.7/6010B
			11/6/2008	13:01	JL	Total Hardness		1840	mg/l	0.06	0.06	200.7/6010B
			11/3/2008	10:10	OP	Total Alkalinity		102	mg/l	2	2	EPA_310.1
			11/4/2008	12:15	OP	Chloride		2474	mg/l	0.383	0.383	EPA 9253
		10/30/2008	12:52		JL	Dissolved Oxygen		7.2	mg/l	0.1	0.1	EPA_360.1
		11/19/2008	11:30		MY	Fluoride	J	1.11	mg/L	0.04	0.04	SM4500F-D
		11/4/2008	15:25		OP	Nitrate/nitrite As Nitroge	U	BDL	mg/l	1.2	1.2	EPA 353.3
		10/30/2008	12:52		JL	pH		7.6	s.u.			EPA_150.1
		11/3/2008	10:00		BS	Sulfate		1350	mg/l	1.2	1.2	ASTM D516-9
		11/4/2008	11:00		MY	Total Dissolved Solids		6240	mg/l	5.5	5.5	SM 2540C
		11/13/2008	12:30		OP	Total Kjeldahl Nitrogen	U	BDL	mg/l	0.4	0.4	EPA_351.3M
		11/4/2008	9:00		MY	Total Suspended Solids		16.5	mg/l	1.7	1.7	ASTM 3977-9
		11/3/2008	13:00		MY	Turbidity		21	NTU	0.078	0.078	EPA_180.1

*Susie Southwell*

Laboratory Authorized Signature

# Red River

## Environmental Laboratory and Consulting Company

Analytical Laboratory - Environmental Consulting - Permit Application and Compliance

### Certificate of Analysis

ODEQ ID # 9953

To: MR. TONY CLYDE

TULSA DISTRICT CORPS OF ENGINEERS  
1645 S 101st EAST AVE  
TULSA, OK 74128-4609

Project #: W912BV-07-P0189

Date Received: 10/31/2008

Project Name: WATER QUALITY MONITORING

Report Date: 11/20/2008

Lab Number	Sample Identification	Date Sampled	Analysis Date	Time	Analized By	Parameter	Q	Results	Units	MDL	SQL	Method
200804456	GAGE # 07311800					METALS-TUL-D:						
		10/30/2008	11/5/2008	10:50	JL	Dissolved Arsenic	U	BDL	mg/L	0.009	0.009	200.7/6010B
			11/5/2008		JL	Dissolved Barium		0.09	mg/L	0.0006	0.0006	200.7/6010B
			11/5/2008		JL	Dissolved Cadmium	U	BDL	mg/L	0.0009	0.0009	200.7/6010B
			11/5/2008		JL	Dissolved Chromium	U	BDL	mg/L	0.0009	0.0009	200.7/6010B
			11/5/2008		JL	Dissolved Copper		0.08	mg/L	0.0003	0.0003	200.7/6010B
			11/5/2008		JL	Dissolved Iron	U	BDL	mg/L	0.0008	0.0008	200.7/6010B
			11/5/2008		JL	Dissolved Lead	U	BDL	mg/L	0.009	0.009	200.7/6010B
			11/5/2008		JL	Dissolved Manganese	U	BDL	mg/L	0.0001	0.0001	200.7/6010B
			11/5/2008		JL	Dissolved Nickel	U	BDL	mg/L	0.0069	0.0069	200.7/6010B
			11/5/2008		JL	Dissolved Silver	U	BDL	mg/L	0.0003	0.0003	200.7/6010B
			11/5/2008		JL	Dissolved Zinc	U	BDL	mg/L	0.0006	0.0006	200.7/6010B
200804456	GAGE # 07311800					METALS-TULSA:						
		10/30/2008	11/5/2008	17:30	JL	Arsenic, Total	U	BDL	mg/L	0.009	0.009	200.7/6010B
			11/5/2008		JL	Barium, Total		0.08	mg/L	0.0006	0.0006	200.7/6010B
			11/5/2008		JL	Cadmium, Total	U	BDL	mg/L	0.0009	0.0009	200.7/6010B
			11/5/2008		JL	Chromium, Total	U	BDL	mg/L	0.0009	0.0009	200.7/6010B
			11/5/2008		JL	Copper, Total		0.27	mg/L	0.0003	0.0003	200.7/6010B
			11/5/2008		JL	Iron, Total	U	BDL	mg/L	0.0008	0.0008	200.7/6010B
			11/5/2008		JL	Lead, Total	U	BDL	mg/L	0.009	0.009	200.7/6010B
			11/5/2008		JL	Manganese, Total	U	BDL	mg/L	0.0001	0.0001	200.7/6010B
			11/5/2008		JL	Nickel, Total	U	BDL	mg/L	0.0069	0.0069	200.7/6010B
			11/5/2008		JL	Silver, Total	U	BDL	mg/L	0.0003	0.0003	200.7/6010B
			11/5/2008		JL	Zinc, Total	U	BDL	mg/L	0.0006	0.0006	200.7/6010B
		11/20/2008		14:00	OP	Mercury, Dissolved	U	BDL	mg/l	0.0002	0.0002	EPA_245.1
		11/6/2008		10:00	op	Mercury	<	0.0002	mg/l	0.0002	0.0002	EPA_245.1
		11/13/2008		15:58	OL	Selenium, Dissolved	<	0.00279	mg/l	0.00093	0.00279	EPA_7440
		11/13/2008		8:18	OL	Selenium	<	0.00279	mg/l	0.00093	0.00279	EPA_7740
		11/5/2008		17:30	JL	Silicon Dioxide (silica)		5.7	mg/l	0.006	0.006	200.7/6010B

*Susie Southwell*

Laboratory Authorized Signature

# Red River

## Environmental Laboratory and Consulting Company

Analytical Laboratory - Environmental Consulting - Permit Application and Compliance

### Certificate of Analysis

ODEQ ID # 9953

To: MR. TONY CLYDE

TULSA DISTRICT CORPS OF ENGINEERS  
1645 S 101st EAST AVE  
TULSA, OK 74128-4609

Project #: W912BV-07-P0189

Date Received: 10/31/2008

Project Name: WATER QUALITY MONITORING

Report Date: 11/20/2008

Lab Number	Sample Identification	Date Sampled	Analysis Date	Time	Analized By	Parameter	Q	Results	Units	MDL	SQL	Method
200804456	GAGE # 07311800					SALTS-TULSA:						
		10/30/2008	11/6/2008	13:01	JL	Calcium, Dissolved		526	mg/L	0.0039	0.0039	200.7/6010B
			11/6/2008		JL	Magnesium, Dissolved		135	mg/L	0.0006	0.0006	200.7/6010B
			11/6/2008		JL	Phosphorus, Total		0.55	mg/L	0.0096	0.0096	200.7/6010B
			11/6/2008		JL	Potassium, Dissolved		17.4	mg/L	0.0009	0.0009	200.7/6010B
			11/6/2008		JL	Sodium, Dissolved		1110	mg/L	0.0018	0.0018	200.7/6010B
			11/6/2008	13:01	JL	Total Hardness		2180	mg/l	0.06	0.06	200.7/6010B
			11/3/2008	10:10	OP	Total Alkalinity		130	mg/l	2	2	EPA_310.1
			11/4/2008	12:15	OP	Chloride		1914	mg/l	0.383	0.383	EPA 9253
		10/30/2008	14:10	JL	JL	Dissolved Oxygen		7.2	mg/l	0.1	0.1	EPA_360.1
		11/19/2008	11:30	MY	MY	Fluoride		1.26	mg/L	0.04	0.04	SM4500F-D
		11/4/2008	15:25	OP	OP	Nitrate/nitrite As Nitroge	U	BDL	mg/l	1.2	1.2	EPA 353.3
		10/30/2008	14:10	JL	JL	pH		7.6	s.u.			EPA_150.1
		11/3/2008	10:00	BS	BS	Sulfate		1850	mg/l	1.2	1.2	ASTM D516-9
		11/4/2008	11:00	MY	MY	Total Dissolved Solids		5860	mg/l	5.5	5.5	SM 2540C
		11/13/2008	12:30	OP	OP	Total Kjeldahl Nitrogen	U	BDL	mg/l	0.4	0.4	EPA_351.3M
		11/4/2008	9:00	MY	MY	Total Suspended Solids		18.5	mg/l	1.7	1.7	ASTM 3977-9
		11/3/2008	13:00	MY	MY	Turbidity		22.5	NTU	0.078	0.078	EPA_180.1
200804457	GAGE # 07311700					METALS-TUL-D:						
		10/30/2008	11/5/2008	10:50	JL	Dissolved Arsenic	U	BDL	mg/L	0.009	0.009	200.7/6010B
			11/5/2008		JL	Dissolved Barium		0.08	mg/L	0.0006	0.0006	200.7/6010B
			11/5/2008		JL	Dissolved Cadmium	U	BDL	mg/L	0.0009	0.0009	200.7/6010B
			11/5/2008		JL	Dissolved Chromium	U	BDL	mg/L	0.0009	0.0009	200.7/6010B
			11/5/2008		JL	Dissolved Copper	U	BDL	mg/L	0.0003	0.0003	200.7/6010B
			11/5/2008		JL	Dissolved Iron	U	BDL	mg/L	0.0008	0.0008	200.7/6010B
			11/5/2008		JL	Dissolved Lead	U	BDL	mg/L	0.009	0.009	200.7/6010B
			11/5/2008		JL	Dissolved Manganese	U	BDL	mg/L	0.0001	0.0001	200.7/6010B
			11/5/2008		JL	Dissolved Nickel	U	BDL	mg/L	0.0069	0.0069	200.7/6010B
			11/5/2008		JL	Dissolved Silver	U	BDL	mg/L	0.0003	0.0003	200.7/6010B

*Susie Southwell*

Laboratory Authorized Signature



## Environmental Laboratory and Consulting Company

Analytical Laboratory - Environmental Consulting - Permit Application and Compliance

# Certificate of Analysis

ODEQ ID # 9953

To: MR. TONY CLYDE

TULSA DISTRICT CORPS OF ENGINEERS  
1645 S 101st EAST AVE  
TULSA, OK 74128-4609

Project #: W912BV-07-P0189

Date Received: 10/31/2008

Project Name: WATER QUALITY MONITORING

Report Date: 11/20/2008

Lab Number	Sample Identification	Date Sampled	Analysis Date	Time	Analized By	Parameter	Q	Results	Units	MDL	SQL	Method
200804457	GAGE # 07311700	10/30/2008	11/5/2008		JL	Dissolved Zinc	U	BDL	mg/L	0.0006	0.0006	200.7/6010B
200804457	GAGE # 07311700					METALS-TULSA:						
		10/30/2008	11/5/2008	17:30	JL	Arsenic, Total	U	BDL	mg/L	0.009	0.009	200.7/6010B
			11/5/2008		JL	Barium, Total		0.09	mg/L	0.0006	0.0006	200.7/6010B
			11/5/2008		JL	Cadmium, Total	U	BDL	mg/L	0.0009	0.0009	200.7/6010B
			11/5/2008		JL	Chromium, Total	U	BDL	mg/L	0.0009	0.0009	200.7/6010B
			11/5/2008		JL	Copper, Total		0.34	mg/L	0.0003	0.0003	200.7/6010B
			11/5/2008		JL	Iron, Total	U	BDL	mg/L	0.0008	0.0008	200.7/6010B
			11/5/2008		JL	Lead, Total	U	BDL	mg/L	0.009	0.009	200.7/6010B
			11/5/2008		JL	Manganese, Total	U	BDL	mg/L	0.0001	0.0001	200.7/6010B
			11/5/2008		JL	Nickel, Total	U	BDL	mg/L	0.0069	0.0069	200.7/6010B
			11/5/2008		JL	Silver, Total	U	BDL	mg/L	0.0003	0.0003	200.7/6010B
			11/5/2008		JL	Zinc, Total	U	BDL	mg/L	0.0006	0.0006	200.7/6010B
		11/20/2008		14:00	OP	Mercury, Dissolved	U	BDL	mg/l	0.0002	0.0002	EPA_245.1
		11/6/2008		10:00	op	Mercury	<	0.0002	mg/l	0.0002	0.0002	EPA_245.1
		11/13/2008		16:01	OL	Selenium, Dissolved	<	0.0186	mg/l	0.00093	0.0186	EPA_7440
		11/13/2008		8:18	OL	Selenium	<	0.0186	mg/l	0.00093	0.0186	EPA_7740
		11/5/2008		17:30	JL	Silicon Dioxide (silica)		0.83	mg/l	0.006	0.006	200.7/6010B
200804457	GAGE # 07311700					SALTS-TULSA:						
		10/30/2008	11/6/2008	13:01	JL	Calcium, Dissolved		730	mg/L	0.0039	0.0039	200.7/6010B
			11/6/2008		JL	Magnesium, Dissolved		181	mg/L	0.0006	0.0006	200.7/6010B
			11/6/2008		JL	Phosphorus, Total		0.5	mg/L	0.0096	0.0096	200.7/6010B
			11/6/2008		JL	Potassium, Dissolved		20.7	mg/L	0.0009	0.0009	200.7/6010B
			11/6/2008		JL	Sodium, Dissolved		3540	mg/L	0.0018	0.0018	200.7/6010B
			11/6/2008	13:01	JL	Total Hardness		2990	mg/l	0.06	0.06	200.7/6010B
			11/3/2008	10:10	OP	Total Alkalinity		67	mg/l	2	2	EPA_310.1
			11/4/2008	12:15	OP	Chloride		4389	mg/l	0.383	0.383	EPA 9253
		10/30/2008		14:35	JL	Dissolved Oxygen		8.4	mg/l	0.1	0.1	EPA_360.1
		11/19/2008		11:30	MY	Fluoride		1.3	mg/L	0.04	0.04	SM4500F-D
		11/4/2008		15:25	OP	Nitrate/nitrite As Nitroge	U	BDL	mg/l	1.2	1.2	EPA 353.3

*Susie Southwell*

Laboratory Authorized Signature

# Red River

## Environmental Laboratory and Consulting Company

Analytical Laboratory - Environmental Consulting - Permit Application and Compliance

### Certificate of Analysis

ODEQ ID # 9953

To: MR. TONY CLYDE

TULSA DISTRICT CORPS OF ENGINEERS  
1645 S 101st EAST AVE  
TULSA, OK 74128-4609

Project #: W912BV-07-P0189

Date Received: 10/31/2008

Project Name: WATER QUALITY MONITORING

Report Date: 11/20/2008

Lab Number	Sample Identification	Date Sampled	Analysis Date	Time	Analyst	Parameter	Q	Results	Units	MDL	SQL Method	
200804457	GAGE # 07311700	10/30/2008	10/30/2008	14:35	JL	pH		7.8	s.u.		EPA_150.1	
			11/3/2008	10:00	BS	Sulfate		2050	mg/l	1.2	1.2	ASTM D516-9
			11/4/2008	11:00	MY	Total Dissolved Solids		10430	mg/l	5.5	5.5	SM 2540C
			11/13/2008	12:30	OP	Total Kjeldahl Nitrogen	U	BDL	mg/l	0.4	0.4	EPA_351.3M
			11/4/2008	9:00	MY	Total Suspended Solids		20.3	mg/l	1.7	1.7	ASTM 3977-9
			11/3/2008	13:00	MY	Turbidity		11.6	NTU	0.078	0.078	EPA_180.1
200804458	GAGE # 07311630	10/30/2008	METALS-TUL-D:									
			11/5/2008	10:50	JL	Dissolved Arsenic	U	BDL	mg/L	0.009	0.009	200.7/6010B
			11/5/2008		JL	Dissolved Barium	U	BDL	mg/L	0.0006	0.0006	200.7/6010B
			11/5/2008		JL	Dissolved Cadmium	U	BDL	mg/L	0.0009	0.0009	200.7/6010B
			11/5/2008		JL	Dissolved Chromium	U	BDL	mg/L	0.0009	0.0009	200.7/6010B
			11/5/2008		JL	Dissolved Copper	U	BDL	mg/L	0.0003	0.0003	200.7/6010B
			11/5/2008		JL	Dissolved Iron	U	BDL	mg/L	0.0008	0.0008	200.7/6010B
			11/5/2008		JL	Dissolved Lead	U	BDL	mg/L	0.009	0.009	200.7/6010B
			11/5/2008		JL	Dissolved Manganese	U	BDL	mg/L	0.0001	0.0001	200.7/6010B
			11/5/2008		JL	Dissolved Nickel	U	BDL	mg/L	0.0069	0.0069	200.7/6010B
			11/5/2008		JL	Dissolved Silver	U	BDL	mg/L	0.0003	0.0003	200.7/6010B
200804458	GAGE # 07311630	10/30/2008	METALS-TULSA:									
			11/5/2008	17:30	JL	Arsenic, Total	U	BDL	mg/L	0.009	0.009	200.7/6010B
			11/5/2008		JL	Barium, Total	U	BDL	mg/L	0.0006	0.0006	200.7/6010B
			11/5/2008		JL	Cadmium, Total	U	BDL	mg/L	0.0009	0.0009	200.7/6010B
			11/5/2008		JL	Chromium, Total	U	BDL	mg/L	0.0009	0.0009	200.7/6010B
			11/5/2008		JL	Copper, Total		0.29	mg/L	0.0003	0.0003	200.7/6010B
			11/5/2008		JL	Iron, Total	U	BDL	mg/L	0.0008	0.0008	200.7/6010B
			11/5/2008		JL	Lead, Total	U	BDL	mg/L	0.009	0.009	200.7/6010B
			11/5/2008		JL	Manganese, Total	U	BDL	mg/L	0.0001	0.0001	200.7/6010B
			11/5/2008		JL	Nickel, Total	U	BDL	mg/L	0.0069	0.0069	200.7/6010B
11/5/2008		JL	Silver, Total	U	BDL	mg/L	0.0003	0.0003	200.7/6010B			

*Susie Southwell*

Laboratory Authorized Signature



Environmental Laboratory and Consulting Company

Analytical Laboratory - Environmental Consulting - Permit Application and Compliance

Certificate of Analysis

ODEQ ID # 9953

To: MR. TONY CLYDE

TULSA DISTRICT CORPS OF ENGINEERS
1645 S 101st EAST AVE
TULSA, OK 74128-4609

Project #: W912BV-07-P0189

Date Received: 10/31/2008

Project Name: WATER QUALITY MONITORING

Report Date: 11/20/2008

Table with columns: Lab Number, Sample Identification, Date Sampled, Analysis Date, Analyzed Time, By, Parameter, Q Results, Units, MDL, SQL Method. Contains data for samples 200804458, 200804458, and 200804459.

Susie Southwell

Laboratory Authorized Signature



## Environmental Laboratory and Consulting Company

Analytical Laboratory - Environmental Consulting - Permit Application and Compliance

# Certificate of Analysis

ODEQ ID # 9953

To: MR. TONY CLYDE

TULSA DISTRICT CORPS OF ENGINEERS  
1645 S 101st EAST AVE  
TULSA, OK 74128-4609

Project #: W912BV-07-P0189

Date Received: 10/31/2008

Project Name: WATER QUALITY MONITORING

Report Date: 11/20/2008

Lab Number	Sample Identification	Date Sampled	Analysis Date	Time	Analized By	Parameter	Q	Results	Units	MDL	SQL Method
200804459	GAGE # 07311600	10/30/2008	11/5/2008		JL	Dissolved Copper	0.05	mg/L	0.0003	0.0003	200.7/6010B
			11/5/2008		JL	Dissolved Iron	U BDL	mg/L	0.0008	0.0008	200.7/6010B
			11/5/2008		JL	Dissolved Lead	U BDL	mg/L	0.009	0.009	200.7/6010B
			11/5/2008		JL	Dissolved Manganese	U BDL	mg/L	0.0001	0.0001	200.7/6010B
			11/5/2008		JL	Dissolved Nickel	U BDL	mg/L	0.0069	0.0069	200.7/6010B
			11/5/2008		JL	Dissolved Silver	U BDL	mg/L	0.0003	0.0003	200.7/6010B
			11/5/2008		JL	Dissolved Zinc	0.05	mg/L	0.0006	0.0006	200.7/6010B
200804459	GAGE # 07311600	10/30/2008	METALS-TULSA:								
			11/5/2008	17:30	JL	Arsenic, Total	U BDL	mg/L	0.009	0.009	200.7/6010B
			11/5/2008		JL	Barium, Total	0.05	mg/L	0.0006	0.0006	200.7/6010B
			11/5/2008		JL	Cadmium, Total	U BDL	mg/L	0.0009	0.0009	200.7/6010B
			11/5/2008		JL	Chromium, Total	U BDL	mg/L	0.0009	0.0009	200.7/6010B
			11/5/2008		JL	Copper, Total	0.3	mg/L	0.0003	0.0003	200.7/6010B
			11/5/2008		JL	Iron, Total	U BDL	mg/L	0.0008	0.0008	200.7/6010B
			11/5/2008		JL	Lead, Total	U BDL	mg/L	0.009	0.009	200.7/6010B
			11/5/2008		JL	Manganese, Total	U BDL	mg/L	0.0001	0.0001	200.7/6010B
			11/5/2008		JL	Nickel, Total	U BDL	mg/L	0.0069	0.0069	200.7/6010B
			11/5/2008		JL	Silver, Total	U BDL	mg/L	0.0003	0.0003	200.7/6010B
			11/5/2008		JL	Zinc, Total	0.05	mg/L	0.0006	0.0006	200.7/6010B
			11/20/2008	14:00	OP	Mercury, Dissolved	U BDL	mg/l	0.0002	0.0002	EPA_245.1
			11/6/2008	10:00	op	Mercury	< 0.0002	mg/l	0.0002	0.0002	EPA_245.1
			11/13/2008	16:07	OL	Selenium, Dissolved	< 0.0186	mg/l	0.00093	0.0186	EPA_7440
11/13/2008	8:18	OL	Selenium	< 0.0186	mg/l	0.00093	0.0186	EPA_7740			
11/5/2008	17:30	JL	Silicon Dioxide (silica)	0.72	mg/l	0.006	0.006	200.7/6010B			
200804459	GAGE # 07311600	10/30/2008	SALTS-TULSA:								
			11/6/2008	13:01	JL	Calcium, Dissolved	934	mg/L	0.0039	0.0039	200.7/6010B
			11/6/2008		JL	Magnesium, Dissolved	219	mg/L	0.0006	0.0006	200.7/6010B
			11/6/2008		JL	Phosphorus, Total	0.6	mg/L	0.0096	0.0096	200.7/6010B
			11/6/2008		JL	Potassium, Dissolved	34.9	mg/L	0.0009	0.0009	200.7/6010B
11/6/2008		JL	Sodium, Dissolved	7040	mg/L	0.0018	0.0018	200.7/6010B			

*Susie Southwell*

Laboratory Authorized Signature

# Red River

## Environmental Laboratory and Consulting Company

Analytical Laboratory - Environmental Consulting - Permit Application and Compliance

### Certificate of Analysis

ODEQ ID # 9953

To: MR. TONY CLYDE

TULSA DISTRICT CORPS OF ENGINEERS  
1645 S 101st EAST AVE  
TULSA, OK 74128-4609

Project #: W912BV-07-P0189

Date Received: 10/31/2008

Project Name: WATER QUALITY MONITORING

Report Date: 11/20/2008

Lab Number	Sample Identification	Date Sampled	Analysis Date	Time	Analized By	Parameter	Q	Results	Units	MDL	SQL Method
200804459	GAGE # 07311600	10/30/2008	11/6/2008	13:01	JL	Total Hardness		3840	mg/l	0.06	0.06 200.7/6010B
			11/3/2008	10:10	OP	Total Alkalinity		112	mg/l	2	2 EPA_310.1
			11/4/2008	12:15	OP	Chloride		7618	mg/l	0.383	0.383 EPA 9253
			10/30/2008	16:50	JL	Dissolved Oxygen		10.4	mg/l	0.1	0.1 EPA_360.1
			11/19/2008	11:30	MY	Fluoride		1.45	mg/L	0.04	0.04 SM4500F-D
			11/4/2008	15:25	OP	Nitrate/nitrite As Nitroge	U	BDL	mg/l	1.2	1.2 EPA 353.3
			10/30/2008	16:50	JL	pH		7.9	s.u.		EPA_150.1
			11/3/2008	10:00	BS	Sulfate		2550	mg/l	1.2	1.2 ASTM D516-9
			11/4/2008	11:00	MY	Total Dissolved Solids		16710	mg/l	5.5	5.5 SM 2540C
			11/13/2008	12:30	OP	Total Kjeldahl Nitrogen	U	BDL	mg/l	0.4	0.4 EPA_351.3M
			11/4/2008	9:00	MY	Total Suspended Solids		17.4	mg/l	1.7	1.7 ASTM 3977-9
			11/3/2008	13:00	MY	Turbidity		3.1	NTU	0.078	0.078 EPA_180.1
200804460	GAGE # 07311782					METALS-TUL-D:					
		10/30/2008	11/5/2008	10:50	JL	Dissolved Arsenic	U	BDL	mg/L	0.009	0.009 200.7/6010B
			11/5/2008		JL	Dissolved Barium		0.04	mg/L	0.0006	0.0006 200.7/6010B
			11/5/2008		JL	Dissolved Cadmium	U	BDL	mg/L	0.0009	0.0009 200.7/6010B
			11/5/2008		JL	Dissolved Chromium	U	BDL	mg/L	0.0009	0.0009 200.7/6010B
			11/5/2008		JL	Dissolved Copper		0.24	mg/L	0.0003	0.0003 200.7/6010B
			11/5/2008		JL	Dissolved Iron	U	BDL	mg/L	0.0008	0.0008 200.7/6010B
			11/5/2008		JL	Dissolved Lead	U	BDL	mg/L	0.009	0.009 200.7/6010B
			11/5/2008		JL	Dissolved Manganese	U	BDL	mg/L	0.0001	0.0001 200.7/6010B
			11/5/2008		JL	Dissolved Nickel	U	BDL	mg/L	0.0069	0.0069 200.7/6010B
			11/5/2008		JL	Dissolved Silver	U	BDL	mg/L	0.0003	0.0003 200.7/6010B
			11/5/2008		JL	Dissolved Zinc		0.33	mg/L	0.0006	0.0006 200.7/6010B
200804460	GAGE # 07311782					METALS-TULSA:					
		10/30/2008	11/5/2008	17:30	JL	Arsenic, Total	U	BDL	mg/L	0.009	0.009 200.7/6010B
			11/5/2008		JL	Barium, Total		0.04	mg/L	0.0006	0.0006 200.7/6010B
			11/5/2008		JL	Cadmium, Total	U	BDL	mg/L	0.0009	0.0009 200.7/6010B
			11/5/2008		JL	Chromium, Total	U	BDL	mg/L	0.0009	0.0009 200.7/6010B

*Susie Southwell*

Laboratory Authorized Signature

# Red River

## Environmental Laboratory and Consulting Company

Analytical Laboratory - Environmental Consulting - Permit Application and Compliance

### Certificate of Analysis

ODEQ ID # 9953

To: MR. TONY CLYDE

TULSA DISTRICT CORPS OF ENGINEERS  
1645 S 101st EAST AVE  
TULSA, OK 74128-4609

Project #: W912BV-07-P0189

Date Received: 10/31/2008

Project Name: WATER QUALITY MONITORING

Report Date: 11/20/2008

Lab Number	Sample Identification	Date Sampled	Analysis Date	Time	Analized By	Parameter	Q	Results	Units	MDL	SQL Method
200804460	GAGE # 07311782	10/30/2008	11/5/2008		JL	Copper, Total		0.43	mg/L	0.0003	0.0003 200.7/6010B
			11/5/2008		JL	Iron, Total	U	BDL	mg/L	0.0008	0.0008 200.7/6010B
			11/5/2008		JL	Lead, Total	U	BDL	mg/L	0.009	0.009 200.7/6010B
			11/5/2008		JL	Manganese, Total	U	BDL	mg/L	0.0001	0.0001 200.7/6010B
			11/5/2008		JL	Nickel, Total	U	BDL	mg/L	0.0069	0.0069 200.7/6010B
			11/5/2008		JL	Silver, Total	U	BDL	mg/L	0.0003	0.0003 200.7/6010B
			11/5/2008		JL	Zinc, Total		0.24	mg/L	0.0006	0.0006 200.7/6010B
			11/20/2008	14:00	OP	Mercury, Dissolved	U	BDL	mg/l	0.0002	0.0002 EPA_245.1
			11/6/2008	10:00	op	Mercury	<	0.0002	mg/l	0.0002	0.0002 EPA_245.1
			11/13/2008	16:16	OL	Selenium, Dissolved	<	0.00465	mg/l	0.00093	0.00465 EPA_7440
			11/13/2008	8:18	OL	Selenium	<	0.0093	mg/l	0.00093	0.0093 EPA_7740
			11/5/2008	17:30	JL	Silicon Dioxide (silica)		7.49	mg/l	0.006	0.006 200.7/6010B
200804460	GAGE # 07311782					SALTS-TULSA:					
		10/30/2008	11/6/2008	13:01	JL	Calcium, Dissolved		1460	mg/L	0.0039	0.0039 200.7/6010B
			11/6/2008		JL	Magnesium, Dissolved		416	mg/L	0.0006	0.0006 200.7/6010B
			11/6/2008		JL	Phosphorus, Total		1.4	mg/L	0.0096	0.0096 200.7/6010B
			11/6/2008		JL	Potassium, Dissolved		130	mg/L	0.0009	0.0009 200.7/6010B
			11/6/2008		JL	Sodium, Dissolved		20200	mg/L	0.0018	0.0018 200.7/6010B
			11/6/2008	13:01	JL	Total Hardness		6480	mg/l	0.06	0.06 200.7/6010B
			11/3/2008	10:10	OP	Total Alkalinity		120	mg/l	2	2 EPA_310.1
			11/4/2008	12:15	OP	Chloride		19134	mg/l	0.383	0.383 EPA 9253
		10/30/2008	18:05	JL	JL	Dissolved Oxygen		9.4	mg/l	0.1	0.1 EPA_360.1
		11/19/2008	11:30	MY	MY	Fluoride		1.89	mg/L	0.04	0.04 SM4500F-D
		11/4/2008	15:25	OP	OP	Nitrate/nitrite As Nitroge	U	BDL	mg/l	1.2	1.2 EPA 353.3
		10/30/2008	18:05	JL	JL	pH		7.6	s.u.		EPA_150.1
		11/3/2008	10:00	BS	BS	Sulfate		3050	mg/l	1.2	1.2 ASTM D516-9
		11/4/2008	11:00	MY	MY	Total Dissolved Solids		36560	mg/l	5.5	5.5 SM 2540C
		11/13/2008	12:30	OP	OP	Total Kjeldahl Nitrogen	J	1.12	mg/l	0.4	0.4 EPA_351.3M
		11/4/2008	9:00	MY	MY	Total Suspended Solids		5.2	mg/l	1.7	1.7 ASTM 3977-9
		11/3/2008	13:00	MY	MY	Turbidity		2	NTU	0.078	0.078 EPA_180.1

*Susie Southwell*

Laboratory Authorized Signature

# Red River

## Environmental Laboratory and Consulting Company

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### Certificate of Analysis

ODEQ ID # 9953

To: MR. TONY CLYDE

TULSA DISTRICT CORPS OF ENGINEERS  
1645 S 101st EAST AVE  
TULSA, OK 74128-4609

Project #: W912BV-07-P0189

Date Received: 10/31/2008

Project Name: WATER QUALITY MONITORING

Report Date: 11/20/2008

Lab Number	Sample Identification	Date Sampled	Analysis Date	Time	Analized By	Parameter	Q	Results	Units	MDL	SQL	Method
200804461	GAGE # 07311783					METALS-TUL-D:						
		10/30/2008	11/5/2008	10:50	JL	Dissolved Arsenic	U	BDL	mg/L	0.009	0.009	200.7/6010B
			11/5/2008		JL	Dissolved Barium		0.04	mg/L	0.0006	0.0006	200.7/6010B
			11/5/2008		JL	Dissolved Cadmium	U	BDL	mg/L	0.0009	0.0009	200.7/6010B
			11/5/2008		JL	Dissolved Chromium	U	BDL	mg/L	0.0009	0.0009	200.7/6010B
			11/5/2008		JL	Dissolved Copper		0.18	mg/L	0.0003	0.0003	200.7/6010B
			11/5/2008		JL	Dissolved Iron		0.52	mg/L	0.0008	0.0008	200.7/6010B
			11/5/2008		JL	Dissolved Lead	U	BDL	mg/L	0.009	0.009	200.7/6010B
			11/5/2008		JL	Dissolved Manganese		0.43	mg/L	0.0001	0.0001	200.7/6010B
			11/5/2008		JL	Dissolved Nickel	U	BDL	mg/L	0.0069	0.0069	200.7/6010B
			11/5/2008		JL	Dissolved Silver	U	BDL	mg/L	0.0003	0.0003	200.7/6010B
			11/5/2008		JL	Dissolved Zinc		0.22	mg/L	0.0006	0.0006	200.7/6010B
200804461	GAGE # 07311783					METALS-TULSA:						
		10/30/2008	11/5/2008	17:30	JL	Arsenic, Total	U	BDL	mg/L	0.009	0.009	200.7/6010B
			11/5/2008		JL	Barium, Total		0.04	mg/L	0.0006	0.0006	200.7/6010B
			11/5/2008		JL	Cadmium, Total	U	BDL	mg/L	0.0009	0.0009	200.7/6010B
			11/5/2008		JL	Chromium, Total	U	BDL	mg/L	0.0009	0.0009	200.7/6010B
			11/5/2008		JL	Copper, Total		0.38	mg/L	0.0003	0.0003	200.7/6010B
			11/5/2008		JL	Iron, Total		0.47	mg/L	0.0008	0.0008	200.7/6010B
			11/5/2008		JL	Lead, Total	U	BDL	mg/L	0.009	0.009	200.7/6010B
			11/5/2008		JL	Manganese, Total		0.41	mg/L	0.0001	0.0001	200.7/6010B
			11/5/2008		JL	Nickel, Total	U	BDL	mg/L	0.0069	0.0069	200.7/6010B
			11/5/2008		JL	Silver, Total	U	BDL	mg/L	0.0003	0.0003	200.7/6010B
			11/5/2008		JL	Zinc, Total		0.18	mg/L	0.0006	0.0006	200.7/6010B
		11/20/2008		14:00	OP	Mercury, Dissolved	U	BDL	mg/l	0.0002	0.0002	EPA_245.1
		11/6/2008		10:00	op	Mercury	<	0.0002	mg/l	0.0002	0.0002	EPA_245.1
		11/13/2008		16:19	OL	Selenium, Dissolved	<	0.00465	mg/l	0.00093	0.00465	EPA_7440
		11/13/2008		8:18	OL	Selenium	<	0.0093	mg/l	0.00093	0.0093	EPA_7740
		11/5/2008		17:30	JL	Silicon Dioxide (silica)		12.1	mg/l	0.006	0.006	200.7/6010B

*Susie Southwell*

Laboratory Authorized Signature



Environmental Laboratory and Consulting Company

Analytical Laboratory - Environmental Consulting - Permit Application and Compliance

Certificate of Analysis

ODEQ ID # 9953

To: MR. TONY CLYDE

TULSA DISTRICT CORPS OF ENGINEERS
1645 S 101st EAST AVE
TULSA, OK 74128-4609

Project #: W912BV-07-P0189

Date Received: 10/31/2008

Project Name: WATER QUALITY MONITORING

Report Date: 11/20/2008

Table with columns: Lab Number, Sample Identification, Date Sampled, Analysis Date, Analyzed Time, Analyzed By, Parameter, Q Results, Units, MDL, SQL Method. Contains two main sections: SALTS-TULSA and METALS-TUL-D.

Susie Southwell

Laboratory Authorized Signature

# Red River

## Environmental Laboratory and Consulting Company

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Project Name: WATER QUALITY MONITORING

Report Date: 11/20/2008

Lab Number	Sample Identification	Date Sampled	Analysis Date	Time	Analized By	Parameter	Q	Results	Units	MDL	SQL Method
200804462	GAGE # 07308500					METALS-TULSA:					
		10/30/2008	11/5/2008	17:30	JL	Arsenic, Total		0.053	mg/L	0.009	0.009 200.7/6010B
			11/5/2008		JL	Barium, Total		0.124	mg/L	0.0006	0.0006 200.7/6010B
			11/5/2008		JL	Cadmium, Total		0.007	mg/L	0.0009	0.0009 200.7/6010B
			11/5/2008		JL	Chromium, Total	U	BDL	mg/L	0.0009	0.0009 200.7/6010B
			11/5/2008		JL	Copper, Total		0.24	mg/L	0.0003	0.0003 200.7/6010B
			11/5/2008		JL	Iron, Total		0.801	mg/L	0.0008	0.0008 200.7/6010B
			11/5/2008		JL	Lead, Total		0.027	mg/L	0.009	0.009 200.7/6010B
			11/5/2008		JL	Manganese, Total		0.058	mg/L	0.0001	0.0001 200.7/6010B
			11/5/2008		JL	Nickel, Total		0.026	mg/L	0.0069	0.0069 200.7/6010B
			11/5/2008		JL	Silver, Total	U	BDL	mg/L	0.0003	0.0003 200.7/6010B
			11/5/2008		JL	Zinc, Total		0.059	mg/L	0.0006	0.0006 200.7/6010B
		11/20/2008		14:00	OP	Mercury, Dissolved	U	BDL	mg/l	0.0002	0.0002 EPA_245.1
		11/6/2008		10:00	op	Mercury	<	0.0002	mg/l	0.0002	0.0002 EPA_245.1
		11/13/2008		16:22	OL	Selenium, Dissolved	<	0.00465	mg/l	0.00093	0.00465 EPA_7440
		11/13/2008		8:18	OL	Selenium	<	0.00465	mg/l	0.00093	0.00465 EPA_7740
		11/5/2008		17:30	JL	Silicon Dioxide (silica)		14.7	mg/l	0.006	0.006 200.7/6010B
200804462	GAGE # 07308500					SALTS-TULSA:					
		10/30/2008	11/6/2008	13:01	JL	Calcium, Dissolved		454	mg/L	0.0039	0.0039 200.7/6010B
			11/6/2008		JL	Magnesium, Dissolved		106	mg/L	0.0006	0.0006 200.7/6010B
			11/6/2008		JL	Phosphorus, Total		0.37	mg/L	0.0096	0.0096 200.7/6010B
			11/6/2008		JL	Potassium, Dissolved		25.3	mg/L	0.0009	0.0009 200.7/6010B
			11/6/2008		JL	Sodium, Dissolved		2320	mg/L	0.0018	0.0018 200.7/6010B
			11/6/2008	13:01	JL	Total Hardness		1860	mg/l	0.06	0.06 200.7/6010B
			11/3/2008	14:15	OP	Total Alkalinity		166	mg/l	2	2 EPA_310.1
			11/4/2008	12:15	OP	Chloride		2114	mg/l	0.383	0.383 EPA 9253
		10/30/2008		10:40	JL	Dissolved Oxygen		9.2	mg/l	0.1	0.1 EPA_360.1
		11/19/2008		11:30	MY	Fluoride	J	1.18	mg/L	0.04	0.04 SM4500F-D
		11/4/2008		16:30	OP	Nitrate/nitrite As Nitroge	U	BDL	mg/l	1.2	1.2 EPA 353.3
		10/30/2008		10:40	JL	pH		7.6	s.u.		EPA_150.1

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# Red River

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TULSA, OK 74128-4609

Project #: W912BV-07-P0189

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Project Name: WATER QUALITY MONITORING

Report Date: 11/20/2008

Lab Number	Sample Identification	Date Sampled	Analysis Date	Time	By	Parameter	Q	Results	Units	MDL	SQL Method	
200804462	GAGE # 07308500	10/30/2008	11/3/2008	10:00	BS	Sulfate		1350	mg/l	1.2	1.2 ASTM D516-9	
			11/4/2008	11:00	MY	Total Dissolved Solids		5652	mg/l	5.5	5.5 SM 2540C	
			11/13/2008	12:30	OP	Total Kjeldahl Nitrogen	U	BDL	mg/l	0.4	0.4 EPA_351.3M	
			11/4/2008	9:00	MY	Total Suspended Solids		147	mg/l	1.7	1.7 ASTM 3977-9	
			11/3/2008	13:00	MY	Turbidity		130	NTU	0.078	0.078 EPA_180.1	
200804463	GAGE # 07331600 DUPLICATE	10/31/2008	METALS-TUL-D:									
			11/5/2008	10:50	JL	Dissolved Arsenic	U	BDL	mg/L	0.009	0.009	200.7/6010B
			11/5/2008		JL	Dissolved Barium		0.144	mg/L	0.0006	0.0006	200.7/6010B
			11/5/2008		JL	Dissolved Cadmium	U	BDL	mg/L	0.0009	0.0009	200.7/6010B
			11/5/2008		JL	Dissolved Chromium	U	BDL	mg/L	0.0009	0.0009	200.7/6010B
			11/5/2008		JL	Dissolved Copper		0.028	mg/L	0.0003	0.0003	200.7/6010B
			11/5/2008		JL	Dissolved Iron	U	BDL	mg/L	0.0008	0.0008	200.7/6010B
			11/5/2008		JL	Dissolved Lead	U	BDL	mg/L	0.009	0.009	200.7/6010B
			11/5/2008		JL	Dissolved Manganese	U	BDL	mg/L	0.0001	0.0001	200.7/6010B
			11/5/2008		JL	Dissolved Nickel	U	BDL	mg/L	0.0069	0.0069	200.7/6010B
			11/5/2008		JL	Dissolved Silver	U	BDL	mg/L	0.0003	0.0003	200.7/6010B
11/5/2008		JL	Dissolved Zinc	U	BDL	mg/L	0.0006	0.0006	200.7/6010B			
200804463	GAGE # 07331600 DUPLICATE	10/31/2008	METALS-TULSA:									
			11/5/2008	17:30	JL	Arsenic, Total	U	BDL	mg/L	0.009	0.009	200.7/6010B
			11/5/2008		JL	Barium, Total		0.142	mg/L	0.0006	0.0006	200.7/6010B
			11/5/2008		JL	Cadmium, Total	U	BDL	mg/L	0.0009	0.0009	200.7/6010B
			11/5/2008		JL	Chromium, Total	U	BDL	mg/L	0.0009	0.0009	200.7/6010B
			11/5/2008		JL	Copper, Total		0.206	mg/L	0.0003	0.0003	200.7/6010B
			11/5/2008		JL	Iron, Total		0.116	mg/L	0.0008	0.0008	200.7/6010B
			11/5/2008		JL	Lead, Total	U	BDL	mg/L	0.009	0.009	200.7/6010B
			11/5/2008		JL	Manganese, Total		0.065	mg/L	0.0001	0.0001	200.7/6010B
11/5/2008		JL	Nickel, Total	U	BDL	mg/L	0.0069	0.0069	200.7/6010B			

*Susie Southwell*

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# Red River

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Lab Number	Sample Identification	Date Sampled	Analysis Date	Time	Analized By	Parameter	Q	Results	Units	MDL	SQL	Method
200804463	GAGE # 07331600 DUPLICATE	10/31/2008	11/5/2008		JL	Silver, Total	U	BDL	mg/L	0.0003	0.0003	200.7/6010B
			11/5/2008		JL	Zinc, Total	U	BDL	mg/L	0.0006	0.0006	200.7/6010B
			11/20/2008	14:00	OP	Mercury, Dissolved	U	BDL	mg/l	0.0002	0.0002	EPA_245.1
			11/6/2008	10:00	op	Mercury	<	0.0002	mg/l	0.0002	0.0002	EPA_245.1
			11/13/2008	16:25	OL	Selenium, Dissolved	<	0.00093	mg/l	0.00093	0.00093	EPA_7440
			11/13/2008	8:18	OL	Selenium	<	0.00093	mg/l	0.00093	0.00093	EPA_7740
			11/5/2008	17:30	JL	Silicon Dioxide (silica)		3.72	mg/l	0.006	0.006	200.7/6010B
200804463	GAGE # 07331600 DUPLICATE					SALTS-TULSA:						
		10/31/2008	11/6/2008	13:01	JL	Calcium, Dissolved		87.1	mg/L	0.0039	0.0039	200.7/6010B
			11/6/2008		JL	Magnesium, Dissolved		34.8	mg/L	0.0006	0.0006	200.7/6010B
			11/6/2008		JL	Phosphorus, Total		0.22	mg/L	0.0096	0.0096	200.7/6010B
			11/6/2008		JL	Potassium, Dissolved		9	mg/L	0.0009	0.0009	200.7/6010B
			11/6/2008		JL	Sodium, Dissolved		172	mg/L	0.0018	0.0018	200.7/6010B
			11/6/2008	13:01	JL	Total Hardness		416	mg/l	0.06	0.06	200.7/6010B
			11/3/2008	14:15	OP	Total Alkalinity		121	mg/l	2	2	EPA_310.1
			11/4/2008	14:00	OP	Chloride		225	mg/l	0.383	0.383	EPA 9253
		10/31/2008	12:20		JL	Dissolved Oxygen		7.2	mg/l	0.1	0.1	EPA_360.1
		11/19/2008	11:30		MY	Fluoride	J	0.7	mg/L	0.04	0.04	SM4500F-D
		11/4/2008	16:30		OP	Nitrate/nitrite As Nitroge	U	BDL	mg/l	1.2	1.2	EPA 353.3
		10/31/2008	12:20		JL	pH		7.3	s.u.			EPA_150.1
		11/3/2008	10:00		BS	Sulfate		520	mg/l	1.2	1.2	ASTM D516-9
		11/4/2008	11:00		MY	Total Dissolved Solids		876	mg/l	5.5	5.5	SM 2540C
		11/13/2008	12:30		OP	Total Kjeldahl Nitrogen	U	BDL	mg/l	0.4	0.4	EPA_351.3M
		11/4/2008	9:00		MY	Total Suspended Solids		12.2	mg/l	1.7	1.7	ASTM 3977-9
		11/3/2008	13:00		MY	Turbidity		10	NTU	0.078	0.078	EPA_180.1

*Susie Southwell*

Laboratory Authorized Signature



## Environmental Laboratory and Consulting Company

Analytical Laboratory - Environmental Consulting - Permit Application and Compliance

# Certificate of Analysis

ODEQ ID # 9953

To: MR. TONY CLYDE

TULSA DISTRICT CORPS OF ENGINEERS  
1645 S 101st EAST AVE  
TULSA, OK 74128-4609

Project #: W912BV-07-P0189

Date Received: 10/31/2008

Project Name: WATER QUALITY MONITORING

Report Date: 11/20/2008

Lab	Sample	Date	Analysis	Analized							
Number	Identification	Sampled	Date	Time	By	Parameter	Q	Results	Units	MDL	SQL Method

Note:

200804452: The higher detection limit on the selenium results is based on the sample being diluted prior to analysis.  
 200804453: Samples 200804453-200804463 were not filtered within the 48 hour holding time for dissolved Mercury.  
 200804455: The higher detection limit on the selenium results is based on the sample being diluted prior to analysis.  
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 200804459: The higher detection limit on the selenium results is based on the sample being diluted prior to analysis.  
 200804460: The higher detection limit on the selenium results is based on the sample being diluted prior to analysis.  
 200804461: The higher detection limit on the selenium results is based on the sample being diluted prior to analysis.  
 200804462: The higher detection limit on the selenium results is based on the sample being diluted prior to analysis.

MDL = Method Detection Limit. SQL\* = Sample Quantitation Level.

BDL = Analyte was analyzed for but not detected above MDL.

B = Analyte was detected in both the sample and associated blank.

J = Analyte was detected above the MDL but below the PQL.

OL2 = Subcontracted to ODEQ Lab #7211.

Q = Surrogate recovery fell outside acceptance limits.

M = Matrix effect present

\* When a sample contains a high concentration of either a target or non-target compound(s) or interference, it must be diluted. SQL = Dilution factor x MDL. Samples are disposed of 20 days after the sample is reported.

*Susie Southwell*

Laboratory Authorized Signature