



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 #: W912BV07-P-0189

Date Received: 4/2/2009

Project Name: WATER QUALITY MONITORING

Report Date: 4/28/2009

Lab Number	Sample Identification	Date Sampled	Analysis Date	Time	Analized By	Parameter	Q	Results	Units	MDL	SQL	Method
200901041	07331000					METALS-TUL-D:						
		4/1/2009	4/9/2009	10:30	JL	Dissolved Arsenic	U	BDL	mg/L	0.009	0.009	200.7/6010B
			4/9/2009		JL	Dissolved Barium		0.13	mg/L	0.0006	0.0006	200.7/6010B
			4/9/2009		JL	Dissolved Cadmium	U	BDL	mg/L	0.0009	0.0009	200.7/6010B
			4/9/2009		JL	Dissolved Chromium	U	BDL	mg/L	0.0009	0.0009	200.7/6010B
			4/9/2009		JL	Dissolved Copper	U	BDL	mg/L	0.0003	0.0003	200.7/6010B
			4/9/2009		JL	Dissolved Iron	U	BDL	mg/L	0.0008	0.0008	200.7/6010B
			4/9/2009		JL	Dissolved Lead	U	BDL	mg/L	0.009	0.009	200.7/6010B
			4/9/2009		JL	Dissolved Manganese	U	BDL	mg/L	0.0001	0.0001	200.7/6010B
			4/9/2009		JL	Dissolved Nickel	U	BDL	mg/L	0.0069	0.0069	200.7/6010B
			4/9/2009		JL	Dissolved Silver	U	BDL	mg/L	0.0003	0.0003	200.7/6010B
			4/9/2009		JL	Dissolved Zinc	U	BDL	mg/L	0.0006	0.0006	200.7/6010B
200901041	07331000					METALS-TULSA:						
		4/1/2009	4/9/2009	15:20	JL	Arsenic, Total		0.35	mg/L	0.009	0.009	200.7/6010B
			4/9/2009		JL	Barium, Total		0.14	mg/L	0.0006	0.0006	200.7/6010B
			4/9/2009		JL	Cadmium, Total	U	BDL	mg/L	0.0009	0.0009	200.7/6010B
			4/9/2009		JL	Chromium, Total	U	BDL	mg/L	0.0009	0.0009	200.7/6010B
			4/9/2009		JL	Copper, Total		0.189	mg/L	0.0003	0.0003	200.7/6010B
			4/9/2009		JL	Iron, Total		1.75	mg/L	0.0008	0.0008	200.7/6010B
			4/9/2009		JL	Lead, Total		0.168	mg/L	0.009	0.009	200.7/6010B
			4/9/2009		JL	Manganese, Total		1.05	mg/L	0.0001	0.0001	200.7/6010B
			4/9/2009		JL	Nickel, Total	U	BDL	mg/L	0.0069	0.0069	200.7/6010B
			4/9/2009		JL	Silver, Total	U	BDL	mg/L	0.0003	0.0003	200.7/6010B
			4/9/2009		JL	Zinc, Total		0.026	mg/L	0.0006	0.0006	200.7/6010B
			4/6/2009	9:10	PR	Mercury, Dissolved	U	BDL	mg/l	0.0002	0.0002	EPA_245.1
			4/6/2009	9:10	PR	Mercury	U	BDL	mg/l	0.0002	0.0002	EPA_245.1
			4/8/2009	16:38	OL	Selenium, Dissolved	U	BDL	mg/l	0.00169	0.00169	EPA_7740
			4/8/2009	17:44	OL	Selenium	U	BDL	mg/l	0.00169	0.00169	EPA_7740

Susie Southwell

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TULSA DISTRICT CORPS OF ENGINEERS
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Project #: W912BV07-P-0189

Date Received: 4/2/2009

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Report Date: 4/28/2009

Lab Number	Sample Identification	Date Sampled	Analysis Date	Time	Analized By	Parameter	Q	Results	Units	MDL	SQL Method
200901041	07331000	4/1/2009	4/9/2009	15:20	JL	Silicon Dioxide (silica)		12.8	mg/l	0.006	0.006 200.7/6010B
200901041	07331000					SALTS-TULSA:					
		4/1/2009	4/13/2009	11:30	JL	Calcium, Dissolved		173.3	mg/L	0.0039	0.0039 200.7/6010B
			4/13/2009		JL	Magnesium, Dissolved		65.8	mg/L	0.0006	0.0006 200.7/6010B
			4/13/2009		JL	Phosphorus, Total		0.81	mg/L	0.0096	0.0096 200.7/6010B
			4/13/2009		JL	Potassium, Dissolved		4.38	mg/L	0.0009	0.0009 200.7/6010B
			4/13/2009		JL	Sodium, Dissolved		66.6	mg/L	0.0018	0.0018 200.7/6010B
			4/13/2009	11:30	JL	Total Hardness		808	mg/l	0.06	0.06 200.7/6010B
			4/13/2009	10:30	PR	Total Alkalinity		166	mg/l	2	2 EPA_310.1
			4/7/2009		jc	Chloride		51	mg/l	0.383	0.383 SM4500-CL-B
			4/1/2009	16:05	JL	Dissolved Oxygen		8.38	mg/l	0.1	0.1 EPA_360.1
			4/15/2009	13:00	PR	Fluoride		0.28	mg/L	0.04	0.04 SM4500F-D
			4/6/2009		pr	Nitrate/nitrite As Nitroge	J	2	mg/l	1.2	1.2 SM_4500-NO
			4/1/2009	16:05	JL	pH		8.6	s.u.		EPA_150.1
			4/7/2009		jc	Sulfate		475	mg/l	1.2	1.2 EPA_375.2
			4/3/2009	10:05	SS	Total Dissolved Solids		1012	mg/l	5.5	5.5 SM_2540C
			4/27/2009	9:00	PR	Total Kjeldahl Nitrogen		2.12	mg/l	0.4	0.4 EPA_351.3M
			4/2/2009	15:05	SS	Total Suspended Solids		584	mg/l	1.7	1.7 SM 2540D
			4/6/2009		my	Turbidity		521.6	NTU	0.078	0.078 EPA_180.1
200901042	07331600					METALS-TUL-D:					
		4/1/2009	4/9/2009	10:30	JL	Dissolved Arsenic	U	BDL	mg/L	0.009	0.009 200.7/6010B
			4/9/2009		JL	Dissolved Barium		0.16	mg/L	0.0006	0.0006 200.7/6010B
			4/9/2009		JL	Dissolved Cadmium	U	BDL	mg/L	0.0009	0.0009 200.7/6010B
			4/9/2009		JL	Dissolved Chromium	U	BDL	mg/L	0.0009	0.0009 200.7/6010B
			4/9/2009		JL	Dissolved Copper	U	BDL	mg/L	0.0003	0.0003 200.7/6010B
			4/9/2009		JL	Dissolved Iron	U	BDL	mg/L	0.0008	0.0008 200.7/6010B
			4/9/2009		JL	Dissolved Lead	U	BDL	mg/L	0.009	0.009 200.7/6010B
			4/9/2009		JL	Dissolved Manganese	U	BDL	mg/L	0.0001	0.0001 200.7/6010B
			4/9/2009		JL	Dissolved Nickel	U	BDL	mg/L	0.0069	0.0069 200.7/6010B

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Report Date: 4/28/2009

Table with columns: Lab Number, Sample Identification, Date Sampled, Analysis Date, Analyzed Time, Analyzed By, Parameter, Q Results, Units, MDL, SQL Method. Includes data for Dissolved Silver/Zinc, METALS-TULSA (Arsenic, Barium, Cadmium, Chromium, Copper, Iron, Lead, Manganese, Nickel, Silver, Zinc), and SALTS-TULSA (Calcium, Magnesium, Phosphorus, Potassium, Sodium, Total Hardness, Total Alkalinity, Chloride, Dissolved Oxygen, Fluoride).

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Lab Number	Sample Identification	Date Sampled	Analysis Date	Time	Analized By	Parameter	Q	Results	Units	MDL	SQL Method	
200901042	07331600	4/1/2009	4/6/2009		pr	Nitrate/nitrite As Nitroge	U	BDL	mg/l	1.2	1.2 SM_4500-NO	
			4/1/2009	14:55	JL	pH		8.8	s.u.		EPA_150.1	
			4/7/2009		jc	Sulfate		275	mg/l	1.2	1.2 EPA_375.2	
			4/3/2009	10:05	SS	Total Dissolved Solids		1076	mg/l	5.5	5.5 SM_2540C	
			4/27/2009	9:00	PR	Total Kjeldahl Nitrogen	J	0.82	mg/l	0.4	0.4 EPA_351.3M	
			4/2/2009	15:05	SS	Total Suspended Solids		6	mg/l	1.7	1.7 SM 2540D	
			4/6/2009		my	Turbidity		6.4	NTU	0.078	0.078 EPA_180.1	
200901043	07316000	4/1/2009	METALS-TUL-D:									
			4/9/2009	10:30	JL	Dissolved Arsenic	U	BDL	mg/L	0.009	0.009	200.7/6010B
			4/9/2009		JL	Dissolved Barium		0.141	mg/L	0.0006	0.0006	200.7/6010B
			4/9/2009		JL	Dissolved Cadmium	U	BDL	mg/L	0.0009	0.0009	200.7/6010B
			4/9/2009		JL	Dissolved Chromium	U	BDL	mg/L	0.0009	0.0009	200.7/6010B
			4/9/2009		JL	Dissolved Copper	U	BDL	mg/L	0.0003	0.0003	200.7/6010B
			4/9/2009		JL	Dissolved Iron	U	BDL	mg/L	0.0008	0.0008	200.7/6010B
			4/9/2009		JL	Dissolved Lead	U	BDL	mg/L	0.009	0.009	200.7/6010B
			4/9/2009		JL	Dissolved Manganese		0.043	mg/L	0.0001	0.0001	200.7/6010B
			4/9/2009		JL	Dissolved Nickel	U	BDL	mg/L	0.0069	0.0069	200.7/6010B
			4/9/2009		JL	Dissolved Silver	U	BDL	mg/L	0.0003	0.0003	200.7/6010B
			4/9/2009		JL	Dissolved Zinc	U	BDL	mg/L	0.0006	0.0006	200.7/6010B
200901043	07316000	4/1/2009	METALS-TULSA:									
			4/9/2009	15:20	JL	Arsenic, Total	U	BDL	mg/L	0.009	0.009	200.7/6010B
			4/9/2009		JL	Barium, Total		0.146	mg/L	0.0006	0.0006	200.7/6010B
			4/9/2009		JL	Cadmium, Total	U	BDL	mg/L	0.0009	0.0009	200.7/6010B
			4/9/2009		JL	Chromium, Total	U	BDL	mg/L	0.0009	0.0009	200.7/6010B
			4/9/2009		JL	Copper, Total		0.223	mg/L	0.0003	0.0003	200.7/6010B
			4/9/2009		JL	Iron, Total		0.058	mg/L	0.0008	0.0008	200.7/6010B
			4/9/2009		JL	Lead, Total	U	BDL	mg/L	0.009	0.009	200.7/6010B
			4/9/2009		JL	Manganese, Total		0.06	mg/L	0.0001	0.0001	200.7/6010B
			4/9/2009		JL	Nickel, Total	U	BDL	mg/L	0.0069	0.0069	200.7/6010B

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200901043	07316000	4/1/2009	4/9/2009		JL	Silver, Total	U	BDL	mg/L	0.0003	0.0003	200.7/6010B
			4/9/2009		JL	Zinc, Total	U	BDL	mg/L	0.0006	0.0006	200.7/6010B
			4/6/2009	9:10	PR	Mercury, Dissolved	U	BDL	mg/l	0.0002	0.0002	EPA_245.1
			4/6/2009	9:10	PR	Mercury	U	BDL	mg/l	0.0002	0.0002	EPA_245.1
			4/8/2009	16:44	OL	Selenium, Dissolved	U	BDL	mg/l	0.00169	0.00169	EPA_7740
			4/8/2009	17:51	OL	Selenium	U	BDL	mg/l	0.00169	0.00169	EPA_7740
			4/9/2009	15:20	JL	Silicon Dioxide (silica)		0.96	mg/l	0.006	0.006	200.7/6010B
200901043	07316000					SALTS-TULSA:						
		4/1/2009	4/13/2009	11:30	JL	Calcium, Dissolved		394	mg/L	0.0039	0.0039	200.7/6010B
			4/13/2009		JL	Magnesium, Dissolved		152.8	mg/L	0.0006	0.0006	200.7/6010B
			4/13/2009		JL	Phosphorus, Total		0.85	mg/L	0.0096	0.0096	200.7/6010B
			4/13/2009		JL	Potassium, Dissolved		15.1	mg/L	0.0009	0.0009	200.7/6010B
			4/13/2009		JL	Sodium, Dissolved		1790	mg/L	0.0018	0.0018	200.7/6010B
			4/13/2009	11:30	JL	Total Hardness		1710.3	mg/l	0.06	0.06	200.7/6010B
			4/13/2009	10:30	PR	Total Alkalinity		142	mg/l	2	2	EPA_310.1
			4/7/2009		jc	Chloride		2500	mg/l	0.383	0.383	SM4500-CL-B
			4/1/2009	13:35	JL	Dissolved Oxygen		9.12	mg/l	0.1	0.1	EPA_360.1
			4/15/2009	13:00	PR	Fluoride		0.85	mg/L	0.04	0.04	SM4500F-D
			4/6/2009		pr	Nitrate/nitrite As Nitroge	U	BDL	mg/l	1.2	1.2	SM_4500-NO
			4/1/2009	13:35	JL	pH		8.6	s.u.			EPA_150.1
			4/7/2009		jc	Sulfate		1025	mg/l	1.2	1.2	EPA_375.2
			4/3/2009	10:05	SS	Total Dissolved Solids		5874	mg/l	5.5	5.5	SM_2540C
			4/27/2009	9:00	PR	Total Kjeldahl Nitrogen	J	1.092	mg/l	0.4	0.4	EPA_351.3M
			4/2/2009	15:05	SS	Total Suspended Solids		31.4	mg/l	1.7	1.7	SM 2540D
			4/6/2009		my	Turbidity		20.1	NTU	0.078	0.078	EPA_180.1
200901044	07331600 DUPLICATE					METALS-TUL-D:						
		4/1/2009	4/9/2009	10:30	JL	Dissolved Arsenic	U	BDL	mg/L	0.009	0.009	200.7/6010B
			4/9/2009		JL	Dissolved Barium		0.158	mg/L	0.0006	0.0006	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. Includes data for Lab 200901044 with various metal analyses and Lab 200901044 with Salts-Tulsa analysis.

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200901044	07331600 DUPLICATE	4/1/2009	4/13/2009		JL	Magnesium, Dissolved		44.9	mg/L	0.0006	0.0006 200.7/6010B
			4/13/2009		JL	Phosphorus, Total		1.1	mg/L	0.0096	0.0096 200.7/6010B
			4/13/2009		JL	Potassium, Dissolved		5.63	mg/L	0.0009	0.0009 200.7/6010B
			4/13/2009		JL	Sodium, Dissolved		203	mg/L	0.0018	0.0018 200.7/6010B
			4/13/2009	11:30	JL	Total Hardness		466.7	mg/l	0.06	0.06 200.7/6010B
			4/13/2009	10:30	PR	Total Alkalinity		128	mg/l	2	2 EPA_310.1
			4/7/2009		jc	Chloride		280	mg/l	0.383	0.383 SM4500-CL-B
			4/1/2009	15:15	JL	Dissolved Oxygen		9.32	mg/l	0.1	0.1 EPA_360.1
			4/15/2009	13:00	PR	Fluoride		0.36	mg/L	0.04	0.04 SM4500F-D
			4/6/2009		pr	Nitrate/nitrite As Nitroge	U	BDL	mg/l	1.2	1.2 SM_4500-NO
			4/1/2009	15:15	JL	pH		8.7	s.u.		EPA_150.1
			4/7/2009		jc	Sulfate		300	mg/l	1.2	1.2 EPA_375.2
			4/3/2009	10:05	SS	Total Dissolved Solids		1060	mg/l	5.5	5.5 SM_2540C
			4/27/2009	9:00	PR	Total Kjeldahl Nitrogen	U	BDL	mg/l	0.4	0.4 EPA_351.3M
			4/2/2009	15:05	SS	Total Suspended Solids		6.2	mg/l	1.7	1.7 SM 2540D
			4/6/2009		my	Turbidity		6	NTU	0.078	0.078 EPA_180.1
200901045	07312100					METALS-TUL-D:					
		4/3/2009	4/9/2009	10:30	JL	Dissolved Arsenic	U	BDL	mg/L	0.009	0.009 200.7/6010B
			4/9/2009		JL	Dissolved Barium		0.125	mg/L	0.0006	0.0006 200.7/6010B
			4/9/2009		JL	Dissolved Cadmium	U	BDL	mg/L	0.0009	0.0009 200.7/6010B
			4/9/2009		JL	Dissolved Chromium	U	BDL	mg/L	0.0009	0.0009 200.7/6010B
			4/9/2009		JL	Dissolved Copper	U	BDL	mg/L	0.0003	0.0003 200.7/6010B
			4/9/2009		JL	Dissolved Iron	U	BDL	mg/L	0.0008	0.0008 200.7/6010B
			4/9/2009		JL	Dissolved Lead	U	BDL	mg/L	0.009	0.009 200.7/6010B
			4/9/2009		JL	Dissolved Manganese	U	BDL	mg/L	0.0001	0.0001 200.7/6010B
			4/9/2009		JL	Dissolved Nickel	U	BDL	mg/L	0.0069	0.0069 200.7/6010B
			4/9/2009		JL	Dissolved Silver	U	BDL	mg/L	0.0003	0.0003 200.7/6010B
			4/9/2009		JL	Dissolved Zinc	U	BDL	mg/L	0.0006	0.0006 200.7/6010B

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200901045	07312100	4/3/2009	4/9/2009	15:20	JL	METALS-TULSA:					
			4/9/2009		JL	Arsenic, Total	U	BDL	mg/L	0.009	0.009 200.7/6010B
			4/9/2009		JL	Barium, Total		0.131	mg/L	0.0006	0.0006 200.7/6010B
			4/9/2009		JL	Cadmium, Total	U	BDL	mg/L	0.0009	0.0009 200.7/6010B
			4/9/2009		JL	Chromium, Total	U	BDL	mg/L	0.0009	0.0009 200.7/6010B
			4/9/2009		JL	Copper, Total		0.175	mg/L	0.0003	0.0003 200.7/6010B
			4/9/2009		JL	Iron, Total	U	BDL	mg/L	0.0008	0.0008 200.7/6010B
			4/9/2009		JL	Lead, Total	U	BDL	mg/L	0.009	0.009 200.7/6010B
			4/9/2009		JL	Manganese, Total	U	BDL	mg/L	0.0001	0.0001 200.7/6010B
			4/9/2009		JL	Nickel, Total	U	BDL	mg/L	0.0069	0.0069 200.7/6010B
			4/9/2009		JL	Silver, Total	U	BDL	mg/L	0.0003	0.0003 200.7/6010B
			4/9/2009		JL	Zinc, Total	U	BDL	mg/L	0.0006	0.0006 200.7/6010B
		4/13/2009		10:00	PR	Mercury, Dissolved	U	BDL	mg/l	0.0002	0.0002 EPA_245.1
		4/13/2009		10:00	PR	Mercury	U	BDL	mg/l	0.0002	0.0002 EPA_245.1
		4/8/2009		16:57	OL	Selenium, Dissolved	<	0.00845	mg/l	0.00169	0.00845 EPA_7740
		4/8/2009		17:57	OL	Selenium	<	0.00845	mg/l	0.00169	0.00845 EPA_7740
		4/9/2009		15:20	JL	Silicon Dioxide (silica)		6.29	mg/l	0.006	0.006 200.7/6010B
200901045	07312100	4/3/2009	4/13/2009	11:30	JL	SALTS-TULSA:					
			4/13/2009		JL	Calcium, Dissolved		289	mg/L	0.0039	0.0039 200.7/6010B
			4/13/2009		JL	Magnesium, Dissolved		93.5	mg/L	0.0006	0.0006 200.7/6010B
			4/13/2009		JL	Phosphorus, Total		0.45	mg/L	0.0096	0.0096 200.7/6010B
			4/13/2009		JL	Potassium, Dissolved		11.3	mg/L	0.0009	0.0009 200.7/6010B
			4/13/2009		JL	Sodium, Dissolved		954	mg/L	0.0018	0.0018 200.7/6010B
			4/13/2009	11:30	JL	Total Hardness		1159	mg/l	0.06	0.06 200.7/6010B
			4/13/2009	10:30	PR	Total Alkalinity		110	mg/l	2	2 EPA_310.1
			4/7/2009		jc	Chloride		1330	mg/l	0.383	0.383 SM4500-CL-B
			4/3/2009	11:40	JL	Dissolved Oxygen		9.23	mg/l	0.1	0.1 EPA_360.1
			4/15/2009	13:00	PR	Fluoride		0.76	mg/L	0.04	0.04 SM4500F-D
			4/6/2009		pr	Nitrate/nitrite As Nitroge	U	BDL	mg/l	1.2	1.2 SM_4500-NO
			4/3/2009	11:40	JL	pH		8.28	s.u.		EPA_150.1
			4/7/2009		jc	Sulfate		925	mg/l	1.2	1.2 EPA_375.2

Susie Southwell

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

Project #: W912BV07-P-0189

Date Received:

Project Name: WATER QUALITY MONITORING

Report Date: 4/28/2009

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 200901045, 200901046, and 200901046.

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Lab Number	Sample Identification	Date Sampled	Analysis Date	Time	Analyst	Parameter	Q	Results	Units	MDL	SQL Method	
200901046	07311900	4/3/2009	4/13/2009	10:00	PR	Mercury	U	BDL	mg/l	0.0002	0.0002 EPA_245.1	
			4/8/2009	17:00	OL	Selenium, Dissolved	<	0.00507	mg/l	0.00169	0.00507 EPA_7740	
			4/8/2009	18:00	OL	Selenium	<	0.00507	mg/l	0.00169	0.00507 EPA_7740	
			4/9/2009	15:20	JL	Silicon Dioxide (silica)		1.67	mg/l	0.006	0.006 200.7/6010B	
200901046	07311900	4/3/2009	SALTS-TULSA:									
			4/13/2009	11:30	JL	Calcium, Dissolved		1055	mg/L	0.0039	0.0039	200.7/6010B
			4/13/2009		JL	Magnesium, Dissolved		299.9	mg/L	0.0006	0.0006	200.7/6010B
			4/13/2009		JL	Phosphorus, Total		2.1	mg/L	0.0096	0.0096	200.7/6010B
			4/13/2009		JL	Potassium, Dissolved		30.3	mg/L	0.0009	0.0009	200.7/6010B
			4/13/2009		JL	Sodium, Dissolved		5383	mg/L	0.0018	0.0018	200.7/6010B
			4/13/2009	11:30	JL	Total Hardness		3728	mg/l	0.06	0.06	200.7/6010B
			4/13/2009	10:30	PR	Total Alkalinity		114	mg/l	2	2	EPA_310.1
			4/7/2009		jc	Chloride		6399	mg/l	0.383	0.383	SM4500-CL-B
			4/3/2009	12:29	JL	Dissolved Oxygen		9.25	mg/l	0.1	0.1	EPA_360.1
			4/15/2009	13:00	PR	Fluoride		1.26	mg/L	0.04	0.04	SM4500F-D
			4/6/2009		pr	Nitrate/nitrite As Nitroge	U	BDL	mg/l	1.2	1.2	SM_4500-NO
			4/3/2009	12:29	JL	pH		7.84	s.u.			EPA_150.1
			4/7/2009		jc	Sulfate		3000	mg/l	1.2	1.2	EPA_375.2
			4/27/2009	9:00	PR	Total Kjeldahl Nitrogen	U	BDL	mg/l	0.4	0.4	EPA_351.3M
			4/8/2009	13:20	PR	Total Suspended Solids	J	3	mg/l	1.7	1.7	SM 2540D
4/6/2009		my	Turbidity		4.2	NTU	0.078	0.078	EPA_180.1			
4/8/2009	13:20	PR	Total Dissolved Solids		15211	mg/l	5.5	5.5	SM 2540C			
200901047	07311800	4/3/2009	METALS-TUL-D:									
			4/9/2009	10:30	JL	Dissolved Arsenic	U	BDL	mg/L	0.009	0.009	200.7/6010B
			4/9/2009		JL	Dissolved Barium		0.089	mg/L	0.0006	0.0006	200.7/6010B
			4/9/2009		JL	Dissolved Cadmium	U	BDL	mg/L	0.0009	0.0009	200.7/6010B
			4/9/2009		JL	Dissolved Chromium	U	BDL	mg/L	0.0009	0.0009	200.7/6010B
			4/9/2009		JL	Dissolved Copper	U	BDL	mg/L	0.0003	0.0003	200.7/6010B
4/9/2009		JL	Dissolved Iron	U	BDL	mg/L	0.0008	0.0008	200.7/6010B			

Susie Southwell

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Certificate of Analysis

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

Project #: W912BV07-P-0189

Date Received:

Project Name: WATER QUALITY MONITORING

Report Date: 4/28/2009

Lab Number	Sample Identification	Date Sampled	Analysis Date	Time	Analyst	Parameter	Q	Results	Units	MDL	SQL Method
200901047	07311800	4/3/2009	4/9/2009		JL	Dissolved Lead	U	BDL	mg/L	0.009	0.009 200.7/6010B
			4/9/2009		JL	Dissolved Manganese		0.099	mg/L	0.0001	0.0001 200.7/6010B
			4/9/2009		JL	Dissolved Nickel		0.019	mg/L	0.0069	0.0069 200.7/6010B
			4/9/2009		JL	Dissolved Silver	U	BDL	mg/L	0.0003	0.0003 200.7/6010B
			4/9/2009		JL	Dissolved Zinc		0.072	mg/L	0.0006	0.0006 200.7/6010B
200901047	07311800	4/3/2009	METALS-TULSA:								
			4/9/2009	15:20	JL	Arsenic, Total		0.096	mg/L	0.009	0.009 200.7/6010B
			4/9/2009		JL	Barium, Total		0.107	mg/L	0.0006	0.0006 200.7/6010B
			4/9/2009		JL	Cadmium, Total		0.022	mg/L	0.0009	0.0009 200.7/6010B
			4/9/2009		JL	Chromium, Total	U	BDL	mg/L	0.0009	0.0009 200.7/6010B
			4/9/2009		JL	Copper, Total		0.327	mg/L	0.0003	0.0003 200.7/6010B
			4/9/2009		JL	Iron, Total	U	BDL	mg/L	0.0008	0.0008 200.7/6010B
			4/9/2009		JL	Lead, Total	U	BDL	mg/L	0.009	0.009 200.7/6010B
			4/9/2009		JL	Manganese, Total		0.087	mg/L	0.0001	0.0001 200.7/6010B
			4/9/2009		JL	Nickel, Total		0.019	mg/L	0.0069	0.0069 200.7/6010B
			4/9/2009		JL	Silver, Total	U	BDL	mg/L	0.0003	0.0003 200.7/6010B
			4/9/2009		JL	Zinc, Total		0.099	mg/L	0.0006	0.0006 200.7/6010B
			4/13/2009	10:00	PR	Mercury, Dissolved	U	BDL	mg/l	0.0002	0.0002 EPA_245.1
			4/13/2009	10:00	PR	Mercury	U	BDL	mg/l	0.0002	0.0002 EPA_245.1
			4/8/2009	17:03	OL	Selenium, Dissolved	<	0.00845	mg/l	0.00169	0.00845 EPA_7740
4/8/2009	18:03	OL	Selenium	<	0.00845	mg/l	0.00169	0.00845 EPA_7740			
4/9/2009	15:20	JL	Silicon Dioxide (silica)		6.1	mg/l	0.006	0.006 200.7/6010B			
200901047	07311800	4/3/2009	SALTS-TULSA:								
			4/13/2009	11:30	JL	Calcium, Dissolved		919	mg/L	0.0039	0.0039 200.7/6010B
			4/13/2009		JL	Magnesium, Dissolved		320	mg/L	0.0006	0.0006 200.7/6010B
			4/13/2009		JL	Phosphorus, Total		3.2	mg/L	0.0096	0.0096 200.7/6010B
			4/13/2009		JL	Potassium, Dissolved		27.7	mg/L	0.0009	0.0009 200.7/6010B
			4/13/2009		JL	Sodium, Dissolved		3199	mg/L	0.0018	0.0018 200.7/6010B
			4/13/2009	11:30	JL	Total Hardness		3651	mg/l	0.06	0.06 200.7/6010B
4/13/2009	10:30	PR	Total Alkalinity		222	mg/l	2	2 EPA_310.1			

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Lab Number	Sample Identification	Date Sampled	Analysis Date	Time	Analized By	Parameter	Q	Results	Units	MDL	SQL Method	
200901047	07311800	4/3/2009	4/7/2009		jc	Chloride		4649	mg/l	0.383	0.383 SM4500-CL-B	
			4/3/2009	13:56	JL	Dissolved Oxygen		8.89	mg/l	0.1	0.1 EPA_360.1	
			4/15/2009	13:00	PR	Fluoride		1.25	mg/L	0.04	0.04 SM4500F-D	
			4/6/2009		pr	Nitrate/nitrite As Nitroge	U	BDL	mg/l	1.2	1.2 SM_4500-NO	
			4/3/2009	13:56	JL	pH		7.94	s.u.			EPA_150.1
			4/7/2009		jc	Sulfate		2100	mg/l	1.2	1.2 EPA_375.2	
			4/27/2009	9:00	PR	Total Kjeldahl Nitrogen		1.44	mg/l	0.4	0.4 EPA_351.3M	
			4/8/2009	13:20	PR	Total Suspended Solids		22	mg/l	1.7	1.7 SM 2540D	
			4/6/2009		my	Turbidity		25.2	NTU	0.078	0.078 EPA_180.1	
			4/8/2009	13:20	PR	Total Dissolved Solids		11608	mg/l	5.5	5.5 SM 2540C	
			200901048	07311700	4/3/2009	METALS-TUL-D:						
4/9/2009	10:30	JL				Dissolved Arsenic	U	BDL	mg/L	0.009	0.009 200.7/6010B	
4/9/2009		JL				Dissolved Barium	U	BDL	mg/L	0.0006	0.0006 200.7/6010B	
4/9/2009		JL				Dissolved Cadmium	U	BDL	mg/L	0.0009	0.0009 200.7/6010B	
4/9/2009		JL				Dissolved Chromium	U	BDL	mg/L	0.0009	0.0009 200.7/6010B	
4/9/2009		JL				Dissolved Copper	U	BDL	mg/L	0.0003	0.0003 200.7/6010B	
4/9/2009		JL				Dissolved Iron	U	BDL	mg/L	0.0008	0.0008 200.7/6010B	
4/9/2009		JL				Dissolved Lead	U	BDL	mg/L	0.009	0.009 200.7/6010B	
4/9/2009		JL				Dissolved Manganese	U	BDL	mg/L	0.0001	0.0001 200.7/6010B	
4/9/2009		JL				Dissolved Nickel	U	BDL	mg/L	0.0069	0.0069 200.7/6010B	
4/9/2009		JL				Dissolved Silver	U	BDL	mg/L	0.0003	0.0003 200.7/6010B	
4/9/2009		JL	Dissolved Zinc		0.075	mg/L	0.0006	0.0006 200.7/6010B				
200901048	07311700	4/3/2009	METALS-TULSA:									
			4/9/2009	15:20	JL	Arsenic, Total	U	BDL	mg/L	0.009	0.009 200.7/6010B	
			4/9/2009		JL	Barium, Total	U	BDL	mg/L	0.0006	0.0006 200.7/6010B	
			4/9/2009		JL	Cadmium, Total	U	BDL	mg/L	0.0009	0.0009 200.7/6010B	
			4/9/2009		JL	Chromium, Total	U	BDL	mg/L	0.0009	0.0009 200.7/6010B	
			4/9/2009		JL	Copper, Total		0.215	mg/L	0.0003	0.0003 200.7/6010B	
4/9/2009		JL	Iron, Total	U	BDL	mg/L	0.0008	0.0008 200.7/6010B				

Susie Southwell

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1645 S 101st EAST AVE
TULSA, OK 74128-4609

Project #: W912BV07-P-0189

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Lab Number	Sample Identification	Date Sampled	Analysis Date	Time	By	Parameter	Q	Results	Units	MDL	SQL Method			
200901048	07311700	4/3/2009	4/9/2009		JL	Lead, Total	U	BDL	mg/L	0.009	0.009 200.7/6010B			
			4/9/2009		JL	Manganese, Total	U	BDL	mg/L	0.0001	0.0001 200.7/6010B			
			4/9/2009		JL	Nickel, Total	U	BDL	mg/L	0.0069	0.0069 200.7/6010B			
			4/9/2009		JL	Silver, Total	U	BDL	mg/L	0.0003	0.0003 200.7/6010B			
			4/9/2009		JL	Zinc, Total			0.043	mg/L	0.0006	0.0006 200.7/6010B		
			4/13/2009	10:00	PR	Mercury, Dissolved	U	BDL	mg/l	0.0002	0.0002	EPA_245.1		
			4/13/2009	10:00	PR	Mercury	U	BDL	mg/l	0.0002	0.0002	EPA_245.1		
			4/8/2009	17:06	OL	Selenium, Dissolved	<	0.00845	mg/l	0.00169	0.00845	EPA_7740		
			4/8/2009	18:13	OL	Selenium	<	0.00845	mg/l	0.00169	0.00845	EPA_7740		
			4/9/2009	15:20	JL	Silicon Dioxide (silica)			0.53	mg/l	0.006	0.006 200.7/6010B		
			200901048	07311700	4/3/2009	SALTS-TULSA:								
						4/13/2009	11:30	JL	Calcium, Dissolved		903	mg/L	0.0039	0.0039 200.7/6010B
						4/13/2009		JL	Magnesium, Dissolved		245	mg/L	0.0006	0.0006 200.7/6010B
						4/13/2009		JL	Phosphorus, Total		1.87	mg/L	0.0096	0.0096 200.7/6010B
4/13/2009		JL				Potassium, Dissolved		27.2	mg/L	0.0009	0.0009 200.7/6010B			
4/13/2009		JL				Sodium, Dissolved		4880	mg/L	0.0018	0.0018 200.7/6010B			
4/13/2009	11:30	JL				Total Hardness		3357	mg/l	0.06	0.06	200.7/6010B		
4/13/2009	10:30	PR				Total Alkalinity		92	mg/l	2	2	EPA_310.1		
4/7/2009		jc				Chloride		7497	mg/l	0.383	0.383	SM4500-CL-B		
4/3/2009	14:30	JL				Dissolved Oxygen		8.79	mg/l	0.1	0.1	EPA_360.1		
4/15/2009	13:00	PR				Fluoride		1.61	mg/L	0.04	0.04	SM4500F-D		
4/6/2009		pr				Nitrate/nitrite As Nitroge	U	BDL	mg/l	1.2	1.2	SM_4500-NO		
4/3/2009	14:30	JL				pH		8.01	s.u.			EPA_150.1		
4/7/2009		jc				Sulfate		2700	mg/l	1.2	1.2	EPA_375.2		
4/27/2009	9:00	PR	Total Kjeldahl Nitrogen	U	BDL	mg/l	0.4	0.4	EPA_351.3M					
4/8/2009	13:20	PR	Total Suspended Solids	J	4.3	mg/l	1.7	1.7	SM 2540D					
4/6/2009		my	Turbidity		4	NTU	0.078	0.078	EPA_180.1					
4/8/2009	13:20	PR	Total Dissolved Solids		15226	mg/l	5.5	5.5	SM 2540C					

200901049 07311630

METALS-TUL-D:

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Red River

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TULSA, OK 74128-4609

Project #: W912BV07-P-0189

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Report Date: 4/28/2009

Lab Number	Sample Identification	Date Sampled	Analysis Date	Time	Analized By	Parameter	Q	Results	Units	MDL	SQL Method	
200901049	07311630	4/3/2009	4/9/2009	10:30	JL	Dissolved Arsenic	U	BDL	mg/L	0.009	0.009	200.7/6010B
			4/9/2009	JL	Dissolved Barium		0.024	mg/L	0.0006	0.0006	200.7/6010B	
			4/9/2009	JL	Dissolved Cadmium		0.024	mg/L	0.0009	0.0009	200.7/6010B	
			4/9/2009	JL	Dissolved Chromium	U	BDL	mg/L	0.0009	0.0009	200.7/6010B	
			4/9/2009	JL	Dissolved Copper	U	BDL	mg/L	0.0003	0.0003	200.7/6010B	
			4/9/2009	JL	Dissolved Iron	U	BDL	mg/L	0.0008	0.0008	200.7/6010B	
			4/9/2009	JL	Dissolved Lead	U	BDL	mg/L	0.009	0.009	200.7/6010B	
			4/9/2009	JL	Dissolved Manganese	U	BDL	mg/L	0.0001	0.0001	200.7/6010B	
			4/9/2009	JL	Dissolved Nickel	U	BDL	mg/L	0.0069	0.0069	200.7/6010B	
			4/9/2009	JL	Dissolved Silver	U	BDL	mg/L	0.0003	0.0003	200.7/6010B	
			4/9/2009	JL	Dissolved Zinc		0.043	mg/L	0.0006	0.0006	200.7/6010B	
200901049	07311630	4/3/2009	METALS-TULSA:									
			4/9/2009	15:20	JL	Arsenic, Total	U	BDL	mg/L	0.009	0.009	200.7/6010B
			4/9/2009	JL	Barium, Total		0.022	mg/L	0.0006	0.0006	200.7/6010B	
			4/9/2009	JL	Cadmium, Total		0.022	mg/L	0.0009	0.0009	200.7/6010B	
			4/9/2009	JL	Chromium, Total	U	BDL	mg/L	0.0009	0.0009	200.7/6010B	
			4/9/2009	JL	Copper, Total		0.282	mg/L	0.0003	0.0003	200.7/6010B	
			4/9/2009	JL	Iron, Total	U	BDL	mg/L	0.0008	0.0008	200.7/6010B	
			4/9/2009	JL	Lead, Total	U	BDL	mg/L	0.009	0.009	200.7/6010B	
			4/9/2009	JL	Manganese, Total	U	BDL	mg/L	0.0001	0.0001	200.7/6010B	
			4/9/2009	JL	Nickel, Total		0.022	mg/L	0.0069	0.0069	200.7/6010B	
			4/9/2009	JL	Silver, Total	U	BDL	mg/L	0.0003	0.0003	200.7/6010B	
			4/9/2009	JL	Zinc, Total		0.029	mg/L	0.0006	0.0006	200.7/6010B	
			4/13/2009	10:00	PR	Mercury, Dissolved	U	BDL	mg/l	0.0002	0.0002	EPA_245.1
			4/13/2009	10:00	PR	Mercury	U	BDL	mg/l	0.0002	0.0002	EPA_245.1
4/8/2009	17:09	OL	Selenium, Dissolved	<	0.00845	mg/l	0.00169	0.00845	EPA_7740			
4/8/2009	18:16	OL	Selenium	<	0.00845	mg/l	0.00169	0.00845	EPA_7740			
4/9/2009	15:20	JL	Silicon Dioxide (silica)		10.4	mg/l	0.006	0.006	200.7/6010B			
200901049	07311630	4/3/2009	SALTS-TULSA:									
			4/13/2009	11:30	JL	Calcium, Dissolved		854	mg/L	0.0039	0.0039	200.7/6010B

Susie Southwell

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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 #: W912BV07-P-0189

Date Received:

Project Name: WATER QUALITY MONITORING

Report Date: 4/28/2009

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 200901049 and 200901050.

200901050 07311600

METALS-TULSA:

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Lab Number	Sample Identification	Date Sampled	Analysis Date	Time	Analyst	Parameter	Q	Results	Units	MDL	SQL	Method
200901050	07311600	4/3/2009	4/9/2009	15:20	JL	Arsenic, Total	U	BDL	mg/L	0.009	0.009	200.7/6010B
			4/9/2009	JL	Barium, Total		0.029	mg/L	0.0006	0.0006	200.7/6010B	
			4/9/2009	JL	Cadmium, Total	U	BDL	mg/L	0.0009	0.0009	200.7/6010B	
			4/9/2009	JL	Chromium, Total	U	BDL	mg/L	0.0009	0.0009	200.7/6010B	
			4/9/2009	JL	Copper, Total		0.256	mg/L	0.0003	0.0003	200.7/6010B	
			4/9/2009	JL	Iron, Total		0.048	mg/L	0.0008	0.0008	200.7/6010B	
			4/9/2009	JL	Lead, Total		0.13	mg/L	0.009	0.009	200.7/6010B	
			4/9/2009	JL	Manganese, Total		0.049	mg/L	0.0001	0.0001	200.7/6010B	
			4/9/2009	JL	Nickel, Total		0.03	mg/L	0.0069	0.0069	200.7/6010B	
			4/9/2009	JL	Silver, Total	U	BDL	mg/L	0.0003	0.0003	200.7/6010B	
			4/9/2009	JL	Zinc, Total		0.054	mg/L	0.0006	0.0006	200.7/6010B	
			4/28/2009	13:00	PR	Mercury, Dissolved	J	0.00020	mg/l	0.0002	0.0002	EPA_245.1
			4/13/2009	10:00	PR	Mercury	U	BDL	mg/l	0.0002	0.0002	EPA_245.1
			4/8/2009	17:13	OL	Selenium, Dissolved	<	0.00845	mg/l	0.00169	0.00845	EPA_7740
			4/8/2009	18:19	OL	Selenium	<	0.00845	mg/l	0.00169	0.00845	EPA_7740
			4/9/2009	15:20	JL	Silicon Dioxide (silica)		4.2	mg/l	0.006	0.006	200.7/6010B
200901050	07311600	4/3/2009	SALTS-TULSA:									
			4/13/2009	11:30	JL	Calcium, Dissolved		888.9	mg/L	0.0039	0.0039	200.7/6010B
			4/13/2009	JL	Magnesium, Dissolved		231.4	mg/L	0.0006	0.0006	200.7/6010B	
			4/13/2009	JL	Phosphorus, Total		1.82	mg/L	0.0096	0.0096	200.7/6010B	
			4/13/2009	JL	Potassium, Dissolved		28.8	mg/L	0.0009	0.0009	200.7/6010B	
			4/13/2009	JL	Sodium, Dissolved		6395	mg/L	0.0018	0.0018	200.7/6010B	
			4/13/2009	11:30	JL	Total Hardness		3082	mg/l	0.06	0.06	200.7/6010B
			4/15/2009	15:00	PR	Total Alkalinity		138	mg/l	2	2	EPA_310.1
			4/7/2009	jc	Chloride		8997	mg/l	0.383	0.383	SM4500-CL-B	
			4/3/2009	16:38	JL	Dissolved Oxygen		9.3	mg/l	0.1	0.1	EPA_360.1
			4/15/2009	13:00	PR	Fluoride		2.42	mg/L	0.04	0.04	SM4500F-D
			4/6/2009	pr	Nitrate/nitrite As Nitroge	U	BDL	mg/l	1.2	1.2	SM_4500-NO	
			4/3/2009	16:38	JL	pH		7.95	s.u.			EPA_150.1
			4/7/2009	jc	Sulfate		2800	mg/l	1.2	1.2	EPA_375.2	
			4/27/2009	9:00	PR	Total Kjeldahl Nitrogen	J	0.92	mg/l	0.4	0.4	EPA_351.3M

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

Project #: W912BV07-P-0189

Date Received:

Project Name: WATER QUALITY MONITORING

Report Date: 4/28/2009

Lab Number	Sample Identification	Date Sampled	Analysis Date	Time	Analyst	Parameter	Q	Results	Units	MDL	SQL	Method
200901050	07311600	4/3/2009	4/8/2009	13:20	PR	Total Suspended Solids	J 3	mg/l	1.7	1.7	SM 2540D	
			4/6/2009		my	Turbidity		2.6	NTU	0.078	0.078	EPA_180.1
			4/8/2009	13:20	PR	Total Dissolved Solids		17920	mg/l	5.5	5.5	SM 2540C
200901051	07311782					METALS-TUL-D:						
		4/3/2009	4/9/2009	10:30	JL	Dissolved Arsenic	U BDL	mg/L	0.009	0.009	200.7/6010B	
			4/9/2009		JL	Dissolved Barium		0.038	mg/L	0.0006	0.0006	200.7/6010B
			4/9/2009		JL	Dissolved Cadmium	U BDL	mg/L	0.0009	0.0009	200.7/6010B	
			4/9/2009		JL	Dissolved Chromium	U BDL	mg/L	0.0009	0.0009	200.7/6010B	
			4/9/2009		JL	Dissolved Copper		0.078	mg/L	0.0003	0.0003	200.7/6010B
			4/9/2009		JL	Dissolved Iron		0.05	mg/L	0.0008	0.0008	200.7/6010B
			4/9/2009		JL	Dissolved Lead	U BDL	mg/L	0.009	0.009	200.7/6010B	
			4/9/2009		JL	Dissolved Manganese		0.042	mg/L	0.0001	0.0001	200.7/6010B
			4/9/2009		JL	Dissolved Nickel	U BDL	mg/L	0.0069	0.0069	200.7/6010B	
			4/9/2009		JL	Dissolved Silver	U BDL	mg/L	0.0003	0.0003	200.7/6010B	
			4/9/2009		JL	Dissolved Zinc		0.08	mg/L	0.0006	0.0006	200.7/6010B
200901051	07311782					METALS-TULSA:						
		4/3/2009	4/9/2009	15:20	JL	Arsenic, Total	U BDL	mg/L	0.009	0.009	200.7/6010B	
			4/9/2009		JL	Barium, Total		0.036	mg/L	0.0006	0.0006	200.7/6010B
			4/9/2009		JL	Cadmium, Total	U BDL	mg/L	0.0009	0.0009	200.7/6010B	
			4/9/2009		JL	Chromium, Total	U BDL	mg/L	0.0009	0.0009	200.7/6010B	
			4/9/2009		JL	Copper, Total		0.256	mg/L	0.0003	0.0003	200.7/6010B
			4/9/2009		JL	Iron, Total		0.129	mg/L	0.0008	0.0008	200.7/6010B
			4/9/2009		JL	Lead, Total		0.025	mg/L	0.009	0.009	200.7/6010B
			4/9/2009		JL	Manganese, Total		0.053	mg/L	0.0001	0.0001	200.7/6010B
			4/9/2009		JL	Nickel, Total	U BDL	mg/L	0.0069	0.0069	200.7/6010B	
			4/9/2009		JL	Silver, Total	U BDL	mg/L	0.0003	0.0003	200.7/6010B	
			4/9/2009		JL	Zinc, Total		0.079	mg/L	0.0006	0.0006	200.7/6010B
			4/17/2009	9:50	PR	Mercury, Dissolved	U BDL	mg/l	0.0002	0.0002	EPA_245.1	
			4/13/2009	10:00	PR	Mercury	U BDL	mg/l	0.0002	0.0002	EPA_245.1	

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

Project #: W912BV07-P-0189

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Report Date: 4/28/2009

Lab Number	Sample Identification	Date Sampled	Analysis Date	Time	Analyst	Parameter	Q	Results	Units	MDL	SQL Method	
200901051	07311782	4/3/2009	4/8/2009	17:16	OL	Selenium, Dissolved	<	0.00845	mg/l	0.00169	0.00845 EPA_7740	
			4/8/2009	18:22	OL	Selenium	<	0.00845	mg/l	0.00169	0.00845 EPA_7740	
			4/9/2009	15:20	JL	Silicon Dioxide (silica)	1.24	mg/l	0.006	0.006	200.7/6010B	
200901051	07311782	4/3/2009	SALTS-TULSA:									
			4/13/2009	11:30	JL	Calcium, Dissolved	1383	mg/L	0.0039	0.0039	200.7/6010B	
			4/13/2009		JL	Magnesium, Dissolved	442.9	mg/L	0.0006	0.0006	200.7/6010B	
			4/13/2009		JL	Phosphorus, Total	3.07	mg/L	0.0096	0.0096	200.7/6010B	
			4/13/2009		JL	Potassium, Dissolved	103.5	mg/L	0.0009	0.0009	200.7/6010B	
			4/13/2009		JL	Sodium, Dissolved	18290	mg/L	0.0018	0.0018	200.7/6010B	
			4/13/2009	11:30	JL	Total Hardness	5321	mg/l	0.06	0.06	200.7/6010B	
			4/15/2009	15:00	PR	Total Alkalinity	104	mg/l	2	2	EPA_310.1	
			4/7/2009		jc	Chloride	20993	mg/l	0.383	0.383	SM4500-CL-B	
			4/3/2009	17:48	JL	Dissolved Oxygen	10.09	mg/l	0.1	0.1	EPA_360.1	
			4/15/2009	13:00	PR	Fluoride	1.97	mg/L	0.04	0.04	SM4500F-D	
			4/6/2009		pr	Nitrate/nitrite As Nitroge	U	BDL	mg/l	1.2	1.2	SM_4500-NO
			4/3/2009	17:48	JL	pH	7.96	s.u.				EPA_150.1
			4/7/2009		jc	Sulfate	3050	mg/l	1.2	1.2	EPA_375.2	
			4/27/2009	9:00	PR	Total Kjeldahl Nitrogen	U	BDL	mg/l	0.4	0.4	EPA_351.3M
			4/8/2009	13:20	PR	Total Suspended Solids	5.4	mg/l	1.7	1.7	SM 2540D	
4/6/2009		my	Turbidity	2.7	NTU	0.078	0.078	EPA_180.1				
4/8/2009	13:20	PR	Total Dissolved Solids	41908	mg/l	5.5	5.5	SM 2540C				
200901052	07311783	4/3/2009	METALS-TUL-D:									
			4/9/2009	10:30	JL	Dissolved Arsenic	U	BDL	mg/L	0.009	0.009	200.7/6010B
			4/9/2009		JL	Dissolved Barium	0.034	mg/L	0.0006	0.0006	200.7/6010B	
			4/9/2009		JL	Dissolved Cadmium	0.017	mg/L	0.0009	0.0009	200.7/6010B	
			4/9/2009		JL	Dissolved Chromium	U	BDL	mg/L	0.0009	0.0009	200.7/6010B
			4/9/2009		JL	Dissolved Copper	0.073	mg/L	0.0003	0.0003	200.7/6010B	
			4/9/2009		JL	Dissolved Iron	0.191	mg/L	0.0008	0.0008	200.7/6010B	
4/9/2009		JL	Dissolved Lead	0.036	mg/L	0.009	0.009	200.7/6010B				

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

Project #: W912BV07-P-0189

Date Received:

Project Name: WATER QUALITY MONITORING

Report Date: 4/28/2009

Lab Number	Sample Identification	Date Sampled	Analysis Date	Time	Analized By	Parameter	Q	Results	Units	MDL	SQL Method
200901052	07311783	4/3/2009	4/9/2009		JL	Dissolved Manganese		0.266	mg/L	0.0001	0.0001 200.7/6010B
			4/9/2009		JL	Dissolved Nickel	U	BDL	mg/L	0.0069	0.0069 200.7/6010B
			4/9/2009		JL	Dissolved Silver	U	BDL	mg/L	0.0003	0.0003 200.7/6010B
			4/9/2009		JL	Dissolved Zinc		0.12	mg/L	0.0006	0.0006 200.7/6010B
200901052	07311783					METALS-TULSA:					
		4/3/2009	4/9/2009	15:20	JL	Arsenic, Total		0.15	mg/L	0.009	0.009 200.7/6010B
			4/9/2009		JL	Barium, Total		0.045	mg/L	0.0006	0.0006 200.7/6010B
			4/9/2009		JL	Cadmium, Total		0.023	mg/L	0.0009	0.0009 200.7/6010B
			4/9/2009		JL	Chromium, Total	U	BDL	mg/L	0.0009	0.0009 200.7/6010B
			4/9/2009		JL	Copper, Total		0.359	mg/L	0.0003	0.0003 200.7/6010B
			4/9/2009		JL	Iron, Total		0.739	mg/L	0.0008	0.0008 200.7/6010B
			4/9/2009		JL	Lead, Total		0.05	mg/L	0.009	0.009 200.7/6010B
			4/9/2009		JL	Manganese, Total		0.333	mg/L	0.0001	0.0001 200.7/6010B
			4/9/2009		JL	Nickel, Total	U	BDL	mg/L	0.0069	0.0069 200.7/6010B
			4/9/2009		JL	Silver, Total	U	BDL	mg/L	0.0003	0.0003 200.7/6010B
			4/9/2009		JL	Zinc, Total		0.11	mg/L	0.0006	0.0006 200.7/6010B
			4/13/2009	10:00	PR	Mercury, Dissolved	U	BDL	mg/l	0.0002	0.0002 EPA_245.1
			4/13/2009	10:00	PR	Mercury	U	BDL	mg/l	0.0002	0.0002 EPA_245.1
			4/8/2009	17:19	OL	Selenium, Dissolved	U	BDL	mg/l	0.00169	0.00169 EPA_7740
			4/8/2009	18:25	OL	Selenium	U	BDL	mg/l	0.00169	0.00169 EPA_7740
			4/9/2009	15:20	JL	Silicon Dioxide (silica)		11.7	mg/l	0.006	0.006 200.7/6010B
200901052	07311783					SALTS-TULSA:					
		4/3/2009	4/13/2009	11:30	JL	Calcium, Dissolved		1322	mg/L	0.0039	0.0039 200.7/6010B
			4/13/2009		JL	Magnesium, Dissolved		401	mg/L	0.0006	0.0006 200.7/6010B
			4/13/2009		JL	Phosphorus, Total		3.02	mg/L	0.0096	0.0096 200.7/6010B
			4/13/2009		JL	Potassium, Dissolved		74.7	mg/L	0.0009	0.0009 200.7/6010B
			4/13/2009		JL	Sodium, Dissolved		13800	mg/L	0.0018	0.0018 200.7/6010B
			4/13/2009	11:30	JL	Total Hardness		5316	mg/l	0.06	0.06 200.7/6010B
			4/15/2009	15:00	PR	Total Alkalinity		118	mg/l	2	2 EPA_310.1
			4/7/2009		jc	Chloride		17495	mg/l	0.383	0.383 SM4500-CL-B

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Lab Number	Sample Identification	Date Sampled	Analysis Date	Time	Analyst	Parameter	Q	Results	Units	MDL	SQL Method	
200901052	07311783	4/3/2009	4/3/2009	18:00	JL	Dissolved Oxygen		13.14	mg/l	0.1	0.1 EPA_360.1	
			4/15/2009	13:00	PR	Fluoride		3.04	mg/L	0.04	0.04 SM4500F-D	
			4/6/2009		pr	Nitrate/nitrite As Nitroge	U	BDL	mg/l	1.2	1.2 SM_4500-NO	
			4/3/2009	18:00	JL	pH		7.96	s.u.			EPA_150.1
			4/7/2009		jc	Sulfate		3500	mg/l	1.2	1.2 EPA_375.2	
			4/27/2009	9:00	PR	Total Kjeldahl Nitrogen	U	BDL	mg/l	0.4	0.4 EPA_351.3M	
			4/8/2009	13:20	PR	Total Suspended Solids		9	mg/l	1.7	1.7 SM 2540D	
			4/6/2009		my	Turbidity		8.6	NTU	0.078	0.078 EPA_180.1	
			4/8/2009	13:20	PR	Total Dissolved Solids		36333	mg/l	5.5	5.5 SM 2540C	
			200901053	07308500	4/3/2009	METALS-TUL-D:						
4/9/2009	10:30	JL				Dissolved Arsenic	U	BDL	mg/L	0.009	0.009 200.7/6010B	
4/9/2009		JL				Dissolved Barium		0.122	mg/L	0.0006	0.0006 200.7/6010B	
4/9/2009		JL				Dissolved Cadmium	U	BDL	mg/L	0.0009	0.0009 200.7/6010B	
4/9/2009		JL				Dissolved Chromium	U	BDL	mg/L	0.0009	0.0009 200.7/6010B	
4/9/2009		JL				Dissolved Copper		0.014	mg/L	0.0003	0.0003 200.7/6010B	
4/9/2009		JL				Dissolved Iron	U	BDL	mg/L	0.0008	0.0008 200.7/6010B	
4/9/2009		JL				Dissolved Lead		0.023	mg/L	0.009	0.009 200.7/6010B	
4/9/2009		JL				Dissolved Manganese		0.025	mg/L	0.0001	0.0001 200.7/6010B	
4/9/2009		JL				Dissolved Nickel	U	BDL	mg/L	0.0069	0.0069 200.7/6010B	
4/9/2009		JL	Dissolved Silver	U	BDL	mg/L	0.0003	0.0003 200.7/6010B				
4/9/2009		JL	Dissolved Zinc		0.048	mg/L	0.0006	0.0006 200.7/6010B				
200901053	07308500	4/3/2009	METALS-TULSA:									
			4/9/2009	15:20	JL	Arsenic, Total	U	BDL	mg/L	0.009	0.009 200.7/6010B	
			4/9/2009		JL	Barium, Total		0.134	mg/L	0.0006	0.0006 200.7/6010B	
			4/9/2009		JL	Cadmium, Total	U	BDL	mg/L	0.0009	0.0009 200.7/6010B	
			4/9/2009		JL	Chromium, Total	U	BDL	mg/L	0.0009	0.0009 200.7/6010B	
			4/9/2009		JL	Copper, Total		0.287	mg/L	0.0003	0.0003 200.7/6010B	
			4/9/2009		JL	Iron, Total	U	BDL	mg/L	0.0008	0.0008 200.7/6010B	
			4/9/2009		JL	Lead, Total		0.057	mg/L	0.009	0.009 200.7/6010B	

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Lab Number	Sample Identification	Date Sampled	Analysis Date	Time	Analized By	Parameter	Q	Results	Units	MDL	SQL Method
200901053	07308500	4/3/2009	4/9/2009		JL	Manganese, Total		0.06	mg/L	0.0001	0.0001 200.7/6010B
			4/9/2009		JL	Nickel, Total	U	BDL	mg/L	0.0069	0.0069 200.7/6010B
			4/9/2009		JL	Silver, Total	U	BDL	mg/L	0.0003	0.0003 200.7/6010B
			4/9/2009		JL	Zinc, Total		0.025	mg/L	0.0006	0.0006 200.7/6010B
			4/13/2009	10:00	PR	Mercury, Dissolved	U	BDL	mg/l	0.0002	0.0002 EPA_245.1
			4/13/2009	10:00	PR	Mercury	U	BDL	mg/l	0.0002	0.0002 EPA_245.1
			4/8/2009	17:22	OL	Selenium, Dissolved	<	0.00845	mg/l	0.00169	0.00845 EPA_7740
			4/8/2009	18:28	OL	Selenium	<	0.00845	mg/l	0.00169	0.00845 EPA_7740
			4/9/2009	15:20	JL	Silicon Dioxide (silica)		1.09	mg/l	0.006	0.006 200.7/6010B
200901053	07308500					SALTS-TULSA:					
		4/3/2009	4/13/2009	11:30	JL	Calcium, Dissolved		473	mg/L	0.0039	0.0039 200.7/6010B
			4/13/2009		JL	Magnesium, Dissolved		181	mg/L	0.0006	0.0006 200.7/6010B
			4/13/2009		JL	Phosphorus, Total		0.18	mg/L	0.0096	0.0096 200.7/6010B
			4/13/2009		JL	Potassium, Dissolved		14.5	mg/L	0.0009	0.0009 200.7/6010B
			4/13/2009		JL	Sodium, Dissolved		1862	mg/L	0.0018	0.0018 200.7/6010B
			4/13/2009	11:30	JL	Total Hardness		1901	mg/l	0.06	0.06 200.7/6010B
			4/15/2009	15:00	PR	Total Alkalinity		114	mg/l	2	2 EPA_310.1
			4/7/2009		jc	Chloride		3050	mg/l	0.383	0.383 SM4500-CL-B
			4/3/2009	10:35	JL	Dissolved Oxygen		10.1	mg/l	0.1	0.1 EPA_360.1
			4/15/2009	13:00	PR	Fluoride		1.1	mg/L	0.04	0.04 SM4500F-D
			4/6/2009		pr	Nitrate/nitrite As Nitroge	U	BDL	mg/l	1.2	1.2 SM_4500-NO
			4/3/2009	10:35	JL	pH		8.3	s.u.		EPA_150.1
			4/7/2009		jc	Sulfate		1350	mg/l	1.2	1.2 EPA_375.2
			4/27/2009	9:00	PR	Total Kjeldahl Nitrogen	J	0.9	mg/l	0.4	0.4 EPA_351.3M
			4/8/2009	13:20	PR	Total Suspended Solids		37	mg/l	1.7	1.7 SM 2540D
			4/6/2009		my	Turbidity		27.5	NTU	0.078	0.078 EPA_180.1
			4/8/2009	13:20	PR	Total Dissolved Solids		7107	mg/l	5.5	5.5 SM 2540C

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 #: W912BV07-P-0189

Date Received:

Project Name: WATER QUALITY MONITORING

Report Date: 4/28/2009

Table with 11 columns: Lab Number, Sample Identification, Date Sampled, Analysis Date, Analyzed Time, Analyzed By, Parameter, Q Results, Units, MDL, SQL Method

Note:

- 200901044: The higher detection limit on the selenium results is based on the sample being diluted prior to analysis.
200901045: The higher detection limit on the selenium results is based on the sample being diluted prior to analysis.
200901046: The higher detection limit on the selenium results is based on the sample being diluted prior to analysis.
200901047: The higher detection limit on the selenium results is based on the sample being diluted prior to analysis.
200901048: The higher detection limit on the selenium results is based on the sample being diluted prior to analysis.
200901049: The higher detection limit on the selenium results is based on the sample being diluted prior to analysis.
200901050: The higher detection limit on the selenium results is based on the sample being diluted prior to analysis.
200901051: The higher detection limit on the selenium results is based on the sample being diluted prior to analysis.
200901053: 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