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July 31, 2017

Mr. Michael L. Bednar
Superintendent of Environmental Compliance
Grand River Dam Authority
PO Box 70
Langley, OK 74350-0070

RE: First 2017 Semi-Annual Groundwater Sampling and Statistical Analysis Report
Grand River Dam Authority Landfill
Mayes County, Oklahoma
Solid Waste Permit No. 3549012

Dear Mr. Bednar:

A&M Engineering and Environmental Services, Inc. (A&M Engineering) is submitting three (3) copies of this Semi-Annual Groundwater Sampling and Statistical Analysis letter report for the Grand River Dam Authority (GRDA) Landfill located in Mayes County, Oklahoma.

In accordance with the facility permit, semi-annual groundwater sampling was conducted at the landfill on June 6, 2017. Groundwater samples were analyzed for Alkalinity, Arsenic, Chloride, pH, Sodium, Specific Conductance, Sulfate and other groundwater quality indicators. The analytical results from this sampling event are tabulated in Table 1 and historical data previously collected are presented in Table 2. Groundwater elevation data is plotted on the Groundwater Contour Map provided as Figure 1. The referenced figure and tables are attached to this letter report as Attachment 1; time series graphs and statistical analysis of the analytical results are provided in Attachment 2; and field sampling data and the laboratory analysis report is provided in Attachment 3.

Statistical analysis was performed for Alkalinity, Arsenic, Chloride, pH, Sodium, Specific Conductance and Sulfate in MW-93-1, MW-93-2, MW-93-3, MW-03-1, and MW-03-2 based on data collected between December 1994 and the present. MW-93-1 is the only up-gradient well for this landfill facility and MW 93-2, MW-93-3, MW-03-1, and MW-03-2 are designated as down-gradient wells. The statistical analysis methods utilized in this report include the Shapiro-Francia Test of Normality, Levenes Equal Variance Test, and ANOVA (Analysis of Variance) for inter-well analysis. Inter-well analysis is used to identify whether chemical parameters in the down-gradient wells exhibit a significant increase relative to the background data for the up-gradient well. In the event that the inter-well analysis indicates a significant increase of a parameter within in a down-gradient well, an intra-well analysis is performed to determine if that particular parameter exhibits a statistically significant increase compared to background data for that particular well. The statistical analysis results for this sampling event are summarized in the table below.

Parameter	Inter-well Exceedance	Intra-Well Exceedance
Alkalinity	None	None
Arsenic	MW-93-2	None
Chloride	MW-93-2, MW-93-3, MW-03-2	None
pH	MW-93-2	None
Sodium	MW-93-2, MW-93-3	None
Specific Conductance	None	None
Sulfate	MW-93-2	None

During this semi-annual monitoring event MW-93-2, MW-93-3, and MW-03-2 did exhibit inter-well exceedances for some of the parameters relative to background data. Further analysis reveals that none had an intra-well exceedance. .

In addition to the regular semi-annual monitoring, GRDA also collected quarterly samples on March 4, 2016 and June 22, 2016 from MW-93-2 and the adjacent surface water as requested by the Oklahoma Department of Environmental Quality (DEQ). The samples were tested for pH, Reduction Potential (Eh), and Specific Conductance. The results are presented in Table 3 along with previously collected historical data. pH and Reduction Potential have been observed to be relatively stable. The results for MW-93-2 do not appear to show a correlation with the adjacent surface water. GRDA will continue to conduct quarterly sampling as long as MW-93-2 remains in assessment monitoring.

A&M Engineering appreciates the opportunity to provide groundwater statistical analysis and reporting services for GRDA. After you review and approve this report, please forward one (1) copy to:

Ms. Hillary Young, P.E.
Chief Engineer
Land Protection Division
Oklahoma Department of Environmental Quality
P.O. Box 1677
Oklahoma City, Oklahoma 73101-1677

If you should have any questions or require any further information, please do not hesitate to contact me at (918) 665-6575.

Sincerely,
A&M Engineering and Environmental Services, Inc.

Thomas A. Trebonik, P.G.
Senior Project Manager

Attachment 1: Tables and Figures
Attachment 2: Graphs and Statistical Analysis
Attachment 3: Groundwater Sampling and Analysis Data

2017 FIRST SEMI-ANNUAL GROUNDWATER SAMPLING AND STATISTICAL ANALYSIS REPORT

Grand River Dam Authority Landfill
Chouteau, Mayes County, Oklahoma
Permit No. 3549012

JUNE 2017

Prepared for

Grand River Dam Authority
Chouteau, Oklahoma

Project No. 1986-002

Prepared by

A & M Engineering and Environmental Services, Inc.
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Tulsa, Oklahoma 74128
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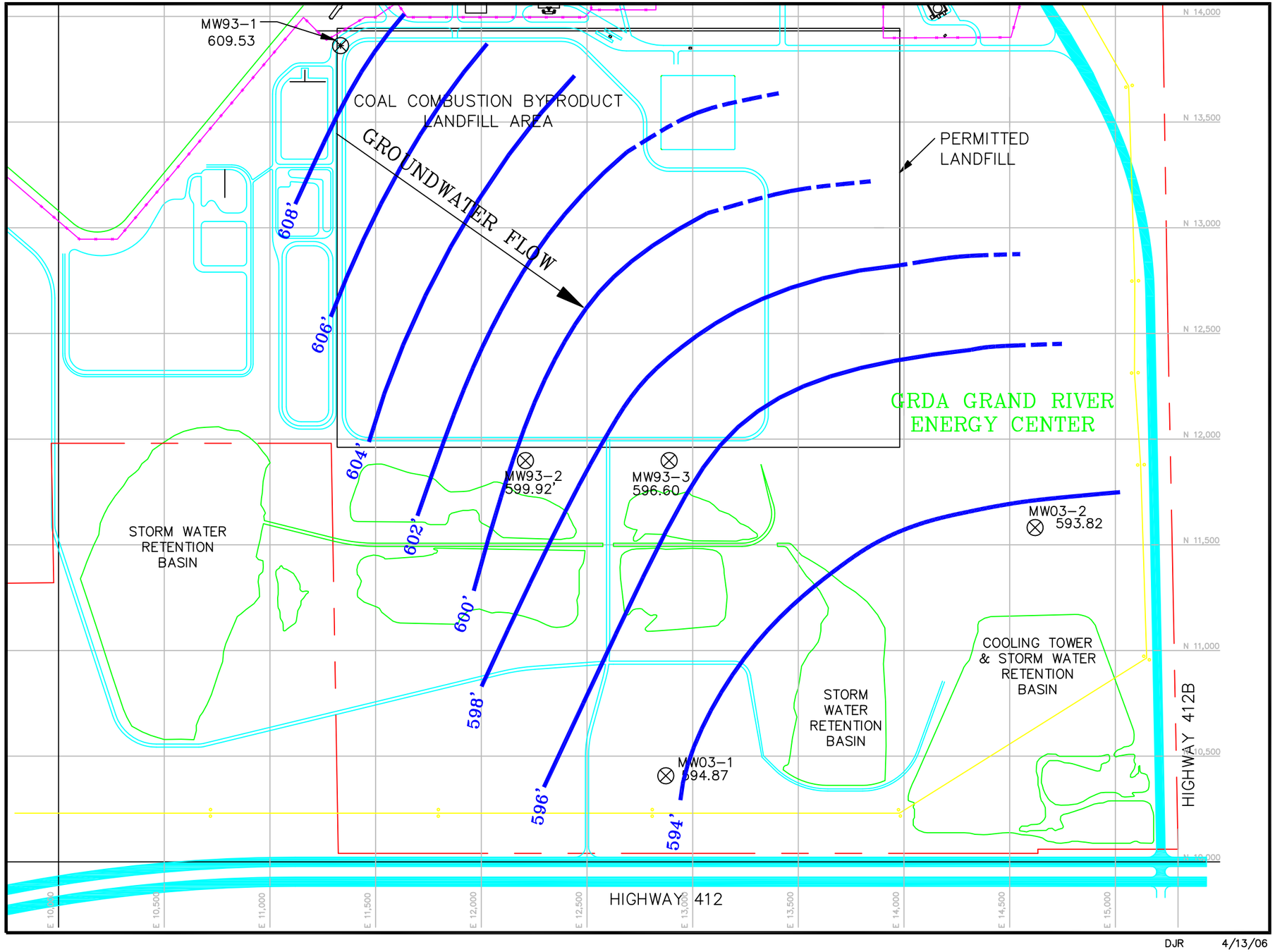
Attachment 1

Tables and Figures



SCALE

0 500' 1000'

DJR 4/13/06

GENERAL NOTES

1) GROUNDWATER ELEVATIONS MEASURED ON JUNE 6, 2017.

REVISIONS

NO.	DESCRIPTION	BY	CHECKED	DATE	NO.	DESCRIPTION	BY	CHECKED	DATE

A & M ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

ENGINEERING – ENVIRONMENTAL – CONSTRUCTION

DRAWN:	CHECKED BY:	MATERIALS BY:	ENGINEER:
BAG	DME		
DATE: 7/18/2017	DATE: 7/18/2017	DATE:	DATE:

GROUNDWATER CONTOUR MAP
JUNE 6, 2017
GRAND RIVER DAM AUTHORITY LANDFILL
CHOUTEAU, OK

APPROVED BY:	SCALE:	PROJECT NUMBER:	DRAWING NUMBER:	REV.:
DME	AS SHOWN	1986-002	FIGURE 1	
DATE: 7/21/2017				

Table 1
First Semi-Annual 2017 Analytical Results
June 6, 2017
Grand River Dam Authority (GRDA) Landfill
Chouteau, Oklahoma

PARAMETER	Monitoring Well I.D.				
	MW 93-1 (upgradient)	MW 93-2 (downgradient)	MW 93-3 (downgradient)	MW 03-1 (downgradient)	MW 03-2 (downgradient)
Stabilized Water Level (msl)	609.53	599.92	596.60	594.87	593.82
Temperature °C	25.7	24.8	24.2	24.1	21.7
pH (S.U.)	6.69	9.29	6.65	6.64	6.73
Specific Conductivity (umhos/cm)	1,289	12,590	1,743	198	1,498
ORP mv	-113.0	-166.4	-174.1	-159.2	-158.1
Alkalinity (mg/L)	398	246	304	56	192.0
Chloride (mg/L)	16.1	1,580	113	0.887	117
Sulfate (mg/L)	265	3,630	18.2	8.92	332
Dissolved Arsenic (mg/L)	<0.005	0.038	<0.005	<0.005	<0.005
Dissolved Sodium (mg/L)	58.4	2,310	301	6.56	96.8
Hardness (mg/L)	568	114	192	NT	NT
Calcium (mg/L	206	45.2	56.0	NT	NT
Dissolved Copper (mg/L)	<0.01	0.014	<0.01	NT	NT
Dissolved Iron (mg/L)	<0.075	<0.075	<0.075	NT	NT
Nitrate-Nitrogen (mg/L)	<0.25	<0.25	1.53	NT	NT
Total Phosphorus (mg/L)	<0.025	0.588	0.048	NT	NT
Total Residue (mg/L)	820	7,380	830	NT	NT
TDS (mg/L)	810	7,350	780	NT	NT
COD (mg/L)	<15.0	82.2	<15.0	NT	NT
TOC (mg/L)	3.31	12.1	2.54	NT	NT
Dissolved Potassium (mg/L)	0.45	241	4.37	NT	NT
Dissolved Barium (mg/L)	0.013	0.033	0.199	NT	NT
Dissolved Selenium (mg/L)	<0.005	0.015	0.005	NT	NT

NT = Not Tested
NS = Insufficient Sample for analysis

Table 2
Historical Monitoring Well Analytical Results
June 6, 2017
Grand River Dam Authority (GRDA) Landfill
Chouteau, Oklahoma

	WELL ID																														
	MW 93-1 Upgradient																														
PARAMETER	6/24/04	9/15/04	12/15/04	3/16/05	6/15/05	9/21/05	12/21/05	3/15/06	6/21/06	12/20/06	6/12/07	12/17/07	6/11/08	12/3/08	6/17/09	12/9/09	6/17/10	12/22/10	6/29/11	12/7/11	6/6/12	12/12/12	6/19/13	12/11/13	6/11/14	12/3/14	6/17/15	12/1/15	6/22/16	12/20/16	6/6/17
pH (S.U.)	6.53	6.43	6.61	6.57	6.53	6.65	6.61	6.64	6.85	6.67	6.58	6.33	6.7	6.5	6.8	6.6	6.5	6.55	6.5	6.41	6.23	6.61	6.58	6.57	6.10	6.69	6.38	6.45	6.59	6.28	6.69
Specific Conductivity (umhos/cm)	1620	1618	1586	1521	1531	1441	1030	1318	1547	1370	1466	1327	1334	1352	1301	1218	1179	1270	1275	1236	1185	1227	1366	1329	1200	1230	1210	1230	1185	1186	1289
Alkalinity (mg/L)	348	332	327	340	330	347	340	320	314	300	310	330	370	344	350	370	380	370	366	370	384	330	360	358	342	368	380	383	390	395.4	398
Chloride (mg/L)	61	44	48	42	42	42	58	50	31	35	24	27	29	28	20	24	17	20	20.8	17.6	23.8	22.2	21.5	17.6	19.3	16.9	13	15.2	13	15.2	16.1
Sodium (mg/L)	94.7	71	92.3	86.3	77.4	92.8	81.9	99.7	82	85.1	74.9	81.8	56.5	75.2	67.4	76.9	55	70.5	55.4	69.1	55.6	58.9	70	72.9	56.5	69.4	69.7	57.5	66.9	54.8	58.4
Sulfate (mg/L)	500	475	558	880	22	467	475	375	420	330	260	300	375	340	650	160	290	304	306	255	275	301	409	306	316	292	286	299	250	275	265
Arsenic (mg/L)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.0109	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0068	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0005	<0.005

	WELL ID																															
	MW 93-2 Downgradient																															
PARAMETER	6/24/04	9/15/04	12/15/04	3/16/05	6/15/05	9/21/05	12/21/05	3/15/06	6/21/06	12/20/06	2/21/07	6/12/07	12/17/07	6/11/08	12/3/08	12/15/08	6/17/09	12/9/09	6/17/10	12/22/10	6/29/11	12/7/11	6/6/12	12/12/12	6/19/13	12/11/13	6/11/14	12/3/14	6/17/15	12/1/15	6/22/16	12/20/16	6/6/17
pH (S.U.)	9.24	9.32	9.26	9.23	9.10	9.25	9.31	9.47	9.4	9.18	9.20	9.10	9.30	9.4	9.7	9.6*	9.8	9.8	9.6	9.5	9.4	9.5	9.68	10.02/9.51*	9.4	9.46	8.55	8.95	9.13	9.37	9.28	9.72	9.29
Specific Conductivity (umhos/cm)	10494	10340	9940	9690	10010	9660	10000	8650	9830	8310	7660	9590	9100	9600	10520	9070*	10690	10050	10020	11230	11110	10770	10490	11460	10500	10650	9940	10900	1270	10560	6710	11400	12590
Alkalinity (mg/L)	329	272	288	240	246	228	232	250	290	356	340	312	210	240	280	280	250	236	252	240	266	288	256	248	364	328	342	296	384	226	176	162	246
Chloride (mg/L)	1892	1435	1600	1325	1400	1412	1550	1375	1500	1250	1250	1350	1399	1210	1584	1584	750	875	1500	1600	1670	1510	1610	1750	1390	1410	1360	1520	47.7	1760	1300	1690	1580
Sodium (mg/L)	2180	1800	2480	2490	2030	2520	2300	2720	2450	2170	1900	1980	2244	2649	2120	2120	2220	240	2100	2460	2190	2500	2060	2730	2230	2290	1940	2730	270	3140 / 2780 / 1890**	2700	2400	2310
Sulfate (mg/L)	2650	2700	2950	3200	2650	3200	3200	3000	2700	2500	2900	2400	3100	2350	3300	2400*	2300	2200	2900	3460	2630	2520	2360	3240	2510	2460	2790	2940	114	3600	2620	3800	3630
Arsenic (mg/L)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.0343	0.0603	0.0510	0.0330	NT	0.0525	0.0635	0.0179	0.0215	0.0610	<0.005	0.0098	0.0562	0.0530	0.0353	0.0197	0.0274	<0.005	0.03	0.047	0.06	0.038

*MW-93-2 was resampled for pH on 1/9/2013.
**MW-93-2 was resampled for Sodium on 3/4/2016 and 5/25/2016

	WELL ID																														
	MW 93-3 Downgradient																														
PARAMETER	6/24/04	9/15/04	12/15/04	3/16/05	6/15/05	9/21/05	12/21/05	3/15/06	6/21/06	12/20/06	6/12/07	12/17/07	6/11/08	12/3/08	6/17/09	12/9/09	6/17/10	12/22/10	6/29/11	12/7/11	6/6/12	12/12/12	6/19/13	12/11/13	12/11/13	6/11/14	12/3/14	6/7/15	12/1/15	6/22/16	12/20/16	6/6/17
pH (S.U.)	6.80	6.70	6.88	6.69	6.81	6.85	6.70	7.07	6.84	6.93	6.89	6.8	6.8	6.8	7.2	6.9	6.7	6.82	6.7	6.77	6.42	6.85	6.49	7.07	7.07	6.08	6.80	6.4	6.6	6.43	6.27	6.65
Specific Conductivity (umhos/cm)	1129	1068	972	1134	1080	1155	1140	1035	1226	1087	1031	910	1023	1073	1073	1038	1108	1090	1178	930	1203	1010	1438	1252	1252	1500	1200	1480	1807	2494	2200	1743
Alkalinity (mg/L)	309	264	254	290	268	264	246	227	253	250	280	290	300	226	240	214	296	230	256	244	288	226	316	262	262	338	262	388	480 / 462 / 440*	330	330.4	304
Chloride (mg/L)	160	139	122	180	150	215	180	221	210	210	110	131	144	152	120	175	150	170	170	98.9	194	168	194	173	173	254	194	168	280	518	475	113
Sodium (mg/L)	150	200	186	196	170	239	180	180	227	211	159	194	195	190	173	202	202	216	158	218	201	168	235	234	234	258	220	280	339 / 440 / 464*	449/ 368*	337	301
Sulfate (mg/L)	24	17	26	29	26	19	23	19	21	42	3	28	27	11	16	12	45	25.8	34.2	37.4	38.3	25.8	61.6	26.5	26.5	56.2	36.0	109	81	58.5	66.6	18.2
Arsenic (mg/L)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0005	<0.005

*MW-93-3 was resampled for Sodium and Alklinity on 3/4/2016 and
5/25/2016, and Sodium on 10/11/2016.

Table 2 (continued)
Historical Monitoring Well Analytical Results
June 6, 2017
Grand River Dam Authority (GRDA) Landfill
Chouteau, Oklahoma

	WELL ID																														
	MW 03-1 Downgradient																														
PARAMETER	6/24/04	9/15/04	12/15/04	3/16/05	6/15/05	9/21/05	12/21/05	3/15/06	6/21/06	12/20/06	6/12/07	12/17/07	6/11/08	12/3/08	6/7/09	12/9/09	6/17/10	12/22/10	6/29/11	12/7/11	6/6/12	12/12/12	6/19/13	12/11/13	6/11/14	12/3/14	6/7/15	12/1/15	6/22/16	12/20/16	6/6/17
pH (S.U.)	7.27	6.78	7.32	7.30	7.28	7.88	**	**	**	7	7	7	7.4	7.4	7.6	7.5	7.1	6.89	7.3	7.05	7.33	DRY	7.15	7.19	6.62	6.73	6.66	6.34	7.2	6.75	6.64
Specific Conductivity (umhos/cm)	497	687	514	422	465	517	**	**	**	447	630	540	467	649	519	469	500	504	463	501	457	DRY	373	476	826	409	267	385	320	NS	198
Alkalinity (mg/L)	209	220	184	160	252	180	**	**	**	204	200	190	200	206	204	216	232	216	210	222	216	DRY	144	212	222	194	134	150	130	211.6	56
Chloride (mg/L)	10	22	6	4	6	5	**	**	**	5	4	3	11	11	4	32	5	8.7	4.86	5.88	9.36	DRY	<5.0	<5.0	44	<5.0	<5.00	0.777	0.628	0.786	0.887
Sodium (mg/L)	10.2	42	8.04	5.99	7.3	14.1	**	**	**	8	8	10	5.71	7.01	7.34	6.77	9.31	7.11	7.04	8.87	7.94	DRY	10.3	9.78	55.9	9.80	9.7	12	8.59	7.94	6.56
Sulfate (mg/L)	42	76	62	22	23	17	**	**	**	55	88	120	23	90	21	15	16	22.9	21.6	18.1	14.3	DRY	16.2	29.1	127	19.7	7.86	12.1	10.3	30.9	332
Arsenic (mg/L)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	DRY	0.008	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0005	<0.05

NS = Insuffiecient sample for analysis

	WELL ID																														
	MW 03-2 Downgradient																														
PARAMETER	6/24/04	9/15/04	12/15/04	3/16/05	6/15/05	9/21/05	12/21/05	3/15/06	6/21/06	12/20/06	6/12/07	12/17/07	6/11/08	12/3/08	6/7/09	12/9/09	6/17/10	12/22/11	6/29/11	12/7/11	6/6/12	12/12/12	6/19/13	12/11/13	6/11/14	12/3/14	6/7/15	12/1/15	6/22/16	12/20/16	6/6/17
pH (S.U.)	6.84	7.17	6.86	6.80	6.87	6.87	6.83	6.88	6.78	6.88	6.87	6.7	6.9	6.8	7.3	6.8	6.8	7.2	6.7	6.69	6.73	6.82	6.88	6.72	7.00	7.14	6.45	6.39	6.75	6.36	6.73
Specific Conductivity (umhos/cm)	692	522	655	661	674	625	572	594	636	580	680	617	674	752	720	690	685	728	748	755	716	807	807	805	219	1540	965	967	1074	1454	1498
Alkalinity (mg/L)	235	200	222	220	252	224	230	220	228	220	228	200	200	210	200	208	216	230	224	236	230	242	232	230	92	76	220	214	204	199.4	192.0
Chloride (mg/L)	36	4	28	30	30	27	26	27	23	35	30	20	41	46	60	45	33	29	28.4	23.5	29.3	28.3	32.1	32.8	<5.00	51.2	54.7	67.8 / 69.6 / 80.1*	79.7/ 88.4*	126	117
Sodium (mg/L)	47.4	8.7	51.3	47	42.8	52.6	46.5	50.4	44.9	50.5	47	50.2	33.8	54.4	48.2	47.3	52.9	51.7	51	60.1	52	61.3	57.3	54	9.78	68	66.3	63.8	76.8	80.2	96.8
Sulfate (mg/L)	72	32	54	78	23	80	72	30	***	34	68	130	67	210	84	80	106	98.9	101	98.8	107	111	113	106	10.3	158	179	197	254	451	332
Arsenic (mg/L)	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0005	<0.005

*MW-03-2 was resampled for Chloride on 3/4/2016, 5/25/2016, and 10/11/2016.

Table 3
First Semi-Annual 2017 Additional Sampling Summary
Grand River Dam Authority (GRDA) Landfill
Chouteau, Oklahoma

	MW93-3		MW03-2
Sample Date	Sodium (mg/L)	Conductivity (uS/cm)	Chloride (mg/L)
12/1/2015	339*	1807	67.8*
3/4/2016	440*	N/A	69.6*
5/25/2016	464*	N/A	80.1*
6/22/2016	449*	2494*	79.7*
10/11/2016	368*	2005*	88.4*
12/20/2016	337	2200*	126*
3/8/2017	334*	2404*	146*
6/6/2017	301*	1743	117*

* Indicates a verified intra-well statistical exceedance for the specified sampling event.

Table 4
Quarterly Test Results

Grand River Dam Authority (GRDA) Landfill
Chouteau, Oklahoma

	MW 93-2																														
Parameter	3/24/10	6/17/10	9/21/10	12/22/10	3/31/11	6/29/11	9/29/11	12/7/11	2/22/12	6/6/12	8/23/12	12/12/12	3/6/13	6/19/13	8/28/13	12/11/13	2/21/14	6/11/14	8/28/14	12/3/14	3/12/15	6/17/15	8/13/15	12/1/15	3/4/16	6/22/16	10/11/16	12/20/16	3/8/17	6/6/17
pH (S.U)	9.7	9.6	9.7	9.5	9.7	9.4	9.5	9.5	9.5	9.68	9.45	10.02 / 9.51*	9.4	9.4	9.3	9.46	9.1	8.55	8.8	8.95	8.8	9.13	8.9	9.4	9.5	9.3	9.5	9.72	9.6	9.29
Specific Conductivity (umhos/cm)	10100	10020	10670	11230	10950	11110	11520	10770	9930	10490	11450	11460	11320	10500	10610	10650	10140	9940	10340	10900	11200	1270	11090	10560	11480	6710	10910	11400	11500	12590
Eh (mV)	-85.9	-47	-381.5	-392.2	-130.8	-227	-274.6	-141.8	-276.4	-316.3	-17.7	-309	-83.4	116.4	41.5	39.7	81.3	-237.9	-330.3	-394.0	-372	-317	27.2	-244.4	-260	-235	-116	80	-128.4	-166.4

* MW-93-2 resampled for pH 1/9/2013

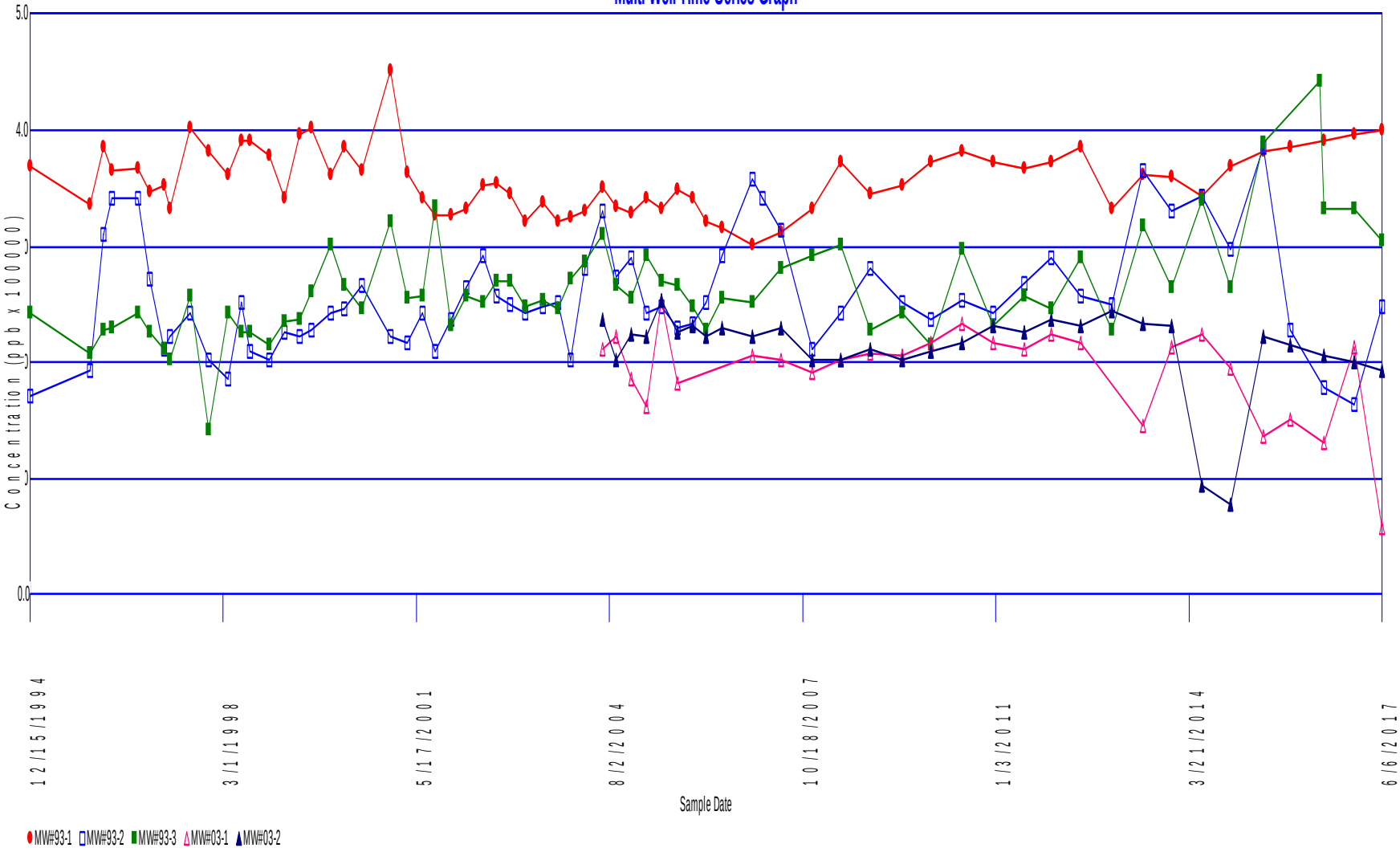
	F08 Surface Pond Adjacent to MW-93-2																														
Parameter	3/24/10	7/13/10	9/21/10	12/22/10	3/31/11	6/29/11	9/29/11	12/7/11	2/22/12	6/6/12	8/23/12	12/12/12	3/6/13	6/19/13	8/28/13	12/11/13	2/21/14	6/11/14	8/28/14	12/3/14	3/12/15	6/17/15	8/13/15	12/1/15	3/4/16	6/22/16	10/11/16	12/20/16	3/8/17	6/6/17
pH (S.U)	8.80	8.40	8.30	7.90	8.00	8.50	9.20	7.85	8.60	7.60	9.09	8.30	8.20	8.60	9.50	8.8	8.11	8.70	8.70	8.60	8.1	7.7	8.7	7.6	7.8	8.3	7.6	8.6	8.2	9.9
Specific Conductivity (umhos/cm)	1174	1079	1133	1125	1219	1208	1140	908	1003	1153	1285	1405	1315	1139	1182	1236	1341	1486	1326	234	1341	958	938	1009	1332	1172	920	1078	1102	869
Eh (mV)	-293	-157.3	-296.3	-156	-23.5	-160.3	-63.8	-55.3	-166.3	-39.4	-30.7	-6.4	17.3	165	-14.6	39.5	130.1	-184.3	-349.6	-234.0	207	-202.8	196.7	-171	-170	-251	-210	25	-111.1	69.4

Attachment 2

Graphs and Statistical Analysis

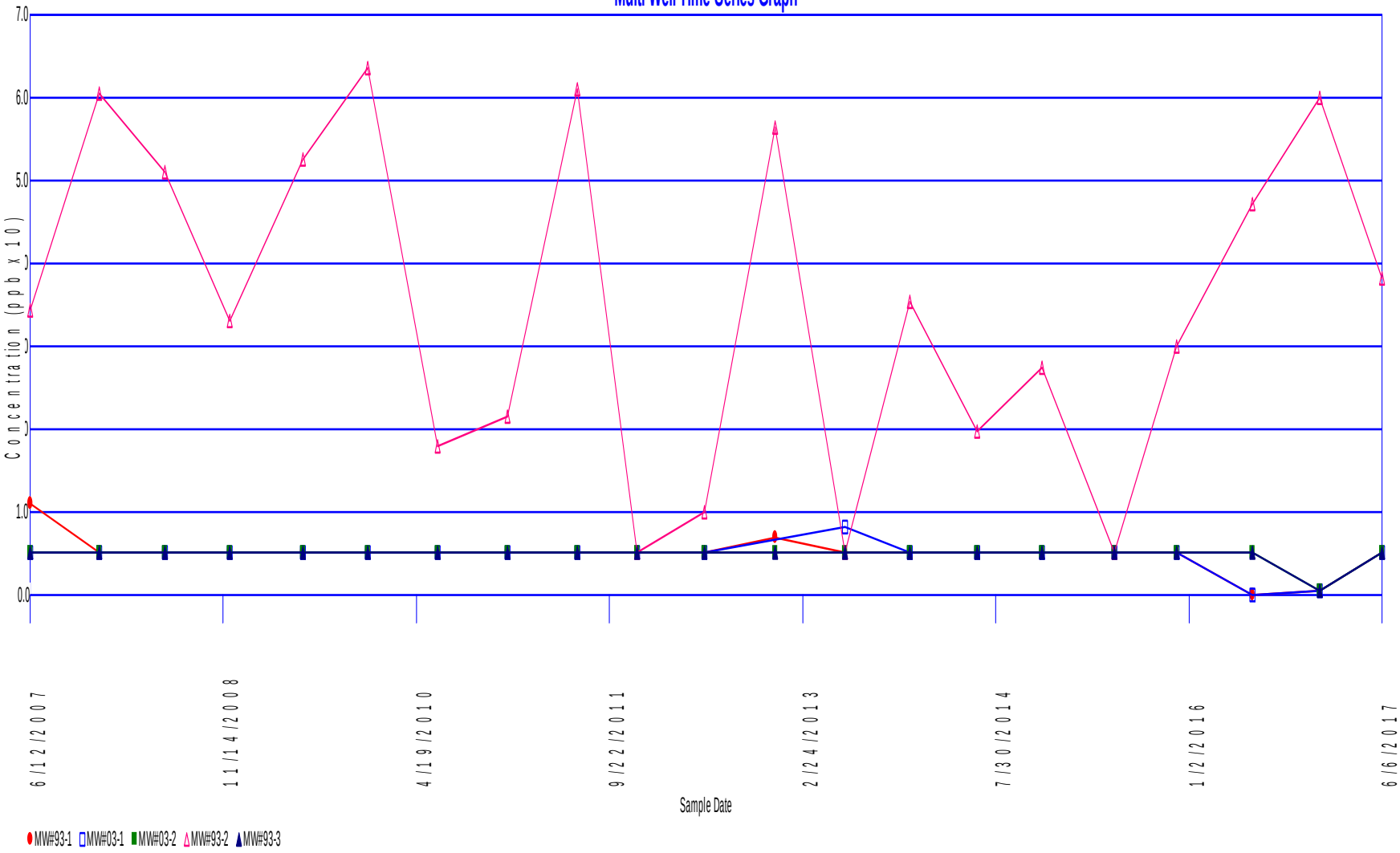
Alkalinity

Multi-Well Time-Series Graph



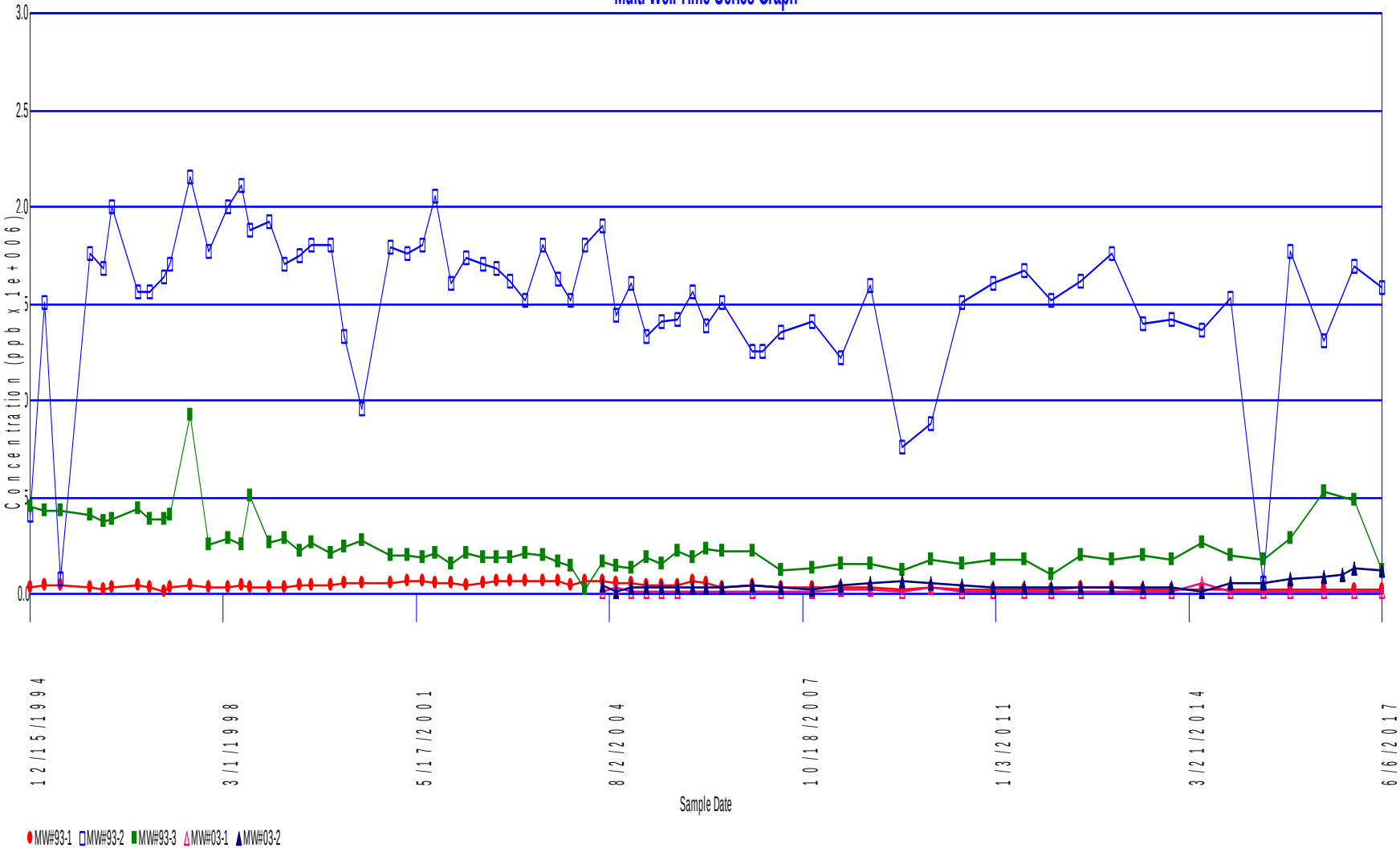
Arsenic

Multi-Well Time-Series Graph



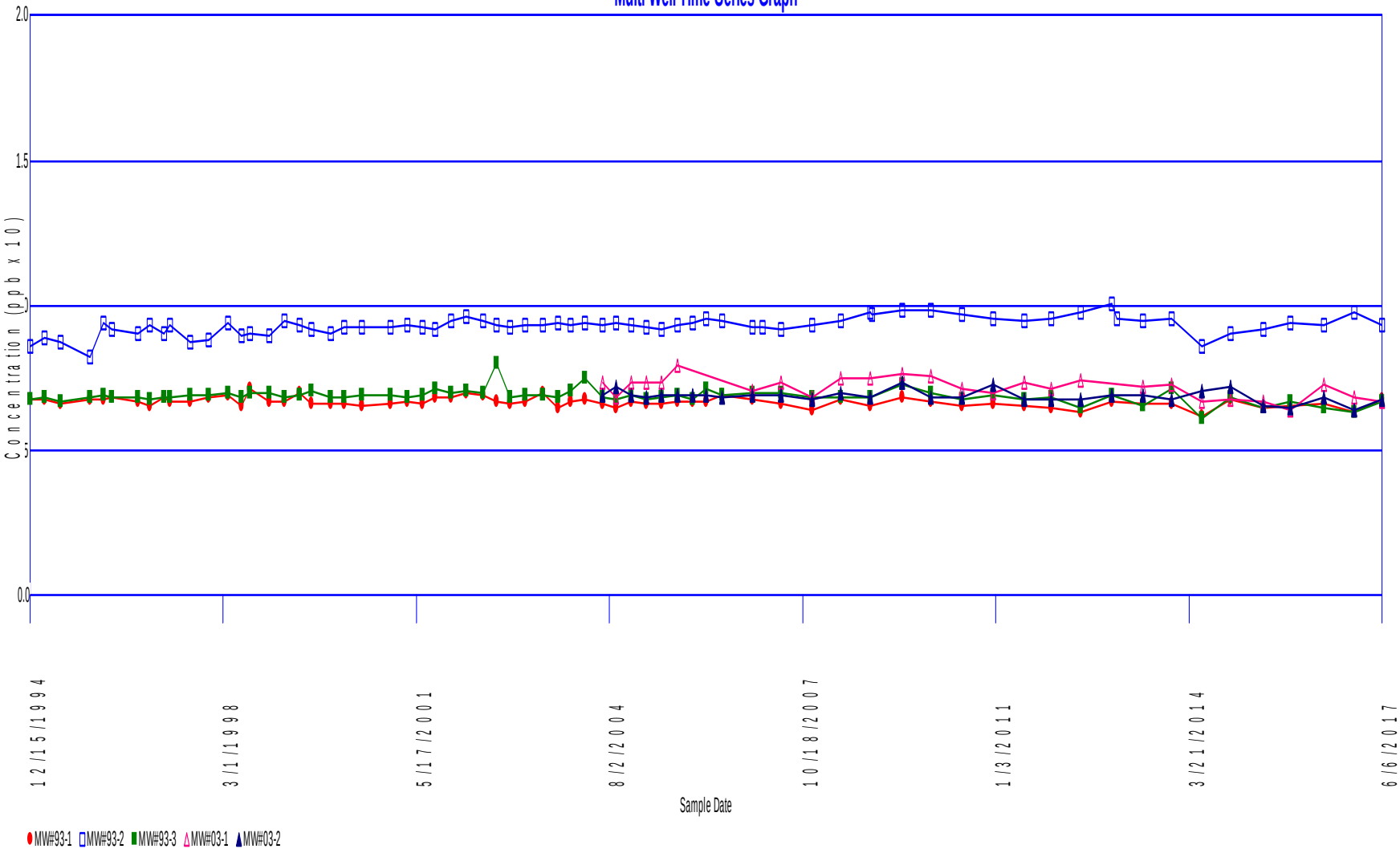
Chloride

Multi-Well Time-Series Graph



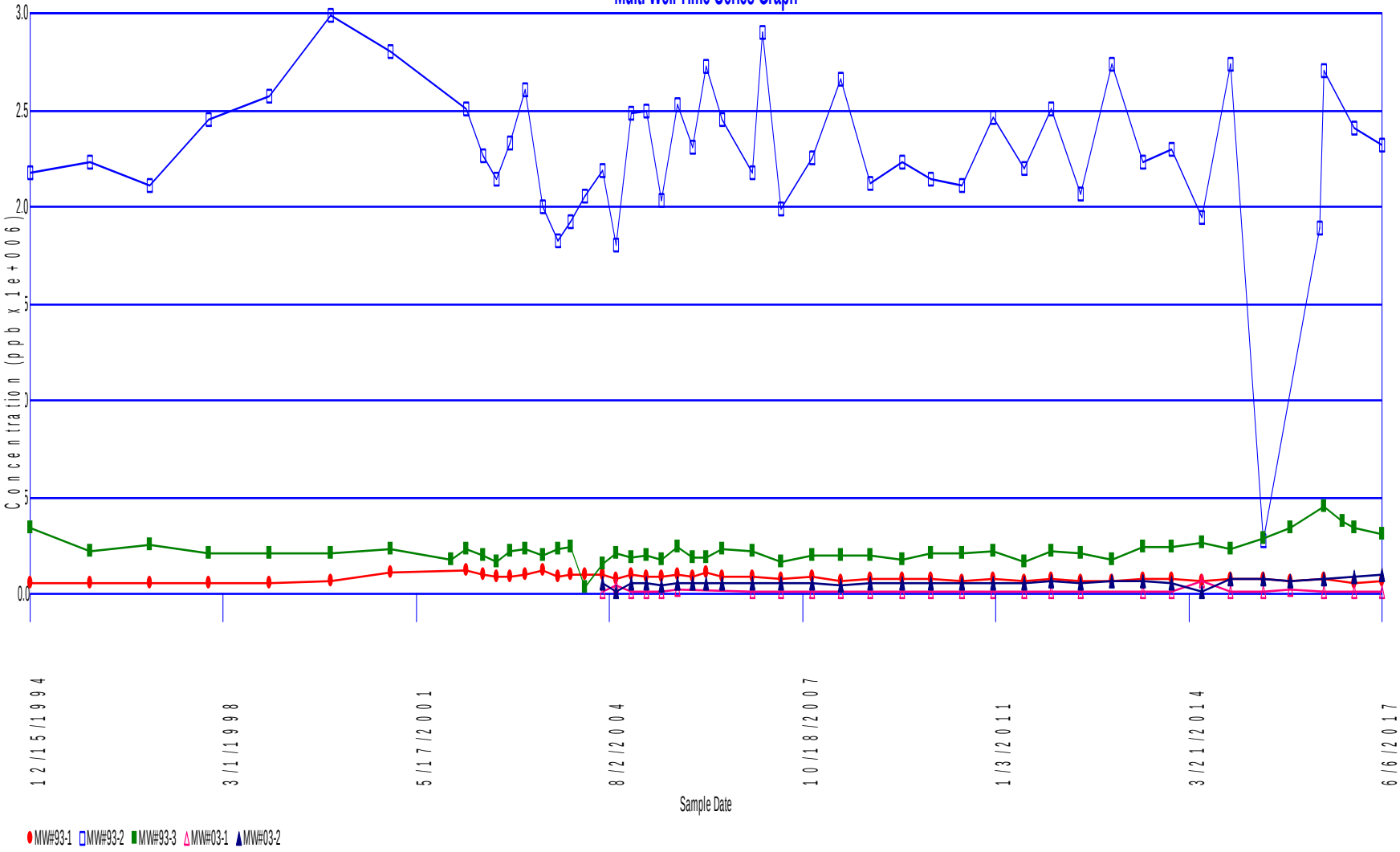
ph

Multi-Well Time-Series Graph



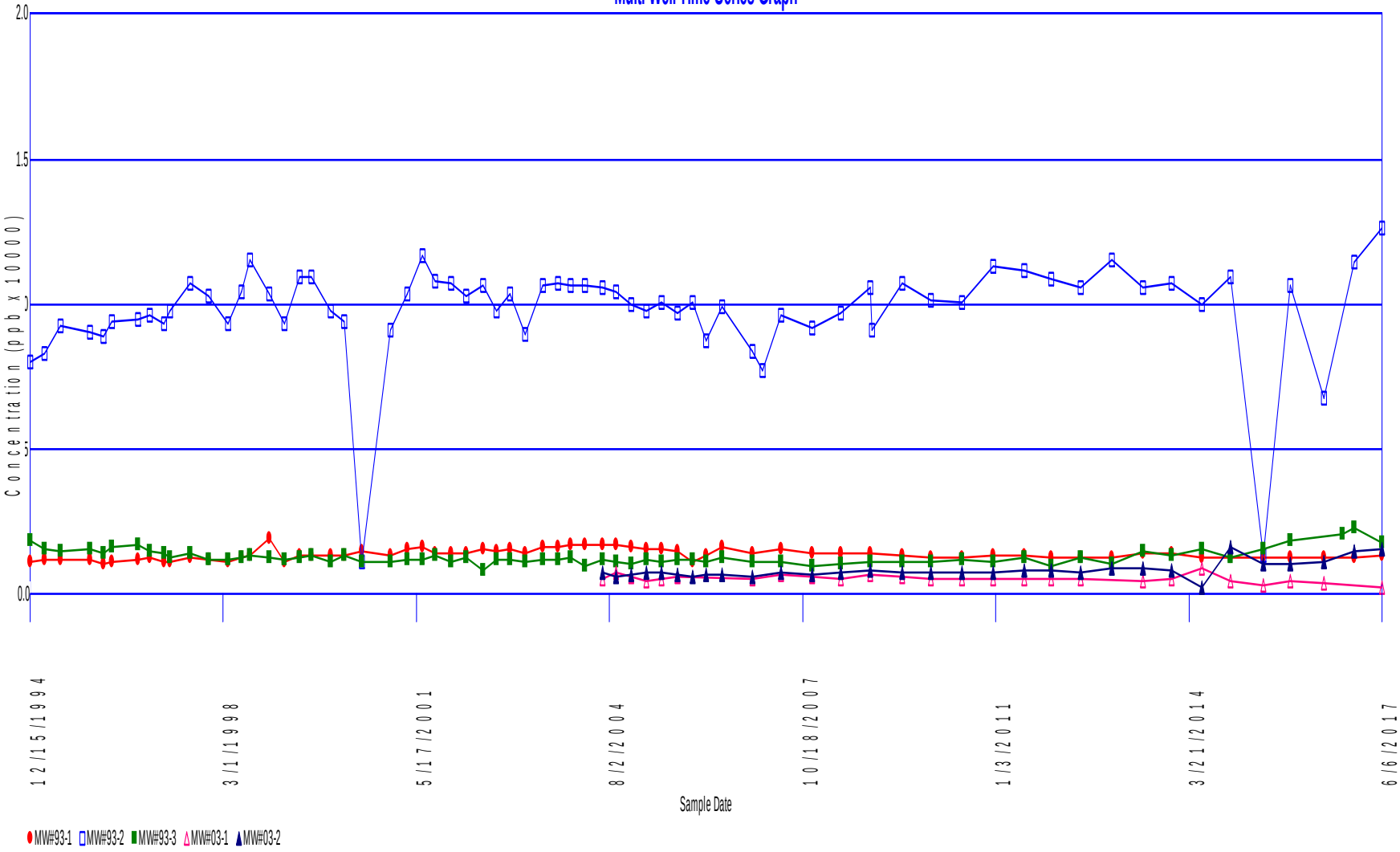
Sodium

Multi-Well Time-Series Graph



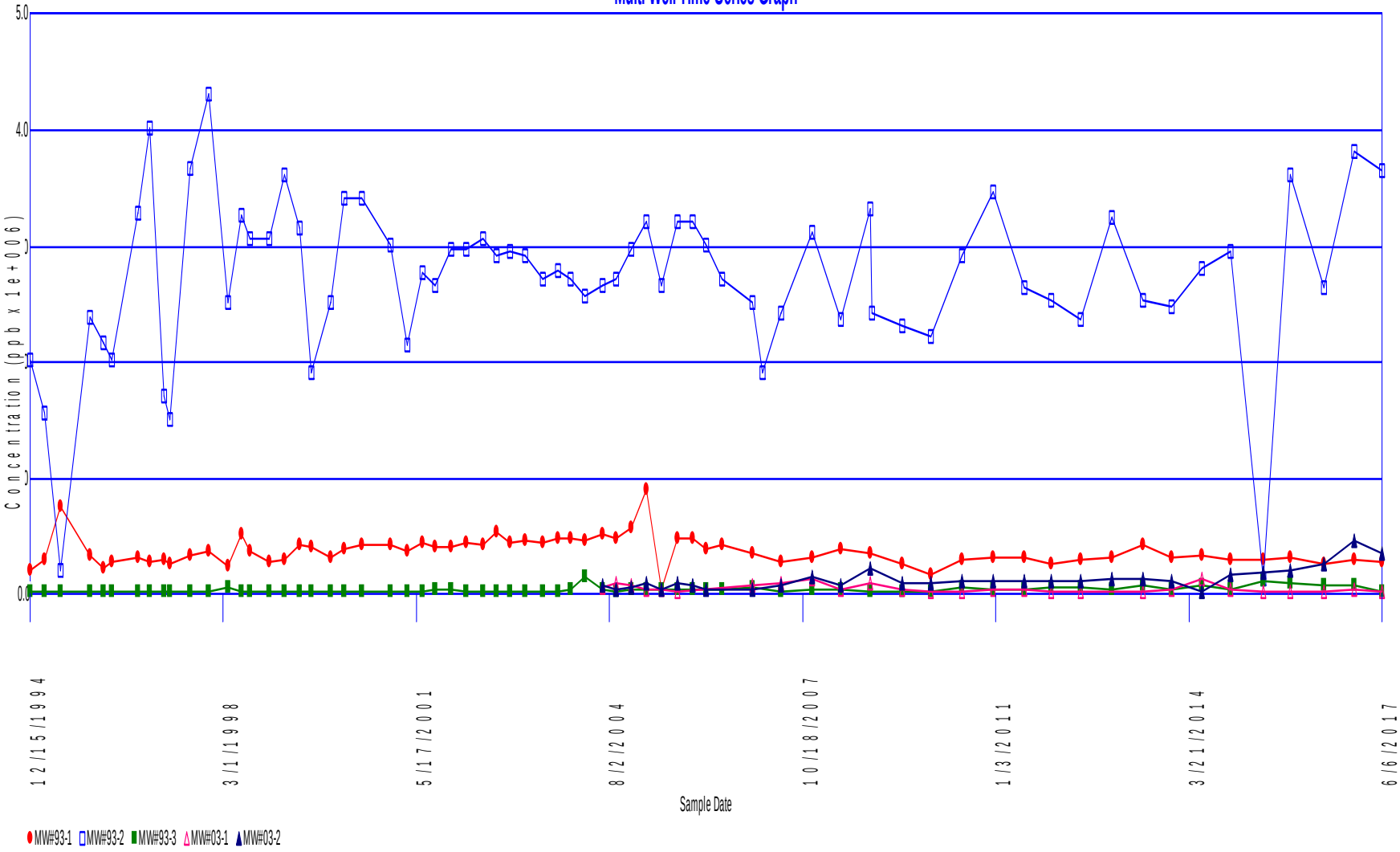
Specific Conductance

Multi-Well Time-Series Graph



Sulfate

Multi-Well Time-Series Graph



Concentrations (ppb)

Parameter: Alkalinity

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Samples: 254
Total Non-Detect: 0
Percent Non-Detects: 0%
Total Background Samples: 65
There is 1 background well

Well	Samples	ND	Date	Result	Original
MW#93-1	65	0 (0%)	12/15/1994	367000	367000
			12/14/1995	334000	334000
			3/6/1996	384000	384000
			4/25/1996	363000	363000
			10/2/1996	365000	365000
			12/10/1996	346000	346000
			3/11/1997	350000	350000
			4/15/1997	330000	330000
			8/14/1997	400000	400000
			12/4/1997	380000	380000
			3/31/1998	360000	360000
			6/23/1998	390000	390000
			8/11/1998	389000	389000
			12/8/1998	376000	376000
			3/9/1999	340000	340000
			6/8/1999	395000	395000
			8/19/1999	400000	400000
			12/14/1999	360000	360000
			3/7/2000	384000	384000
			6/23/2000	364000	364000
			12/12/2000	450000	450000
			3/27/2001	362000	362000
			6/28/2001	340000	340000
			9/10/2001	326000	326000
			12/18/2001	326000	326000
			3/19/2002	330000	330000
			6/26/2002	350000	350000
			9/18/2002	353000	353000
			12/11/2002	344000	344000
			3/13/2003	320000	320000
			6/25/2003	336000	336000
			9/26/2003	320000	320000
			12/10/2003	324000	324000
			3/9/2004	329000	329000
			6/24/2004	348000	348000
			9/15/2004	332000	332000
			12/15/2004	327000	327000
			3/16/2005	340000	340000
			6/15/2005	330000	330000
			9/21/2005	347000	347000
			12/21/2005	340000	340000
			3/15/2006	320000	320000
			6/21/2006	314000	314000
			12/20/2006	300000	300000

			6/12/2007	310000	310000
			12/17/2007	330000	330000
			6/11/2008	370000	370000
			12/3/2008	344000	344000
			6/17/2009	350000	350000
			12/9/2009	370000	370000
			6/17/2010	380000	380000
			12/22/2010	370000	370000
			6/29/2011	366000	366000
			12/7/2011	370000	370000
			6/6/2012	384000	384000
			12/12/2012	330000	330000
			6/19/2013	360000	360000
			12/11/2013	358000	358000
			6/11/2014	342000	342000
			12/3/2014	368000	368000
			6/17/2015	380000	380000
			12/1/2015	383000	383000
			6/22/2016	390000	390000
			12/20/2016	395400	395400
			6/6/2017	398000	398000

There are 4 compliance wells

Well	Samples	ND	Date	Result	Original
MW#93-2	66	0 (0%)	12/15/1994	170000	170000
			12/14/1995	191000	191000
			3/6/1996	308000	308000
			4/25/1996	340000	340000
			10/2/1996	340000	340000
			12/10/1996	270000	270000
			3/11/1997	210000	210000
			4/15/1997	220000	220000
			8/14/1997	240000	240000
			12/4/1997	200000	200000
			3/31/1998	184000	184000
			6/23/1998	250000	250000
			8/11/1998	208000	208000
			12/8/1998	200000	200000
			3/9/1999	224000	224000
			6/8/1999	220000	220000
			8/19/1999	226000	226000
			12/14/1999	240000	240000
			3/7/2000	244000	244000
			6/23/2000	264000	264000
			12/12/2000	220000	220000
			3/27/2001	215000	215000
			6/28/2001	240000	240000
			9/10/2001	208000	208000
			12/18/2001	235000	235000
			3/19/2002	263000	263000
			6/26/2002	290000	290000
			9/18/2002	256000	256000
			12/11/2002	249000	249000
			3/13/2003	240000	240000
			6/25/2003	246000	246000

			9/26/2003	250000	250000
			12/10/2003	200000	200000
			3/9/2004	280000	280000
			6/24/2004	329000	329000
			9/15/2004	272000	272000
			12/15/2004	288000	288000
			3/16/2005	240000	240000
			6/15/2005	246000	246000
			9/21/2005	228000	228000
			12/21/2005	232000	232000
			3/15/2006	250000	250000
			6/21/2006	290000	290000
			12/20/2006	356000	356000
			2/21/2007	340000	340000
			6/12/2007	312000	312000
			12/17/2007	210000	210000
			6/11/2008	240000	240000
			12/3/2008	280000	280000
			6/17/2009	250000	250000
			12/9/2009	236000	236000
			6/17/2010	252000	252000
			12/22/2010	240000	240000
			6/29/2011	266000	266000
			12/7/2011	288000	288000
			6/6/2012	256000	256000
			12/12/2012	248000	248000
			6/19/2013	364000	364000
			12/11/2013	328000	328000
			6/11/2014	342000	342000
			12/3/2014	296000	296000
			6/17/2015	384000	384000
			12/1/2015	226000	226000
			6/22/2016	176000	176000
			12/20/2016	162200	162200
			6/6/2017	246000	246000
MW#93-3	65	0 (0%)	12/15/1994	240000	240000
			12/14/1995	206000	206000
			3/6/1996	226000	226000
			4/25/1996	228000	228000
			10/2/1996	240000	240000
			12/10/1996	225000	225000
			3/11/1997	210000	210000
			4/15/1997	200000	200000
			8/14/1997	255000	255000
			12/4/1997	140000	140000
			3/31/1998	240000	240000
			6/23/1998	225000	225000
			8/11/1998	224000	224000
			12/8/1998	214000	214000
			3/9/1999	234000	234000
			6/8/1999	236000	236000
			8/19/1999	260000	260000
			12/14/1999	300000	300000
			3/7/2000	264000	264000
			6/23/2000	244000	244000
			12/12/2000	320000	320000

			3/27/2001	254000	254000
			6/28/2001	255000	255000
			9/10/2001	332000	332000
			12/18/2001	230000	230000
			3/19/2002	255000	255000
			6/26/2002	250000	250000
			9/18/2002	268000	268000
			12/11/2002	268000	268000
			3/13/2003	247000	247000
			6/25/2003	252000	252000
			9/26/2003	244000	244000
			12/10/2003	271000	271000
			3/9/2004	284000	284000
			6/24/2004	309000	309000
			9/15/2004	264000	264000
			12/15/2004	254000	254000
			3/16/2005	290000	290000
			6/15/2005	268000	268000
			9/21/2005	264000	264000
			12/21/2005	246000	246000
			3/15/2006	227000	227000
			6/21/2006	253000	253000
			12/20/2006	250000	250000
			6/12/2007	280000	280000
			12/17/2007	290000	290000
			6/11/2008	300000	300000
			12/3/2008	226000	226000
			6/17/2009	240000	240000
			12/9/2009	214000	214000
			6/17/2010	296000	296000
			12/22/2010	230000	230000
			6/29/2011	256000	256000
			12/7/2011	244000	244000
			6/6/2012	288000	288000
			12/12/2012	226000	226000
			6/19/2013	316000	316000
			12/11/2013	262000	262000
			6/11/2014	338000	338000
			12/3/2014	262000	262000
			6/17/2015	388000	388000
			5/25/2016	440000	440000
			6/22/2016	330000	330000
			12/20/2016	330400	330400
			6/6/2017	304000	304000
MW#03-1	27	0 (0%)	6/24/2004	209000	209000
			9/15/2004	220000	220000
			12/15/2004	184000	184000
			3/16/2005	160000	160000
			6/15/2005	252000	252000
			9/21/2005	180000	180000
			12/20/2006	204000	204000
			6/12/2007	200000	200000
			12/17/2007	190000	190000
			6/11/2008	200000	200000
			12/3/2008	206000	206000
			6/17/2009	204000	204000

			12/9/2009	216000	216000
			6/17/2010	232000	232000
			12/22/2010	216000	216000
			6/29/2011	210000	210000
			12/7/2011	222000	222000
			6/6/2012	216000	216000
			6/19/2013	144000	144000
			12/11/2013	212000	212000
			6/11/2014	222000	222000
			12/3/2014	194000	194000
			6/17/2015	134000	134000
			12/1/2015	150000	150000
			6/22/2016	130000	130000
			12/20/2016	211600	211600
			6/6/2017	56000	56000
MW#03-2	31	0 (0%)	6/24/2004	235000	235000
			9/15/2004	200000	200000
			12/15/2004	222000	222000
			3/16/2005	220000	220000
			6/15/2005	252000	252000
			9/21/2005	224000	224000
			12/21/2005	230000	230000
			3/15/2006	220000	220000
			6/21/2006	228000	228000
			12/20/2006	220000	220000
			6/12/2007	228000	228000
			12/17/2007	200000	200000
			6/11/2008	200000	200000
			12/3/2008	210000	210000
			6/17/2009	200000	200000
			12/9/2009	208000	208000
			6/17/2010	216000	216000
			12/22/2010	230000	230000
			6/29/2011	224000	224000
			12/7/2011	236000	236000
			6/6/2012	230000	230000
			12/12/2012	242000	242000
			6/19/2013	232000	232000
			12/11/2013	230000	230000
			6/11/2014	92000	92000
			12/3/2014	76000	76000
			6/17/2015	220000	220000
			12/1/2015	214000	214000
			6/22/2016	204000	204000
			12/20/2016	199400	199400
			6/6/2017	192000	192000

There are 0 unused wells

Well	Samples	ND	Date	Result	Original

Levene's Test for Equal of Variance

Parameter: Alkalinity

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Overall Mean = 29635.1
Overall Std Dev = 27832.7
Overall Total = 7.52731e+006
SS Wells = 9.36512e+009
SS Total = 1.95989e+011

ANOVA Table

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	F
Between Wells	9.36512e+009	4	2.34128e+009	3.12382
Error (within wells)	1.86624e+011	249	7.49493e+008	
Totals	1.95989e+011	253		

3.12382 exceeds 2.37; assumption of equal variance should be rejected

Well: MW#93-1	Sample	Residual
	12/15/1994	11101.5
	12/14/1995	21898.5
	3/6/1996	28101.5
	4/25/1996	7101.54
	10/2/1996	9101.54
	12/10/1996	9898.46
	3/11/1997	5898.46
	4/15/1997	25898.5
	8/14/1997	44101.5
	12/4/1997	24101.5
	3/31/1998	4101.54
	6/23/1998	34101.5
	8/11/1998	33101.5
	12/8/1998	20101.5
	3/9/1999	15898.5
	6/8/1999	39101.5
	8/19/1999	44101.5
	12/14/1999	4101.54
	3/7/2000	28101.5
	6/23/2000	8101.54
	12/12/2000	94101.5
	3/27/2001	6101.54
	6/28/2001	15898.5
	9/10/2001	29898.5
	12/18/2001	29898.5
	3/19/2002	25898.5
	6/26/2002	5898.46
	9/18/2002	2898.46
	12/11/2002	11898.5
	3/13/2003	35898.5
	6/25/2003	19898.5
	9/26/2003	35898.5

12/10/2003	31898.5
3/9/2004	26898.5
6/24/2004	7898.46
9/15/2004	23898.5
12/15/2004	28898.5
3/16/2005	15898.5
6/15/2005	25898.5
9/21/2005	8898.46
12/21/2005	15898.5
3/15/2006	35898.5
6/21/2006	41898.5
12/20/2006	55898.5
6/12/2007	45898.5
12/17/2007	25898.5
6/11/2008	14101.5
12/3/2008	11898.5
6/17/2009	5898.46
12/9/2009	14101.5
6/17/2010	24101.5
12/22/2010	14101.5
6/29/2011	10101.5
12/7/2011	14101.5
6/6/2012	28101.5
12/12/2012	25898.5
6/19/2013	4101.54
12/11/2013	2101.54
6/11/2014	13898.5
12/3/2014	12101.5
6/17/2015	24101.5
12/1/2015	27101.5
6/22/2016	34101.5
12/20/2016	39501.5
6/6/2017	42101.5

Well: MW#93-2

Sample	Residual
12/15/1994	84760.6
12/14/1995	63760.6
3/6/1996	53239.4
4/25/1996	85239.4
10/2/1996	85239.4
12/10/1996	15239.4
3/11/1997	44760.6
4/15/1997	34760.6
8/14/1997	14760.6
12/4/1997	54760.6
3/31/1998	70760.6
6/23/1998	4760.61
8/11/1998	46760.6
12/8/1998	54760.6
3/9/1999	30760.6
6/8/1999	34760.6
8/19/1999	28760.6
12/14/1999	14760.6
3/7/2000	10760.6
6/23/2000	9239.39
12/12/2000	34760.6
3/27/2001	39760.6

6/28/2001	14760.6
9/10/2001	46760.6
12/18/2001	19760.6
3/19/2002	8239.39
6/26/2002	35239.4
9/18/2002	1239.39
12/11/2002	5760.61
3/13/2003	14760.6
6/25/2003	8760.61
9/26/2003	4760.61
12/10/2003	54760.6
3/9/2004	25239.4
6/24/2004	74239.4
9/15/2004	17239.4
12/15/2004	33239.4
3/16/2005	14760.6
6/15/2005	8760.61
9/21/2005	26760.6
12/21/2005	22760.6
3/15/2006	4760.61
6/21/2006	35239.4
12/20/2006	101239
2/21/2007	85239.4
6/12/2007	57239.4
12/17/2007	44760.6
6/11/2008	14760.6
12/3/2008	25239.4
6/17/2009	4760.61
12/9/2009	18760.6
6/17/2010	2760.61
12/22/2010	14760.6
6/29/2011	11239.4
12/7/2011	33239.4
6/6/2012	1239.39
12/12/2012	6760.61
6/19/2013	109239
12/11/2013	73239.4
6/11/2014	87239.4
12/3/2014	41239.4
6/17/2015	129239
12/1/2015	28760.6
6/22/2016	78760.6
12/20/2016	92560.6
6/6/2017	8760.61

Well: MW#93-3	**Sample**	**Residual**
	12/15/1994	21944.6
	12/14/1995	55944.6
	3/6/1996	35944.6
	4/25/1996	33944.6
	10/2/1996	21944.6
	12/10/1996	36944.6
	3/11/1997	51944.6
	4/15/1997	61944.6
	8/14/1997	6944.62
	12/4/1997	121945
	3/31/1998	21944.6

6/23/1998	36944.6
8/11/1998	37944.6
12/8/1998	47944.6
3/9/1999	27944.6
6/8/1999	25944.6
8/19/1999	1944.62
12/14/1999	38055.4
3/7/2000	2055.38
6/23/2000	17944.6
12/12/2000	58055.4
3/27/2001	7944.62
6/28/2001	6944.62
9/10/2001	70055.4
12/18/2001	31944.6
3/19/2002	6944.62
6/26/2002	11944.6
9/18/2002	6055.38
12/11/2002	6055.38
3/13/2003	14944.6
6/25/2003	9944.62
9/26/2003	17944.6
12/10/2003	9055.38
3/9/2004	22055.4
6/24/2004	47055.4
9/15/2004	2055.38
12/15/2004	7944.62
3/16/2005	28055.4
6/15/2005	6055.38
9/21/2005	2055.38
12/21/2005	15944.6
3/15/2006	34944.6
6/21/2006	8944.62
12/20/2006	11944.6
6/12/2007	18055.4
12/17/2007	28055.4
6/11/2008	38055.4
12/3/2008	35944.6
6/17/2009	21944.6
12/9/2009	47944.6
6/17/2010	34055.4
12/22/2010	31944.6
6/29/2011	5944.62
12/7/2011	17944.6
6/6/2012	26055.4
12/12/2012	35944.6
6/19/2013	54055.4
12/11/2013	55.3846
6/11/2014	76055.4
12/3/2014	55.3846
6/17/2015	126055
5/25/2016	178055
6/22/2016	68055.4
12/20/2016	68455.4
6/6/2017	42055.4

Well: MW#03-1	**Sample**	**Residual**
	6/24/2004	17348.1

9/15/2004	28348.1
12/15/2004	7651.85
3/16/2005	31651.9
6/15/2005	60348.1
9/21/2005	11651.9
12/20/2006	12348.1
6/12/2007	8348.15
12/17/2007	1651.85
6/11/2008	8348.15
12/3/2008	14348.1
6/17/2009	12348.1
12/9/2009	24348.1
6/17/2010	40348.1
12/22/2010	24348.1
6/29/2011	18348.1
12/7/2011	30348.1
6/6/2012	24348.1
6/19/2013	47651.9
12/11/2013	20348.1
6/11/2014	30348.1
12/3/2014	2348.15
6/17/2015	57651.9
12/1/2015	41651.9
6/22/2016	61651.9
12/20/2016	19948.1
6/6/2017	135652

Well: MW#03-2	**Sample**	**Residual**
	6/24/2004	24212.9
	9/15/2004	10787.1
	12/15/2004	11212.9
	3/16/2005	9212.9
	6/15/2005	41212.9
	9/21/2005	13212.9
	12/21/2005	19212.9
	3/15/2006	9212.9
	6/21/2006	17212.9
	12/20/2006	9212.9
	6/12/2007	17212.9
	12/17/2007	10787.1
	6/11/2008	10787.1
	12/3/2008	787.097
	6/17/2009	10787.1
	12/9/2009	2787.1
	6/17/2010	5212.9
	12/22/2010	19212.9
	6/29/2011	13212.9
	12/7/2011	25212.9
	6/6/2012	19212.9
	12/12/2012	31212.9
	6/19/2013	21212.9
	12/11/2013	19212.9
	6/11/2014	118787
	12/3/2014	134787
	6/17/2015	9212.9
	12/1/2015	3212.9
	6/22/2016	6787.1

12/20/2016	11387.1
6/6/2017	18787.1

Shapiro-Francia Test of Normality

Parameter: Alkalinity

All Wells

Normality Test of Parameter Concentrations

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Sample Size = 254

i	x(i)	m(i)	sum(m^2)	sum(mx)
0	0	0	0	0
1	56000	-2.74777	7.55021	-153875
2	76000	-2.45727	13.5884	-340628
3	92000	-2.29036	18.8342	-551341
4	130000	-2.17009	23.5435	-833453
5	134000	-2.07485	27.8485	-1.11148e+006
6	140000	-1.99539	31.8301	-1.39084e+006
7	144000	-1.92684	35.5428	-1.6683e+006
8	150000	-1.86629	39.0258	-1.94825e+006
9	160000	-1.81191	42.3088	-2.23815e+006
10	162200	-1.76241	45.4149	-2.52402e+006
11	170000	-1.71688	48.3626	-2.81589e+006
12	176000	-1.67466	51.1671	-3.11063e+006
13	180000	-1.64485	53.8726	-3.4067e+006
14	184000	-1.60725	56.4559	-3.70243e+006
15	184000	-1.57179	58.9264	-3.99164e+006
16	190000	-1.5382	61.2925	-4.2839e+006
17	191000	-1.50626	63.5613	-4.5716e+006
18	192000	-1.47579	65.7393	-4.85495e+006
19	194000	-1.44663	67.832	-5.1356e+006
20	199400	-1.41865	69.8446	-5.41847e+006
21	200000	-1.39175	71.7815	-5.69682e+006
22	200000	-1.36581	73.647	-5.96998e+006
23	200000	-1.34075	75.4446	-6.23814e+006
24	200000	-1.31652	77.1778	-6.50144e+006
25	200000	-1.29303	78.8498	-6.76005e+006
26	200000	-1.27588	80.4776	-7.01522e+006
27	200000	-1.25357	82.049	-7.26593e+006
28	200000	-1.23187	83.5665	-7.51231e+006
29	200000	-1.21073	85.0324	-7.75445e+006
30	200000	-1.19012	86.4488	-7.99248e+006
31	204000	-1.17	87.8177	-8.23116e+006
32	204000	-1.15035	89.141	-8.46583e+006
33	204000	-1.13113	90.4204	-8.69658e+006
34	206000	-1.11232	91.6577	-8.92572e+006
35	206000	-1.0939	92.8543	-9.15106e+006
36	208000	-1.07584	94.0117	-9.37483e+006
37	208000	-1.05812	95.1314	-9.59492e+006
38	208000	-1.04073	96.2145	-9.8114e+006
39	209000	-1.02789	97.271	-1.00262e+007
40	210000	-1.01104	98.2932	-1.02385e+007
41	210000	-0.994457	99.2822	-1.04474e+007
42	210000	-0.97815	100.239	-1.06528e+007
43	210000	-0.9621	101.165	-1.08548e+007
44	210000	-0.946291	102.06	-1.10536e+007
45	211600	-0.930718	102.926	-1.12505e+007
46	212000	-0.915365	103.764	-1.14446e+007

47	214000	-0.900227	104.575	-1.16372e+007
48	214000	-0.885291	105.358	-1.18267e+007
49	214000	-0.87055	106.116	-1.20129e+007
50	215000	-0.855996	106.849	-1.2197e+007
51	216000	-0.841621	107.557	-1.23788e+007
52	216000	-0.830953	108.248	-1.25583e+007
53	216000	-0.816874	108.915	-1.27347e+007
54	216000	-0.802956	109.56	-1.29081e+007
55	220000	-0.789191	110.183	-1.30818e+007
56	220000	-0.775574	110.784	-1.32524e+007
57	220000	-0.7621	111.365	-1.34201e+007
58	220000	-0.748762	111.926	-1.35848e+007
59	220000	-0.735557	112.467	-1.37466e+007
60	220000	-0.722479	112.989	-1.39056e+007
61	220000	-0.709522	113.492	-1.40616e+007
62	220000	-0.696684	113.977	-1.42149e+007
63	222000	-0.68396	114.445	-1.43668e+007
64	222000	-0.67449	114.9	-1.45165e+007
65	222000	-0.661955	115.338	-1.46634e+007
66	224000	-0.649522	115.76	-1.48089e+007
67	224000	-0.637192	116.166	-1.49517e+007
68	224000	-0.624956	116.557	-1.50917e+007
69	224000	-0.612813	116.932	-1.52289e+007
70	225000	-0.60076	117.293	-1.53641e+007
71	225000	-0.588793	117.64	-1.54966e+007
72	226000	-0.576911	117.973	-1.5627e+007
73	226000	-0.565108	118.292	-1.57547e+007
74	226000	-0.553384	118.598	-1.58797e+007
75	226000	-0.541736	118.892	-1.60022e+007
76	226000	-0.530162	119.173	-1.6122e+007
77	227000	-0.521527	119.445	-1.62404e+007
78	228000	-0.510074	119.705	-1.63567e+007
79	228000	-0.498687	119.954	-1.64704e+007
80	228000	-0.487364	120.191	-1.65815e+007
81	228000	-0.476105	120.418	-1.669e+007
82	230000	-0.464904	120.634	-1.6797e+007
83	230000	-0.453763	120.84	-1.69013e+007
84	230000	-0.442676	121.036	-1.70032e+007
85	230000	-0.431644	121.222	-1.71024e+007
86	230000	-0.420664	121.399	-1.71992e+007
87	230000	-0.409735	121.567	-1.72934e+007
88	232000	-0.398855	121.726	-1.7386e+007
89	232000	-0.388022	121.877	-1.7476e+007
90	232000	-0.379927	122.021	-1.75641e+007
91	234000	-0.369171	122.157	-1.76505e+007
92	235000	-0.358459	122.286	-1.77347e+007
93	235000	-0.347787	122.407	-1.78165e+007
94	236000	-0.337155	122.52	-1.7896e+007
95	236000	-0.326561	122.627	-1.79731e+007
96	236000	-0.316004	122.727	-1.80477e+007
97	240000	-0.305481	122.82	-1.8121e+007
98	240000	-0.294992	122.907	-1.81918e+007
99	240000	-0.284535	122.988	-1.82601e+007
100	240000	-0.27411	123.063	-1.83259e+007
101	240000	-0.263715	123.133	-1.83892e+007
102	240000	-0.253347	123.197	-1.845e+007
103	240000	-0.24559	123.257	-1.85089e+007

104	240000	-0.235269	123.313	-1.85654e+007
105	240000	-0.224974	123.363	-1.86194e+007
106	240000	-0.214702	123.409	-1.86709e+007
107	240000	-0.204452	123.451	-1.872e+007
108	242000	-0.194225	123.489	-1.8767e+007
109	244000	-0.184017	123.523	-1.88119e+007
110	244000	-0.173829	123.553	-1.88543e+007
111	244000	-0.163659	123.58	-1.88942e+007
112	244000	-0.153505	123.603	-1.89317e+007
113	246000	-0.143367	123.624	-1.89669e+007
114	246000	-0.133244	123.642	-1.89997e+007
115	246000	-0.125661	123.658	-1.90306e+007
116	246000	-0.115562	123.671	-1.90591e+007
117	247000	-0.105474	123.682	-1.90851e+007
118	248000	-0.0953969	123.691	-1.91088e+007
119	249000	-0.0853288	123.698	-1.913e+007
120	250000	-0.0752698	123.704	-1.91488e+007
121	250000	-0.0652187	123.708	-1.91651e+007
122	250000	-0.0551734	123.711	-1.91789e+007
123	250000	-0.0451348	123.713	-1.91902e+007
124	250000	-0.0350997	123.715	-1.9199e+007
125	250000	-0.0250691	123.715	-1.92053e+007
126	252000	-0.0150408	123.715	-1.92091e+007
127	252000	-0.00501359	123.715	-1.92103e+007
128	252000	0.00501359	123.716	-1.92091e+007
129	252000	0.0150408	123.716	-1.92053e+007
130	253000	0.0250691	123.716	-1.91989e+007
131	254000	0.0350997	123.718	-1.919e+007
132	254000	0.0451348	123.72	-1.91785e+007
133	255000	0.0551734	123.723	-1.91645e+007
134	255000	0.0652187	123.727	-1.91478e+007
135	255000	0.0752698	123.733	-1.91286e+007
136	256000	0.0853288	123.74	-1.91068e+007
137	256000	0.0953969	123.749	-1.90824e+007
138	256000	0.105474	123.76	-1.90554e+007
139	260000	0.115562	123.773	-1.90253e+007
140	262000	0.125661	123.789	-1.89924e+007
141	262000	0.133244	123.807	-1.89575e+007
142	263000	0.143367	123.828	-1.89198e+007
143	264000	0.153505	123.851	-1.88793e+007
144	264000	0.163659	123.878	-1.88361e+007
145	264000	0.173829	123.908	-1.87902e+007
146	264000	0.184017	123.942	-1.87416e+007
147	266000	0.194225	123.98	-1.86899e+007
148	268000	0.204452	124.022	-1.86351e+007
149	268000	0.214702	124.068	-1.85776e+007
150	268000	0.224974	124.118	-1.85173e+007
151	270000	0.235269	124.174	-1.84538e+007
152	271000	0.24559	124.234	-1.83872e+007
153	272000	0.253347	124.298	-1.83183e+007
154	280000	0.263715	124.368	-1.82445e+007
155	280000	0.27411	124.443	-1.81677e+007
156	280000	0.284535	124.524	-1.80881e+007
157	284000	0.294992	124.611	-1.80043e+007
158	288000	0.305481	124.704	-1.79163e+007
159	288000	0.316004	124.804	-1.78253e+007
160	288000	0.326561	124.911	-1.77312e+007

161	290000	0.337155	125.024	-1.76335e+007
162	290000	0.347787	125.145	-1.75326e+007
163	290000	0.358459	125.274	-1.74287e+007
164	290000	0.369171	125.41	-1.73216e+007
165	296000	0.379927	125.554	-1.72091e+007
166	296000	0.388022	125.705	-1.70943e+007
167	300000	0.398855	125.864	-1.69746e+007
168	300000	0.409735	126.032	-1.68517e+007
169	300000	0.420664	126.209	-1.67255e+007
170	304000	0.431644	126.395	-1.65943e+007
171	308000	0.442676	126.591	-1.64579e+007
172	309000	0.453763	126.797	-1.63177e+007
173	310000	0.464904	127.013	-1.61736e+007
174	312000	0.476105	127.24	-1.60251e+007
175	314000	0.487364	127.477	-1.5872e+007
176	316000	0.498687	127.726	-1.57144e+007
177	320000	0.510074	127.986	-1.55512e+007
178	320000	0.521527	128.258	-1.53843e+007
179	320000	0.530162	128.539	-1.52147e+007
180	320000	0.541736	128.833	-1.50413e+007
181	324000	0.553384	129.139	-1.4862e+007
182	326000	0.565108	129.458	-1.46778e+007
183	326000	0.576911	129.791	-1.44897e+007
184	327000	0.588793	130.138	-1.42972e+007
185	328000	0.60076	130.499	-1.41001e+007
186	329000	0.612813	130.874	-1.38985e+007
187	329000	0.624956	131.265	-1.36929e+007
188	330000	0.637192	131.671	-1.34826e+007
189	330000	0.649522	132.093	-1.32683e+007
190	330000	0.661955	132.531	-1.30499e+007
191	330000	0.67449	132.986	-1.28273e+007
192	330000	0.68396	133.454	-1.26016e+007
193	330000	0.696684	133.939	-1.23717e+007
194	330400	0.709522	134.442	-1.21372e+007
195	332000	0.722479	134.964	-1.18974e+007
196	332000	0.735557	135.505	-1.16532e+007
197	334000	0.748762	136.066	-1.14031e+007
198	336000	0.7621	136.647	-1.1147e+007
199	338000	0.775574	137.248	-1.08849e+007
200	340000	0.789191	137.871	-1.06165e+007
201	340000	0.802956	138.516	-1.03435e+007
202	340000	0.816874	139.183	-1.00658e+007
203	340000	0.830953	139.874	-9.78328e+006
204	340000	0.841621	140.582	-9.49713e+006
205	340000	0.855996	141.315	-9.20609e+006
206	340000	0.87055	142.073	-8.91011e+006
207	342000	0.885291	142.856	-8.60734e+006
208	342000	0.900227	143.667	-8.29946e+006
209	344000	0.915365	144.505	-7.98457e+006
210	344000	0.930718	145.371	-7.66441e+006
211	346000	0.946291	146.266	-7.33699e+006
212	347000	0.9621	147.192	-7.00314e+006
213	348000	0.97815	148.149	-6.66275e+006
214	350000	0.994457	149.138	-6.31469e+006
215	350000	1.01104	150.16	-5.96082e+006
216	350000	1.02789	151.217	-5.60106e+006
217	353000	1.04073	152.3	-5.23368e+006

218	356000	1.05812	153.419	-4.85699e+006
219	358000	1.07584	154.577	-4.47184e+006
220	360000	1.0939	155.773	-4.07804e+006
221	360000	1.11232	157.011	-3.6776e+006
222	360000	1.13113	158.29	-3.27039e+006
223	362000	1.15035	159.613	-2.85397e+006
224	363000	1.17	160.982	-2.42926e+006
225	364000	1.19012	162.399	-1.99605e+006
226	364000	1.21073	163.864	-1.55535e+006
227	365000	1.23187	165.382	-1.10572e+006
228	366000	1.25357	166.953	-646914
229	367000	1.27588	168.581	-178667
230	368000	1.29303	170.253	297169
231	370000	1.31652	171.986	784282
232	370000	1.34075	173.784	1.28036e+006
233	370000	1.36581	175.649	1.78571e+006
234	370000	1.39175	177.586	2.30065e+006
235	376000	1.41865	179.599	2.83407e+006
236	380000	1.44663	181.692	3.38379e+006
237	380000	1.47579	183.87	3.94459e+006
238	380000	1.50626	186.139	4.51697e+006
239	383000	1.5382	188.505	5.1061e+006
240	384000	1.57179	190.975	5.70967e+006
241	384000	1.60725	193.558	6.32685e+006
242	384000	1.64485	196.264	6.95847e+006
243	384000	1.67466	199.068	7.60154e+006
244	388000	1.71688	202.016	8.2677e+006
245	389000	1.76241	205.122	8.95327e+006
246	390000	1.81191	208.405	9.65992e+006
247	390000	1.86629	211.888	1.03878e+007
248	395000	1.92684	215.601	1.11489e+007
249	395400	1.99539	219.583	1.19379e+007
250	398000	2.07485	223.888	1.27636e+007
251	400000	2.17009	228.597	1.36317e+007
252	400000	2.29036	233.843	1.45478e+007
253	440000	2.45727	239.881	1.5629e+007

Sample Standard Deviation = 68657.3
Numerator = 2.44266e+014
Denominator = 2.86082e+014 = 253 239.881
W Statistic = 0.853834
5% Critical value of 0.976 exceeds 0.853834
Evidence of non-normality at 95% level of significance
1% Critical value of 0.967 exceeds 0.853834
Evidence of non-normality at 99% level of significance

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Alkalinity

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Total Percent Non-Detects = 0%
Number of comparisons = 4
Future Samples (k) = 4
Recent Dates = 1
Background Samples (n) = 65
Maximum Background Concentration = 450000
Confidence Level = 94.2%
False Positive Rate = 5.8%

Well	Date	Samples	Mean	Impacted
MW#93-2	6/6/2017	1	246000	FALSE
MW#93-3	6/6/2017	1	304000	FALSE
MW#03-1	6/6/2017	1	56000	FALSE
MW#03-2	6/6/2017	1	192000	FALSE

Concentrations (ppb)

Parameter: Arsenic

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Samples: 104
Total Non-Detect: 83
Percent Non-Detects: 79.8077%
Total Background Samples: 21
There is 1 background well

Well	Samples	ND	Date	Result	Original
MW#93-1	21	19 (90.4762%)	6/12/2007	10.9	10.9
			12/17/2007	ND<5	ND<5
			6/11/2008	ND<5	ND<5
			12/3/2008	ND<5	ND<5
			6/17/2009	ND<5	ND<5
			12/9/2009	ND<5	ND<5
			6/17/2010	ND<5	ND<5
			12/22/2010	ND<5	ND<5
			6/29/2011	ND<5	ND<5
			12/7/2011	ND<5	ND<5
			6/6/2012	ND<5	ND<5
			12/12/2012	6.8	6.8
			6/19/2013	ND<5	ND<5
			12/11/2013	ND<5	ND<5
			6/11/2014	ND<5	ND<5
			12/3/2014	ND<5	ND<5
			6/17/2015	ND<5	ND<5
			12/1/2015	ND<5	ND<5
			6/22/2016	ND<0	ND<0
			12/20/2016	ND<0.5	ND<0.5
			6/6/2017	ND<5	ND<5

There are 4 compliance wells

Well	Samples	ND	Date	Result	Original
MW#03-1	20	19 (95%)	6/12/2007	ND<5	ND<5
			12/17/2007	ND<5	ND<5
			6/11/2008	ND<5	ND<5
			12/3/2008	ND<5	ND<5
			6/17/2009	ND<5	ND<5
			12/9/2009	ND<5	ND<5
			6/17/2010	ND<5	ND<5
			12/22/2010	ND<5	ND<5
			6/29/2011	ND<5	ND<5
			12/7/2011	ND<5	ND<5
			6/6/2012	ND<5	ND<5
			6/19/2013	8	8
			12/11/2013	ND<5	ND<5
			6/11/2014	ND<5	ND<5
			12/3/2014	ND<5	ND<5
			6/17/2015	ND<5	ND<5
			12/1/2015	ND<5	ND<5
			6/22/2016	ND<0	ND<0

			12/20/2016	ND<0.5	ND<0.5
			6/6/2017	ND<5	ND<5
MW#03-2	21	21 (100%)	6/12/2007	ND<5	ND<5
			12/17/2007	ND<5	ND<5
			6/11/2008	ND<5	ND<5
			12/3/2008	ND<5	ND<5
			6/17/2009	ND<5	ND<5
			12/9/2009	ND<5	ND<5
			6/17/2010	ND<5	ND<5
			12/22/2010	ND<5	ND<5
			6/29/2011	ND<5	ND<5
			12/7/2011	ND<5	ND<5
			6/6/2012	ND<5	ND<5
			12/12/2012	ND<5	ND<5
			6/19/2013	ND<5	ND<5
			12/11/2013	ND<5	ND<5
			6/11/2014	ND<5	ND<5
			12/3/2014	ND<5	ND<5
			6/17/2015	ND<5	ND<5
			12/1/2015	ND<5	ND<5
			6/22/2016	ND<5	ND<5
			12/20/2016	ND<0.5	ND<0.5
			6/6/2017	ND<5	ND<5
MW#93-2	21	3 (14.2857%)	6/12/2007	34.3	34.3
			12/17/2007	60.3	60.3
			6/11/2008	51	51
			12/3/2008	33	33
			6/17/2009	52.5	52.5
			12/9/2009	63.5	63.5
			6/17/2010	17.9	17.9
			12/22/2010	21.5	21.5
			6/29/2011	61	61
			12/7/2011	ND<5	ND<5
			6/6/2012	9.8	9.8
			12/12/2012	56.2	56.2
			6/19/2013	ND<5	ND<5
			12/11/2013	35.3	35.3
			6/11/2014	19.7	19.7
			12/3/2014	27.4	27.4
			6/17/2015	ND<5	ND<5
			12/1/2015	30	30
			6/22/2016	47	47
			12/20/2016	60	60
			6/6/2017	38	38
MW#93-3	21	21 (100%)	6/12/2007	ND<5	ND<5
			12/17/2007	ND<5	ND<5
			6/11/2008	ND<5	ND<5
			12/3/2008	ND<5	ND<5
			6/17/2009	ND<5	ND<5
			12/9/2009	ND<5	ND<5
			6/17/2010	ND<5	ND<5
			12/22/2010	ND<5	ND<5
			6/29/2011	ND<5	ND<5
			12/7/2011	ND<5	ND<5

6/6/2012	ND<5	ND<5
12/12/2012	ND<5	ND<5
6/19/2013	ND<5	ND<5
12/11/2013	ND<5	ND<5
6/11/2014	ND<5	ND<5
12/3/2014	ND<5	ND<5
6/17/2015	ND<5	ND<5
12/1/2015	ND<5	ND<5
6/22/2016	ND<5	ND<5
12/20/2016	ND<0.5	ND<0.5
6/6/2017	ND<5	ND<5

There are 0 unused wells

Well	Samples	ND	Date	Result	Original

Levene's Test for Equal of Variance

Parameter: Arsenic

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Overall Mean = 3.89061
Overall Std Dev = 8.03431
Overall Total = 404.624
SS Wells = 4335.86
SS Total = 6648.66

ANOVA Table

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	F
Between Wells	4335.86	4	1083.96	46.3993
Error (within wells)	2312.8	99	23.3616	
Totals	6648.66	103		

46.3993 exceeds 2.44724; assumption of equal variance should be rejected

Well: MW#93-1	Sample	Residual
	6/12/2007	5.98571
	12/17/2007	0.0857143
	6/11/2008	0.0857143
	12/3/2008	0.0857143
	6/17/2009	0.0857143
	12/9/2009	0.0857143
	6/17/2010	0.0857143
	12/22/2010	0.0857143
	6/29/2011	0.0857143
	12/7/2011	0.0857143
	6/6/2012	0.0857143
	12/12/2012	1.88571
	6/19/2013	0.0857143
	12/11/2013	0.0857143
	6/11/2014	0.0857143
	12/3/2014	0.0857143
	6/17/2015	0.0857143
	12/1/2015	0.0857143
	6/22/2016	4.91429
	12/20/2016	4.41429
	6/6/2017	0.0857143

Well: MW#03-1	Sample	Residual
	6/12/2007	0.325
	12/17/2007	0.325
	6/11/2008	0.325
	12/3/2008	0.325
	6/17/2009	0.325
	12/9/2009	0.325
	6/17/2010	0.325
	12/22/2010	0.325
	6/29/2011	0.325

12/7/2011	0.325
6/6/2012	0.325
6/19/2013	3.325
12/11/2013	0.325
6/11/2014	0.325
12/3/2014	0.325
6/17/2015	0.325
12/1/2015	0.325
6/22/2016	4.675
12/20/2016	4.175
6/6/2017	0.325

Well: MW#03-2

Sample	Residual
6/12/2007	0.214286
12/17/2007	0.214286
6/11/2008	0.214286
12/3/2008	0.214286
6/17/2009	0.214286
12/9/2009	0.214286
6/17/2010	0.214286
12/22/2010	0.214286
6/29/2011	0.214286
12/7/2011	0.214286
6/6/2012	0.214286
12/12/2012	0.214286
6/19/2013	0.214286
12/11/2013	0.214286
6/11/2014	0.214286
12/3/2014	0.214286
6/17/2015	0.214286
12/1/2015	0.214286
6/22/2016	0.214286
12/20/2016	4.28571
6/6/2017	0.214286

Well: MW#93-2

Sample	Residual
6/12/2007	0.62381
12/17/2007	25.3762
6/11/2008	16.0762
12/3/2008	1.92381
6/17/2009	17.5762
12/9/2009	28.5762
6/17/2010	17.0238
12/22/2010	13.4238
6/29/2011	26.0762
12/7/2011	29.9238
6/6/2012	25.1238
12/12/2012	21.2762
6/19/2013	29.9238
12/11/2013	0.37619
6/11/2014	15.2238
12/3/2014	7.52381
6/17/2015	29.9238
12/1/2015	4.92381
6/22/2016	12.0762
12/20/2016	25.0762

	6/6/2017	3.07619

Well: MW#93-3	Sample	Residual
	6/12/2007	0.214286
	12/17/2007	0.214286
	6/11/2008	0.214286
	12/3/2008	0.214286
	6/17/2009	0.214286
	12/9/2009	0.214286
	6/17/2010	0.214286
	12/22/2010	0.214286
	6/29/2011	0.214286
	12/7/2011	0.214286
	6/6/2012	0.214286
	12/12/2012	0.214286
	6/19/2013	0.214286
	12/11/2013	0.214286
	6/11/2014	0.214286
	12/3/2014	0.214286
	6/17/2015	0.214286
	12/1/2015	0.214286
	6/22/2016	0.214286
	12/20/2016	4.28571
	6/6/2017	0.214286

Shapiro-Francia Test of Normality

Parameter: Arsenic

All Wells

Normality Test of Parameter Concentrations

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Sample Size = 104

i	x(i)	m(i)	sum(m^2)	sum(mx)
0	0	0	0	0
1	0	-2.36561	5.59613	0
2	0	-2.07485	9.90113	0
3	0.5	-1.91103	13.5532	-0.955515
4	0.5	-1.77438	16.7016	-1.8427
5	0.5	-1.67466	19.5061	-2.68004
6	0.5	-1.58047	22.0039	-3.47027
7	5	-1.50626	24.2728	-11.0016
8	5	-1.4325	26.3248	-18.1641
9	5	-1.3722	28.2078	-25.0251
10	5	-1.31058	29.9254	-31.578
11	5	-1.25908	31.5107	-37.8734
12	5	-1.20553	32.964	-43.9011
13	5	-1.16012	34.3099	-49.7017
14	5	-1.11232	35.5471	-55.2633
15	5	-1.07138	36.695	-60.6202
16	5	-1.02789	37.7515	-65.7596
17	5	-0.990356	38.7323	-70.7114
18	5	-0.950222	39.6353	-75.4625
19	5	-0.915365	40.4732	-80.0393
20	5	-0.877897	41.2439	-84.4288
21	5	-0.841621	41.9522	-88.6369
22	5	-0.809896	42.6081	-92.6864
23	5	-0.775574	43.2096	-96.5643
24	5	-0.745449	43.7653	-100.292
25	5	-0.712751	44.2733	-103.855
26	5	-0.68396	44.7411	-107.275
27	5	-0.652622	45.1671	-110.538
28	5	-0.624956	45.5576	-113.663
29	5	-0.594766	45.9114	-116.637
30	5	-0.568052	46.2341	-119.477
31	5	-0.538836	46.5244	-122.171
32	5	-0.51293	46.7875	-124.736
33	5	-0.484544	47.0223	-127.159
34	5	-0.459327	47.2333	-129.455
35	5	-0.431644	47.4196	-131.613
36	5	-0.40701	47.5852	-133.649
37	5	-0.379927	47.7296	-135.548
38	5	-0.355788	47.8562	-137.327
39	5	-0.329206	47.9645	-138.973
40	5	-0.305481	48.0579	-140.501
41	5	-0.279319	48.1359	-141.897
42	5	-0.253347	48.2001	-143.164
43	5	-0.230118	48.253	-144.314
44	5	-0.204452	48.2948	-145.337
45	5	-0.181468	48.3277	-146.244
46	5	-0.156042	48.3521	-147.024

47	5	-0.133244	48.3698	-147.69
48	5	-0.107995	48.3815	-148.23
49	5	-0.0853288	48.3888	-148.657
50	5	-0.0601949	48.3924	-148.958
51	5	-0.0376076	48.3938	-149.146
52	5	-0.0125328	48.394	-149.209
53	5	0.0125328	48.3941	-149.146
54	5	0.0376076	48.3956	-148.958
55	5	0.0601949	48.3992	-148.657
56	5	0.0853288	48.4065	-148.23
57	5	0.107995	48.4181	-147.69
58	5	0.133244	48.4359	-147.024
59	5	0.156042	48.4602	-146.244
60	5	0.181468	48.4932	-145.337
61	5	0.204452	48.535	-144.314
62	5	0.230118	48.5879	-143.164
63	5	0.253347	48.6521	-141.897
64	5	0.279319	48.7301	-140.501
65	5	0.305481	48.8234	-138.973
66	5	0.329206	48.9318	-137.327
67	5	0.355788	49.0584	-135.548
68	5	0.379927	49.2027	-133.649
69	5	0.40701	49.3684	-131.613
70	5	0.431644	49.5547	-129.455
71	5	0.459327	49.7657	-127.159
72	5	0.484544	50.0005	-124.736
73	5	0.51293	50.2636	-122.171
74	5	0.538836	50.5539	-119.477
75	5	0.568052	50.8766	-116.637
76	5	0.594766	51.2303	-113.663
77	5	0.624956	51.6209	-110.538
78	5	0.652622	52.0468	-107.275
79	5	0.68396	52.5146	-103.855
80	5	0.712751	53.0226	-100.292
81	5	0.745449	53.5783	-96.5643
82	5	0.775574	54.1799	-92.6864
83	5	0.809896	54.8358	-88.6369
84	6.8	0.841621	55.5441	-82.9139
85	8	0.877897	56.3148	-75.8907
86	9.8	0.915365	57.1527	-66.9201
87	10.9	0.950222	58.0556	-56.5627
88	17.9	0.990356	59.0364	-38.8354
89	19.7	1.02789	60.093	-18.5859
90	21.5	1.07138	61.2409	4.44876
91	27.4	1.11232	62.4781	34.9264
92	30	1.16012	63.824	69.7299
93	33	1.20553	65.2773	109.512
94	34.3	1.25908	66.8626	152.699
95	35.3	1.31058	68.5802	198.962
96	38	1.3722	70.4631	251.106
97	47	1.4325	72.5152	318.434
98	51	1.50626	74.784	395.253
99	52.5	1.58047	77.2819	478.227
100	56.2	1.67466	80.0864	572.343
101	60	1.77438	83.2348	678.806
102	60.3	1.91103	86.8868	794.041
103	61	2.07485	91.1918	920.607

Sample Standard Deviation = 15.0856
Numerator = 847517
Denominator = 2.13757e+006 = 103 91.1918
W Statistic = 0.396486
5% Critical value of 0.976 exceeds 0.396486
Evidence of non-normality at 95% level of significance
1% Critical value of 0.967 exceeds 0.396486
Evidence of non-normality at 99% level of significance

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Arsenic

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Total Percent Non-Detects = 79.8077%
Number of comparisons = 4
Future Samples (k) = 4
Recent Dates = 1
Background Samples (n) = 21
Maximum Background Concentration = 10.9
Confidence Level = 84%
False Positive Rate = 16%

Well	Date	Samples	Mean	Impacted
MW#03-1	6/6/2017	1	5	FALSE
MW#03-2	6/6/2017	1	5	FALSE
MW#93-2	6/6/2017	1	38	TRUE
MW#93-3	6/6/2017	1	5	FALSE

Non-Parametric Prediction Interval

Intra-Well Comparison for MW#93-2

Parameter: Arsenic

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Total Percent Non-Detects = 15%
Future Samples (k) = 1
Recent Dates = 1
Baseline Samples (n) = 20
Maximum Baseline Concentration = 63.5
Confidence Level = 95.2%
False Positive Rate = 4.8%

Baseline Samples	Date	Result
	6/12/2007	34.3
	12/17/2007	60.3
	6/11/2008	51
	12/3/2008	33
	6/17/2009	52.5
	12/9/2009	63.5
	6/17/2010	17.9
	12/22/2010	21.5
	6/29/2011	61
	12/7/2011	ND<5
	6/6/2012	9.8
	12/12/2012	56.2
	6/19/2013	ND<5
	12/11/2013	35.3
	6/11/2014	19.7
	12/3/2014	27.4
	6/17/2015	ND<5
	12/1/2015	30
	6/22/2016	47
	12/20/2016	60

Date	Samples	Mean	Impacted
6/6/2017	1	38	FALSE

Concentrations (ppb)

Parameter: Chloride

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Samples: 261
Total Non-Detect: 5
Percent Non-Detects: 1.91571%
Total Background Samples: 67
There is 1 background well

Well	Samples	ND	Date	Result	Original
MW#93-1	67	0 (0%)	12/15/1994	30000	30000
			3/14/1995	38000	38000
			6/21/1995	37000	37000
			12/14/1995	24000	24000
			3/6/1996	20000	20000
			4/25/1996	32000	32000
			10/2/1996	40000	40000
			12/10/1996	30000	30000
			3/11/1997	4000	4000
			4/15/1997	28000	28000
			8/14/1997	33000	33000
			12/4/1997	29000	29000
			3/31/1998	30000	30000
			6/23/1998	37000	37000
			8/11/1998	24000	24000
			12/8/1998	31000	31000
			3/9/1999	30000	30000
			6/8/1999	35000	35000
			8/19/1999	40000	40000
			12/14/1999	40000	40000
			3/7/2000	50000	50000
			6/23/2000	52000	52000
			12/12/2000	54000	54000
			3/27/2001	60000	60000
			6/28/2001	58000	58000
			9/10/2001	46000	46000
			12/18/2001	46000	46000
			3/19/2002	42000	42000
			6/26/2002	51000	51000
			9/18/2002	57000	57000
			12/11/2002	56000	56000
			3/13/2003	56000	56000
			6/25/2003	63000	63000
			9/26/2003	59000	59000
			12/10/2003	40000	40000
			3/9/2004	58000	58000
			6/24/2004	61000	61000
			9/15/2004	44000	44000
			12/15/2004	48000	48000
			3/16/2005	42000	42000
			6/15/2005	42000	42000
			9/21/2005	42000	42000
			12/21/2005	58000	58000
			3/15/2006	50000	50000

			6/21/2006	31000	31000
			12/20/2006	35000	35000
			6/12/2007	24000	24000
			12/17/2007	27000	27000
			6/11/2008	29000	29000
			12/3/2008	28000	28000
			6/17/2009	20000	20000
			12/9/2009	24000	24000
			6/17/2010	17000	17000
			12/22/2010	20000	20000
			6/29/2011	20800	20800
			12/7/2011	17600	17600
			6/6/2012	23800	23800
			12/12/2012	22200	22200
			6/19/2013	21500	21500
			12/11/2013	17600	17600
			6/11/2014	19300	19300
			12/3/2014	16900	16900
			6/17/2015	13000	13000
			12/1/2015	15200	15200
			6/22/2016	13000	13000
			12/20/2016	15200	15200
			6/6/2017	16100	16100

There are 4 compliance wells

Well	Samples	ND	Date	Result	Original
MW#93-2	68	0 (0%)	12/15/1994	400000	400000
			3/14/1995	1.5e+006	1.5e+006
			6/21/1995	75000	75000
			12/14/1995	1.749e+006	1.749e+006
			3/6/1996	1.674e+006	1.674e+006
			4/25/1996	1.999e+006	1.999e+006
			10/2/1996	1.553e+006	1.553e+006
			12/10/1996	1.56e+006	1.56e+006
			3/11/1997	1.634e+006	1.634e+006
			4/15/1997	1.7e+006	1.7e+006
			8/14/1997	2.149e+006	2.149e+006
			12/4/1997	1.769e+006	1.769e+006
			3/31/1998	2e+006	2e+006
			6/23/1998	2.099e+006	2.099e+006
			8/11/1998	1.874e+006	1.874e+006
			12/8/1998	1.922e+006	1.922e+006
			3/9/1999	1.7e+006	1.7e+006
			6/8/1999	1.739e+006	1.739e+006
			8/19/1999	1.8e+006	1.8e+006
			12/14/1999	1.8e+006	1.8e+006
			3/7/2000	1.328e+006	1.328e+006
			6/23/2000	950000	950000
			12/12/2000	1.789e+006	1.789e+006
			3/27/2001	1.749e+006	1.749e+006
			6/28/2001	1.799e+006	1.799e+006
			9/10/2001	2.05e+006	2.05e+006
			12/18/2001	1.6e+006	1.6e+006
			3/19/2002	1.73e+006	1.73e+006
			6/26/2002	1.699e+006	1.699e+006

			9/18/2002	1.674e+006	1.674e+006
			12/11/2002	1.613e+006	1.613e+006
			3/13/2003	1.51e+006	1.51e+006
			6/25/2003	1.8e+006	1.8e+006
			9/26/2003	1.616e+006	1.616e+006
			12/10/2003	1.509e+006	1.509e+006
			3/9/2004	1.8e+006	1.8e+006
			6/24/2004	1.892e+006	1.892e+006
			9/15/2004	1.435e+006	1.435e+006
			12/15/2004	1.6e+006	1.6e+006
			3/16/2005	1.325e+006	1.325e+006
			6/15/2005	1.4e+006	1.4e+006
			9/21/2005	1.412e+006	1.412e+006
			12/21/2005	1.55e+006	1.55e+006
			3/15/2006	1.375e+006	1.375e+006
			6/21/2006	1.5e+006	1.5e+006
			12/20/2006	1.25e+006	1.25e+006
			2/21/2007	1.25e+006	1.25e+006
			6/12/2007	1.35e+006	1.35e+006
			12/17/2007	1.399e+006	1.399e+006
			6/11/2008	1.21e+006	1.21e+006
			12/3/2008	1.584e+006	1.584e+006
			6/17/2009	750000	750000
			12/9/2009	875000	875000
			6/17/2010	1.5e+006	1.5e+006
			12/22/2010	1.6e+006	1.6e+006
			6/29/2011	1.67e+006	1.67e+006
			12/7/2011	1.51e+006	1.51e+006
			6/6/2012	1.61e+006	1.61e+006
			12/12/2012	1.75e+006	1.75e+006
			6/19/2013	1.39e+006	1.39e+006
			12/11/2013	1.41e+006	1.41e+006
			6/11/2014	1.36e+006	1.36e+006
			12/3/2014	1.52e+006	1.52e+006
			6/17/2015	47700	47700
			12/1/2015	1.76e+006	1.76e+006
			6/22/2016	1.3e+006	1.3e+006
			12/20/2016	1.69e+006	1.69e+006
			6/6/2017	1.58e+006	1.58e+006
MW#93-3	67	0 (0%)	12/15/1994	440000	440000
			3/14/1995	420000	420000
			6/21/1995	420000	420000
			12/14/1995	406000	406000
			3/6/1996	368000	368000
			4/25/1996	384000	384000
			10/2/1996	430000	430000
			12/10/1996	377000	377000
			3/11/1997	375000	375000
			4/15/1997	400000	400000
			8/14/1997	916000	916000
			12/4/1997	249000	249000
			3/31/1998	275000	275000
			6/23/1998	246000	246000
			8/11/1998	500000	500000
			12/8/1998	260000	260000
			3/9/1999	280000	280000

			6/8/1999	214000	214000
			8/19/1999	260000	260000
			12/14/1999	200000	200000
			3/7/2000	232000	232000
			6/23/2000	270000	270000
			12/12/2000	196000	196000
			3/27/2001	190000	190000
			6/28/2001	180000	180000
			9/10/2001	202000	202000
			12/18/2001	149000	149000
			3/19/2002	203000	203000
			6/26/2002	180000	180000
			9/18/2002	185000	185000
			12/11/2002	178000	178000
			3/13/2003	207000	207000
			6/25/2003	190000	190000
			9/26/2003	158000	158000
			12/10/2003	140000	140000
			3/9/2004	13000	13000
			6/24/2004	160000	160000
			9/15/2004	139000	139000
			12/15/2004	122000	122000
			3/16/2005	180000	180000
			6/15/2005	150000	150000
			9/21/2005	215000	215000
			12/21/2005	180000	180000
			3/15/2006	221000	221000
			6/21/2006	210000	210000
			12/20/2006	210000	210000
			6/12/2007	110000	110000
			12/17/2007	131000	131000
			6/11/2008	144000	144000
			12/3/2008	152000	152000
			6/17/2009	120000	120000
			12/9/2009	175000	175000
			6/17/2010	150000	150000
			12/22/2010	170000	170000
			6/29/2011	170000	170000
			12/7/2011	98900	98900
			6/6/2012	194000	194000
			12/12/2012	168000	168000
			6/19/2013	194000	194000
			12/11/2013	173000	173000
			6/11/2014	254000	254000
			12/3/2014	194000	194000
			6/17/2015	168000	168000
			12/1/2015	280000	280000
			6/22/2016	518000	518000
			12/20/2016	475000	475000
			6/6/2017	113000	113000
MW#03-1	27	4 (14.8148%)	6/24/2004	10000	10000
			9/15/2004	22000	22000
			12/15/2004	6000	6000
			3/16/2005	4000	4000
			6/15/2005	6000	6000
			9/21/2005	5000	5000

			12/20/2006	5000	5000
			6/12/2007	4000	4000
			12/17/2007	3000	3000
			6/11/2008	11000	11000
			12/3/2008	11000	11000
			6/17/2009	4000	4000
			12/9/2009	32000	32000
			6/17/2010	5000	5000
			12/22/2010	8700	8700
			6/29/2011	4860	4860
			12/7/2011	5880	5880
			6/6/2012	9360	9360
			6/19/2013	ND<5000	ND<5000
			12/11/2013	ND<5000	ND<5000
			6/11/2014	44000	44000
			12/3/2014	ND<5000	ND<5000
			6/17/2015	ND<5000	ND<5000
			12/1/2015	777	777
			6/22/2016	628	628
			12/20/2016	786	786
			6/6/2017	887	887
MW#03-2	32	1 (3.125%)	6/24/2004	36000	36000
			9/15/2004	4000	4000
			12/15/2004	28000	28000
			3/16/2005	30000	30000
			6/15/2005	30000	30000
			9/21/2005	27000	27000
			12/21/2005	26000	26000
			3/15/2006	27000	27000
			6/21/2006	23000	23000
			12/20/2006	35000	35000
			6/12/2007	30000	30000
			12/17/2007	20000	20000
			6/11/2008	41000	41000
			12/3/2008	46000	46000
			6/17/2009	60000	60000
			12/9/2009	45000	45000
			6/17/2010	33000	33000
			12/22/2010	29000	29000
			6/29/2011	28400	28400
			12/7/2011	23500	23500
			6/6/2012	29300	29300
			12/12/2012	28300	28300
			6/19/2013	32100	32100
			12/11/2013	32800	32800
			6/11/2014	ND<5000	ND<5000
			12/3/2014	51200	51200
			6/17/2015	54700	54700
			12/1/2015	67800	67800
			6/22/2016	79700	79700
			10/11/2016	88400	88400
			12/20/2016	126000	126000
			6/6/2017	117000	117000

There are 0 unused wells

Levene's Test for Equal of Variance

Parameter: Chloride

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Overall Mean = 99159.9
Overall Std Dev = 186607
Overall Total = 2.58807e+007
SS Wells = 2.72676e+012
SS Total = 9.05378e+012

ANOVA Table

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	F
Between Wells	2.72676e+012	4	6.8169e+011	27.5822
Error (within wells)	6.32702e+012	256	2.47149e+010	
Totals	9.05378e+012	260		

27.5822 exceeds 2.37; assumption of equal variance should be rejected

Well: MW#93-1	Sample	Residual
	12/15/1994	4838.81
	3/14/1995	3161.19
	6/21/1995	2161.19
	12/14/1995	10838.8
	3/6/1996	14838.8
	4/25/1996	2838.81
	10/2/1996	5161.19
	12/10/1996	4838.81
	3/11/1997	30838.8
	4/15/1997	6838.81
	8/14/1997	1838.81
	12/4/1997	5838.81
	3/31/1998	4838.81
	6/23/1998	2161.19
	8/11/1998	10838.8
	12/8/1998	3838.81
	3/9/1999	4838.81
	6/8/1999	161.194
	8/19/1999	5161.19
	12/14/1999	5161.19
	3/7/2000	15161.2
	6/23/2000	17161.2
	12/12/2000	19161.2
	3/27/2001	25161.2
	6/28/2001	23161.2
	9/10/2001	11161.2
	12/18/2001	11161.2
	3/19/2002	7161.19
	6/26/2002	16161.2
	9/18/2002	22161.2
	12/11/2002	21161.2
	3/13/2003	21161.2

6/25/2003	28161.2
9/26/2003	24161.2
12/10/2003	5161.19
3/9/2004	23161.2
6/24/2004	26161.2
9/15/2004	9161.19
12/15/2004	13161.2
3/16/2005	7161.19
6/15/2005	7161.19
9/21/2005	7161.19
12/21/2005	23161.2
3/15/2006	15161.2
6/21/2006	3838.81
12/20/2006	161.194
6/12/2007	10838.8
12/17/2007	7838.81
6/11/2008	5838.81
12/3/2008	6838.81
6/17/2009	14838.8
12/9/2009	10838.8
6/17/2010	17838.8
12/22/2010	14838.8
6/29/2011	14038.8
12/7/2011	17238.8
6/6/2012	11038.8
12/12/2012	12638.8
6/19/2013	13338.8
12/11/2013	17238.8
6/11/2014	15538.8
12/3/2014	17938.8
6/17/2015	21838.8
12/1/2015	19638.8
6/22/2016	21838.8
12/20/2016	19638.8
6/6/2017	18738.8

Well: MW#93-2

Sample	Residual
12/15/1994	1.12598e+006
3/14/1995	25980.9
6/21/1995	1.45098e+006
12/14/1995	223019
3/6/1996	148019
4/25/1996	473019
10/2/1996	27019.1
12/10/1996	34019.1
3/11/1997	108019
4/15/1997	174019
8/14/1997	623019
12/4/1997	243019
3/31/1998	474019
6/23/1998	573019
8/11/1998	348019
12/8/1998	396019
3/9/1999	174019
6/8/1999	213019
8/19/1999	274019
12/14/1999	274019

3/7/2000	197981
6/23/2000	575981
12/12/2000	263019
3/27/2001	223019
6/28/2001	273019
9/10/2001	524019
12/18/2001	74019.1
3/19/2002	204019
6/26/2002	173019
9/18/2002	148019
12/11/2002	87019.1
3/13/2003	15980.9
6/25/2003	274019
9/26/2003	90019.1
12/10/2003	16980.9
3/9/2004	274019
6/24/2004	366019
9/15/2004	90980.9
12/15/2004	74019.1
3/16/2005	200981
6/15/2005	125981
9/21/2005	113981
12/21/2005	24019.1
3/15/2006	150981
6/21/2006	25980.9
12/20/2006	275981
2/21/2007	275981
6/12/2007	175981
12/17/2007	126981
6/11/2008	315981
12/3/2008	58019.1
6/17/2009	775981
12/9/2009	650981
6/17/2010	25980.9
12/22/2010	74019.1
6/29/2011	144019
12/7/2011	15980.9
6/6/2012	84019.1
12/12/2012	224019
6/19/2013	135981
12/11/2013	115981
6/11/2014	165981
12/3/2014	5980.88
6/17/2015	1.47828e+006
12/1/2015	234019
6/22/2016	225981
12/20/2016	164019
6/6/2017	54019.1

Well: MW#93-3	**Sample**	**Residual**
	12/15/1994	197733
	3/14/1995	177733
	6/21/1995	177733
	12/14/1995	163733
	3/6/1996	125733
	4/25/1996	141733
	10/2/1996	187733

12/10/1996	134733
3/11/1997	132733
4/15/1997	157733
8/14/1997	673733
12/4/1997	6732.84
3/31/1998	32732.8
6/23/1998	3732.84
8/11/1998	257733
12/8/1998	17732.8
3/9/1999	37732.8
6/8/1999	28267.2
8/19/1999	17732.8
12/14/1999	42267.2
3/7/2000	10267.2
6/23/2000	27732.8
12/12/2000	46267.2
3/27/2001	52267.2
6/28/2001	62267.2
9/10/2001	40267.2
12/18/2001	93267.2
3/19/2002	39267.2
6/26/2002	62267.2
9/18/2002	57267.2
12/11/2002	64267.2
3/13/2003	35267.2
6/25/2003	52267.2
9/26/2003	84267.2
12/10/2003	102267
3/9/2004	229267
6/24/2004	82267.2
9/15/2004	103267
12/15/2004	120267
3/16/2005	62267.2
6/15/2005	92267.2
9/21/2005	27267.2
12/21/2005	62267.2
3/15/2006	21267.2
6/21/2006	32267.2
12/20/2006	32267.2
6/12/2007	132267
12/17/2007	111267
6/11/2008	98267.2
12/3/2008	90267.2
6/17/2009	122267
12/9/2009	67267.2
6/17/2010	92267.2
12/22/2010	72267.2
6/29/2011	72267.2
12/7/2011	143367
6/6/2012	48267.2
12/12/2012	74267.2
6/19/2013	48267.2
12/11/2013	69267.2
6/11/2014	11732.8
12/3/2014	48267.2
6/17/2015	74267.2
12/1/2015	37732.8

6/22/2016	275733
12/20/2016	232733
6/6/2017	129267

Well: MW#03-1	Sample	Residual
	6/24/2004	1708.22
	9/15/2004	13708.2
	12/15/2004	2291.78
	3/16/2005	4291.78
	6/15/2005	2291.78
	9/21/2005	3291.78
	12/20/2006	3291.78
	6/12/2007	4291.78
	12/17/2007	5291.78
	6/11/2008	2708.22
	12/3/2008	2708.22
	6/17/2009	4291.78
	12/9/2009	23708.2
	6/17/2010	3291.78
	12/22/2010	408.222
	6/29/2011	3431.78
	12/7/2011	2411.78
	6/6/2012	1068.22
	6/19/2013	3291.78
	12/11/2013	3291.78
	6/11/2014	35708.2
	12/3/2014	3291.78
	6/17/2015	3291.78
	12/1/2015	7514.78
	6/22/2016	7663.78
	12/20/2016	7505.78
	6/6/2017	7404.78

Well: MW#03-2	Sample	Residual
	6/24/2004	5693.75
	9/15/2004	37693.8
	12/15/2004	13693.8
	3/16/2005	11693.8
	6/15/2005	11693.8
	9/21/2005	14693.8
	12/21/2005	15693.8
	3/15/2006	14693.8
	6/21/2006	18693.8
	12/20/2006	6693.75
	6/12/2007	11693.8
	12/17/2007	21693.8
	6/11/2008	693.75
	12/3/2008	4306.25
	6/17/2009	18306.3
	12/9/2009	3306.25
	6/17/2010	8693.75
	12/22/2010	12693.8
	6/29/2011	13293.8
	12/7/2011	18193.8
	6/6/2012	12393.8
	12/12/2012	13393.8

6/19/2013	9593.75
12/11/2013	8893.75
6/11/2014	36693.8
12/3/2014	9506.25
6/17/2015	13006.3
12/1/2015	26106.3
6/22/2016	38006.3
10/11/2016	46706.3
12/20/2016	84306.3
6/6/2017	75306.3

Shapiro-Francia Test of Normality

Parameter: Chloride

All Wells

Normality Test of Parameter Concentrations

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Sample Size = 261

i	x(i)	m(i)	sum(m^2)	sum(mx)
0	0	0	0	0
1	628	-2.74777	7.55021	-1725.6
2	777	-2.45727	13.5884	-3634.9
3	786	-2.29036	18.8342	-5435.12
4	887	-2.17009	23.5435	-7359.99
5	3000	-2.07485	27.8485	-13584.5
6	4000	-2.01409	31.905	-21640.9
7	4000	-1.94314	35.6808	-29413.5
8	4000	-1.88079	39.2182	-36936.6
9	4000	-1.82501	42.5488	-44236.6
10	4000	-1.77438	45.6972	-51334.2
11	4860	-1.7392	48.7221	-59786.7
12	5000	-1.6954	51.5964	-68263.7
13	5000	-1.65463	54.3342	-76536.8
14	5000	-1.61644	56.9471	-84619
15	5000	-1.58047	59.445	-92521.3
16	5000	-1.54643	61.8364	-100253
17	5000	-1.52203	64.153	-107864
18	5000	-1.49085	66.3756	-115318
19	5000	-1.46106	68.5103	-122623
20	5880	-1.4325	70.5624	-131046
21	6000	-1.40507	72.5366	-139477
22	6000	-1.38517	74.4553	-147788
23	8700	-1.35946	76.3035	-159615
24	9360	-1.33462	78.0847	-172107
25	10000	-1.31058	79.8023	-185213
26	11000	-1.28727	81.4594	-199373
27	11000	-1.26464	83.0587	-213284
28	13000	-1.24809	84.6164	-229509
29	13000	-1.22653	86.1208	-245454
30	13000	-1.20553	87.5741	-261126
31	15200	-1.18504	88.9784	-279139
32	15200	-1.16505	90.3357	-296847
33	16100	-1.15035	91.659	-315368
34	16900	-1.13113	92.9385	-334484
35	17000	-1.11232	94.1758	-353393
36	17600	-1.0939	95.3724	-372646
37	17600	-1.07584	96.5298	-391581
38	19300	-1.05812	97.6494	-412003
39	20000	-1.04505	98.7415	-432904
40	20000	-1.02789	99.7981	-453461
41	20000	-1.01104	100.82	-473682
42	20000	-0.994457	101.809	-493571
43	20800	-0.97815	102.766	-513917
44	21500	-0.966088	103.699	-534688
45	22000	-0.950222	104.602	-555593
46	22200	-0.93459	105.476	-576340

47	23000	-0.919183	106.321	-597482
48	23500	-0.903992	107.138	-618725
49	23800	-0.889006	107.928	-639884
50	24000	-0.877897	108.699	-660953
51	24000	-0.863249	109.444	-681671
52	24000	-0.848786	110.165	-702042
53	24000	-0.834498	110.861	-722070
54	26000	-0.820379	111.534	-743400
55	27000	-0.809896	112.19	-765267
56	27000	-0.796056	112.824	-786761
57	27000	-0.782366	113.436	-807885
58	28000	-0.768821	114.027	-829411
59	28000	-0.755415	114.597	-850563
60	28000	-0.742143	115.148	-871343
61	28300	-0.732275	115.684	-892067
62	28400	-0.719228	116.202	-912493
63	29000	-0.706302	116.701	-932975
64	29000	-0.693493	117.181	-953087
65	29000	-0.680797	117.645	-972830
66	29300	-0.671346	118.096	-992500
67	30000	-0.658838	118.53	-1.01227e+006
68	30000	-0.646431	118.948	-1.03166e+006
69	30000	-0.634124	119.35	-1.05068e+006
70	30000	-0.621911	119.736	-1.06934e+006
71	30000	-0.612813	120.112	-1.08772e+006
72	30000	-0.60076	120.473	-1.10575e+006
73	30000	-0.588793	120.82	-1.12341e+006
74	31000	-0.576911	121.152	-1.14129e+006
75	31000	-0.565108	121.472	-1.15881e+006
76	32000	-0.553384	121.778	-1.17652e+006
77	32000	-0.544642	122.075	-1.19395e+006
78	32100	-0.533048	122.359	-1.21106e+006
79	32800	-0.521527	122.631	-1.22817e+006
80	33000	-0.510074	122.891	-1.245e+006
81	33000	-0.498687	123.14	-1.26146e+006
82	35000	-0.490189	123.38	-1.27861e+006
83	35000	-0.478914	123.609	-1.29537e+006
84	35000	-0.467699	123.828	-1.31174e+006
85	36000	-0.456542	124.036	-1.32818e+006
86	37000	-0.445443	124.235	-1.34466e+006
87	37000	-0.434397	124.424	-1.36073e+006
88	38000	-0.426148	124.605	-1.37693e+006
89	40000	-0.415193	124.778	-1.39353e+006
90	40000	-0.40429	124.941	-1.40971e+006
91	40000	-0.393433	125.096	-1.42544e+006
92	40000	-0.382622	125.242	-1.44075e+006
93	41000	-0.374544	125.382	-1.4561e+006
94	42000	-0.363809	125.515	-1.47138e+006
95	42000	-0.353118	125.64	-1.48622e+006
96	42000	-0.342466	125.757	-1.5006e+006
97	42000	-0.331854	125.867	-1.51454e+006
98	44000	-0.321278	125.97	-1.52867e+006
99	44000	-0.31337	126.068	-1.54246e+006
100	45000	-0.302855	126.16	-1.55609e+006
101	46000	-0.292375	126.246	-1.56954e+006
102	46000	-0.281926	126.325	-1.58251e+006
103	46000	-0.271509	126.399	-1.595e+006

104	47700	-0.263715	126.468	-1.60758e+006
105	48000	-0.253347	126.533	-1.61974e+006
106	50000	-0.243007	126.592	-1.63189e+006
107	50000	-0.232693	126.646	-1.64352e+006
108	51000	-0.222403	126.695	-1.65486e+006
109	51200	-0.212137	126.74	-1.66573e+006
110	52000	-0.204452	126.782	-1.67636e+006
111	54000	-0.194225	126.82	-1.68685e+006
112	54700	-0.184017	126.854	-1.69691e+006
113	56000	-0.173829	126.884	-1.70665e+006
114	56000	-0.163659	126.911	-1.71581e+006
115	57000	-0.156042	126.935	-1.72471e+006
116	58000	-0.1459	126.956	-1.73317e+006
117	58000	-0.135774	126.975	-1.74104e+006
118	58000	-0.125661	126.99	-1.74833e+006
119	59000	-0.115562	127.004	-1.75515e+006
120	60000	-0.105474	127.015	-1.76148e+006
121	60000	-0.0979139	127.024	-1.76735e+006
122	61000	-0.0878447	127.032	-1.77271e+006
123	63000	-0.0777834	127.038	-1.77761e+006
124	67800	-0.0677301	127.043	-1.7822e+006
125	75000	-0.0576847	127.046	-1.78653e+006
126	79700	-0.0501541	127.049	-1.79053e+006
127	88400	-0.0401167	127.05	-1.79407e+006
128	98900	-0.0300838	127.051	-1.79705e+006
129	110000	-0.0200544	127.052	-1.79925e+006
130	113000	-0.0100272	127.052	-1.80039e+006
131	117000	0	127.052	-1.80039e+006
132	120000	0.0100272	127.052	-1.79918e+006
133	122000	0.0200544	127.052	-1.79674e+006
134	126000	0.0300838	127.053	-1.79295e+006
135	131000	0.0401167	127.055	-1.78769e+006
136	139000	0.0501541	127.057	-1.78072e+006
137	140000	0.0576847	127.061	-1.77264e+006
138	144000	0.0677301	127.065	-1.76289e+006
139	149000	0.0777834	127.071	-1.7513e+006
140	150000	0.0878447	127.079	-1.73813e+006
141	150000	0.0979139	127.089	-1.72344e+006
142	152000	0.105474	127.1	-1.70741e+006
143	158000	0.115562	127.113	-1.68915e+006
144	160000	0.125661	127.129	-1.66904e+006
145	168000	0.135774	127.147	-1.64623e+006
146	168000	0.1459	127.168	-1.62172e+006
147	170000	0.156042	127.193	-1.59519e+006
148	170000	0.163659	127.22	-1.56737e+006
149	173000	0.173829	127.25	-1.5373e+006
150	175000	0.184017	127.284	-1.5051e+006
151	178000	0.194225	127.321	-1.47052e+006
152	180000	0.204452	127.363	-1.43372e+006
153	180000	0.212137	127.408	-1.39554e+006
154	180000	0.222403	127.458	-1.3555e+006
155	180000	0.232693	127.512	-1.31362e+006
156	185000	0.243007	127.571	-1.26866e+006
157	190000	0.253347	127.635	-1.22053e+006
158	190000	0.263715	127.705	-1.17042e+006
159	194000	0.271509	127.778	-1.11775e+006
160	194000	0.281926	127.858	-1.06306e+006

161	194000	0.292375	127.943	-1.00633e+006
162	196000	0.302855	128.035	-946975
163	200000	0.31337	128.133	-884301
164	202000	0.321278	128.236	-819403
165	203000	0.331854	128.347	-752037
166	207000	0.342466	128.464	-681146
167	210000	0.353118	128.589	-606992
168	210000	0.363809	128.721	-530592
169	214000	0.374544	128.861	-450439
170	215000	0.382622	129.008	-368176
171	221000	0.393433	129.162	-281227
172	232000	0.40429	129.326	-187432
173	246000	0.415193	129.498	-85294.1
174	249000	0.426148	129.68	20816.8
175	254000	0.434397	129.869	131154
176	260000	0.445443	130.067	246969
177	260000	0.456542	130.275	365670
178	270000	0.467699	130.494	491949
179	275000	0.478914	130.723	623650
180	280000	0.490189	130.964	760903
181	280000	0.498687	131.212	900535
182	368000	0.510074	131.473	1.08824e+006
183	375000	0.521527	131.745	1.28382e+006
184	377000	0.533048	132.029	1.48477e+006
185	384000	0.544642	132.325	1.69392e+006
186	400000	0.553384	132.632	1.91527e+006
187	400000	0.565108	132.951	2.14131e+006
188	406000	0.576911	133.284	2.37554e+006
189	420000	0.588793	133.63	2.62283e+006
190	420000	0.60076	133.991	2.87515e+006
191	430000	0.612813	134.367	3.13866e+006
192	440000	0.621911	134.754	3.4123e+006
193	475000	0.634124	135.156	3.71351e+006
194	500000	0.646431	135.574	4.03673e+006
195	518000	0.658838	136.008	4.378e+006
196	750000	0.671346	136.458	4.88151e+006
197	875000	0.680797	136.922	5.47721e+006
198	916000	0.693493	137.403	6.11245e+006
199	950000	0.706302	137.902	6.78344e+006
200	1.21e+006	0.719228	138.419	7.6537e+006
201	1.25e+006	0.732275	138.955	8.56905e+006
202	1.25e+006	0.742143	139.506	9.49673e+006
203	1.3e+006	0.755415	140.077	1.04788e+007
204	1.325e+006	0.768821	140.668	1.14975e+007
205	1.328e+006	0.782366	141.28	1.25364e+007
206	1.35e+006	0.796056	141.914	1.36111e+007
207	1.36e+006	0.809896	142.57	1.47126e+007
208	1.375e+006	0.820379	143.243	1.58406e+007
209	1.39e+006	0.834498	143.939	1.70005e+007
210	1.399e+006	0.848786	144.659	1.8188e+007
211	1.4e+006	0.863249	145.405	1.93965e+007
212	1.41e+006	0.877897	146.175	2.06344e+007
213	1.412e+006	0.889006	146.966	2.18897e+007
214	1.435e+006	0.903992	147.783	2.31869e+007
215	1.5e+006	0.919183	148.628	2.45657e+007
216	1.5e+006	0.93459	149.501	2.59675e+007
217	1.5e+006	0.950222	150.404	2.73929e+007

218	1.509e+006	0.966088	151.337	2.88507e+007
219	1.51e+006	0.97815	152.294	3.03277e+007
220	1.51e+006	0.994457	153.283	3.18293e+007
221	1.52e+006	1.01104	154.305	3.33661e+007
222	1.55e+006	1.02789	155.362	3.49593e+007
223	1.553e+006	1.04505	156.454	3.65823e+007
224	1.56e+006	1.05812	157.574	3.8233e+007
225	1.58e+006	1.07584	158.731	3.99328e+007
226	1.584e+006	1.0939	159.928	4.16655e+007
227	1.6e+006	1.11232	161.165	4.34452e+007
228	1.6e+006	1.13113	162.444	4.52551e+007
229	1.6e+006	1.15035	163.768	4.70956e+007
230	1.61e+006	1.16505	165.125	4.89713e+007
231	1.613e+006	1.18504	166.529	5.08828e+007
232	1.616e+006	1.20553	167.983	5.2831e+007
233	1.634e+006	1.22653	169.487	5.48351e+007
234	1.67e+006	1.24809	171.045	5.69194e+007
235	1.674e+006	1.26464	172.644	5.90364e+007
236	1.674e+006	1.28727	174.301	6.11913e+007
237	1.69e+006	1.31058	176.019	6.34062e+007
238	1.699e+006	1.33462	177.8	6.56737e+007
239	1.7e+006	1.35946	179.648	6.79848e+007
240	1.7e+006	1.38517	181.567	7.03396e+007
241	1.73e+006	1.40507	183.541	7.27704e+007
242	1.739e+006	1.4325	185.593	7.52615e+007
243	1.749e+006	1.46106	187.728	7.78169e+007
244	1.749e+006	1.49085	189.95	8.04244e+007
245	1.75e+006	1.52203	192.267	8.30879e+007
246	1.76e+006	1.54643	194.658	8.58097e+007
247	1.769e+006	1.58047	197.156	8.86055e+007
248	1.789e+006	1.61644	199.769	9.14973e+007
249	1.799e+006	1.65463	202.507	9.4474e+007
250	1.8e+006	1.6954	205.381	9.75257e+007
251	1.8e+006	1.7392	208.406	1.00656e+008
252	1.8e+006	1.77438	211.555	1.0385e+008
253	1.8e+006	1.82501	214.885	1.07135e+008
254	1.874e+006	1.88079	218.423	1.1066e+008
255	1.892e+006	1.94314	222.198	1.14336e+008
256	1.922e+006	2.01409	226.255	1.18207e+008
257	1.999e+006	2.07485	230.56	1.22355e+008
258	2e+006	2.17009	235.269	1.26695e+008
259	2.05e+006	2.29036	240.515	1.3139e+008
260	2.099e+006	2.45727	246.553	1.36548e+008

Sample Standard Deviation = 665724
Numerator = 1.86454e+016
Denominator = 2.84101e+016 = 260 246.553
W Statistic = 0.656294
5% Critical value of 0.976 exceeds 0.656294
Evidence of non-normality at 95% level of significance
1% Critical value of 0.967 exceeds 0.656294
Evidence of non-normality at 99% level of significance

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Chloride

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Total Percent Non-Detects = 1.91571%
Number of comparisons = 4
Future Samples (k) = 4
Recent Dates = 1
Background Samples (n) = 67
Maximum Background Concentration = 63000
Confidence Level = 94.4%
False Positive Rate = 5.6%

Well	Date	Samples	Mean	Impacted
MW#93-2	6/6/2017	1	1.58e+006	TRUE
MW#93-3	6/6/2017	1	113000	TRUE
MW#03-1	6/6/2017	1	887	FALSE
MW#03-2	6/6/2017	1	117000	TRUE

Non-Parametric Prediction Interval

Intra-Well Comparison for MW#93-2

Parameter: Chloride

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Total Percent Non-Detects = 0%
Future Samples (k) = 1
Recent Dates = 1
Baseline Samples (n) = 67
Maximum Baseline Concentration = 2.149e+006
Confidence Level = 98.5%
False Positive Rate = 1.5%

Baseline Samples	Date	Result
	12/15/1994	400000
	3/14/1995	1.5e+006
	6/21/1995	75000
	12/14/1995	1.749e+006
	3/6/1996	1.674e+006
	4/25/1996	1.999e+006
	10/2/1996	1.553e+006
	12/10/1996	1.56e+006
	3/11/1997	1.634e+006
	4/15/1997	1.7e+006
	8/14/1997	2.149e+006
	12/4/1997	1.769e+006
	3/31/1998	2e+006
	6/23/1998	2.099e+006
	8/11/1998	1.874e+006
	12/8/1998	1.922e+006
	3/9/1999	1.7e+006
	6/8/1999	1.739e+006
	8/19/1999	1.8e+006
	12/14/1999	1.8e+006
	3/7/2000	1.328e+006
	6/23/2000	950000
	12/12/2000	1.789e+006
	3/27/2001	1.749e+006
	6/28/2001	1.799e+006
	9/10/2001	2.05e+006
	12/18/2001	1.6e+006
	3/19/2002	1.73e+006
	6/26/2002	1.699e+006
	9/18/2002	1.674e+006
	12/11/2002	1.613e+006
	3/13/2003	1.51e+006
	6/25/2003	1.8e+006
	9/26/2003	1.616e+006
	12/10/2003	1.509e+006
	3/9/2004	1.8e+006
	6/24/2004	1.892e+006
	9/15/2004	1.435e+006
	12/15/2004	1.6e+006
	3/16/2005	1.325e+006
	6/15/2005	1.4e+006

9/21/2005	1.412e+006
12/21/2005	1.55e+006
3/15/2006	1.375e+006
6/21/2006	1.5e+006
12/20/2006	1.25e+006
2/21/2007	1.25e+006
6/12/2007	1.35e+006
12/17/2007	1.399e+006
6/11/2008	1.21e+006
12/3/2008	1.584e+006
6/17/2009	750000
12/9/2009	875000
6/17/2010	1.5e+006
12/22/2010	1.6e+006
6/29/2011	1.67e+006
12/7/2011	1.51e+006
6/6/2012	1.61e+006
12/12/2012	1.75e+006
6/19/2013	1.39e+006
12/11/2013	1.41e+006
6/11/2014	1.36e+006
12/3/2014	1.52e+006
6/17/2015	47700
12/1/2015	1.76e+006
6/22/2016	1.3e+006
12/20/2016	1.69e+006

Date	Samples	Mean	Impacted
6/6/2017	1	1.58e+006	FALSE

Non-Parametric Prediction Interval

Intra-Well Comparison for MW#93-3

Parameter: Chloride

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Total Percent Non-Detects = 0%
Future Samples (k) = 1
Recent Dates = 1
Baseline Samples (n) = 66
Maximum Baseline Concentration = 916000
Confidence Level = 98.5%
False Positive Rate = 1.5%

Baseline Samples	Date	Result
	12/15/1994	440000
	3/14/1995	420000
	6/21/1995	420000
	12/14/1995	406000
	3/6/1996	368000
	4/25/1996	384000
	10/2/1996	430000
	12/10/1996	377000
	3/11/1997	375000
	4/15/1997	400000
	8/14/1997	916000
	12/4/1997	249000
	3/31/1998	275000
	6/23/1998	246000
	8/11/1998	500000
	12/8/1998	260000
	3/9/1999	280000
	6/8/1999	214000
	8/19/1999	260000
	12/14/1999	200000
	3/7/2000	232000
	6/23/2000	270000
	12/12/2000	196000
	3/27/2001	190000
	6/28/2001	180000
	9/10/2001	202000
	12/18/2001	149000
	3/19/2002	203000
	6/26/2002	180000
	9/18/2002	185000
	12/11/2002	178000
	3/13/2003	207000
	6/25/2003	190000
	9/26/2003	158000
	12/10/2003	140000
	3/9/2004	13000
	6/24/2004	160000
	9/15/2004	139000
	12/15/2004	122000
	3/16/2005	180000
	6/15/2005	150000

9/21/2005	215000
12/21/2005	180000
3/15/2006	221000
6/21/2006	210000
12/20/2006	210000
6/12/2007	110000
12/17/2007	131000
6/11/2008	144000
12/3/2008	152000
6/17/2009	120000
12/9/2009	175000
6/17/2010	150000
12/22/2010	170000
6/29/2011	170000
12/7/2011	98900
6/6/2012	194000
12/12/2012	168000
6/19/2013	194000
12/11/2013	173000
6/11/2014	254000
12/3/2014	194000
6/17/2015	168000
12/1/2015	280000
6/22/2016	518000
12/20/2016	475000

Date	Samples	Mean	Impacted
6/6/2017	1	113000	FALSE

Non-Parametric Prediction Interval

Intra-Well Comparison for MW#03-2

Parameter: Chloride

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Total Percent Non-Detects = 3.22581%
Future Samples (k) = 1
Recent Dates = 1
Baseline Samples (n) = 31
Maximum Baseline Concentration = 126000
Confidence Level = 96.9%
False Positive Rate = 3.1%

Baseline Samples	Date	Result
	6/24/2004	36000
	9/15/2004	4000
	12/15/2004	28000
	3/16/2005	30000
	6/15/2005	30000
	9/21/2005	27000
	12/21/2005	26000
	3/15/2006	27000
	6/21/2006	23000
	12/20/2006	35000
	6/12/2007	30000
	12/17/2007	20000
	6/11/2008	41000
	12/3/2008	46000
	6/17/2009	60000
	12/9/2009	45000
	6/17/2010	33000
	12/22/2010	29000
	6/29/2011	28400
	12/7/2011	23500
	6/6/2012	29300
	12/12/2012	28300
	6/19/2013	32100
	12/11/2013	32800
	6/11/2014	ND<5000
	12/3/2014	51200
	6/17/2015	54700
	12/1/2015	67800
	6/22/2016	79700
	10/11/2016	88400
	12/20/2016	126000

Date	Samples	Mean	Impacted
6/6/2017	1	117000	FALSE

Concentrations (ppb)

Parameter: ph

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Samples: 262
Total Non-Detect: 0
Percent Non-Detects: 0%
Total Background Samples: 67
There is 1 background well

Well	Samples	ND	Date	Result	Original
MW#93-1	67	0 (0%)	12/15/1994	6.67	6.67
			3/14/1995	6.72	6.72
			6/21/1995	6.58	6.58
			12/14/1995	6.72	6.72
			3/6/1996	6.72	6.72
			4/25/1996	6.79	6.79
			10/2/1996	6.61	6.61
			12/10/1996	6.51	6.51
			3/11/1997	6.77	6.77
			4/15/1997	6.66	6.66
			8/14/1997	6.66	6.66
			12/4/1997	6.78	6.78
			3/31/1998	6.87	6.87
			6/23/1998	6.5	6.5
			8/11/1998	7.05	7.05
			12/8/1998	6.62	6.62
			3/9/1999	6.6	6.6
			6/8/1999	6.93	6.93
			8/19/1999	6.54	6.54
			12/14/1999	6.55	6.55
			3/7/2000	6.59	6.59
			6/23/2000	6.52	6.52
			12/12/2000	6.56	6.56
			3/27/2001	6.6	6.6
			6/28/2001	6.59	6.59
			9/10/2001	6.76	6.76
			12/18/2001	6.76	6.76
			3/19/2002	6.93	6.93
			6/26/2002	6.85	6.85
			9/18/2002	6.62	6.62
			12/11/2002	6.58	6.58
			3/13/2003	6.66	6.66
			6/25/2003	6.94	6.94
			9/26/2003	6.42	6.42
			12/10/2003	6.64	6.64
			3/9/2004	6.68	6.68
			6/24/2004	6.53	6.53
			9/15/2004	6.43	6.43
			12/15/2004	6.61	6.61
			3/16/2005	6.57	6.57
			6/15/2005	6.53	6.53
			9/21/2005	6.65	6.65
			12/21/2005	6.61	6.61
			3/15/2006	6.64	6.64

			6/21/2006	6.85	6.85
			12/20/2006	6.67	6.67
			6/12/2007	6.58	6.58
			12/17/2007	6.33	6.33
			6/11/2008	6.7	6.7
			12/3/2008	6.5	6.5
			6/17/2009	6.8	6.8
			12/9/2009	6.6	6.6
			6/17/2010	6.5	6.5
			12/22/2010	6.55	6.55
			6/29/2011	6.5	6.5
			12/7/2011	6.41	6.41
			6/6/2012	6.23	6.23
			12/12/2012	6.61	6.61
			6/19/2013	6.58	6.58
			12/11/2013	6.57	6.57
			6/11/2014	6.1	6.1
			12/3/2014	6.69	6.69
			6/17/2015	6.38	6.38
			12/1/2015	6.45	6.45
			6/22/2016	6.59	6.59
			12/20/2016	6.28	6.28
			6/6/2017	6.69	6.69

There are 4 compliance wells

Well	Samples	ND	Date	Result	Original
MW#93-2	70	0 (0%)	12/15/1994	8.54	8.54
			3/14/1995	8.82	8.82
			6/21/1995	8.68	8.68
			12/14/1995	8.16	8.16
			3/6/1996	9.37	9.37
			4/25/1996	9.14	9.14
			10/2/1996	8.94	8.94
			12/10/1996	9.27	9.27
			3/11/1997	8.95	8.95
			4/15/1997	9.25	9.25
			8/14/1997	8.67	8.67
			12/4/1997	8.77	8.77
			3/31/1998	9.32	9.32
			6/23/1998	8.87	8.87
			8/11/1998	9	9
			12/8/1998	8.9	8.9
			3/9/1999	9.39	9.39
			6/8/1999	9.25	9.25
			8/19/1999	9.15	9.15
			12/14/1999	8.98	8.98
			3/7/2000	9.2	9.2
			6/23/2000	9.18	9.18
			12/12/2000	9.18	9.18
			3/27/2001	9.29	9.29
			6/28/2001	9.22	9.22
			9/10/2001	9.1	9.1
			12/18/2001	9.4	9.4
			3/19/2002	9.54	9.54
			6/26/2002	9.44	9.44

			9/18/2002	9.24	9.24
			12/11/2002	9.16	9.16
			3/13/2003	9.28	9.28
			6/25/2003	9.27	9.27
			9/26/2003	9.32	9.32
			12/10/2003	9.25	9.25
			3/9/2004	9.37	9.37
			6/24/2004	9.24	9.24
			9/15/2004	9.32	9.32
			12/15/2004	9.26	9.26
			3/16/2005	9.23	9.23
			6/15/2005	9.1	9.1
			9/21/2005	9.25	9.25
			12/21/2005	9.31	9.31
			3/15/2006	9.47	9.47
			6/21/2006	9.4	9.4
			12/20/2006	9.18	9.18
			2/21/2007	9.2	9.2
			6/12/2007	9.1	9.1
			12/17/2007	9.3	9.3
			6/11/2008	9.4	9.4
			12/3/2008	9.7	9.7
			12/15/2008	9.6	9.6
			6/17/2009	9.8	9.8
			12/9/2009	9.8	9.8
			6/17/2010	9.6	9.6
			12/22/2010	9.5	9.5
			6/29/2011	9.4	9.4
			12/7/2011	9.5	9.5
			6/6/2012	9.68	9.68
			12/12/2012	10.02	10.02
			1/9/2013	9.51	9.51
			6/19/2013	9.4	9.4
			12/11/2013	9.46	9.46
			6/11/2014	8.55	8.55
			12/3/2014	8.95	8.95
			6/17/2015	9.13	9.13
			12/1/2015	9.37	9.37
			6/22/2016	9.28	9.28
			12/20/2016	9.72	9.72
			6/6/2017	9.29	9.29
MW#93-3	67	0 (0%)	12/15/1994	6.68	6.68
			3/14/1995	6.74	6.74
			6/21/1995	6.61	6.61
			12/14/1995	6.75	6.75
			3/6/1996	6.85	6.85
			4/25/1996	6.78	6.78
			10/2/1996	6.75	6.75
			12/10/1996	6.7	6.7
			3/11/1997	6.8	6.8
			4/15/1997	6.74	6.74
			8/14/1997	6.88	6.88
			12/4/1997	6.88	6.88
			3/31/1998	6.92	6.92
			6/23/1998	6.76	6.76
			8/11/1998	6.91	6.91

			12/8/1998	6.93	6.93
			3/9/1999	6.78	6.78
			6/8/1999	6.85	6.85
			8/19/1999	6.97	6.97
			12/14/1999	6.8	6.8
			3/7/2000	6.77	6.77
			6/23/2000	6.82	6.82
			12/12/2000	6.86	6.86
			3/27/2001	6.79	6.79
			6/28/2001	6.86	6.86
			9/10/2001	7.04	7.04
			12/18/2001	6.93	6.93
			3/19/2002	7	7
			6/26/2002	6.89	6.89
			9/18/2002	7.96	7.96
			12/11/2002	6.74	6.74
			3/13/2003	6.87	6.87
			6/25/2003	6.85	6.85
			9/26/2003	6.77	6.77
			12/10/2003	6.99	6.99
			3/9/2004	7.45	7.45
			6/24/2004	6.8	6.8
			9/15/2004	6.7	6.7
			12/15/2004	6.88	6.88
			3/16/2005	6.69	6.69
			6/15/2005	6.81	6.81
			9/21/2005	6.85	6.85
			12/21/2005	6.7	6.7
			3/15/2006	7.07	7.07
			6/21/2006	6.84	6.84
			12/20/2006	6.93	6.93
			6/12/2007	6.89	6.89
			12/17/2007	6.8	6.8
			6/11/2008	6.8	6.8
			12/3/2008	6.8	6.8
			6/17/2009	7.2	7.2
			12/9/2009	6.9	6.9
			6/17/2010	6.7	6.7
			12/22/2010	6.82	6.82
			6/29/2011	6.7	6.7
			12/7/2011	6.77	6.77
			6/6/2012	6.42	6.42
			12/12/2012	6.85	6.85
			6/19/2013	6.49	6.49
			12/11/2013	7.07	7.07
			6/11/2014	6.08	6.08
			12/3/2014	6.8	6.8
			6/17/2015	6.4	6.4
			12/1/2015	6.6	6.6
			6/22/2016	6.43	6.43
			12/20/2016	6.27	6.27
			6/6/2017	6.65	6.65
MW#03-1	27	0 (0%)	6/24/2004	7.27	7.27
			9/15/2004	6.78	6.78
			12/15/2004	7.32	7.32
			3/16/2005	7.3	7.3

			6/15/2005	7.28	7.28
			9/21/2005	7.88	7.88
			12/20/2006	7	7
			6/12/2007	7.29	7.29
			12/17/2007	6.8	6.8
			6/11/2008	7.4	7.4
			12/3/2008	7.4	7.4
			6/17/2009	7.6	7.6
			12/9/2009	7.5	7.5
			6/17/2010	7.1	7.1
			12/22/2010	6.89	6.89
			6/29/2011	7.3	7.3
			12/7/2011	7.05	7.05
			6/6/2012	7.33	7.33
			6/19/2013	7.15	7.15
			12/11/2013	7.19	7.19
			6/11/2014	6.62	6.62
			12/3/2014	6.73	6.73
			6/17/2015	6.66	6.66
			12/1/2015	6.34	6.34
			6/22/2016	7.2	7.2
			12/20/2016	6.75	6.75
			6/6/2017	6.64	6.64
MW#03-2	31	0 (0%)	6/24/2004	6.84	6.84
			9/15/2004	7.17	7.17
			12/15/2004	6.86	6.86
			3/16/2005	6.8	6.8
			6/15/2005	6.87	6.87
			9/21/2005	6.87	6.87
			12/21/2005	6.83	6.83
			3/15/2006	6.88	6.88
			6/21/2006	6.78	6.78
			12/20/2006	6.88	6.88
			6/12/2007	6.87	6.87
			12/17/2007	6.7	6.7
			6/11/2008	6.9	6.9
			12/3/2008	6.8	6.8
			6/17/2009	7.3	7.3
			12/9/2009	6.8	6.8
			6/17/2010	6.8	6.8
			12/22/2010	7.2	7.2
			6/29/2011	6.7	6.7
			12/7/2011	6.69	6.69
			6/6/2012	6.73	6.73
			12/12/2012	6.82	6.82
			6/19/2013	6.88	6.88
			12/11/2013	6.72	6.72
			6/11/2014	7	7
			12/3/2014	7.14	7.14
			6/17/2015	6.45	6.45
			12/1/2015	6.39	6.39
			6/22/2016	6.75	6.75
			12/20/2016	6.36	6.36
			6/6/2017	6.73	6.73

There are 0 unused wells

Well	Samples	ND	Date	Result	Original

Levene's Test for Equal of Variance

Parameter: ph

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Overall Mean = 0.172346
Overall Std Dev = 0.187332
Overall Total = 45.1547
SS Wells = 0.786178
SS Total = 9.15932

ANOVA Table

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	F
Between Wells	0.786178	4	0.196545	6.03261
Error (within wells)	8.37314	257	0.0325803	
Totals	9.15932	261		

6.03261 exceeds 2.37; assumption of equal variance should be rejected

Well: MW#93-1	Sample	Residual
	12/15/1994	0.0538806
	3/14/1995	0.103881
	6/21/1995	0.0361194
	12/14/1995	0.103881
	3/6/1996	0.103881
	4/25/1996	0.173881
	10/2/1996	0.0061194
	12/10/1996	0.106119
	3/11/1997	0.153881
	4/15/1997	0.0438806
	8/14/1997	0.0438806
	12/4/1997	0.163881
	3/31/1998	0.253881
	6/23/1998	0.116119
	8/11/1998	0.433881
	12/8/1998	0.0038806
	3/9/1999	0.0161194
	6/8/1999	0.313881
	8/19/1999	0.0761194
	12/14/1999	0.0661194
	3/7/2000	0.0261194
	6/23/2000	0.0961194
	12/12/2000	0.0561194
	3/27/2001	0.0161194
	6/28/2001	0.0261194
	9/10/2001	0.143881
	12/18/2001	0.143881
	3/19/2002	0.313881
	6/26/2002	0.233881
	9/18/2002	0.0038806
	12/11/2002	0.0361194
	3/13/2003	0.0438806

6/25/2003	0.323881
9/26/2003	0.196119
12/10/2003	0.0238806
3/9/2004	0.0638806
6/24/2004	0.0861194
9/15/2004	0.186119
12/15/2004	0.0061194
3/16/2005	0.0461194
6/15/2005	0.0861194
9/21/2005	0.0338806
12/21/2005	0.0061194
3/15/2006	0.0238806
6/21/2006	0.233881
12/20/2006	0.0538806
6/12/2007	0.0361194
12/17/2007	0.286119
6/11/2008	0.0838806
12/3/2008	0.116119
6/17/2009	0.183881
12/9/2009	0.0161194
6/17/2010	0.116119
12/22/2010	0.0661194
6/29/2011	0.116119
12/7/2011	0.206119
6/6/2012	0.386119
12/12/2012	0.0061194
6/19/2013	0.0361194
12/11/2013	0.0461194
6/11/2014	0.516119
12/3/2014	0.0738806
6/17/2015	0.236119
12/1/2015	0.166119
6/22/2016	0.0261194
12/20/2016	0.336119
6/6/2017	0.0738806

Well: MW#93-2

Sample	Residual
12/15/1994	0.701143
3/14/1995	0.421143
6/21/1995	0.561143
12/14/1995	1.08114
3/6/1996	0.128857
4/25/1996	0.101143
10/2/1996	0.301143
12/10/1996	0.0288571
3/11/1997	0.291143
4/15/1997	0.00885714
8/14/1997	0.571143
12/4/1997	0.471143
3/31/1998	0.0788571
6/23/1998	0.371143
8/11/1998	0.241143
12/8/1998	0.341143
3/9/1999	0.148857
6/8/1999	0.00885714
8/19/1999	0.0911429
12/14/1999	0.261143

3/7/2000	0.0411429
6/23/2000	0.0611429
12/12/2000	0.0611429
3/27/2001	0.0488571
6/28/2001	0.0211429
9/10/2001	0.141143
12/18/2001	0.158857
3/19/2002	0.298857
6/26/2002	0.198857
9/18/2002	0.00114286
12/11/2002	0.0811429
3/13/2003	0.0388571
6/25/2003	0.0288571
9/26/2003	0.0788571
12/10/2003	0.00885714
3/9/2004	0.128857
6/24/2004	0.00114286
9/15/2004	0.0788571
12/15/2004	0.0188571
3/16/2005	0.0111429
6/15/2005	0.141143
9/21/2005	0.00885714
12/21/2005	0.0688571
3/15/2006	0.228857
6/21/2006	0.158857
12/20/2006	0.0611429
2/21/2007	0.0411429
6/12/2007	0.141143
12/17/2007	0.0588571
6/11/2008	0.158857
12/3/2008	0.458857
12/15/2008	0.358857
6/17/2009	0.558857
12/9/2009	0.558857
6/17/2010	0.358857
12/22/2010	0.258857
6/29/2011	0.158857
12/7/2011	0.258857
6/6/2012	0.438857
12/12/2012	0.778857
1/9/2013	0.268857
6/19/2013	0.158857
12/11/2013	0.218857
6/11/2014	0.691143
12/3/2014	0.291143
6/17/2015	0.111143
12/1/2015	0.128857
6/22/2016	0.0388571
12/20/2016	0.478857
6/6/2017	0.0488571

Well: MW#93-3	**Sample**	**Residual**
	12/15/1994	0.131642
	3/14/1995	0.0716418
	6/21/1995	0.201642
	12/14/1995	0.0616418
	3/6/1996	0.0383582

4/25/1996	0.0316418
10/2/1996	0.0616418
12/10/1996	0.111642
3/11/1997	0.0116418
4/15/1997	0.0716418
8/14/1997	0.0683582
12/4/1997	0.0683582
3/31/1998	0.108358
6/23/1998	0.0516418
8/11/1998	0.0983582
12/8/1998	0.118358
3/9/1999	0.0316418
6/8/1999	0.0383582
8/19/1999	0.158358
12/14/1999	0.0116418
3/7/2000	0.0416418
6/23/2000	0.00835821
12/12/2000	0.0483582
3/27/2001	0.0216418
6/28/2001	0.0483582
9/10/2001	0.228358
12/18/2001	0.118358
3/19/2002	0.188358
6/26/2002	0.0783582
9/18/2002	1.14836
12/11/2002	0.0716418
3/13/2003	0.0583582
6/25/2003	0.0383582
9/26/2003	0.0416418
12/10/2003	0.178358
3/9/2004	0.638358
6/24/2004	0.0116418
9/15/2004	0.111642
12/15/2004	0.0683582
3/16/2005	0.121642
6/15/2005	0.00164179
9/21/2005	0.0383582
12/21/2005	0.111642
3/15/2006	0.258358
6/21/2006	0.0283582
12/20/2006	0.118358
6/12/2007	0.0783582
12/17/2007	0.0116418
6/11/2008	0.0116418
12/3/2008	0.0116418
6/17/2009	0.388358
12/9/2009	0.0883582
6/17/2010	0.111642
12/22/2010	0.00835821
6/29/2011	0.111642
12/7/2011	0.0416418
6/6/2012	0.391642
12/12/2012	0.0383582
6/19/2013	0.321642
12/11/2013	0.258358
6/11/2014	0.731642
12/3/2014	0.0116418

6/17/2015	0.411642
12/1/2015	0.211642
6/22/2016	0.381642
12/20/2016	0.541642
6/6/2017	0.161642

Well: MW#03-1	Sample	Residual
	6/24/2004	0.167407
	9/15/2004	0.322593
	12/15/2004	0.217407
	3/16/2005	0.197407
	6/15/2005	0.177407
	9/21/2005	0.777407
	12/20/2006	0.102593
	6/12/2007	0.187407
	12/17/2007	0.302593
	6/11/2008	0.297407
	12/3/2008	0.297407
	6/17/2009	0.497407
	12/9/2009	0.397407
	6/17/2010	0.00259259
	12/22/2010	0.212593
	6/29/2011	0.197407
	12/7/2011	0.0525926
	6/6/2012	0.227407
	6/19/2013	0.0474074
	12/11/2013	0.0874074
	6/11/2014	0.482593
	12/3/2014	0.372593
	6/17/2015	0.442593
	12/1/2015	0.762593
	6/22/2016	0.0974074
	12/20/2016	0.352593
	6/6/2017	0.462593

Well: MW#03-2	Sample	Residual
	6/24/2004	0.0170968
	9/15/2004	0.347097
	12/15/2004	0.0370968
	3/16/2005	0.0229032
	6/15/2005	0.0470968
	9/21/2005	0.0470968
	12/21/2005	0.00709677
	3/15/2006	0.0570968
	6/21/2006	0.0429032
	12/20/2006	0.0570968
	6/12/2007	0.0470968
	12/17/2007	0.122903
	6/11/2008	0.0770968
	12/3/2008	0.0229032
	6/17/2009	0.477097
	12/9/2009	0.0229032
	6/17/2010	0.0229032
	12/22/2010	0.377097
	6/29/2011	0.122903
	12/7/2011	0.132903

6/6/2012	0.0929032
12/12/2012	0.00290323
6/19/2013	0.0570968
12/11/2013	0.102903
6/11/2014	0.177097
12/3/2014	0.317097
6/17/2015	0.372903
12/1/2015	0.432903
6/22/2016	0.0729032
12/20/2016	0.462903
6/6/2017	0.0929032

Shapiro-Francia Test of Normality

Parameter: ph

All Wells

Normality Test of Parameter Concentrations

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Sample Size = 262

i	x(i)	m(i)	sum(m^2)	sum(mx)
0	0	0	0	0
1	6.08	-2.74777	7.55021	-16.7064
2	6.1	-2.45727	13.5884	-31.6958
3	6.23	-2.29036	18.8342	-45.9647
4	6.27	-2.17009	23.5435	-59.5712
5	6.28	-2.07485	27.8485	-72.6013
6	6.33	-2.01409	31.905	-85.3505
7	6.34	-1.94314	35.6808	-97.6699
8	6.36	-1.88079	39.2182	-109.632
9	6.38	-1.82501	42.5488	-121.275
10	6.39	-1.77438	45.6972	-132.614
11	6.4	-1.7392	48.7221	-143.744
12	6.41	-1.6954	51.5964	-154.612
13	6.42	-1.65463	54.3342	-165.235
14	6.42	-1.61644	56.9471	-175.612
15	6.43	-1.58047	59.445	-185.775
16	6.43	-1.55477	61.8623	-195.772
17	6.45	-1.52203	64.1789	-205.589
18	6.45	-1.49085	66.4015	-215.205
19	6.49	-1.46106	68.5362	-224.687
20	6.5	-1.4325	70.5883	-233.998
21	6.5	-1.41183	72.5815	-243.175
22	6.5	-1.38517	74.5002	-252.179
23	6.5	-1.35946	76.3484	-261.015
24	6.51	-1.33462	78.1296	-269.704
25	6.52	-1.31058	79.8472	-278.249
26	6.53	-1.29303	81.5191	-286.692
27	6.53	-1.27024	83.1326	-294.987
28	6.54	-1.24809	84.6904	-303.149
29	6.55	-1.22653	86.1947	-311.183
30	6.55	-1.20553	87.648	-319.079
31	6.56	-1.19012	89.0644	-326.887
32	6.57	-1.17	90.4333	-334.574
33	6.57	-1.15035	91.7566	-342.131
34	6.58	-1.13113	93.0361	-349.574
35	6.58	-1.11232	94.2733	-356.893
36	6.58	-1.09847	95.48	-364.121
37	6.58	-1.08032	96.6471	-371.23
38	6.59	-1.06252	97.776	-378.232
39	6.59	-1.04505	98.8681	-385.119
40	6.59	-1.02789	99.9247	-391.892
41	6.6	-1.01522	100.955	-398.593
42	6.6	-0.998575	101.953	-405.183
43	6.6	-0.982202	102.917	-411.666
44	6.6	-0.966088	103.851	-418.042
45	6.61	-0.950222	104.753	-424.323
46	6.61	-0.938476	105.634	-430.526

47	6.61	-0.923014	106.486	-436.628
48	6.61	-0.907769	107.31	-442.628
49	6.61	-0.892733	108.107	-448.529
50	6.62	-0.877897	108.878	-454.341
51	6.62	-0.866894	109.629	-460.079
52	6.62	-0.852385	110.356	-465.722
53	6.64	-0.838054	111.058	-471.287
54	6.64	-0.823893	111.737	-476.758
55	6.64	-0.809896	112.393	-482.135
56	6.65	-0.7995	113.032	-487.452
57	6.65	-0.785774	113.65	-492.677
58	6.66	-0.772193	114.246	-497.82
59	6.66	-0.758753	114.822	-502.873
60	6.66	-0.745449	115.377	-507.838
61	6.66	-0.735557	115.918	-512.737
62	6.67	-0.722479	116.44	-517.556
63	6.67	-0.709522	116.944	-522.288
64	6.68	-0.696684	117.429	-526.942
65	6.68	-0.68396	117.897	-531.511
66	6.69	-0.67449	118.352	-536.023
67	6.69	-0.661955	118.79	-540.452
68	6.69	-0.649522	119.212	-544.797
69	6.69	-0.637192	119.618	-549.06
70	6.7	-0.624956	120.009	-553.247
71	6.7	-0.615839	120.388	-557.373
72	6.7	-0.603765	120.752	-561.419
73	6.7	-0.591776	121.103	-565.383
74	6.7	-0.579873	121.439	-569.269
75	6.7	-0.568052	121.761	-573.075
76	6.7	-0.559237	122.074	-576.821
77	6.7	-0.547551	122.374	-580.49
78	6.72	-0.53594	122.661	-584.092
79	6.72	-0.524401	122.936	-587.616
80	6.72	-0.51293	123.199	-591.062
81	6.72	-0.504372	123.454	-594.452
82	6.73	-0.493018	123.697	-597.77
83	6.73	-0.481728	123.929	-601.012
84	6.73	-0.470498	124.15	-604.178
85	6.74	-0.459327	124.361	-607.274
86	6.74	-0.450985	124.565	-610.314
87	6.74	-0.439913	124.758	-613.279
88	6.75	-0.428895	124.942	-616.174
89	6.75	-0.417928	125.117	-618.995
90	6.75	-0.40701	125.282	-621.742
91	6.75	-0.396142	125.439	-624.416
92	6.76	-0.388022	125.59	-627.039
93	6.76	-0.377233	125.732	-629.589
94	6.76	-0.36649	125.867	-632.067
95	6.77	-0.355788	125.993	-634.475
96	6.77	-0.345126	126.112	-636.812
97	6.77	-0.337155	126.226	-639.094
98	6.77	-0.326561	126.333	-641.305
99	6.78	-0.316004	126.432	-643.448
100	6.78	-0.305481	126.526	-645.519
101	6.78	-0.294992	126.613	-647.519
102	6.78	-0.287147	126.695	-649.466
103	6.78	-0.276714	126.772	-651.342

104	6.79	-0.266311	126.843	-653.15
105	6.79	-0.255936	126.908	-654.888
106	6.8	-0.24559	126.969	-656.558
107	6.8	-0.237847	127.025	-658.175
108	6.8	-0.227545	127.077	-659.723
109	6.8	-0.217267	127.124	-661.2
110	6.8	-0.207012	127.167	-662.608
111	6.8	-0.196779	127.206	-663.946
112	6.8	-0.189118	127.241	-665.232
113	6.8	-0.17892	127.273	-666.449
114	6.8	-0.168741	127.302	-667.596
115	6.8	-0.158579	127.327	-668.674
116	6.8	-0.148434	127.349	-669.684
117	6.8	-0.140835	127.369	-670.641
118	6.8	-0.130716	127.386	-671.53
119	6.81	-0.12061	127.401	-672.352
120	6.82	-0.110516	127.413	-673.105
121	6.82	-0.100433	127.423	-673.79
122	6.82	-0.0928787	127.431	-674.424
123	6.83	-0.0828129	127.438	-674.989
124	6.84	-0.0727562	127.444	-675.487
125	6.84	-0.0627062	127.448	-675.916
126	6.85	-0.0526632	127.45	-676.277
127	6.85	-0.0451348	127.452	-676.586
128	6.85	-0.0350997	127.454	-676.826
129	6.85	-0.0250691	127.454	-676.998
130	6.85	-0.0150408	127.454	-677.101
131	6.85	-0.00501359	127.454	-677.135
132	6.85	0.00501359	127.454	-677.101
133	6.86	0.0150408	127.455	-676.998
134	6.86	0.0250691	127.455	-676.826
135	6.86	0.0350997	127.457	-676.585
136	6.87	0.0451348	127.459	-676.275
137	6.87	0.0526632	127.461	-675.913
138	6.87	0.0627062	127.465	-675.482
139	6.87	0.0727562	127.471	-674.983
140	6.87	0.0828129	127.477	-674.414
141	6.88	0.0928787	127.486	-673.775
142	6.88	0.100433	127.496	-673.084
143	6.88	0.110516	127.508	-672.323
144	6.88	0.12061	127.523	-671.493
145	6.88	0.130716	127.54	-670.594
146	6.88	0.140835	127.56	-669.625
147	6.89	0.148434	127.582	-668.602
148	6.89	0.158579	127.607	-667.51
149	6.89	0.168741	127.636	-666.347
150	6.9	0.17892	127.668	-665.113
151	6.9	0.189118	127.703	-663.808
152	6.91	0.196779	127.742	-662.448
153	6.92	0.207012	127.785	-661.016
154	6.93	0.217267	127.832	-659.51
155	6.93	0.227545	127.884	-657.933
156	6.93	0.237847	127.94	-656.285
157	6.93	0.24559	128.001	-654.583
158	6.93	0.255936	128.066	-652.809
159	6.94	0.266311	128.137	-650.961
160	6.97	0.276714	128.214	-649.032

161	6.99	0.287147	128.296	-647.025
162	7	0.294992	128.383	-644.96
163	7	0.305481	128.477	-642.822
164	7	0.316004	128.576	-640.61
165	7.04	0.326561	128.683	-638.311
166	7.05	0.337155	128.797	-635.934
167	7.05	0.345126	128.916	-633.501
168	7.07	0.355788	129.042	-630.985
169	7.07	0.36649	129.177	-628.394
170	7.1	0.377233	129.319	-625.716
171	7.14	0.388022	129.47	-622.945
172	7.15	0.396142	129.627	-620.113
173	7.17	0.40701	129.792	-617.195
174	7.19	0.417928	129.967	-614.19
175	7.2	0.428895	130.151	-611.102
176	7.2	0.439913	130.344	-607.934
177	7.2	0.450985	130.548	-604.687
178	7.27	0.459327	130.759	-601.348
179	7.28	0.470498	130.98	-597.923
180	7.29	0.481728	131.212	-594.411
181	7.3	0.493018	131.455	-590.812
182	7.3	0.504372	131.71	-587.13
183	7.3	0.51293	131.973	-583.386
184	7.32	0.524401	132.248	-579.547
185	7.33	0.53594	132.535	-575.618
186	7.4	0.547551	132.835	-571.567
187	7.4	0.559237	133.147	-567.428
188	7.45	0.568052	133.47	-563.196
189	7.5	0.579873	133.806	-558.847
190	7.6	0.591776	134.157	-554.35
191	7.88	0.603765	134.521	-549.592
192	7.96	0.615839	134.9	-544.69
193	8.16	0.624956	135.291	-539.59
194	8.54	0.637192	135.697	-534.149
195	8.55	0.649522	136.119	-528.595
196	8.67	0.661955	136.557	-522.856
197	8.68	0.67449	137.012	-517.002
198	8.77	0.68396	137.48	-511.003
199	8.82	0.696684	137.965	-504.858
200	8.87	0.709522	138.469	-498.565
201	8.9	0.722479	138.991	-492.135
202	8.94	0.735557	139.532	-485.559
203	8.95	0.745449	140.087	-478.887
204	8.95	0.758753	140.663	-472.096
205	8.98	0.772193	141.259	-465.162
206	9	0.785774	141.877	-458.09
207	9.1	0.7995	142.516	-450.815
208	9.1	0.809896	143.172	-443.445
209	9.1	0.823893	143.851	-435.947
210	9.13	0.838054	144.553	-428.296
211	9.14	0.852385	145.28	-420.505
212	9.15	0.866894	146.031	-412.573
213	9.16	0.877897	146.802	-404.531
214	9.18	0.892733	147.599	-396.336
215	9.18	0.907769	148.423	-388.003
216	9.18	0.923014	149.275	-379.53
217	9.2	0.938476	150.155	-370.896

218	9.2	0.950222	151.058	-362.154
219	9.22	0.966088	151.992	-353.246
220	9.23	0.982202	152.956	-344.18
221	9.24	0.998575	153.954	-334.954
222	9.24	1.01522	154.984	-325.573
223	9.25	1.02789	156.041	-316.065
224	9.25	1.04505	157.133	-306.398
225	9.25	1.06252	158.262	-296.57
226	9.25	1.08032	159.429	-286.577
227	9.26	1.09847	160.636	-276.405
228	9.27	1.11232	161.873	-266.094
229	9.27	1.13113	163.152	-255.608
230	9.28	1.15035	164.476	-244.933
231	9.28	1.17	165.845	-234.076
232	9.29	1.19012	167.261	-223.019
233	9.29	1.20553	168.714	-211.82
234	9.3	1.22653	170.219	-200.413
235	9.31	1.24809	171.776	-188.794
236	9.32	1.27024	173.39	-176.955
237	9.32	1.29303	175.062	-164.904
238	9.32	1.31058	176.779	-152.689
239	9.37	1.33462	178.561	-140.184
240	9.37	1.35946	180.409	-127.446
241	9.37	1.38517	182.327	-114.467
242	9.39	1.41183	184.321	-101.21
243	9.4	1.4325	186.373	-87.744
244	9.4	1.46106	188.507	-74.0101
245	9.4	1.49085	190.73	-59.9961
246	9.4	1.52203	193.047	-45.6889
247	9.4	1.55477	195.464	-31.0741
248	9.44	1.58047	197.962	-16.1545
249	9.46	1.61644	200.575	-0.862996
250	9.47	1.65463	203.312	14.8063
251	9.5	1.6954	206.187	30.9126
252	9.5	1.7392	209.212	47.435
253	9.51	1.77438	212.36	64.3093
254	9.54	1.82501	215.691	81.7199
255	9.6	1.88079	219.228	99.7755
256	9.6	1.94314	223.004	118.43
257	9.68	2.01409	227.06	137.926
258	9.7	2.07485	231.365	158.052
259	9.72	2.17009	236.075	179.145
260	9.8	2.29036	241.321	201.591
261	9.8	2.45727	247.359	225.672

Sample Standard Deviation = 1.12587
Numerator = 50927.9
Denominator = 81836 = 261 247.359
W Statistic = 0.622316
5% Critical value of 0.976 exceeds 0.622316
Evidence of non-normality at 95% level of significance
1% Critical value of 0.967 exceeds 0.622316
Evidence of non-normality at 99% level of significance

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: ph

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Total Percent Non-Detects = 0%
Number of comparisons = 4
Future Samples (k) = 4
Recent Dates = 1
Background Samples (n) = 67
Maximum Background Concentration = 7.05
Confidence Level = 94.4%
False Positive Rate = 5.6%

Well	Date	Samples	Mean	Impacted
MW#93-2	6/6/2017	1	9.29	TRUE
MW#93-3	6/6/2017	1	6.65	FALSE
MW#03-1	6/6/2017	1	6.64	FALSE
MW#03-2	6/6/2017	1	6.73	FALSE

Non-Parametric Prediction Interval

Intra-Well Comparison for MW#93-2

Parameter: ph

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Total Percent Non-Detects = 0%
Future Samples (k) = 1
Recent Dates = 1
Baseline Samples (n) = 69
Maximum Baseline Concentration = 10.02
Confidence Level = 98.6%
False Positive Rate = 1.4%

Baseline Samples	Date	Result
	12/15/1994	8.54
	3/14/1995	8.82
	6/21/1995	8.68
	12/14/1995	8.16
	3/6/1996	9.37
	4/25/1996	9.14
	10/2/1996	8.94
	12/10/1996	9.27
	3/11/1997	8.95
	4/15/1997	9.25
	8/14/1997	8.67
	12/4/1997	8.77
	3/31/1998	9.32
	6/23/1998	8.87
	8/11/1998	9
	12/8/1998	8.9
	3/9/1999	9.39
	6/8/1999	9.25
	8/19/1999	9.15
	12/14/1999	8.98
	3/7/2000	9.2
	6/23/2000	9.18
	12/12/2000	9.18
	3/27/2001	9.29
	6/28/2001	9.22
	9/10/2001	9.1
	12/18/2001	9.4
	3/19/2002	9.54
	6/26/2002	9.44
	9/18/2002	9.24
	12/11/2002	9.16
	3/13/2003	9.28
	6/25/2003	9.27
	9/26/2003	9.32
	12/10/2003	9.25
	3/9/2004	9.37
	6/24/2004	9.24
	9/15/2004	9.32
	12/15/2004	9.26
	3/16/2005	9.23
	6/15/2005	9.1

9/21/2005	9.25
12/21/2005	9.31
3/15/2006	9.47
6/21/2006	9.4
12/20/2006	9.18
2/21/2007	9.2
6/12/2007	9.1
12/17/2007	9.3
6/11/2008	9.4
12/3/2008	9.7
12/15/2008	9.6
6/17/2009	9.8
12/9/2009	9.8
6/17/2010	9.6
12/22/2010	9.5
6/29/2011	9.4
12/7/2011	9.5
6/6/2012	9.68
12/12/2012	10.02
1/9/2013	9.51
6/19/2013	9.4
12/11/2013	9.46
6/11/2014	8.55
12/3/2014	8.95
6/17/2015	9.13
12/1/2015	9.37
6/22/2016	9.28
12/20/2016	9.72

Date	Samples	Mean	Impacted
6/6/2017	1	9.29	FALSE

Concentrations (ppb)

Parameter: Sodium

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Samples: 202
Total Non-Detect: 0
Percent Non-Detects: 0%
Total Background Samples: 47
There is 1 background well

Well	Samples	ND	Date	Result	Original
MW#93-1	47	0 (0%)	12/15/1994	54700	54700
			12/14/1995	51900	51900
			12/10/1996	51600	51600
			12/4/1997	51200	51200
			12/8/1998	47000	47000
			12/14/1999	64400	64400
			12/12/2000	100000	100000
			3/19/2002	112000	112000
			6/26/2002	95000	95000
			9/18/2002	78000	78000
			12/11/2002	83000	83000
			3/13/2003	94000	94000
			6/25/2003	113000	113000
			9/26/2003	84600	84600
			12/10/2003	98100	98100
			3/9/2004	95400	95400
			6/24/2004	94700	94700
			9/15/2004	71000	71000
			12/15/2004	92300	92300
			3/16/2005	86300	86300
			6/15/2005	77400	77400
			9/21/2005	92800	92800
			12/21/2005	81900	81900
			3/15/2006	99700	99700
			6/21/2006	82000	82000
			12/20/2006	85100	85100
			6/12/2007	74900	74900
			12/17/2007	81800	81800
			6/11/2008	56500	56500
			12/3/2008	75200	75200
			6/17/2009	67400	67400
			12/9/2009	76900	76900
			6/17/2010	55000	55000
			12/22/2010	70500	70500
			6/29/2011	55400	55400
			12/7/2011	69100	69100
			6/6/2012	55600	55600
			12/12/2012	58900	58900
			6/19/2013	70000	70000
			12/11/2013	72900	72900
			6/11/2014	56500	56500
			12/3/2014	69400	69400
			6/17/2015	69700	69700
			12/1/2015	57500	57500

			6/22/2016	66900	66900
			12/20/2016	54800	54800
			6/6/2017	58400	58400

There are 4 compliance wells

Well	Samples	ND	Date	Result	Original
MW#93-2	48	0 (0%)	12/15/1994	2.17e+006	2.17e+006
			12/14/1995	2.22e+006	2.22e+006
			12/10/1996	2.1e+006	2.1e+006
			12/4/1997	2.44e+006	2.44e+006
			12/8/1998	2.565e+006	2.565e+006
			12/14/1999	2.98e+006	2.98e+006
			12/12/2000	2.8e+006	2.8e+006
			3/19/2002	2.5e+006	2.5e+006
			6/26/2002	2.26e+006	2.26e+006
			9/18/2002	2.14e+006	2.14e+006
			12/11/2002	2.32e+006	2.32e+006
			3/13/2003	2.6e+006	2.6e+006
			6/25/2003	1.99e+006	1.99e+006
			9/26/2003	1.82e+006	1.82e+006
			12/10/2003	1.92e+006	1.92e+006
			3/9/2004	2.05e+006	2.05e+006
			6/24/2004	2.18e+006	2.18e+006
			9/15/2004	1.8e+006	1.8e+006
			12/15/2004	2.48e+006	2.48e+006
			3/16/2005	2.49e+006	2.49e+006
			6/15/2005	2.03e+006	2.03e+006
			9/21/2005	2.52e+006	2.52e+006
			12/21/2005	2.3e+006	2.3e+006
			3/15/2006	2.72e+006	2.72e+006
			6/21/2006	2.45e+006	2.45e+006
			12/20/2006	2.17e+006	2.17e+006
			2/21/2007	2.9e+006	2.9e+006
			6/12/2007	1.98e+006	1.98e+006
			12/17/2007	2.244e+006	2.244e+006
			6/11/2008	2.649e+006	2.649e+006
			12/3/2008	2.12e+006	2.12e+006
			6/17/2009	2.23e+006	2.23e+006
			12/9/2009	2.14e+006	2.14e+006
			6/17/2010	2.1e+006	2.1e+006
			12/22/2010	2.46e+006	2.46e+006
			6/29/2011	2.19e+006	2.19e+006
			12/7/2011	2.5e+006	2.5e+006
			6/6/2012	2.06e+006	2.06e+006
			12/12/2012	2.73e+006	2.73e+006
			6/19/2013	2.23e+006	2.23e+006
			12/11/2013	2.29e+006	2.29e+006
			6/11/2014	1.94e+006	1.94e+006
			12/3/2014	2.73e+006	2.73e+006
			6/17/2015	270000	270000
			5/25/2016	1.89e+006	1.89e+006
			6/22/2016	2.7e+006	2.7e+006
			12/20/2016	2.4e+006	2.4e+006
			6/6/2017	2.31e+006	2.31e+006

MW#93-3	49	0 (0%)	12/15/1994	330000	330000
			12/14/1995	219000	219000
			12/10/1996	248000	248000
			12/4/1997	201000	201000
			12/8/1998	199000	199000
			12/14/1999	208000	208000
			12/12/2000	230000	230000
			12/18/2001	172000	172000
			3/19/2002	222000	222000
			6/26/2002	189000	189000
			9/18/2002	163000	163000
			12/11/2002	216000	216000
			3/13/2003	230000	230000
			6/25/2003	190000	190000
			9/26/2003	229000	229000
			12/10/2003	231000	231000
			3/9/2004	30800	30800
			6/24/2004	150000	150000
			9/15/2004	200000	200000
			12/15/2004	186000	186000
			3/16/2005	196000	196000
			6/15/2005	170000	170000
			9/21/2005	239000	239000
			12/21/2005	180000	180000
			3/15/2006	180000	180000
			6/21/2006	227000	227000
			12/20/2006	211000	211000
			6/12/2007	159000	159000
			12/17/2007	194000	194000
			6/11/2008	195000	195000
			12/3/2008	190000	190000
			6/17/2009	173000	173000
			12/9/2009	202000	202000
			6/17/2010	202000	202000
			12/22/2010	216000	216000
			6/29/2011	158000	158000
			12/7/2011	218000	218000
			6/6/2012	201000	201000
			12/12/2012	168000	168000
			6/19/2013	235000	235000
			12/11/2013	234000	234000
			6/11/2014	258000	258000
			12/3/2014	220000	220000
			6/17/2015	280000	280000
			12/1/2015	339000	339000
			6/22/2016	449000	449000
			10/11/2016	368000	368000
			12/20/2016	337000	337000
			6/6/2017	301000	301000
MW#03-1	27	0 (0%)	6/24/2004	10200	10200
			9/15/2004	42000	42000
			12/15/2004	8040	8040
			3/16/2005	5990	5990
			6/15/2005	7300	7300
			9/21/2005	14100	14100
			12/20/2006	8000	8000

			6/12/2007	7960	7960
			12/17/2007	9880	9880
			6/11/2008	5710	5710
			12/3/2008	7010	7010
			6/17/2009	7340	7340
			12/9/2009	6770	6770
			6/17/2010	9310	9310
			12/22/2010	7110	7110
			6/29/2011	7040	7040
			12/7/2011	8870	8870
			6/6/2012	7940	7940
			6/19/2013	10300	10300
			12/11/2013	9780	9780
			6/11/2014	55900	55900
			12/3/2014	9800	9800
			6/17/2015	9700	9700
			12/1/2015	12000	12000
			6/22/2016	8590	8590
			12/20/2016	7940	7940
			6/6/2017	6560	6560
MW#03-2	31	0 (0%)	6/24/2004	47400	47400
			9/15/2004	8700	8700
			12/15/2004	51300	51300
			3/16/2005	47000	47000
			6/15/2005	42800	42800
			9/21/2005	52600	52600
			12/21/2005	46500	46500
			3/15/2006	50400	50400
			6/21/2006	44900	44900
			12/20/2006	50500	50500
			6/12/2007	47000	47000
			12/17/2007	50200	50200
			6/11/2008	33800	33800
			12/3/2008	54400	54400
			6/17/2009	48200	48200
			12/9/2009	47300	47300
			6/17/2010	52900	52900
			12/22/2010	51700	51700
			6/29/2011	51000	51000
			12/7/2011	60100	60100
			6/6/2012	52000	52000
			12/12/2012	61300	61300
			6/19/2013	57300	57300
			12/11/2013	54000	54000
			6/11/2014	9780	9780
			12/3/2014	68000	68000
			6/17/2015	66300	66300
			12/1/2015	63800	63800
			6/22/2016	76800	76800
			12/20/2016	80200	80200
			6/6/2017	96800	96800

There are 0 unused wells

Well	Samples	ND	Date	Result	Original

Levene's Test for Equal of Variance

Parameter: Sodium

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Overall Mean = 81046.6
Overall Std Dev = 184986
Overall Total = 1.63714e+007
SS Wells = 2.36987e+012
SS Total = 6.87822e+012

ANOVA Table

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	F
Between Wells	2.36987e+012	4	5.92467e+011	25.8889
Error (within wells)	4.50835e+012	197	2.2885e+010	
Totals	6.87822e+012	201		

25.8889 exceeds 2.37; assumption of equal variance should be rejected

Well: MW#93-1	Sample	Residual
	12/15/1994	19989.4
	12/14/1995	22789.4
	12/10/1996	23089.4
	12/4/1997	23489.4
	12/8/1998	27689.4
	12/14/1999	10289.4
	12/12/2000	25310.6
	3/19/2002	37310.6
	6/26/2002	20310.6
	9/18/2002	3310.64
	12/11/2002	8310.64
	3/13/2003	19310.6
	6/25/2003	38310.6
	9/26/2003	9910.64
	12/10/2003	23410.6
	3/9/2004	20710.6
	6/24/2004	20010.6
	9/15/2004	3689.36
	12/15/2004	17610.6
	3/16/2005	11610.6
	6/15/2005	2710.64
	9/21/2005	18110.6
	12/21/2005	7210.64
	3/15/2006	25010.6
	6/21/2006	7310.64
	12/20/2006	10410.6
	6/12/2007	210.638
	12/17/2007	7110.64
	6/11/2008	18189.4
	12/3/2008	510.638
	6/17/2009	7289.36
	12/9/2009	2210.64

6/17/2010	19689.4
12/22/2010	4189.36
6/29/2011	19289.4
12/7/2011	5589.36
6/6/2012	19089.4
12/12/2012	15789.4
6/19/2013	4689.36
12/11/2013	1789.36
6/11/2014	18189.4
12/3/2014	5289.36
6/17/2015	4989.36
12/1/2015	17189.4
6/22/2016	7789.36
12/20/2016	19889.4
6/6/2017	16289.4

Well: MW#93-2

Sample	Residual
12/15/1994	102458
12/14/1995	52458.3
12/10/1996	172458
12/4/1997	167542
12/8/1998	292542
12/14/1999	707542
12/12/2000	527542
3/19/2002	227542
6/26/2002	12458.3
9/18/2002	132458
12/11/2002	47541.7
3/13/2003	327542
6/25/2003	282458
9/26/2003	452458
12/10/2003	352458
3/9/2004	222458
6/24/2004	92458.3
9/15/2004	472458
12/15/2004	207542
3/16/2005	217542
6/15/2005	242458
9/21/2005	247542
12/21/2005	27541.7
3/15/2006	447542
6/21/2006	177542
12/20/2006	102458
2/21/2007	627542
6/12/2007	292458
12/17/2007	28458.3
6/11/2008	376542
12/3/2008	152458
6/17/2009	42458.3
12/9/2009	132458
6/17/2010	172458
12/22/2010	187542
6/29/2011	82458.3
12/7/2011	227542
6/6/2012	212458
12/12/2012	457542
6/19/2013	42458.3

12/11/2013	17541.7
6/11/2014	332458
12/3/2014	457542
6/17/2015	2.00246e+006
5/25/2016	382458
6/22/2016	427542
12/20/2016	127542
6/6/2017	37541.7

Well: MW#93-3	Sample	Residual
	12/15/1994	110739
	12/14/1995	261.224
	12/10/1996	28738.8
	12/4/1997	18261.2
	12/8/1998	20261.2
	12/14/1999	11261.2
	12/12/2000	10738.8
	12/18/2001	47261.2
	3/19/2002	2738.78
	6/26/2002	30261.2
	9/18/2002	56261.2
	12/11/2002	3261.22
	3/13/2003	10738.8
	6/25/2003	29261.2
	9/26/2003	9738.78
	12/10/2003	11738.8
	3/9/2004	188461
	6/24/2004	69261.2
	9/15/2004	19261.2
	12/15/2004	33261.2
	3/16/2005	23261.2
	6/15/2005	49261.2
	9/21/2005	19738.8
	12/21/2005	39261.2
	3/15/2006	39261.2
	6/21/2006	7738.78
	12/20/2006	8261.22
	6/12/2007	60261.2
	12/17/2007	25261.2
	6/11/2008	24261.2
	12/3/2008	29261.2
	6/17/2009	46261.2
	12/9/2009	17261.2
	6/17/2010	17261.2
	12/22/2010	3261.22
	6/29/2011	61261.2
	12/7/2011	1261.22
	6/6/2012	18261.2
	12/12/2012	51261.2
	6/19/2013	15738.8
	12/11/2013	14738.8
	6/11/2014	38738.8
	12/3/2014	738.776
	6/17/2015	60738.8
	12/1/2015	119739
	6/22/2016	229739
	10/11/2016	148739

12/20/2016	117739
6/6/2017	81738.8

Well: MW#03-1	Sample	Residual
	6/24/2004	1323.7
	9/15/2004	30476.3
	12/15/2004	3483.7
	3/16/2005	5533.7
	6/15/2005	4223.7
	9/21/2005	2576.3
	12/20/2006	3523.7
	6/12/2007	3563.7
	12/17/2007	1643.7
	6/11/2008	5813.7
	12/3/2008	4513.7
	6/17/2009	4183.7
	12/9/2009	4753.7
	6/17/2010	2213.7
	12/22/2010	4413.7
	6/29/2011	4483.7
	12/7/2011	2653.7
	6/6/2012	3583.7
	6/19/2013	1223.7
	12/11/2013	1743.7
	6/11/2014	44376.3
	12/3/2014	1723.7
	6/17/2015	1823.7
	12/1/2015	476.296
	6/22/2016	2933.7
	12/20/2016	3583.7
	6/6/2017	4963.7

Well: MW#03-2	Sample	Residual
	6/24/2004	5018.71
	9/15/2004	43718.7
	12/15/2004	1118.71
	3/16/2005	5418.71
	6/15/2005	9618.71
	9/21/2005	181.29
	12/21/2005	5918.71
	3/15/2006	2018.71
	6/21/2006	7518.71
	12/20/2006	1918.71
	6/12/2007	5418.71
	12/17/2007	2218.71
	6/11/2008	18618.7
	12/3/2008	1981.29
	6/17/2009	4218.71
	12/9/2009	5118.71
	6/17/2010	481.29
	12/22/2010	718.71
	6/29/2011	1418.71
	12/7/2011	7681.29
	6/6/2012	418.71
	12/12/2012	8881.29
	6/19/2013	4881.29

12/11/2013	1581.29
6/11/2014	42638.7
12/3/2014	15581.3
6/17/2015	13881.3
12/1/2015	11381.3
6/22/2016	24381.3
12/20/2016	27781.3
6/6/2017	44381.3

Shapiro-Francia Test of Normality

Parameter: Sodium

All Wells

Normality Test of Parameter Concentrations

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Sample Size = 202

i	x(i)	m(i)	sum(m^2)	sum(mx)
0	0	0	0	0
1	5710	-2.65209	7.03356	-15143.4
2	5990	-2.36561	12.6297	-29313.4
3	6560	-2.19728	17.4578	-43727.6
4	6770	-2.07485	21.7627	-57774.4
5	7010	-1.97737	25.6727	-71635.7
6	7040	-1.8957	29.2664	-84981.4
7	7110	-1.82501	32.597	-97957.2
8	7300	-1.76241	35.7031	-110823
9	7340	-1.70604	38.6137	-123345
10	7940	-1.65463	41.3515	-136483
11	7940	-1.60725	43.9348	-149244
12	7960	-1.56322	46.3784	-161688
13	8000	-1.52203	48.695	-173864
14	8040	-1.49085	50.9176	-185850
15	8590	-1.4538	53.0312	-198339
16	8700	-1.41865	55.0438	-210681
17	8870	-1.38517	56.9625	-222967
18	9310	-1.35317	58.7936	-235565
19	9700	-1.32251	60.5426	-248394
20	9780	-1.29303	62.2145	-261040
21	9780	-1.26464	63.8138	-273408
22	9800	-1.23724	65.3446	-285533
23	9880	-1.21073	66.8104	-297495
24	10200	-1.18504	68.2148	-309582
25	10300	-1.16012	69.5606	-321531
26	12000	-1.1359	70.8509	-335162
27	14100	-1.11232	72.0882	-350846
28	30800	-1.0939	73.2848	-384538
29	33800	-1.07138	74.4326	-420750
30	42000	-1.04939	75.5338	-464825
31	42800	-1.02789	76.5904	-508818
32	44900	-1.00687	77.6042	-554027
33	46500	-0.986272	78.5769	-599888
34	47000	-0.966088	79.5102	-645294
35	47000	-0.946291	80.4057	-689770
36	47000	-0.926859	81.2648	-733333
37	47300	-0.907769	82.0888	-776270
38	47400	-0.889006	82.8791	-818409
39	48200	-0.87055	83.637	-860369
40	50200	-0.852385	84.3636	-903159
41	50400	-0.838054	85.0659	-945397
42	50500	-0.820379	85.7389	-986826
43	51000	-0.802956	86.3837	-1.02778e+006
44	51200	-0.785774	87.0011	-1.06801e+006
45	51300	-0.768821	87.5922	-1.10745e+006
46	51600	-0.752084	88.1578	-1.14626e+006

47	51700	-0.735557	88.6989	-1.18428e+006
48	51900	-0.719228	89.2161	-1.22161e+006
49	52000	-0.703089	89.7105	-1.25817e+006
50	52600	-0.687131	90.1826	-1.29432e+006
51	52900	-0.671346	90.6333	-1.32983e+006
52	54000	-0.655726	91.0633	-1.36524e+006
53	54400	-0.640266	91.4733	-1.40007e+006
54	54700	-0.624956	91.8638	-1.43426e+006
55	54800	-0.612813	92.2394	-1.46784e+006
56	55000	-0.597761	92.5967	-1.50071e+006
57	55400	-0.582841	92.9364	-1.533e+006
58	55600	-0.568052	93.2591	-1.56459e+006
59	55900	-0.553384	93.5653	-1.59552e+006
60	56500	-0.538836	93.8556	-1.62597e+006
61	56500	-0.524401	94.1306	-1.65559e+006
62	57300	-0.510074	94.3908	-1.68482e+006
63	57500	-0.49585	94.6367	-1.71333e+006
64	58400	-0.481728	94.8687	-1.74147e+006
65	58900	-0.467699	95.0875	-1.76901e+006
66	60100	-0.453763	95.2934	-1.79628e+006
67	61300	-0.439913	95.4869	-1.82325e+006
68	63800	-0.428895	95.6709	-1.85062e+006
69	64400	-0.415193	95.8433	-1.87735e+006
70	66300	-0.401571	96.0045	-1.90398e+006
71	66900	-0.388022	96.1551	-1.92994e+006
72	67400	-0.374544	96.2954	-1.95518e+006
73	68000	-0.361133	96.4258	-1.97974e+006
74	69100	-0.347787	96.5467	-2.00377e+006
75	69400	-0.334503	96.6586	-2.02698e+006
76	69700	-0.321278	96.7618	-2.04938e+006
77	70000	-0.308108	96.8568	-2.07094e+006
78	70500	-0.294992	96.9438	-2.09174e+006
79	71000	-0.281926	97.0233	-2.11176e+006
80	72900	-0.268908	97.0956	-2.13136e+006
81	74900	-0.255936	97.1611	-2.15053e+006
82	75200	-0.24559	97.2214	-2.169e+006
83	76800	-0.232693	97.2755	-2.18687e+006
84	76900	-0.219834	97.3239	-2.20378e+006
85	77400	-0.207012	97.3667	-2.2198e+006
86	78000	-0.194225	97.4045	-2.23495e+006
87	80200	-0.181468	97.4374	-2.2495e+006
88	81800	-0.168741	97.4659	-2.26331e+006
89	81900	-0.156042	97.4902	-2.27608e+006
90	82000	-0.143367	97.5108	-2.28784e+006
91	83000	-0.130716	97.5278	-2.29869e+006
92	84600	-0.118085	97.5418	-2.30868e+006
93	85100	-0.105474	97.5529	-2.31766e+006
94	86300	-0.0928787	97.5615	-2.32567e+006
95	92300	-0.0828129	97.5684	-2.33332e+006
96	92800	-0.0702426	97.5733	-2.33983e+006
97	94000	-0.0576847	97.5767	-2.34526e+006
98	94700	-0.0451348	97.5787	-2.34953e+006
99	95000	-0.0325917	97.5798	-2.35263e+006
100	95400	-0.0200544	97.5802	-2.35454e+006
101	96800	-0.00751925	97.5802	-2.35527e+006
102	98100	0.00751925	97.5803	-2.35453e+006
103	99700	0.0200544	97.5807	-2.35253e+006

104	100000	0.0325917	97.5817	-2.34927e+006
105	112000	0.0451348	97.5838	-2.34422e+006
106	113000	0.0576847	97.5871	-2.3377e+006
107	150000	0.0702426	97.592	-2.32716e+006
108	158000	0.0828129	97.5989	-2.31408e+006
109	159000	0.0928787	97.6075	-2.29931e+006
110	163000	0.105474	97.6187	-2.28212e+006
111	168000	0.118085	97.6326	-2.26228e+006
112	170000	0.130716	97.6497	-2.24006e+006
113	172000	0.143367	97.6702	-2.2154e+006
114	173000	0.156042	97.6946	-2.1884e+006
115	180000	0.168741	97.7231	-2.15803e+006
116	180000	0.181468	97.756	-2.12537e+006
117	186000	0.194225	97.7937	-2.08924e+006
118	189000	0.207012	97.8366	-2.05011e+006
119	190000	0.219834	97.8849	-2.00835e+006
120	190000	0.232693	97.939	-1.96413e+006
121	194000	0.24559	97.9994	-1.91649e+006
122	195000	0.255936	98.0649	-1.86658e+006
123	196000	0.268908	98.1372	-1.81388e+006
124	199000	0.281926	98.2167	-1.75777e+006
125	200000	0.294992	98.3037	-1.69877e+006
126	201000	0.308108	98.3986	-1.63684e+006
127	201000	0.321278	98.5018	-1.57227e+006
128	202000	0.334503	98.6137	-1.5047e+006
129	202000	0.347787	98.7347	-1.43444e+006
130	208000	0.361133	98.8651	-1.35933e+006
131	211000	0.374544	99.0054	-1.2803e+006
132	216000	0.388022	99.1559	-1.19649e+006
133	216000	0.401571	99.3172	-1.10975e+006
134	218000	0.415193	99.4896	-1.01924e+006
135	219000	0.428895	99.6735	-925308
136	220000	0.439913	99.8671	-828527
137	222000	0.453763	100.073	-727792
138	227000	0.467699	100.292	-621624
139	229000	0.481728	100.524	-511309
140	230000	0.49585	100.77	-397263
141	230000	0.510074	101.03	-279946
142	231000	0.524401	101.305	-158809
143	234000	0.538836	101.595	-32721.9
144	235000	0.553384	101.901	97323.4
145	239000	0.568052	102.224	233088
146	248000	0.582841	102.564	377632
147	258000	0.597761	102.921	531855
148	270000	0.612813	103.297	697314
149	280000	0.624956	103.687	872302
150	301000	0.640266	104.097	1.06502e+006
151	330000	0.655726	104.527	1.28141e+006
152	337000	0.671346	104.978	1.50766e+006
153	339000	0.687131	105.45	1.74059e+006
154	368000	0.703089	105.944	1.99933e+006
155	449000	0.719228	106.462	2.32226e+006
156	1.8e+006	0.735557	107.003	3.64627e+006
157	1.82e+006	0.752084	107.568	5.01506e+006
158	1.89e+006	0.768821	108.159	6.46813e+006
159	1.92e+006	0.785774	108.777	7.97682e+006
160	1.94e+006	0.802956	109.422	9.53455e+006

161	1.98e+006	0.820379	110.095	1.11589e+007
162	1.99e+006	0.838054	110.797	1.28266e+007
163	2.03e+006	0.852385	111.523	1.4557e+007
164	2.05e+006	0.87055	112.281	1.63416e+007
165	2.06e+006	0.889006	113.072	1.8173e+007
166	2.1e+006	0.907769	113.896	2.00793e+007
167	2.1e+006	0.926859	114.755	2.20257e+007
168	2.12e+006	0.946291	115.65	2.40318e+007
169	2.14e+006	0.966088	116.584	2.60992e+007
170	2.14e+006	0.986272	117.556	2.82099e+007
171	2.17e+006	1.00687	118.57	3.03948e+007
172	2.17e+006	1.02789	119.627	3.26253e+007
173	2.18e+006	1.04939	120.728	3.49129e+007
174	2.19e+006	1.07138	121.876	3.72593e+007
175	2.22e+006	1.0939	123.072	3.96877e+007
176	2.23e+006	1.11232	124.31	4.21682e+007
177	2.23e+006	1.1359	125.6	4.47012e+007
178	2.244e+006	1.16012	126.946	4.73045e+007
179	2.26e+006	1.18504	128.35	4.99827e+007
180	2.29e+006	1.21073	129.816	5.27553e+007
181	2.3e+006	1.23724	131.347	5.5601e+007
182	2.31e+006	1.26464	132.946	5.85223e+007
183	2.32e+006	1.29303	134.618	6.15221e+007
184	2.4e+006	1.32251	136.367	6.46961e+007
185	2.44e+006	1.35317	138.198	6.79979e+007
186	2.45e+006	1.38517	140.117	7.13915e+007
187	2.46e+006	1.41865	142.129	7.48814e+007
188	2.48e+006	1.4538	144.243	7.84869e+007
189	2.49e+006	1.49085	146.465	8.21991e+007
190	2.5e+006	1.52203	148.782	8.60042e+007
191	2.5e+006	1.56322	151.226	8.99122e+007
192	2.52e+006	1.60725	153.809	9.39625e+007
193	2.565e+006	1.65463	156.547	9.82066e+007
194	2.6e+006	1.70604	159.457	1.02642e+008
195	2.649e+006	1.76241	162.563	1.07311e+008
196	2.7e+006	1.82501	165.894	1.12238e+008
197	2.72e+006	1.8957	169.488	1.17395e+008
198	2.73e+006	1.97737	173.398	1.22793e+008
199	2.73e+006	2.07485	177.703	1.28457e+008
200	2.8e+006	2.19728	182.531	1.3461e+008
201	2.9e+006	2.36561	188.127	1.4147e+008

Sample Standard Deviation = 949215
Numerator = 2.00138e+016
Denominator = 3.40703e+016 = 201 188.127
W Statistic = 0.587425
5% Critical value of 0.976 exceeds 0.587425
Evidence of non-normality at 95% level of significance
1% Critical value of 0.967 exceeds 0.587425
Evidence of non-normality at 99% level of significance

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Sodium

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Total Percent Non-Detects = 0%
Number of comparisons = 4
Future Samples (k) = 4
Recent Dates = 1
Background Samples (n) = 47
Maximum Background Concentration = 113000
Confidence Level = 9.2%
False Positive Rate = 90.8%

Well	Date	Samples	Mean	Impacted
MW#93-2	6/6/2017	1	2.31e+006	TRUE
MW#93-3	6/6/2017	1	301000	TRUE
MW#03-1	6/6/2017	1	6560	FALSE
MW#03-2	6/6/2017	1	96800	FALSE

Non-Parametric Prediction Interval

Intra-Well Comparison for MW#93-2

Parameter: Sodium

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Total Percent Non-Detects = 0%
Future Samples (k) = 1
Recent Dates = 1
Baseline Samples (n) = 47
Maximum Baseline Concentration = 2.98e+006
Confidence Level = 97.9%
False Positive Rate = 2.1%

Baseline Samples	Date	Result
	12/15/1994	2.17e+006
	12/14/1995	2.22e+006
	12/10/1996	2.1e+006
	12/4/1997	2.44e+006
	12/8/1998	2.565e+006
	12/14/1999	2.98e+006
	12/12/2000	2.8e+006
	3/19/2002	2.5e+006
	6/26/2002	2.26e+006
	9/18/2002	2.14e+006
	12/11/2002	2.32e+006
	3/13/2003	2.6e+006
	6/25/2003	1.99e+006
	9/26/2003	1.82e+006
	12/10/2003	1.92e+006
	3/9/2004	2.05e+006
	6/24/2004	2.18e+006
	9/15/2004	1.8e+006
	12/15/2004	2.48e+006
	3/16/2005	2.49e+006
	6/15/2005	2.03e+006
	9/21/2005	2.52e+006
	12/21/2005	2.3e+006
	3/15/2006	2.72e+006
	6/21/2006	2.45e+006
	12/20/2006	2.17e+006
	2/21/2007	2.9e+006
	6/12/2007	1.98e+006
	12/17/2007	2.244e+006
	6/11/2008	2.649e+006
	12/3/2008	2.12e+006
	6/17/2009	2.23e+006
	12/9/2009	2.14e+006
	6/17/2010	2.1e+006
	12/22/2010	2.46e+006
	6/29/2011	2.19e+006
	12/7/2011	2.5e+006
	6/6/2012	2.06e+006
	12/12/2012	2.73e+006
	6/19/2013	2.23e+006
	12/11/2013	2.29e+006

6/11/2014	1.94e+006
12/3/2014	2.73e+006
6/17/2015	270000
5/25/2016	1.89e+006
6/22/2016	2.7e+006
12/20/2016	2.4e+006

Date	Samples	Mean	Impacted
6/6/2017	1	2.31e+006	FALSE

Non-Parametric Prediction Interval

Intra-Well Comparison for MW#93-3

Parameter: Sodium

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Total Percent Non-Detects = 0%
Future Samples (k) = 1
Recent Dates = 1
Baseline Samples (n) = 48
Maximum Baseline Concentration = 449000
Confidence Level = 98%
False Positive Rate = 2%

Baseline Samples	Date	Result
	12/15/1994	330000
	12/14/1995	219000
	12/10/1996	248000
	12/4/1997	201000
	12/8/1998	199000
	12/14/1999	208000
	12/12/2000	230000
	12/18/2001	172000
	3/19/2002	222000
	6/26/2002	189000
	9/18/2002	163000
	12/11/2002	216000
	3/13/2003	230000
	6/25/2003	190000
	9/26/2003	229000
	12/10/2003	231000
	3/9/2004	30800
	6/24/2004	150000
	9/15/2004	200000
	12/15/2004	186000
	3/16/2005	196000
	6/15/2005	170000
	9/21/2005	239000
	12/21/2005	180000
	3/15/2006	180000
	6/21/2006	227000
	12/20/2006	211000
	6/12/2007	159000
	12/17/2007	194000
	6/11/2008	195000
	12/3/2008	190000
	6/17/2009	173000
	12/9/2009	202000
	6/17/2010	202000
	12/22/2010	216000
	6/29/2011	158000
	12/7/2011	218000
	6/6/2012	201000
	12/12/2012	168000
	6/19/2013	235000
	12/11/2013	234000

6/11/2014	258000
12/3/2014	220000
6/17/2015	280000
12/1/2015	339000
6/22/2016	449000
10/11/2016	368000
12/20/2016	337000

Date	Samples	Mean	Impacted
6/6/2017	1	301000	FALSE

Concentrations (ppb)

Parameter: Specific Conductance

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Samples: 260
Total Non-Detect: 0
Percent Non-Detects: 0%
Total Background Samples: 67
There is 1 background well

Well	Samples	ND	Date	Result	Original
MW#93-1	67	0 (0%)	12/15/1994	1080	1080
			3/14/1995	1103	1103
			6/21/1995	1154	1154
			12/14/1995	1109	1109
			3/6/1996	1010	1010
			4/25/1996	1063	1063
			10/2/1996	1169	1169
			12/10/1996	1187	1187
			3/11/1997	1077	1077
			4/15/1997	1070	1070
			8/14/1997	1217	1217
			12/4/1997	1170	1170
			3/31/1998	1092	1092
			6/23/1998	1210	1210
			8/11/1998	1273	1273
			12/8/1998	1888	1888
			3/9/1999	1080	1080
			6/8/1999	1301	1301
			8/19/1999	1301	1301
			12/14/1999	1270	1270
			3/7/2000	1290	1290
			6/23/2000	1393	1393
			12/12/2000	1309	1309
			3/27/2001	1469	1469
			6/28/2001	1560	1560
			9/10/2001	1374	1374
			12/18/2001	1374	1374
			3/19/2002	1326	1326
			6/26/2002	1516	1516
			9/18/2002	1423	1423
			12/11/2002	1515	1515
			3/13/2003	1332	1332
			6/25/2003	1608	1608
			9/26/2003	1602	1602
			12/10/2003	1620	1620
			3/9/2004	1630	1630
			6/24/2004	1620	1620
			9/15/2004	1618	1618
			12/15/2004	1586	1586
			3/16/2005	1521	1521
			6/15/2005	1531	1531
			9/21/2005	1441	1441
			12/21/2005	1030	1030
			3/15/2006	1318	1318

			6/21/2006	1547	1547
			12/20/2006	1370	1370
			6/12/2007	1466	1466
			12/17/2007	1327	1327
			6/11/2008	1334	1334
			12/3/2008	1352	1352
			6/17/2009	1301	1301
			12/9/2009	1218	1218
			6/17/2010	1179	1179
			12/22/2010	1270	1270
			6/29/2011	1275	1275
			12/7/2011	1236	1236
			6/6/2012	1185	1185
			12/12/2012	1227	1227
			6/19/2013	1366	1366
			12/11/2013	1329	1329
			6/11/2014	1200	1200
			12/3/2014	1230	1230
			6/17/2015	1210	1210
			12/1/2015	1230	1230
			6/22/2016	1185	1185
			12/20/2016	1186	1186
			6/6/2017	1289	1289

There are 4 compliance wells

Well	Samples	ND	Date	Result	Original
MW#93-2	69	0 (0%)	12/15/1994	7950	7950
			3/14/1995	8217	8217
			6/21/1995	9210	9210
			12/14/1995	9000	9000
			3/6/1996	8820	8820
			4/25/1996	9310	9310
			10/2/1996	9420	9420
			12/10/1996	9590	9590
			3/11/1997	9250	9250
			4/15/1997	9690	9690
			8/14/1997	10660	10660
			12/4/1997	10240	10240
			3/31/1998	9237	9237
			6/23/1998	10400	10400
			8/11/1998	11460	11460
			12/8/1998	10280	10280
			3/9/1999	9240	9240
			6/8/1999	10850	10850
			8/19/1999	10873	10873
			12/14/1999	9690	9690
			3/7/2000	9340	9340
			6/23/2000	1034	1034
			12/12/2000	9080	9080
			3/27/2001	10260	10260
			6/28/2001	11600	11600
			9/10/2001	10700	10700
			12/18/2001	10660	10660
			3/19/2002	10197	10197
			6/26/2002	10590	10590

			9/18/2002	9690	9690
			12/11/2002	10283	10283
			3/13/2003	8920	8920
			6/25/2003	10590	10590
			9/26/2003	10693	10693
			12/10/2003	10550	10550
			3/9/2004	10620	10620
			6/24/2004	10494	10494
			9/15/2004	10340	10340
			12/15/2004	9940	9940
			3/16/2005	9690	9690
			6/15/2005	10010	10010
			9/21/2005	9660	9660
			12/21/2005	10000	10000
			3/15/2006	8650	8650
			6/21/2006	9830	9830
			12/20/2006	8310	8310
			2/21/2007	7660	7660
			6/12/2007	9590	9590
			12/17/2007	9100	9100
			6/11/2008	9600	9600
			12/3/2008	10520	10520
			12/15/2008	9070	9070
			6/17/2009	10690	10690
			12/9/2009	10050	10050
			6/17/2010	10020	10020
			12/22/2010	11230	11230
			6/29/2011	11110	11110
			12/7/2011	10770	10770
			6/6/2012	10490	10490
			12/12/2012	11460	11460
			6/19/2013	10500	10500
			12/11/2013	10650	10650
			6/11/2014	9940	9940
			12/3/2014	10900	10900
			6/17/2015	1270	1270
			12/1/2015	10560	10560
			6/22/2016	6710	6710
			12/20/2016	11400	11400
			6/6/2017	12590	12590
MW#93-3	67	0 (0%)	12/15/1994	1762	1762
			3/14/1995	1490	1490
			6/21/1995	1421	1421
			12/14/1995	1534	1534
			3/6/1996	1327	1327
			4/25/1996	1570	1570
			10/2/1996	1657	1657
			12/10/1996	1427	1427
			3/11/1997	1370	1370
			4/15/1997	1244	1244
			8/14/1997	1351	1351
			12/4/1997	1140	1140
			3/31/1998	1172	1172
			6/23/1998	1214	1214
			8/11/1998	1296	1296
			12/8/1998	1177	1177

			3/9/1999	1137	1137
			6/8/1999	1180	1180
			8/19/1999	1253	1253
			12/14/1999	1088	1088
			3/7/2000	1250	1250
			6/23/2000	1070	1070
			12/12/2000	1051	1051
			3/27/2001	1149	1149
			6/28/2001	1155	1155
			9/10/2001	1250	1250
			12/18/2001	1064	1064
			3/19/2002	1240	1240
			6/26/2002	787	787
			9/18/2002	1109	1109
			12/11/2002	1125	1125
			3/13/2003	1034	1034
			6/25/2003	1111	1111
			9/26/2003	1109	1109
			12/10/2003	1173	1173
			3/9/2004	881	881
			6/24/2004	1129	1129
			9/15/2004	1068	1068
			12/15/2004	972	972
			3/16/2005	1134	1134
			6/15/2005	1080	1080
			9/21/2005	1155	1155
			12/21/2005	1140	1140
			3/15/2006	1035	1035
			6/21/2006	1226	1226
			12/20/2006	1087	1087
			6/12/2007	1031	1031
			12/17/2007	910	910
			6/11/2008	1023	1023
			12/3/2008	1073	1073
			6/17/2009	1073	1073
			12/9/2009	1038	1038
			6/17/2010	1108	1108
			12/22/2010	1090	1090
			6/29/2011	1178	1178
			12/7/2011	930	930
			6/6/2012	1203	1203
			12/12/2012	1010	1010
			6/19/2013	1438	1438
			12/11/2013	1252	1252
			6/11/2014	1500	1500
			12/3/2014	1200	1200
			6/17/2015	1480	1480
			12/1/2015	1807	1807
			10/11/2016	2005	2005
			12/20/2016	2200	2200
			6/6/2017	1743	1743
MW#03-1	26	0 (0%)	6/24/2004	497	497
			9/15/2004	687	687
			12/15/2004	514	514
			3/16/2005	422	422
			6/15/2005	465	465

			9/21/2005	517	517
			12/20/2006	447	447
			6/12/2007	630	630
			12/17/2007	540	540
			6/11/2008	467	467
			12/3/2008	649	649
			6/17/2009	519	519
			12/9/2009	469	469
			6/17/2010	500	500
			12/22/2010	504	504
			6/29/2011	463	463
			12/7/2011	501	501
			6/6/2012	457	457
			6/19/2013	373	373
			12/11/2013	476	476
			6/11/2014	826	826
			12/3/2014	409	409
			6/17/2015	267	267
			12/1/2015	385	385
			6/22/2016	320	320
			6/6/2017	198	198
MW#03-2	31	0 (0%)	6/24/2004	692	692
			9/15/2004	522	522
			12/15/2004	655	655
			3/16/2005	661	661
			6/15/2005	674	674
			9/21/2005	625	625
			12/21/2005	572	572
			3/15/2006	594	594
			6/21/2006	636	636
			12/20/2006	580	580
			6/12/2007	680	680
			12/17/2007	617	617
			6/11/2008	674	674
			12/3/2008	752	752
			6/17/2009	720	720
			12/9/2009	690	690
			6/17/2010	685	685
			12/22/2010	728	728
			6/29/2011	748	748
			12/7/2011	755	755
			6/6/2012	716	716
			12/12/2012	807	807
			6/19/2013	807	807
			12/11/2013	805	805
			6/11/2014	219	219
			12/3/2014	1540	1540
			6/17/2015	965	965
			12/1/2015	967	967
			6/22/2016	1074	1074
			12/20/2016	1454	1454
			6/6/2017	1498	1498

There are 0 unused wells

Well	Samples	ND	Date	Result	Original

Levene's Test for Equal of Variance

Parameter: Specific Conductance

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Overall Mean = 393.037
Overall Std Dev = 849.221
Overall Total = 102190
SS Wells = 4.00266e+007
SS Total = 1.86784e+008

ANOVA Table

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	F
Between Wells	4.00266e+007	4	1.00066e+007	17.3871
Error (within wells)	1.46758e+008	255	575521	
Totals	1.86784e+008	259		

17.3871 exceeds 2.37; assumption of equal variance should be rejected

Well: MW#93-1	Sample	Residual
	12/15/1994	238.537
	3/14/1995	215.537
	6/21/1995	164.537
	12/14/1995	209.537
	3/6/1996	308.537
	4/25/1996	255.537
	10/2/1996	149.537
	12/10/1996	131.537
	3/11/1997	241.537
	4/15/1997	248.537
	8/14/1997	101.537
	12/4/1997	148.537
	3/31/1998	226.537
	6/23/1998	108.537
	8/11/1998	45.5373
	12/8/1998	569.463
	3/9/1999	238.537
	6/8/1999	17.5373
	8/19/1999	17.5373
	12/14/1999	48.5373
	3/7/2000	28.5373
	6/23/2000	74.4627
	12/12/2000	9.53731
	3/27/2001	150.463
	6/28/2001	241.463
	9/10/2001	55.4627
	12/18/2001	55.4627
	3/19/2002	7.46269
	6/26/2002	197.463
	9/18/2002	104.463
	12/11/2002	196.463
	3/13/2003	13.4627

6/25/2003	289.463
9/26/2003	283.463
12/10/2003	301.463
3/9/2004	311.463
6/24/2004	301.463
9/15/2004	299.463
12/15/2004	267.463
3/16/2005	202.463
6/15/2005	212.463
9/21/2005	122.463
12/21/2005	288.537
3/15/2006	0.537313
6/21/2006	228.463
12/20/2006	51.4627
6/12/2007	147.463
12/17/2007	8.46269
6/11/2008	15.4627
12/3/2008	33.4627
6/17/2009	17.5373
12/9/2009	100.537
6/17/2010	139.537
12/22/2010	48.5373
6/29/2011	43.5373
12/7/2011	82.5373
6/6/2012	133.537
12/12/2012	91.5373
6/19/2013	47.4627
12/11/2013	10.4627
6/11/2014	118.537
12/3/2014	88.5373
6/17/2015	108.537
12/1/2015	88.5373
6/22/2016	133.537
12/20/2016	132.537
6/6/2017	29.5373

Well: MW#93-2

Sample	Residual
12/15/1994	1774.61
3/14/1995	1507.61
6/21/1995	514.609
12/14/1995	724.609
3/6/1996	904.609
4/25/1996	414.609
10/2/1996	304.609
12/10/1996	134.609
3/11/1997	474.609
4/15/1997	34.6087
8/14/1997	935.391
12/4/1997	515.391
3/31/1998	487.609
6/23/1998	675.391
8/11/1998	1735.39
12/8/1998	555.391
3/9/1999	484.609
6/8/1999	1125.39
8/19/1999	1148.39
12/14/1999	34.6087

3/7/2000	384.609
6/23/2000	8690.61
12/12/2000	644.609
3/27/2001	535.391
6/28/2001	1875.39
9/10/2001	975.391
12/18/2001	935.391
3/19/2002	472.391
6/26/2002	865.391
9/18/2002	34.6087
12/11/2002	558.391
3/13/2003	804.609
6/25/2003	865.391
9/26/2003	968.391
12/10/2003	825.391
3/9/2004	895.391
6/24/2004	769.391
9/15/2004	615.391
12/15/2004	215.391
3/16/2005	34.6087
6/15/2005	285.391
9/21/2005	64.6087
12/21/2005	275.391
3/15/2006	1074.61
6/21/2006	105.391
12/20/2006	1414.61
2/21/2007	2064.61
6/12/2007	134.609
12/17/2007	624.609
6/11/2008	124.609
12/3/2008	795.391
12/15/2008	654.609
6/17/2009	965.391
12/9/2009	325.391
6/17/2010	295.391
12/22/2010	1505.39
6/29/2011	1385.39
12/7/2011	1045.39
6/6/2012	765.391
12/12/2012	1735.39
6/19/2013	775.391
12/11/2013	925.391
6/11/2014	215.391
12/3/2014	1175.39
6/17/2015	8454.61
12/1/2015	835.391
6/22/2016	3014.61
12/20/2016	1675.39
6/6/2017	2865.39

Well: MW#93-3

Sample	Residual
12/15/1994	527.881
3/14/1995	255.881
6/21/1995	186.881
12/14/1995	299.881
3/6/1996	92.8806
4/25/1996	335.881

10/2/1996	422.881
12/10/1996	192.881
3/11/1997	135.881
4/15/1997	9.8806
8/14/1997	116.881
12/4/1997	94.1194
3/31/1998	62.1194
6/23/1998	20.1194
8/11/1998	61.8806
12/8/1998	57.1194
3/9/1999	97.1194
6/8/1999	54.1194
8/19/1999	18.8806
12/14/1999	146.119
3/7/2000	15.8806
6/23/2000	164.119
12/12/2000	183.119
3/27/2001	85.1194
6/28/2001	79.1194
9/10/2001	15.8806
12/18/2001	170.119
3/19/2002	5.8806
6/26/2002	447.119
9/18/2002	125.119
12/11/2002	109.119
3/13/2003	200.119
6/25/2003	123.119
9/26/2003	125.119
12/10/2003	61.1194
3/9/2004	353.119
6/24/2004	105.119
9/15/2004	166.119
12/15/2004	262.119
3/16/2005	100.119
6/15/2005	154.119
9/21/2005	79.1194
12/21/2005	94.1194
3/15/2006	199.119
6/21/2006	8.1194
12/20/2006	147.119
6/12/2007	203.119
12/17/2007	324.119
6/11/2008	211.119
12/3/2008	161.119
6/17/2009	161.119
12/9/2009	196.119
6/17/2010	126.119
12/22/2010	144.119
6/29/2011	56.1194
12/7/2011	304.119
6/6/2012	31.1194
12/12/2012	224.119
6/19/2013	203.881
12/11/2013	17.8806
6/11/2014	265.881
12/3/2014	34.1194
6/17/2015	245.881

12/1/2015	572.881
10/11/2016	770.881
12/20/2016	965.881
6/6/2017	508.881

Well: MW#03-1

Sample	Residual
6/24/2004	16.1538
9/15/2004	206.154
12/15/2004	33.1538
3/16/2005	58.8462
6/15/2005	15.8462
9/21/2005	36.1538
12/20/2006	33.8462
6/12/2007	149.154
12/17/2007	59.1538
6/11/2008	13.8462
12/3/2008	168.154
6/17/2009	38.1538
12/9/2009	11.8462
6/17/2010	19.1538
12/22/2010	23.1538
6/29/2011	17.8462
12/7/2011	20.1538
6/6/2012	23.8462
6/19/2013	107.846
12/11/2013	4.84615
6/11/2014	345.154
12/3/2014	71.8462
6/17/2015	213.846
12/1/2015	95.8462
6/22/2016	160.846
6/6/2017	282.846

Well: MW#03-2

Sample	Residual
6/24/2004	85.8065
9/15/2004	255.806
12/15/2004	122.806
3/16/2005	116.806
6/15/2005	103.806
9/21/2005	152.806
12/21/2005	205.806
3/15/2006	183.806
6/21/2006	141.806
12/20/2006	197.806
6/12/2007	97.8065
12/17/2007	160.806
6/11/2008	103.806
12/3/2008	25.8065
6/17/2009	57.8065
12/9/2009	87.8065
6/17/2010	92.8065
12/22/2010	49.8065
6/29/2011	29.8065
12/7/2011	22.8065
6/6/2012	61.8065
12/12/2012	29.1935

6/19/2013	29.1935
12/11/2013	27.1935
6/11/2014	558.806
12/3/2014	762.194
6/17/2015	187.194
12/1/2015	189.194
6/22/2016	296.194
12/20/2016	676.194
6/6/2017	720.194

Shapiro-Francia Test of Normality

Parameter: Specific Conductance

All Wells

Normality Test of Parameter Concentrations

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Sample Size = 260

i	x(i)	m(i)	sum(m^2)	sum(mx)
0	0	0	0	0
1	198	-2.74777	7.55021	-544.058
2	219	-2.45727	13.5884	-1082.2
3	267	-2.29036	18.8342	-1693.73
4	320	-2.17009	23.5435	-2388.16
5	373	-2.07485	27.8485	-3162.07
6	385	-2.01409	31.905	-3937.5
7	409	-1.94314	35.6808	-4732.24
8	422	-1.88079	39.2182	-5525.94
9	447	-1.82501	42.5488	-6341.71
10	457	-1.77438	45.6972	-7152.61
11	463	-1.72793	48.683	-7952.64
12	465	-1.6954	51.5574	-8741
13	467	-1.65463	54.2951	-9513.71
14	469	-1.61644	56.908	-10271.8
15	476	-1.58047	59.4059	-11024.1
16	497	-1.54643	61.7973	-11792.7
17	500	-1.5141	64.0898	-12549.7
18	501	-1.49085	66.3125	-13296.7
19	504	-1.46106	68.4472	-14033
20	514	-1.4325	70.4992	-14769.3
21	517	-1.40507	72.4735	-15495.8
22	519	-1.37866	74.3742	-16211.3
23	522	-1.35317	76.2053	-16917.6
24	540	-1.33462	77.9865	-17638.3
25	572	-1.31058	79.7041	-18388
26	580	-1.28727	81.3612	-19134.6
27	594	-1.26464	82.9605	-19885.8
28	617	-1.24264	84.5046	-20652.5
29	625	-1.22123	85.996	-21415.8
30	630	-1.20553	87.4493	-22175.3
31	636	-1.18504	88.8537	-22929
32	649	-1.16505	90.211	-23685.1
33	655	-1.1455	91.5232	-24435.4
34	661	-1.12639	92.7919	-25179.9
35	674	-1.10768	94.0189	-25926.5
36	674	-1.0939	95.2155	-26663.8
37	680	-1.07584	96.3729	-27395.4
38	685	-1.05812	97.4925	-28120.2
39	687	-1.04073	98.5757	-28835.2
40	690	-1.02365	99.6235	-29541.5
41	692	-1.00687	100.637	-30238.2
42	716	-0.994457	101.626	-30950.3
43	720	-0.97815	102.583	-31654.5
44	728	-0.9621	103.509	-32354.9
45	748	-0.946291	104.404	-33062.8
46	752	-0.930718	105.27	-33762.7

47	755	-0.915365	106.108	-34453.8
48	787	-0.903992	106.925	-35165.2
49	805	-0.889006	107.716	-35880.8
50	807	-0.874218	108.48	-36586.3
51	807	-0.859618	109.219	-37280.1
52	826	-0.845198	109.933	-37978.2
53	881	-0.830953	110.624	-38710.3
54	910	-0.820379	111.297	-39456.8
55	930	-0.806422	111.947	-40206.8
56	965	-0.792618	112.575	-40971.6
57	967	-0.778966	113.182	-41724.9
58	972	-0.765456	113.768	-42468.9
59	1010	-0.752084	114.334	-43228.5
60	1010	-0.742143	114.885	-43978.1
61	1023	-0.729003	115.416	-44723.9
62	1030	-0.715986	115.929	-45461.3
63	1031	-0.703089	116.423	-46186.2
64	1034	-0.690309	116.899	-46900
65	1034	-0.677639	117.359	-47600.7
66	1035	-0.668209	117.805	-48292.3
67	1038	-0.655726	118.235	-48972.9
68	1051	-0.643345	118.649	-49649.1
69	1063	-0.631062	119.047	-50319.9
70	1064	-0.618872	119.43	-50978.4
71	1068	-0.606775	119.798	-51626.4
72	1070	-0.597761	120.156	-52266
73	1070	-0.585815	120.499	-52892.8
74	1073	-0.573953	120.828	-53508.7
75	1073	-0.56217	121.144	-54111.9
76	1074	-0.550465	121.447	-54703.1
77	1077	-0.538836	121.738	-55283.4
78	1080	-0.530162	122.019	-55856
79	1080	-0.518658	122.288	-56416.1
80	1080	-0.507221	122.545	-56963.9
81	1087	-0.49585	122.791	-57502.9
82	1088	-0.484544	123.026	-58030.1
83	1090	-0.473299	123.25	-58546
84	1092	-0.464904	123.466	-59053.7
85	1103	-0.453763	123.672	-59554.2
86	1108	-0.442676	123.868	-60044.7
87	1109	-0.431644	124.054	-60523.4
88	1109	-0.420664	124.231	-60989.9
89	1109	-0.412463	124.401	-61447.3
90	1111	-0.401571	124.562	-61893.5
91	1125	-0.390726	124.715	-62333
92	1129	-0.379927	124.859	-62762
93	1134	-0.369171	124.996	-63180.6
94	1137	-0.358459	125.124	-63588.2
95	1140	-0.350451	125.247	-63987.7
96	1140	-0.33981	125.363	-64375.1
97	1149	-0.329206	125.471	-64753.3
98	1154	-0.318639	125.572	-65121
99	1155	-0.308108	125.667	-65476.9
100	1155	-0.297612	125.756	-65820.6
101	1169	-0.28976	125.84	-66159.4
102	1170	-0.279319	125.918	-66486.2
103	1172	-0.268908	125.99	-66801.3

104	1173	-0.258527	126.057	-67104.6
105	1177	-0.248174	126.119	-67396.7
106	1178	-0.237847	126.175	-67676.9
107	1179	-0.230118	126.228	-67948.2
108	1180	-0.219834	126.277	-68207.6
109	1185	-0.209575	126.32	-68455.9
110	1185	-0.199336	126.36	-68692.1
111	1186	-0.189118	126.396	-68916.4
112	1187	-0.17892	126.428	-69128.8
113	1200	-0.171285	126.457	-69334.4
114	1200	-0.161119	126.483	-69527.7
115	1203	-0.150969	126.506	-69709.3
116	1210	-0.140835	126.526	-69879.7
117	1210	-0.130716	126.543	-70037.9
118	1214	-0.12061	126.557	-70184.3
119	1217	-0.113039	126.57	-70321.9
120	1218	-0.102953	126.581	-70447.3
121	1226	-0.0928787	126.59	-70561.1
122	1227	-0.0828129	126.596	-70662.8
123	1230	-0.0727562	126.602	-70752.2
124	1230	-0.0627062	126.606	-70829.4
125	1236	-0.0551734	126.609	-70897.6
126	1240	-0.0451348	126.611	-70953.5
127	1244	-0.0350997	126.612	-70997.2
128	1250	-0.0250691	126.613	-71028.5
129	1250	-0.0150408	126.613	-71047.3
130	1252	-0.00501359	126.613	-71053.6
131	1253	0.00501359	126.613	-71047.3
132	1270	0.0150408	126.613	-71028.2
133	1270	0.0250691	126.614	-70996.4
134	1270	0.0350997	126.615	-70951.8
135	1273	0.0451348	126.617	-70894.4
136	1275	0.0551734	126.62	-70824
137	1289	0.0627062	126.624	-70743.2
138	1290	0.0727562	126.629	-70649.3
139	1296	0.0828129	126.636	-70542
140	1301	0.0928787	126.645	-70421.2
141	1301	0.102953	126.655	-70287.2
142	1301	0.113039	126.668	-70140.2
143	1309	0.12061	126.683	-69982.3
144	1318	0.130716	126.7	-69810
145	1326	0.140835	126.72	-69623.3
146	1327	0.150969	126.742	-69422.9
147	1327	0.161119	126.768	-69209.1
148	1329	0.171285	126.798	-68981.5
149	1332	0.17892	126.83	-68743.2
150	1334	0.189118	126.865	-68490.9
151	1351	0.199336	126.905	-68221.6
152	1352	0.209575	126.949	-67938.2
153	1366	0.219834	126.997	-67637.9
154	1370	0.230118	127.05	-67322.7
155	1370	0.237847	127.107	-66996.8
156	1374	0.248174	127.168	-66655.8
157	1374	0.258527	127.235	-66300.6
158	1393	0.268908	127.308	-65926
159	1421	0.279319	127.386	-65529.1
160	1423	0.28976	127.47	-65116.8

161	1427	0.297612	127.558	-64692.1
162	1438	0.308108	127.653	-64249
163	1441	0.318639	127.755	-63789.9
164	1454	0.329206	127.863	-63311.2
165	1466	0.33981	127.979	-62813
166	1469	0.350451	128.101	-62298.2
167	1480	0.358459	128.23	-61767.7
168	1490	0.369171	128.366	-61217.6
169	1498	0.379927	128.51	-60648.5
170	1500	0.390726	128.663	-60062.4
171	1515	0.401571	128.824	-59454
172	1516	0.412463	128.994	-58828.7
173	1521	0.420664	129.171	-58188.9
174	1531	0.431644	129.358	-57528.1
175	1534	0.442676	129.554	-56849
176	1540	0.453763	129.76	-56150.2
177	1547	0.464904	129.976	-55431
178	1560	0.473299	130.2	-54692.7
179	1570	0.484544	130.435	-53931.9
180	1586	0.49585	130.68	-53145.5
181	1602	0.507221	130.938	-52332.9
182	1608	0.518658	131.207	-51498.9
183	1618	0.530162	131.488	-50641.1
184	1620	0.538836	131.778	-49768.2
185	1620	0.550465	132.081	-48876.5
186	1630	0.56217	132.397	-47960.1
187	1657	0.573953	132.727	-47009.1
188	1743	0.585815	133.07	-45988
189	1762	0.597761	133.427	-44934.8
190	1807	0.606775	133.795	-43838.3
191	1888	0.618872	134.178	-42669.9
192	2005	0.631062	134.577	-41404.6
193	2200	0.643345	134.99	-39989.3
194	6710	0.655726	135.42	-35589.3
195	7660	0.668209	135.867	-30470.8
196	7950	0.677639	136.326	-25083.6
197	8217	0.690309	136.803	-19411.3
198	8310	0.703089	137.297	-13568.7
199	8650	0.715986	137.81	-7375.39
200	8820	0.729003	138.341	-945.586
201	8920	0.742143	138.892	5674.33
202	9000	0.752084	139.457	12443.1
203	9070	0.765456	140.043	19385.8
204	9080	0.778966	140.65	26458.8
205	9100	0.792618	141.278	33671.6
206	9210	0.806422	141.929	41098.7
207	9237	0.820379	142.602	48676.6
208	9240	0.830953	143.292	56354.6
209	9250	0.845198	144.007	64172.7
210	9310	0.859618	144.746	72175.7
211	9340	0.874218	145.51	80340.9
212	9420	0.889006	146.3	88715.4
213	9590	0.903992	147.117	97384.6
214	9590	0.915365	147.955	106163
215	9600	0.930718	148.821	115098
216	9660	0.946291	149.717	124239
217	9690	0.9621	150.643	133562

218	9690	0.97815	151.599	143040
219	9690	0.994457	152.588	152676
220	9690	1.00687	153.602	162433
221	9830	1.02365	154.65	172495
222	9940	1.04073	155.733	182840
223	9940	1.05812	156.853	193358
224	10000	1.07584	158.01	204116
225	10010	1.0939	159.207	215066
226	10020	1.10768	160.434	226165
227	10050	1.12639	161.702	237485
228	10197	1.1455	163.015	249166
229	10240	1.16505	164.372	261096
230	10260	1.18504	165.776	273255
231	10280	1.20553	167.23	285648
232	10283	1.22123	168.721	298206
233	10340	1.24264	170.265	311054
234	10400	1.26464	171.864	324207
235	10490	1.28727	173.521	337710
236	10494	1.31058	175.239	351463
237	10500	1.33462	177.02	365477
238	10520	1.35317	178.851	379712
239	10550	1.37866	180.752	394257
240	10560	1.40507	182.726	409095
241	10590	1.4325	184.778	424265
242	10590	1.46106	186.913	439738
243	10620	1.49085	189.136	455570
244	10650	1.5141	191.428	471696
245	10660	1.54643	193.82	488181
246	10660	1.58047	196.318	505028
247	10690	1.61644	198.93	522308
248	10693	1.65463	201.668	540001
249	10700	1.6954	204.543	558142
250	10770	1.72793	207.528	576752
251	10850	1.77438	210.677	596004
252	10873	1.82501	214.007	615847
253	10900	1.88079	217.545	636347
254	11110	1.94314	221.321	657936
255	11230	2.01409	225.377	680554
256	11400	2.07485	229.682	704207
257	11460	2.17009	234.391	729076
258	11460	2.29036	239.637	755324
259	11600	2.45727	245.675	783828

Sample Standard Deviation = 3942.72
Numerator = 6.14387e+011
Denominator = 9.89131e+011 = 259 245.675
W Statistic = 0.621138
5% Critical value of 0.976 exceeds 0.621138
Evidence of non-normality at 95% level of significance
1% Critical value of 0.967 exceeds 0.621138
Evidence of non-normality at 99% level of significance

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Specific Conductance

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Total Percent Non-Detects = 0%
Number of comparisons = 4
Future Samples (k) = 4
Recent Dates = 1
Background Samples (n) = 67
Maximum Background Concentration = 1888
Confidence Level = 94.4%
False Positive Rate = 5.6%

Well	Date	Samples	Mean	Impacted
MW#93-2	6/6/2017	1	12590	TRUE
MW#93-3	6/6/2017	1	1743	FALSE
MW#03-1	6/6/2017	1	198	FALSE
MW#03-2	6/6/2017	1	1498	FALSE

Non-Parametric Prediction Interval

Intra-Well Comparison for MW#93-2

Parameter: Specific Conductance

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Total Percent Non-Detects = 0%
Future Samples (k) = 1
Recent Dates = 1
Baseline Samples (n) = 68
Maximum Baseline Concentration = 11600
Confidence Level = 98.6%
False Positive Rate = 1.4%

Baseline Samples	Date	Result
	12/15/1994	7950
	3/14/1995	8217
	6/21/1995	9210
	12/14/1995	9000
	3/6/1996	8820
	4/25/1996	9310
	10/2/1996	9420
	12/10/1996	9590
	3/11/1997	9250
	4/15/1997	9690
	8/14/1997	10660
	12/4/1997	10240
	3/31/1998	9237
	6/23/1998	10400
	8/11/1998	11460
	12/8/1998	10280
	3/9/1999	9240
	6/8/1999	10850
	8/19/1999	10873
	12/14/1999	9690
	3/7/2000	9340
	6/23/2000	1034
	12/12/2000	9080
	3/27/2001	10260
	6/28/2001	11600
	9/10/2001	10700
	12/18/2001	10660
	3/19/2002	10197
	6/26/2002	10590
	9/18/2002	9690
	12/11/2002	10283
	3/13/2003	8920
	6/25/2003	10590
	9/26/2003	10693
	12/10/2003	10550
	3/9/2004	10620
	6/24/2004	10494
	9/15/2004	10340
	12/15/2004	9940
	3/16/2005	9690
	6/15/2005	10010

9/21/2005	9660
12/21/2005	10000
3/15/2006	8650
6/21/2006	9830
12/20/2006	8310
2/21/2007	7660
6/12/2007	9590
12/17/2007	9100
6/11/2008	9600
12/3/2008	10520
12/15/2008	9070
6/17/2009	10690
12/9/2009	10050
6/17/2010	10020
12/22/2010	11230
6/29/2011	11110
12/7/2011	10770
6/6/2012	10490
12/12/2012	11460
6/19/2013	10500
12/11/2013	10650
6/11/2014	9940
12/3/2014	10900
6/17/2015	1270
12/1/2015	10560
6/22/2016	6710
12/20/2016	11400

Date	Samples	Mean	Impacted
6/6/2017	1	12590	TRUE

Concentrations (ppb)

Parameter: Sulfate

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Samples: 260
Total Non-Detect: 8
Percent Non-Detects: 3.07692%
Total Background Samples: 67
There is 1 background well

Well	Samples	ND	Date	Result	Original
MW#93-1	67	0 (0%)	12/15/1994	195000	195000
			3/14/1995	275000	275000
			6/21/1995	750000	750000
			12/14/1995	320000	320000
			3/6/1996	215000	215000
			4/25/1996	272000	272000
			10/2/1996	300000	300000
			12/10/1996	260000	260000
			3/11/1997	278000	278000
			4/15/1997	250000	250000
			8/14/1997	320000	320000
			12/4/1997	360000	360000
			3/31/1998	230000	230000
			6/23/1998	500000	500000
			8/11/1998	350000	350000
			12/8/1998	270000	270000
			3/9/1999	290000	290000
			6/8/1999	408000	408000
			8/19/1999	388000	388000
			12/14/1999	310000	310000
			3/7/2000	373000	373000
			6/23/2000	410000	410000
			12/12/2000	420000	420000
			3/27/2001	350000	350000
			6/28/2001	425000	425000
			9/10/2001	390000	390000
			12/18/2001	390000	390000
			3/19/2002	425000	425000
			6/26/2002	420000	420000
			9/18/2002	517000	517000
			12/11/2002	430000	430000
			3/13/2003	450000	450000
			6/25/2003	434000	434000
			9/26/2003	460000	460000
			12/10/2003	470000	470000
			3/9/2004	444000	444000
			6/24/2004	500000	500000
			9/15/2004	475000	475000
			12/15/2004	558000	558000
			3/16/2005	880000	880000
			6/15/2005	22000	22000
			9/21/2005	467000	467000
			12/21/2005	475000	475000
			3/15/2006	375000	375000

			6/21/2006	420000	420000
			12/20/2006	330000	330000
			6/12/2007	260000	260000
			12/17/2007	300000	300000
			6/11/2008	375000	375000
			12/3/2008	340000	340000
			6/17/2009	240000	240000
			12/9/2009	160000	160000
			6/17/2010	290000	290000
			12/22/2010	304000	304000
			6/29/2011	306000	306000
			12/7/2011	255000	255000
			6/6/2012	275000	275000
			12/12/2012	301000	301000
			6/19/2013	409000	409000
			12/11/2013	306000	306000
			6/11/2014	316000	316000
			12/3/2014	292000	292000
			6/17/2015	286000	286000
			12/1/2015	299000	299000
			6/22/2016	250000	250000
			12/20/2016	275000	275000
			6/6/2017	265000	265000

There are 4 compliance wells

Well	Samples	ND	Date	Result	Original
MW#93-2	69	0 (0%)	12/15/1994	2e+006	2e+006
			3/14/1995	1.55e+006	1.55e+006
			6/21/1995	185000	185000
			12/14/1995	2.367e+006	2.367e+006
			3/6/1996	2.15e+006	2.15e+006
			4/25/1996	2e+006	2e+006
			10/2/1996	3.267e+006	3.267e+006
			12/10/1996	4e+006	4e+006
			3/11/1997	1.7e+006	1.7e+006
			4/15/1997	1.5e+006	1.5e+006
			8/14/1997	3.65e+006	3.65e+006
			12/4/1997	4.3e+006	4.3e+006
			3/31/1998	2.5e+006	2.5e+006
			6/23/1998	3.25e+006	3.25e+006
			8/11/1998	3.05e+006	3.05e+006
			12/8/1998	3.05e+006	3.05e+006
			3/9/1999	3.6e+006	3.6e+006
			6/8/1999	3.15e+006	3.15e+006
			8/19/1999	1.897e+006	1.897e+006
			12/14/1999	2.5e+006	2.5e+006
			3/7/2000	3.4e+006	3.4e+006
			6/23/2000	3.4e+006	3.4e+006
			12/12/2000	3e+006	3e+006
			3/27/2001	2.133e+006	2.133e+006
			6/28/2001	2.75e+006	2.75e+006
			9/10/2001	2.65e+006	2.65e+006
			12/18/2001	2.95e+006	2.95e+006
			3/19/2002	2.967e+006	2.967e+006
			6/26/2002	3.05e+006	3.05e+006

			9/18/2002	2.9e+006	2.9e+006
			12/11/2002	2.933e+006	2.933e+006
			3/13/2003	2.9e+006	2.9e+006
			6/25/2003	2.7e+006	2.7e+006
			9/26/2003	2.767e+006	2.767e+006
			12/10/2003	2.7e+006	2.7e+006
			3/9/2004	2.55e+006	2.55e+006
			6/24/2004	2.65e+006	2.65e+006
			9/15/2004	2.7e+006	2.7e+006
			12/15/2004	2.95e+006	2.95e+006
			3/16/2005	3.2e+006	3.2e+006
			6/15/2005	2.65e+006	2.65e+006
			9/21/2005	3.2e+006	3.2e+006
			12/21/2005	3.2e+006	3.2e+006
			3/15/2006	3e+006	3e+006
			6/21/2006	2.7e+006	2.7e+006
			12/20/2006	2.5e+006	2.5e+006
			2/21/2007	1.9e+006	1.9e+006
			6/12/2007	2.4e+006	2.4e+006
			12/17/2007	3.1e+006	3.1e+006
			6/11/2008	2.35e+006	2.35e+006
			12/3/2008	3.3e+006	3.3e+006
			12/15/2008	2.4e+006	2.4e+006
			6/17/2009	2.3e+006	2.3e+006
			12/9/2009	2.2e+006	2.2e+006
			6/17/2010	2.9e+006	2.9e+006
			12/22/2010	3.46e+006	3.46e+006
			6/29/2011	2.63e+006	2.63e+006
			12/7/2011	2.52e+006	2.52e+006
			6/6/2012	2.36e+006	2.36e+006
			12/12/2012	3.24e+006	3.24e+006
			6/19/2013	2.51e+006	2.51e+006
			12/11/2013	2.46e+006	2.46e+006
			6/11/2014	2.79e+006	2.79e+006
			12/3/2014	2.94e+006	2.94e+006
			6/17/2015	114000	114000
			12/1/2015	3.6e+006	3.6e+006
			6/22/2016	2.62e+006	2.62e+006
			12/20/2016	3.8e+006	3.8e+006
			6/6/2017	3.63e+006	3.63e+006
MW#93-3	67	8 (11.9403%)	12/15/1994	ND<10000	ND<10000
			3/14/1995	ND<10000	ND<10000
			6/21/1995	10000	10000
			12/14/1995	ND<10000	ND<10000
			3/6/1996	10000	10000
			4/25/1996	ND<10000	ND<10000
			10/2/1996	11000	11000
			12/10/1996	10000	10000
			3/11/1997	12000	12000
			4/15/1997	15000	15000
			8/14/1997	11000	11000
			12/4/1997	8000	8000
			3/31/1998	45000	45000
			6/23/1998	4000	4000
			8/11/1998	9000	9000
			12/8/1998	2000	2000

			3/9/1999	ND<10000	ND<10000
			6/8/1999	3000	3000
			8/19/1999	ND<10000	ND<10000
			12/14/1999	ND<10000	ND<10000
			3/7/2000	13000	13000
			6/23/2000	14000	14000
			12/12/2000	7000	7000
			3/27/2001	3000	3000
			6/28/2001	ND<10000	ND<10000
			9/10/2001	20000	20000
			12/18/2001	19000	19000
			3/19/2002	8000	8000
			6/26/2002	8000	8000
			9/18/2002	8000	8000
			12/11/2002	6000	6000
			3/13/2003	18000	18000
			6/25/2003	13000	13000
			9/26/2003	16000	16000
			12/10/2003	34000	34000
			3/9/2004	130000	130000
			6/24/2004	24000	24000
			9/15/2004	17000	17000
			12/15/2004	26000	26000
			3/16/2005	29000	29000
			6/15/2005	26000	26000
			9/21/2005	19000	19000
			12/21/2005	23000	23000
			3/15/2006	19000	19000
			6/21/2006	21000	21000
			12/20/2006	42000	42000
			6/12/2007	3000	3000
			12/17/2007	28000	28000
			6/11/2008	27000	27000
			12/3/2008	11000	11000
			6/17/2009	16000	16000
			12/9/2009	12000	12000
			6/17/2010	45000	45000
			12/22/2010	25800	25800
			6/29/2011	34200	34200
			12/7/2011	37400	37400
			6/6/2012	38300	38300
			12/12/2012	25800	25800
			6/19/2013	61600	61600
			12/11/2013	26500	26500
			6/11/2014	56200	56200
			12/3/2014	36000	36000
			6/17/2015	109000	109000
			12/1/2015	81000	81000
			6/22/2016	58500	58500
			12/20/2016	66600	66600
			6/6/2017	18200	18200
MW#03-1	27	0 (0%)	6/24/2004	42000	42000
			9/15/2004	76000	76000
			12/15/2004	62000	62000
			3/16/2005	22000	22000
			6/15/2005	23000	23000

			9/21/2005	17000	17000
			12/20/2006	55000	55000
			6/12/2007	88000	88000
			12/17/2007	120000	120000
			6/11/2008	23000	23000
			12/3/2008	90000	90000
			6/17/2009	21000	21000
			12/9/2009	15000	15000
			6/17/2010	16000	16000
			12/22/2010	22900	22900
			6/29/2011	21600	21600
			12/7/2011	18100	18100
			6/6/2012	14300	14300
			6/19/2013	16200	16200
			12/11/2013	29100	29100
			6/11/2014	127000	127000
			12/3/2014	19700	19700
			6/17/2015	7860	7860
			12/1/2015	12100	12100
			6/22/2016	10300	10300
			12/20/2016	30900	30900
			6/6/2017	8920	8920
MW#03-2	30	0 (0%)	6/24/2004	72000	72000
			9/15/2004	32000	32000
			12/15/2004	54000	54000
			3/16/2005	78000	78000
			6/15/2005	23000	23000
			9/21/2005	80000	80000
			12/21/2005	72000	72000
			3/15/2006	30000	30000
			12/20/2006	34000	34000
			6/12/2007	68000	68000
			12/17/2007	130000	130000
			6/11/2008	67000	67000
			12/3/2008	210000	210000
			6/17/2009	84000	84000
			12/9/2009	80000	80000
			6/17/2010	106000	106000
			12/22/2010	98900	98900
			6/29/2011	101000	101000
			12/7/2011	98800	98800
			6/6/2012	107000	107000
			12/12/2012	111000	111000
			6/19/2013	113000	113000
			12/11/2013	106000	106000
			6/11/2014	10300	10300
			12/3/2014	158000	158000
			6/17/2015	179000	179000
			12/1/2015	197000	197000
			6/22/2016	254000	254000
			12/20/2016	451000	451000
			6/6/2017	332000	332000

There are 0 unused wells

Well	Samples	ND	Date	Result	Original

Levene's Test for Equal of Variance

Parameter: Sulfate

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Overall Mean = 172122
Overall Std Dev = 330580
Overall Total = 4.47517e+007
SS Wells = 1.06519e+013
SS Total = 2.83044e+013

ANOVA Table

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	F
Between Wells	1.06519e+013	4	2.66298e+012	38.4683
Error (within wells)	1.76525e+013	255	6.92253e+010	
Totals	2.83044e+013	259		

38.4683 exceeds 2.37; assumption of equal variance should be rejected

Well: MW#93-1	Sample	Residual
	12/15/1994	162537
	3/14/1995	82537.3
	6/21/1995	392463
	12/14/1995	37537.3
	3/6/1996	142537
	4/25/1996	85537.3
	10/2/1996	57537.3
	12/10/1996	97537.3
	3/11/1997	79537.3
	4/15/1997	107537
	8/14/1997	37537.3
	12/4/1997	2462.69
	3/31/1998	127537
	6/23/1998	142463
	8/11/1998	7537.31
	12/8/1998	87537.3
	3/9/1999	67537.3
	6/8/1999	50462.7
	8/19/1999	30462.7
	12/14/1999	47537.3
	3/7/2000	15462.7
	6/23/2000	52462.7
	12/12/2000	62462.7
	3/27/2001	7537.31
	6/28/2001	67462.7
	9/10/2001	32462.7
	12/18/2001	32462.7
	3/19/2002	67462.7
	6/26/2002	62462.7
	9/18/2002	159463
	12/11/2002	72462.7
	3/13/2003	92462.7

6/25/2003	76462.7
9/26/2003	102463
12/10/2003	112463
3/9/2004	86462.7
6/24/2004	142463
9/15/2004	117463
12/15/2004	200463
3/16/2005	522463
6/15/2005	335537
9/21/2005	109463
12/21/2005	117463
3/15/2006	17462.7
6/21/2006	62462.7
12/20/2006	27537.3
6/12/2007	97537.3
12/17/2007	57537.3
6/11/2008	17462.7
12/3/2008	17537.3
6/17/2009	117537
12/9/2009	197537
6/17/2010	67537.3
12/22/2010	53537.3
6/29/2011	51537.3
12/7/2011	102537
6/6/2012	82537.3
12/12/2012	56537.3
6/19/2013	51462.7
12/11/2013	51537.3
6/11/2014	41537.3
12/3/2014	65537.3
6/17/2015	71537.3
12/1/2015	58537.3
6/22/2016	107537
12/20/2016	82537.3
6/6/2017	92537.3

Well: MW#93-2

Sample	Residual
12/15/1994	720145
3/14/1995	1.17014e+006
6/21/1995	2.53514e+006
12/14/1995	353145
3/6/1996	570145
4/25/1996	720145
10/2/1996	546855
12/10/1996	1.27986e+006
3/11/1997	1.02014e+006
4/15/1997	1.22014e+006
8/14/1997	929855
12/4/1997	1.57986e+006
3/31/1998	220145
6/23/1998	529855
8/11/1998	329855
12/8/1998	329855
3/9/1999	879855
6/8/1999	429855
8/19/1999	823145
12/14/1999	220145

3/7/2000	679855
6/23/2000	679855
12/12/2000	279855
3/27/2001	587145
6/28/2001	29855.1
9/10/2001	70144.9
12/18/2001	229855
3/19/2002	246855
6/26/2002	329855
9/18/2002	179855
12/11/2002	212855
3/13/2003	179855
6/25/2003	20144.9
9/26/2003	46855.1
12/10/2003	20144.9
3/9/2004	170145
6/24/2004	70144.9
9/15/2004	20144.9
12/15/2004	229855
3/16/2005	479855
6/15/2005	70144.9
9/21/2005	479855
12/21/2005	479855
3/15/2006	279855
6/21/2006	20144.9
12/20/2006	220145
2/21/2007	820145
6/12/2007	320145
12/17/2007	379855
6/11/2008	370145
12/3/2008	579855
12/15/2008	320145
6/17/2009	420145
12/9/2009	520145
6/17/2010	179855
12/22/2010	739855
6/29/2011	90144.9
12/7/2011	200145
6/6/2012	360145
12/12/2012	519855
6/19/2013	210145
12/11/2013	260145
6/11/2014	69855.1
12/3/2014	219855
6/17/2015	2.60614e+006
12/1/2015	879855
6/22/2016	100145
12/20/2016	1.07986e+006
6/6/2017	909855

Well: MW#93-3

Sample	Residual
12/15/1994	14031.3
3/14/1995	14031.3
6/21/1995	14031.3
12/14/1995	14031.3
3/6/1996	14031.3
4/25/1996	14031.3

10/2/1996	13031.3
12/10/1996	14031.3
3/11/1997	12031.3
4/15/1997	9031.34
8/14/1997	13031.3
12/4/1997	16031.3
3/31/1998	20968.7
6/23/1998	20031.3
8/11/1998	15031.3
12/8/1998	22031.3
3/9/1999	14031.3
6/8/1999	21031.3
8/19/1999	14031.3
12/14/1999	14031.3
3/7/2000	11031.3
6/23/2000	10031.3
12/12/2000	17031.3
3/27/2001	21031.3
6/28/2001	14031.3
9/10/2001	4031.34
12/18/2001	5031.34
3/19/2002	16031.3
6/26/2002	16031.3
9/18/2002	16031.3
12/11/2002	18031.3
3/13/2003	6031.34
6/25/2003	11031.3
9/26/2003	8031.34
12/10/2003	9968.66
3/9/2004	105969
6/24/2004	31.3433
9/15/2004	7031.34
12/15/2004	1968.66
3/16/2005	4968.66
6/15/2005	1968.66
9/21/2005	5031.34
12/21/2005	1031.34
3/15/2006	5031.34
6/21/2006	3031.34
12/20/2006	17968.7
6/12/2007	21031.3
12/17/2007	3968.66
6/11/2008	2968.66
12/3/2008	13031.3
6/17/2009	8031.34
12/9/2009	12031.3
6/17/2010	20968.7
12/22/2010	1768.66
6/29/2011	10168.7
12/7/2011	13368.7
6/6/2012	14268.7
12/12/2012	1768.66
6/19/2013	37568.7
12/11/2013	2468.66
6/11/2014	32168.7
12/3/2014	11968.7
6/17/2015	84968.7

12/1/2015	56968.7
6/22/2016	34468.7
12/20/2016	42568.7
6/6/2017	5831.34

Well: MW#03-1	Sample	Residual
	6/24/2004	4630.37
	9/15/2004	38630.4
	12/15/2004	24630.4
	3/16/2005	15369.6
	6/15/2005	14369.6
	9/21/2005	20369.6
	12/20/2006	17630.4
	6/12/2007	50630.4
	12/17/2007	82630.4
	6/11/2008	14369.6
	12/3/2008	52630.4
	6/17/2009	16369.6
	12/9/2009	22369.6
	6/17/2010	21369.6
	12/22/2010	14469.6
	6/29/2011	15769.6
	12/7/2011	19269.6
	6/6/2012	23069.6
	6/19/2013	21169.6
	12/11/2013	8269.63
	6/11/2014	89630.4
	12/3/2014	17669.6
	6/17/2015	29509.6
	12/1/2015	25269.6
	6/22/2016	27069.6
	12/20/2016	6469.63
	6/6/2017	28449.6

Well: MW#03-2	Sample	Residual
	6/24/2004	45900
	9/15/2004	85900
	12/15/2004	63900
	3/16/2005	39900
	6/15/2005	94900
	9/21/2005	37900
	12/21/2005	45900
	3/15/2006	87900
	12/20/2006	83900
	6/12/2007	49900
	12/17/2007	12100
	6/11/2008	50900
	12/3/2008	92100
	6/17/2009	33900
	12/9/2009	37900
	6/17/2010	11900
	12/22/2010	19000
	6/29/2011	16900
	12/7/2011	19100
	6/6/2012	10900
	12/12/2012	6900

6/19/2013	4900
12/11/2013	11900
6/11/2014	107600
12/3/2014	40100
6/17/2015	61100
12/1/2015	79100
6/22/2016	136100
12/20/2016	333100
6/6/2017	214100

Shapiro-Francia Test of Normality

Parameter: Sulfate

All Wells

Normality Test of Parameter Concentrations

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Sample Size = 260

i	x(i)	m(i)	sum(m^2)	sum(mx)
0	0	0	0	0
1	2000	-2.74777	7.55021	-5495.53
2	3000	-2.45727	13.5884	-12867.3
3	3000	-2.29036	18.8342	-19738.4
4	3000	-2.17009	23.5435	-26248.7
5	4000	-2.07485	27.8485	-34548.1
6	6000	-2.01409	31.905	-46632.7
7	7000	-1.94314	35.6808	-60234.6
8	7860	-1.88079	39.2182	-75017.6
9	8000	-1.82501	42.5488	-89617.7
10	8000	-1.77438	45.6972	-103813
11	8000	-1.72793	48.683	-117636
12	8000	-1.6954	51.5574	-131199
13	8920	-1.65463	54.2951	-145959
14	9000	-1.61644	56.908	-160507
15	10000	-1.58047	59.4059	-176311
16	10000	-1.54643	61.7973	-191775
17	10000	-1.5141	64.0898	-206917
18	10000	-1.49085	66.3125	-221825
19	10000	-1.46106	68.4472	-236436
20	10000	-1.4325	70.4992	-250761
21	10000	-1.40507	72.4735	-264811
22	10000	-1.37866	74.3742	-278598
23	10000	-1.35317	76.2053	-292130
24	10000	-1.33462	77.9865	-305476
25	10000	-1.31058	79.7041	-318582
26	10300	-1.28727	81.3612	-331841
27	10300	-1.26464	82.9605	-344866
28	11000	-1.24264	84.5046	-358536
29	11000	-1.22123	85.996	-371969
30	11000	-1.20553	87.4493	-385230
31	12000	-1.18504	88.8537	-399450
32	12000	-1.16505	90.211	-413431
33	12100	-1.1455	91.5232	-427292
34	13000	-1.12639	92.7919	-441935
35	13000	-1.10768	94.0189	-456334
36	14000	-1.0939	95.2155	-471649
37	14300	-1.07584	96.3729	-487033
38	15000	-1.05812	97.4925	-502905
39	15000	-1.04073	98.5757	-518516
40	16000	-1.02365	99.6235	-534895
41	16000	-1.00687	100.637	-551005
42	16000	-0.994457	101.626	-566916
43	16200	-0.97815	102.583	-582762
44	17000	-0.9621	103.509	-599118
45	17000	-0.946291	104.404	-615205
46	18000	-0.930718	105.27	-631957

47	18100	-0.915365	106.108	-648526
48	18200	-0.903992	106.925	-664978
49	19000	-0.889006	107.716	-681869
50	19000	-0.874218	108.48	-698480
51	19000	-0.859618	109.219	-714812
52	19700	-0.845198	109.933	-731463
53	20000	-0.830953	110.624	-748082
54	21000	-0.820379	111.297	-765310
55	21000	-0.806422	111.947	-782245
56	21600	-0.792618	112.575	-799365
57	22000	-0.778966	113.182	-816502
58	22000	-0.765456	113.768	-833342
59	22900	-0.752084	114.334	-850565
60	23000	-0.742143	114.885	-867634
61	23000	-0.729003	115.416	-884401
62	23000	-0.715986	115.929	-900869
63	23000	-0.703089	116.423	-917040
64	24000	-0.690309	116.899	-933608
65	25800	-0.677639	117.359	-951091
66	25800	-0.668209	117.805	-968330
67	26000	-0.655726	118.235	-985379
68	26000	-0.643345	118.649	-1.00211e+006
69	26500	-0.631062	119.047	-1.01883e+006
70	27000	-0.618872	119.43	-1.03554e+006
71	28000	-0.606775	119.798	-1.05253e+006
72	29000	-0.597761	120.156	-1.06986e+006
73	29100	-0.585815	120.499	-1.08691e+006
74	30000	-0.573953	120.828	-1.10413e+006
75	30900	-0.56217	121.144	-1.1215e+006
76	32000	-0.550465	121.447	-1.13912e+006
77	34000	-0.538836	121.738	-1.15744e+006
78	34000	-0.530162	122.019	-1.17546e+006
79	34200	-0.518658	122.288	-1.1932e+006
80	36000	-0.507221	122.545	-1.21146e+006
81	37400	-0.49585	122.791	-1.23e+006
82	38300	-0.484544	123.026	-1.24856e+006
83	42000	-0.473299	123.25	-1.26844e+006
84	42000	-0.464904	123.466	-1.28797e+006
85	45000	-0.453763	123.672	-1.30839e+006
86	45000	-0.442676	123.868	-1.32831e+006
87	54000	-0.431644	124.054	-1.35162e+006
88	55000	-0.420664	124.231	-1.37475e+006
89	56200	-0.412463	124.401	-1.39793e+006
90	58500	-0.401571	124.562	-1.42142e+006
91	61600	-0.390726	124.715	-1.44549e+006
92	62000	-0.379927	124.859	-1.46905e+006
93	66600	-0.369171	124.996	-1.49364e+006
94	67000	-0.358459	125.124	-1.51765e+006
95	68000	-0.350451	125.247	-1.54148e+006
96	72000	-0.33981	125.363	-1.56595e+006
97	72000	-0.329206	125.471	-1.58965e+006
98	76000	-0.318639	125.572	-1.61387e+006
99	78000	-0.308108	125.667	-1.6379e+006
100	80000	-0.297612	125.756	-1.66171e+006
101	80000	-0.28976	125.84	-1.68489e+006
102	81000	-0.279319	125.918	-1.70752e+006
103	84000	-0.268908	125.99	-1.7301e+006

104	88000	-0.258527	126.057	-1.75285e+006
105	90000	-0.248174	126.119	-1.77519e+006
106	98800	-0.237847	126.175	-1.79869e+006
107	98900	-0.230118	126.228	-1.82145e+006
108	101000	-0.219834	126.277	-1.84365e+006
109	106000	-0.209575	126.32	-1.86587e+006
110	106000	-0.199336	126.36	-1.887e+006
111	107000	-0.189118	126.396	-1.90723e+006
112	109000	-0.17892	126.428	-1.92673e+006
113	111000	-0.171285	126.457	-1.94575e+006
114	113000	-0.161119	126.483	-1.96395e+006
115	114000	-0.150969	126.506	-1.98116e+006
116	120000	-0.140835	126.526	-1.99806e+006
117	127000	-0.130716	126.543	-2.01466e+006
118	130000	-0.12061	126.557	-2.03034e+006
119	130000	-0.113039	126.57	-2.04504e+006
120	158000	-0.102953	126.581	-2.06131e+006
121	160000	-0.0928787	126.59	-2.07617e+006
122	179000	-0.0828129	126.596	-2.09099e+006
123	185000	-0.0727562	126.602	-2.10445e+006
124	195000	-0.0627062	126.606	-2.11668e+006
125	197000	-0.0551734	126.609	-2.12755e+006
126	210000	-0.0451348	126.611	-2.13702e+006
127	215000	-0.0350997	126.612	-2.14457e+006
128	230000	-0.0250691	126.613	-2.15034e+006
129	240000	-0.0150408	126.613	-2.15395e+006
130	250000	-0.00501359	126.613	-2.1552e+006
131	250000	0.00501359	126.613	-2.15395e+006
132	254000	0.0150408	126.613	-2.15013e+006
133	255000	0.0250691	126.614	-2.14373e+006
134	260000	0.0350997	126.615	-2.13461e+006
135	260000	0.0451348	126.617	-2.12287e+006
136	265000	0.0551734	126.62	-2.10825e+006
137	270000	0.0627062	126.624	-2.09132e+006
138	272000	0.0727562	126.629	-2.07153e+006
139	275000	0.0828129	126.636	-2.04876e+006
140	275000	0.0928787	126.645	-2.02322e+006
141	275000	0.102953	126.655	-1.9949e+006
142	278000	0.113039	126.668	-1.96348e+006
143	286000	0.12061	126.683	-1.92898e+006
144	290000	0.130716	126.7	-1.89108e+006
145	290000	0.140835	126.72	-1.85023e+006
146	292000	0.150969	126.742	-1.80615e+006
147	299000	0.161119	126.768	-1.75798e+006
148	300000	0.171285	126.798	-1.70659e+006
149	300000	0.17892	126.83	-1.65292e+006
150	301000	0.189118	126.865	-1.59599e+006
151	304000	0.199336	126.905	-1.53539e+006
152	306000	0.209575	126.949	-1.47126e+006
153	306000	0.219834	126.997	-1.40399e+006
154	310000	0.230118	127.05	-1.33266e+006
155	316000	0.237847	127.107	-1.2575e+006
156	320000	0.248174	127.168	-1.17808e+006
157	320000	0.258527	127.235	-1.09535e+006
158	330000	0.268908	127.308	-1.00661e+006
159	332000	0.279319	127.386	-913879
160	340000	0.28976	127.47	-815361

161	350000	0.297612	127.558	-711197
162	350000	0.308108	127.653	-603359
163	360000	0.318639	127.755	-488649
164	373000	0.329206	127.863	-365855
165	375000	0.33981	127.979	-238426
166	375000	0.350451	128.101	-107007
167	388000	0.358459	128.23	32075.3
168	390000	0.369171	128.366	176052
169	390000	0.379927	128.51	324223
170	408000	0.390726	128.663	483639
171	409000	0.401571	128.824	647882
172	410000	0.412463	128.994	816992
173	420000	0.420664	129.171	993671
174	420000	0.431644	129.358	1.17496e+006
175	420000	0.442676	129.554	1.36089e+006
176	425000	0.453763	129.76	1.55373e+006
177	425000	0.464904	129.976	1.75132e+006
178	430000	0.473299	130.2	1.95484e+006
179	434000	0.484544	130.435	2.16513e+006
180	444000	0.49585	130.68	2.38529e+006
181	450000	0.507221	130.938	2.61354e+006
182	451000	0.518658	131.207	2.84745e+006
183	460000	0.530162	131.488	3.09132e+006
184	467000	0.538836	131.778	3.34296e+006
185	470000	0.550465	132.081	3.60168e+006
186	475000	0.56217	132.397	3.86871e+006
187	475000	0.573953	132.727	4.14134e+006
188	500000	0.585815	133.07	4.43424e+006
189	500000	0.597761	133.427	4.73313e+006
190	517000	0.606775	133.795	5.04683e+006
191	558000	0.618872	134.178	5.39216e+006
192	750000	0.631062	134.577	5.86546e+006
193	880000	0.643345	134.99	6.4316e+006
194	1.5e+006	0.655726	135.42	7.41519e+006
195	1.55e+006	0.668209	135.867	8.45091e+006
196	1.7e+006	0.677639	136.326	9.6029e+006
197	1.897e+006	0.690309	136.803	1.09124e+007
198	1.9e+006	0.703089	137.297	1.22483e+007
199	2e+006	0.715986	137.81	1.36803e+007
200	2e+006	0.729003	138.341	1.51383e+007
201	2.133e+006	0.742143	138.892	1.67213e+007
202	2.15e+006	0.752084	139.457	1.83382e+007
203	2.2e+006	0.765456	140.043	2.00222e+007
204	2.3e+006	0.778966	140.65	2.18139e+007
205	2.35e+006	0.792618	141.278	2.36765e+007
206	2.36e+006	0.806422	141.929	2.55797e+007
207	2.367e+006	0.820379	142.602	2.75215e+007
208	2.4e+006	0.830953	143.292	2.95158e+007
209	2.4e+006	0.845198	144.007	3.15443e+007
210	2.46e+006	0.859618	144.746	3.36589e+007
211	2.5e+006	0.874218	145.51	3.58445e+007
212	2.5e+006	0.889006	146.3	3.8067e+007
213	2.5e+006	0.903992	147.117	4.0327e+007
214	2.51e+006	0.915365	147.955	4.26245e+007
215	2.52e+006	0.930718	148.821	4.49699e+007
216	2.55e+006	0.946291	149.717	4.7383e+007
217	2.62e+006	0.9621	150.643	4.99037e+007

218	2.63e+006	0.97815	151.599	5.24762e+007
219	2.65e+006	0.994457	152.588	5.51115e+007
220	2.65e+006	1.00687	153.602	5.77797e+007
221	2.65e+006	1.02365	154.65	6.04924e+007
222	2.7e+006	1.04073	155.733	6.33024e+007
223	2.7e+006	1.05812	156.853	6.61593e+007
224	2.7e+006	1.07584	158.01	6.90641e+007
225	2.7e+006	1.0939	159.207	7.20176e+007
226	2.75e+006	1.10768	160.434	7.50637e+007
227	2.767e+006	1.12639	161.702	7.81804e+007
228	2.79e+006	1.1455	163.015	8.13764e+007
229	2.9e+006	1.16505	164.372	8.4755e+007
230	2.9e+006	1.18504	165.776	8.81917e+007
231	2.9e+006	1.20553	167.23	9.16877e+007
232	2.933e+006	1.22123	168.721	9.52695e+007
233	2.94e+006	1.24264	170.265	9.89229e+007
234	2.95e+006	1.26464	171.864	1.02654e+008
235	2.95e+006	1.28727	173.521	1.06451e+008
236	2.967e+006	1.31058	175.239	1.1034e+008
237	3e+006	1.33462	177.02	1.14343e+008
238	3e+006	1.35317	178.851	1.18403e+008
239	3.05e+006	1.37866	180.752	1.22608e+008
240	3.05e+006	1.40507	182.726	1.26893e+008
241	3.05e+006	1.4325	184.778	1.31262e+008
242	3.1e+006	1.46106	186.913	1.35792e+008
243	3.15e+006	1.49085	189.136	1.40488e+008
244	3.2e+006	1.5141	191.428	1.45333e+008
245	3.2e+006	1.54643	193.82	1.50282e+008
246	3.2e+006	1.58047	196.318	1.55339e+008
247	3.24e+006	1.61644	198.93	1.60576e+008
248	3.25e+006	1.65463	201.668	1.65954e+008
249	3.267e+006	1.6954	204.543	1.71493e+008
250	3.3e+006	1.72793	207.528	1.77195e+008
251	3.4e+006	1.77438	210.677	1.83228e+008
252	3.4e+006	1.82501	214.007	1.89433e+008
253	3.46e+006	1.88079	217.545	1.9594e+008
254	3.6e+006	1.94314	221.321	2.02936e+008
255	3.6e+006	2.01409	225.377	2.10186e+008
256	3.63e+006	2.07485	229.682	2.17718e+008
257	3.65e+006	2.17009	234.391	2.25639e+008
258	3.8e+006	2.29036	239.637	2.34342e+008
259	4e+006	2.45727	245.675	2.44171e+008

Sample Standard Deviation = 1.20032e+006
Numerator = 5.96197e+016
Denominator = 9.16758e+016 = 259 245.675
W Statistic = 0.650332
5% Critical value of 0.976 exceeds 0.650332
Evidence of non-normality at 95% level of significance
1% Critical value of 0.967 exceeds 0.650332
Evidence of non-normality at 99% level of significance

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Sulfate

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Total Percent Non-Detects = 3.07692%
Number of comparisons = 4
Future Samples (k) = 4
Recent Dates = 1
Background Samples (n) = 67
Maximum Background Concentration = 880000
Confidence Level = 94.4%
False Positive Rate = 5.6%

Well	Date	Samples	Mean	Impacted
MW#93-2	6/6/2017	1	3.63e+006	TRUE
MW#93-3	6/6/2017	1	18200	FALSE
MW#03-1	6/6/2017	1	8920	FALSE
MW#03-2	6/6/2017	1	332000	FALSE

Non-Parametric Prediction Interval

Intra-Well Comparison for MW#93-2

Parameter: Sulfate

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit

Total Percent Non-Detects = 0%
Future Samples (k) = 1
Recent Dates = 1
Baseline Samples (n) = 68
Maximum Baseline Concentration = 4.3e+006
Confidence Level = 98.6%
False Positive Rate = 1.4%

Baseline Samples	Date	Result
	12/15/1994	2e+006
	3/14/1995	1.55e+006
	6/21/1995	185000
	12/14/1995	2.367e+006
	3/6/1996	2.15e+006
	4/25/1996	2e+006
	10/2/1996	3.267e+006
	12/10/1996	4e+006
	3/11/1997	1.7e+006
	4/15/1997	1.5e+006
	8/14/1997	3.65e+006
	12/4/1997	4.3e+006
	3/31/1998	2.5e+006
	6/23/1998	3.25e+006
	8/11/1998	3.05e+006
	12/8/1998	3.05e+006
	3/9/1999	3.6e+006
	6/8/1999	3.15e+006
	8/19/1999	1.897e+006
	12/14/1999	2.5e+006
	3/7/2000	3.4e+006
	6/23/2000	3.4e+006
	12/12/2000	3e+006
	3/27/2001	2.133e+006
	6/28/2001	2.75e+006
	9/10/2001	2.65e+006
	12/18/2001	2.95e+006
	3/19/2002	2.967e+006
	6/26/2002	3.05e+006
	9/18/2002	2.9e+006
	12/11/2002	2.933e+006
	3/13/2003	2.9e+006
	6/25/2003	2.7e+006
	9/26/2003	2.767e+006
	12/10/2003	2.7e+006
	3/9/2004	2.55e+006
	6/24/2004	2.65e+006
	9/15/2004	2.7e+006
	12/15/2004	2.95e+006
	3/16/2005	3.2e+006
	6/15/2005	2.65e+006

9/21/2005	3.2e+006
12/21/2005	3.2e+006
3/15/2006	3e+006
6/21/2006	2.7e+006
12/20/2006	2.5e+006
2/21/2007	1.9e+006
6/12/2007	2.4e+006
12/17/2007	3.1e+006
6/11/2008	2.35e+006
12/3/2008	3.3e+006
12/15/2008	2.4e+006
6/17/2009	2.3e+006
12/9/2009	2.2e+006
6/17/2010	2.9e+006
12/22/2010	3.46e+006
6/29/2011	2.63e+006
12/7/2011	2.52e+006
6/6/2012	2.36e+006
12/12/2012	3.24e+006
6/19/2013	2.51e+006
12/11/2013	2.46e+006
6/11/2014	2.79e+006
12/3/2014	2.94e+006
6/17/2015	114000
12/1/2015	3.6e+006
6/22/2016	2.62e+006
12/20/2016	3.8e+006

Date	Samples	Mean	Impacted
6/6/2017	1	3.63e+006	FALSE

Attachment 3

Groundwater Sampling and Analysis Data

GRDA GROUNDWATER SAMPLING

DATE: 03/08/17

Logbook Entry By: wsh
Reviewed By: MB
Final Review By:

Well Number	Total Depth	TOC Elev.	Depth to Water Level	Stabilized Water Level
MW93-1	15.6'	619.83	11.3	608.53
MW93-2	22.2'	607.62	8.2	599.42
MW93-3	27.3'	608.10	13.3	594.80
MW03-1	12.3'	602.87	10.9	591.97
MW03-2	26.9'	607.82	15.4	592.42
F0-8				

Date Sampled	Time Sampled	Sampler
3/8/17	844	wsh/cb
3/8/17	856	wsh/cb
3/8/17	904	wsh/cb
3/8/17	934	wsh/cb
3/8/17	919	wsh/cb
3/8/17	940	wsh/cb

Date Sample Analyzed	Time Sample Analyzed	Analyst	Temp. ° C	pH	Specific Conductivity	ORP mv	Fluoride mg/L	Boron mg/L
3/8/17	844	wsh	17.0	6.8	1208	-50.7	0.19	0.348
3/8/17	856	wsh	16.70	9.6	11.50	-127.6	0.79	2.07
3/8/17	904	wsh	18.10	6.6	2,404	-128.4	0.22	0.09
3/8/17	934	wsh	15.80	7.3	444	-113.0	0.16	<0.025
3/8/17	919	wsh	17.20	6.8	1,514	-122.9	0.14	<0.025
3/8/17	940	wsh	14.20	8.2	1,102	-111.1		

Well Number	Chloride mg/L	Nitrate-Nitrogen mg/L	Sulfate mg/L	Dissolved Arsenic mg/L	Dissolved Barium mg/L	Dissolved Calcium mg/L	Dissolved Copper mg/L	Dissolved Iron mg/L	Dissolved Potassium mg/L	Dissolved Selenium mg/L	Dissolved Sodium mg/L	Alkalinity mg/L	COD mg/L	Hardness mg/L	Total Phosphorus mg/L	TDS mg/L	TOC mg/L	Total Residue mg/L
MW93-1																		
MW93-2																		
MW93-3											334							
MW03-1																		
MW03-2	146																	

GRDA GROUNDWATER SAMPLING

DATE: 06/06/17

Logbook Entry By: wsh
Reviewed By: MB
Final Review By: _____

Well Number	Total Depth	TOC Elev.	Depth to Water Level	Stabilized Water Level
MW93-1	15.6'	619.83	10.3	609.53
MW93-2	22.2'	607.62	7.7	599.92
MW93-3	27.3'	608.10	11.5	596.60
MW03-1	12.3'	602.87	8.0	594.87
MW03-2	26.9'	607.82	14.0	593.82
F0-8				

Date Sampled	Time Sampled	Sampler
6/6/17	1402	wsh/dc
6/6/17	1415	wsh/dc
6/6/17	1419	wsh/dc
6/6/17	1452	wsh/dc
6/6/17	1435	wsh/dc
6/6/17	1508	wsh/dc

Date Sample Analyzed	Time Sample Analyzed	Analyst	Temp. ° C	pH	Specific Conductivity	ORP mv	Fluoride mg/L	Boron mg/L
6/6/17	1402	wsh	25.7	6.68	1289	-113.0	0.140	0.371
6/6/17	1415	wsh	24.80	9.29	12.59	-166.4	0.680	1.830
6/6/17	1419	wsh	24.20	6.65	1,743	-174.1	0.240	<.100
6/6/17	1452	wsh	24.10	6.64	198	-159.2	<.10	<.100
6/6/17	1435	wsh	21.70	6.73	1,498	-158.1	0.100	<.100
6/6/17	1516	wsh	32.40	9.90	869	69.4		

Well Number	Chloride mg/L	Nitrate-Nitrogen mg/L	Sulfate mg/L	Dissolved Arsenic mg/L	Dissolved Barium mg/L	Dissolved Calcium mg/L	Dissolved Copper mg/L	Dissolved Iron mg/L	Dissolved Potassium mg/L	Dissolved Selenium mg/L	Dissolved Sodium mg/L	Alkalinity mg/L	COD mg/L	Hardness mg/L	Total Phosphorus mg/L	TDS mg/L	TOC mg/L	Total Residue mg/L
MW93-1	16.1	<.25	265	<.005	0.013	206.00	<.010	<.075	0.45	<.005	58.4	398	<15.0	568	<.025	810	3.31	820
MW93-2	1580	<.25	3630	0.038	0.033	45.20	0.014	<.075	241	0.015	2310	246	82.2	114	0.588	7350	12.1	7380
MW93-3	113	1.53	18.2	<.005	0.199	56.00	<.010	<.075	4.37	0.005	301	304	<15.0	192	0.048	780	2.54	830
MW03-1	0.887		8.92	<.005							6.56	56						
MW03-2	117		332	<.005							96.8	192						

Accurate Environmental Laboratories

March 17, 2017

Client: Grand River Dam Authority

PO Box 609

Chouteau, OK 74337

Requested By: -

National Environmental Laboratory Accreditation Program
Kansas CERT # E-10219

Sample Project Name:	GREC - Monitor Wells Event
Date Samples Received:	March 08, 2017 Time: 14:27 sample temp upon arrival at lab = 4°C - On Ice
Matrix:	Water
Lab Log Numbers:	**7C08082-01 7C08082-02 7C08082-03 7C08082-04 7C08082-05**
Work Order:	7C08082
Report #	7C08082-0317171040
EPA Lab ID#'s:	**Stillwater OK00092 Tulsa OK00983 OKC OK00129 ICR OK 001**
Oklahoma Certification:	Stillwater WasteWater, DEQ 8316/ Drinking Water, DEQ D9602 Tulsa WasteWater, DEQ 9905 / Drinking Water, DEQ D9901 Oklahoma City WasteWater DEQ 7202 / Drinking Water, DEQ D9937
Kansas Certification:	Stillwater NELAP CERT # E-10219
New Jersey Certification:	Oklahoma City Drinking Water NELAP CERT # OK005
Texas Certification:	Stillwater Drinking Water NELAP CERT # T105704533-14-1
Method Reference:	40 CFR 136, 141, and 261 Methods for Chemical Analysis of Water and Wastes EPA-600/4-79-020, March 1983. Test Methods for Evaluating Solid Wastes, SW-846, Final Update III. Standard Methods 1998 (20th Edition), Standard Methods 2005 (21st Edition) and Standard Methods 2011 (22nd Edition) for the Examination of Water and Wastewater.
Analysis Reference:	If qualifiers present in "Prep Info" or "Analysis Info", then analysis performed as follows: @= Tulsa Lab and * = OKC Lab. If no qualifiers present, then analysis performed at Stillwater Lab.

Accurate Environmental Laboratories certify that the test results performed at the Stillwater lab meet all requirements of NELAP. Any exceptions to this can be found in the report footer or Quality Control Section of the report.

This report is to only be replicated in its entirety.

Accurate Enviornmental sampling protocol was followed for any sampling performed by Accurate Field Services.

Sample: ***MW93-1*** **Location Code:** **PWSID#:**

Collection Type: Grab Sample Time: 3/8/17 8:44 **Lab Log#** 7C08082-01

Method/Parameter	Test	Result	Notes	PQL#	Prep Info	Analysis Info
Fluoride EPA 300.0	Fluoride	0.19 mg/L		0.10	03/09/17 10:39 ALM	03/09/17 23:12 ALM
Boron (B) EPA 6020A	Boron	0.348 mg/L		0.025	03/09/17 16:00 PD	03/14/17 13:28 PD

Sample: ***MW93-2*** **Location Code:** **PWSID#:**

Collection Type: Grab Sample Time: 3/8/17 8:56 **Lab Log#** 7C08082-02

Method/Parameter	Test	Result	Notes	PQL#	Prep Info	Analysis Info
Fluoride EPA 300.0	Fluoride	0.79 mg/L		0.20	03/09/17 10:39 ALM	03/15/17 15:46 ALM
Boron (B) EPA 6020A	Boron	2.07 mg/L		0.250	03/09/17 16:00 PD	03/14/17 13:33 PD

Sample: ***MW93-3*** **Location Code:** **PWSID#:**

Collection Type: Grab Sample Time: 3/8/17 9:04 **Lab Log#** 7C08082-03

Method/Parameter	Test	Result	Notes	PQL#	Prep Info	Analysis Info
Fluoride EPA 300.0	Fluoride	0.22 mg/L		0.10	03/09/17 10:39 ALM	03/09/17 23:56 ALM
Boron (B) EPA 6020A	Boron	0.090 mg/L		0.025	03/09/17 16:00 PD	03/14/17 13:39 PD
Sodium (Na), Soluble EPA 6010B	Sodium	334 mg/L		25.0	03/14/17 16:00 PD	03/15/17 15:07 LF

Sample: ***MW03-1*** **Location Code:** **PWSID#:**

Collection Type: Grab Sample Time: 3/8/17 9:34 **Lab Log#** 7C08082-04

Method/Parameter	Test	Result	Notes	PQL#	Prep Info	Analysis Info
Fluoride EPA 300.0	Fluoride	0.16 mg/L		0.10	03/09/17 10:39 ALM	03/10/17 00:17 ALM
Boron (B) EPA 6020A	Boron	BPQL mg/L		0.025	03/09/17 16:00 PD	03/14/17 13:44 PD

Sample: ***MW03-2*** **Location Code:** **PWSID#:**

Collection Type: Grab Sample Time: 3/8/17 9:19 **Lab Log#** 7C08082-05

Method/Parameter	Test	Result	Notes	PQL#	Prep Info	Analysis Info
Chloride EPA 300.0	Chloride	146 mg/L		12.5	03/09/17 10:39 ALM	03/10/17 01:43 ALM
Fluoride EPA 300.0	Fluoride	0.14 mg/L		0.10	03/09/17 10:39 ALM	03/10/17 01:22 ALM
Boron (B) EPA 6020A	Boron	BPQL mg/L		0.025	03/09/17 16:00 PD	03/14/17 13:49 PD

Notes and Definitions

#52	Analyte recoveries are outside of acceptance limits for the matrix spike sample. This failure does not invalidate data reported.
MCL	Analyte concentration may exceed Maximum Contaminant Limit (MCL) for EPA Primary or Secondary Drinking Water Regulations.
###	Analyte concentration may exceed regulatory limit.
PQL	Practical Quantitation Limit - the method reporting limit (MRL) adjusted for any dilutions or other changes made to the sample to deal with interferences/matrix effects
BPQL	Below Practical Quantitation Limit (if applicable).

The "Prep Date" of the QC analysis coincides with the characters of the appropriate QC Lab ID. (Example: S 9 A 02 15 - BLK = 2009, Jan 2, Batch #15 - Blank)

Lab Manager

Quality Control Data

Blank Data

QC Lab #	Test Group	Test	Result	PQL	Flags
S7C0945-BLK1	Chloride EPA 300.0	Chloride	BPQL mg/L	0.500	
S7C0945-BLK1	Fluoride EPA 300.0	Fluoride	BPQL mg/L	0.10	
S7C0967-BLK1	Boron (B) EPA 6020A	Boron	BPQL mg/L	0.025	
S7C1446-BLK1	Sodium (Na), Soluble EPA 6010B	Sodium	BPQL mg/L	0.50	

Duplicate Sample Data

QC Lab #	Test Group	Test Name	Dup Result	Samp Result	% RPD	RPD Limit	Flags
S7C0945-DUP1	Chloride EPA 300.0	Chloride	1.30	1.44	10	20	
S7C0945-DUP1	Fluoride EPA 300.0	Fluoride	0.16	0.16	0	20	

Laboratory Control Sample Data

Lab QC#	Test Group	Test Name	LCS Result	Spike Level	Units	% Rec.	Control Limits	Flags
S7C0945-BS1	Chloride EPA 300.0	Chloride	2.80	3.000	mg/L	93	90 - 110	
S7C0945-BS1	Fluoride EPA 300.0	Fluoride	1.82	2.000	mg/L	91	90 - 110	
S7C0967-BS1	Boron (B) EPA 6020A	Boron	0.090	0.1000	mg/L	90	85 - 115	
S7C1446-BS1	Sodium (Na), Soluble EPA 6010B	Sodium	1.95	2.000	mg/L	98	85 - 115	

LCS Duplicate Data

QC Lab#	Test Group	Test Name	LCS % Rec.	LCS Dup % Rec.	Recovery Limits	RPD	RPD Limit	Flags
S7C0967-BSD1	Boron (B) EPA 6020A	Boron	90	92	85 - 115	2	20	

Matrix Spike Data

QC Lab #	Test Group	Test Name	Sample Result	Units	Spike Result	Spike Level	% Rec.	Acceptance Limits	Flags
S7C0945-MS1	Chloride EPA 300.0	Chloride	1.44	mg/L	5.08	4.000	91	80 - 120	
S7C0945-MS1	Fluoride EPA 300.0	Fluoride	0.16	mg/L	4.07	4.000	98	80 - 120	
S7C1446-MS1	Sodium (Na), Soluble EPA 6010B	Sodium	334	mg/L	362	10.00	280	85 - 115	#52

Matrix Spike Duplicate Data

QC Lab #	Test Group	Test Name	Sample Result	Spike Result	Spike Level	Units	% Rec.	Rec. Limits	% RPD	RPD Limit	Flags
S7C1446-MSD1	Sodium (Na), Soluble EPA 6010B	Sodium	334	366	10.00	mg/L	325	85-115	1	20	#52

Accurate Environmental Labs

7C08082

Chain of Custody

Client Name- Grand River Dam Authority

Project Name- GREC – Monitor Wells event

Lab Log # (Accurate Use Only)	Date Sample Taken	Time Sample Taken	Matrix Water- W Soil - S Sludge-Sl Other	GRAB	COMP	Client I.D. Sample Location	Field Results Time / pH / Temp ° C / Cond.	Analysis Requested → No. of Container ↓	Sample Preservation. & Container →	Dissolved- Na (500ml Plastic Ice HNO3)	BORON (500ml Plastic ice HNO3)	FLUORIDE (500ml Plastic Ice)	CHLORIDE (500ML Plastic ice)				
-01	03/08/17	0844	W	X		MW93-1		2			1	1					
-02	03/08/17	0856	W	X		MW93-2		2			1	1					
-03	03/08/17	0904	W	X		MW93-3		2		1	1	1					
-04	03/08/17	0934	W	X		MW03-1		2			1	1					
-05	03/08/17	0919	W	X		MW03-2		2			1	1	1				

Comments*
- On Ice
- >6°C
- <6°C

*Failure to complete this form may delay turn around time of analytical reporting.

4.6°C ✓ on ice

Instrument Calibration

Meter	Standards	Final Read.	Date, Time	Initials
pH				
Conductivit				

Relinquished By:	Date/Time 3/8/17 1005	Received By:	Date/Time 03/08/17 1005
Relinquished By:	Date/Time 030817 1129	Received By: Matt Hagan	Date/Time 3-8-17 1129
Relinquished to Lab By: Matt Hagan	Date/Time 3-8-17 1427	Received at Lab By:	Date/Time 3-8-17 1427

Send Report To

PAPERLESS REPORTING:
mbutcher@grda.com
Travis.hinshaw@grda.com

shughes@grda.com

Phone #: (918) 824-7553 Fax #: (918) 825-7791

Send Invoice To:

PO#: P-card

PAPERLESS INVOICING:
jennifer.shala@grda.com
kjohnson@grda.com

Phone #: (918) 824-7553 Fax #: (918) 825-7791

Accurate, Inc.- 505 South Lowry Street Stillwater, OK 74074 Phone: (405) 372-5300 Fax: (405) 372-5396

◊ Tulsa, OK (918) 663-5400 ◊ Enid, OK (580) 237-5353
◊ Oklahoma City, OK (405) 751-3132 ◊ Wichita, KS (316) 683-1123

June 16, 2017

Client: Grand River Dam Authority

PO Box 609

Chouteau, OK 74337

Requested By: Matthew Butcher

National Environmental Laboratory Accreditation Program
Kansas CERT # E-10219

Sample Project Name:	Semi-Annual MW Event
Date Samples Received:	June 06, 2017 Time: 15:55 sample temp upon arrival at lab = 22°C - On Ice
Matrix:	Water
Lab Log Numbers:	**7F06138-01 7F06138-02 7F06138-03 7F06138-04 7F06138-05**
Work Order:	7F06138
Report #	7F06138-0616170853
EPA Lab ID#'s:	**Stillwater OK00092 Tulsa OK00983 OKC OK00129 ICR OK 001**
Oklahoma Certification:	Stillwater WasteWater, DEQ 8316/ Drinking Water, DEQ D9602 Tulsa WasteWater, DEQ 9905 / Drinking Water, DEQ D9901 Oklahoma City WasteWater DEQ 7202 / Drinking Water, DEQ D9937
Kansas Certification:	Stillwater NELAP CERT # E-10219
New Jersey Certification:	Oklahoma City Drinking Water NELAP CERT # OK005
Texas Certification:	Stillwater Drinking Water NELAP CERT # T105704533-14-1
Method Reference:	40 CFR 136, 141, and 261 Methods for Chemical Analysis of Water and Wastes EPA-600/4-79-020, March 1983. Test Methods for Evaluating Solid Wastes, SW-846, Final Update III. Standard Methods 1998 (20th Edition), Standard Methods 2005 (21st Edition) and Standard Methods 2011 (22nd Edition) for the Examination of Water and Wastewater.
Analysis Reference:	If qualifiers present in "Prep Info" or "Analysis Info", then analysis performed as follows: @= Tulsa Lab and * = OKC Lab. If no qualifiers present, then analysis performed at Stillwater Lab.

Accurate Environmental Laboratories certify that the test results performed at the Stillwater lab meet all requirements of NELAP. Any exceptions to this can be found in the report footer or Quality Control Section of the report.

This report is to only be replicated in its entirety.

Accurate Enviornmental sampling protocol was followed for any sampling performed by Accurate Field Services.

Sample: ***MW93-1*** **Location Code:** **PWSID#:**

Collection Type: Grab Sample Time: 6/6/17 14:02 **Lab Log#** 7F06138-01

Method/Parameter	Test	Result	Notes	PQL#	Prep Info	Analysis Info
pH in Field SM4500H+B	pH	6.69 pH Units		0.01	06/06/17 14:02 @KC	06/06/17 14:02 @KC
Temperature in Field SM2550 B	Temperature	25.7 °C		0.00	06/06/17 14:02 @KC	06/06/17 14:02 @KC
Chloride EPA 300.0	Chloride	16.1 mg/L		0.500	06/07/17 07:51 BM	06/07/17 15:42 BM
Fluoride EPA 300.0	Fluoride	0.14 mg/L		0.10	06/07/17 07:51 BM	06/07/17 15:42 BM
Phosphorus (P), Total - EPA 365.1	Phosphorus	BPQL mg/L		0.025	06/08/17 15:30 ALM	06/09/17 11:40 ALM
Nitrate EPA 300.0	Nitrate as N	BPQL mg/L		0.25	06/07/17 07:51 BM	06/07/17 15:42 BM
Sulfate EPA 300.0	Sulfate	265 mg/L		12.5	06/07/17 07:51 BM	06/08/17 10:56 BM
Alkalinity, Total (CaCO3) SM2320B	Alkalinity	398 mg/L		10.0	06/13/17 09:00 @AG	06/13/17 09:00 @AG
COD SM5220 D	Chemical Oxygen Demand	BPQL mg/L		15.0	06/12/17 12:20 @AG	06/12/17 13:20 @AG
Hardness, Total - SM2340 C	Hardness	568 mg/L		5.00	06/15/17 11:06 @AG	06/15/17 11:06 @AG
Total Dissolved Solids SM2540 C	Total Dissolved Solids	810 mg/L		25.0	06/08/17 13:49 @MH	06/12/17 09:00 @MH
Total Solids SM2540 B	Total Solids	820 mg/L		5.0	06/12/17 13:05 @MV	06/13/17 13:00 @MV
Total Organic Carbon SM5310 C	Total Organic Carbon	3.31 mg/L		0.250	06/07/17 15:08 ALM	06/08/17 04:01 ALM
Arsenic (As), Soluble - EPA 6020A	Arsenic	BPQL mg/L		0.005	06/08/17 16:00 PD	06/09/17 16:48 PD
Barium (Ba), Soluble - EPA 6020A	Barium	0.013 mg/L		0.005	06/08/17 16:00 PD	06/09/17 16:48 PD
Boron (B) EPA 6010B	Boron	0.371 mg/L		0.100	06/08/17 16:00 PD	06/12/17 16:38 LF
Calcium (Ca) EPA 6010B	Calcium	206 mg/L		5.00	06/08/17 16:00 PD	06/12/17 17:33 LF
Copper (Cu), Soluble - EPA 6020A	Copper	BPQL mg/L		0.010	06/08/17 16:00 PD	06/09/17 16:48 PD
Iron (Fe), Soluble - EPA 6010B	Iron	BPQL mg/L		0.075	06/08/17 16:00 PD	06/12/17 16:24 LF
Potassium (K), Soluble - EPA 6010B	Potassium	0.45 mg/L		0.25	06/08/17 16:00 PD	06/12/17 16:24 LF
Selenium (Se), Soluble - EPA 6020A	Selenium	BPQL mg/L		0.005	06/08/17 16:00 PD	06/09/17 16:48 PD
Sodium (Na), Soluble EPA 6010B	Sodium	58.4 mg/L		1.00	06/08/17 16:00 PD	06/12/17 17:44 LF

Sample: ***MW93-2*** **Location Code:** **PWSID#:**

Collection Type: Grab Sample Time: 6/6/17 14:15 **Lab Log#** 7F06138-02

Method/Parameter	Test	Result	Notes	PQL#	Prep Info	Analysis Info
pH in Field SM4500H+B	pH	9.29 pH Units		0.01	06/06/17 14:15 @KC	06/06/17 14:15 @KC
Temperature in Field SM2550 B	Temperature	24.8 °C		0.00	06/06/17 14:15 @KC	06/06/17 14:15 @KC
Chloride EPA 300.0	Chloride	1580 mg/L		250	06/07/17 07:51 BM	06/08/17 12:01 BM
Fluoride EPA 300.0	Fluoride	0.68 mg/L		0.10	06/07/17 07:51 BM	06/07/17 16:25 BM
Phosphorus (P), Total - EPA 365.1	Phosphorus	0.588 mg/L		0.025	06/08/17 15:30 ALM	06/09/17 11:41 ALM
Nitrate EPA 300.0	Nitrate as N	BPQL mg/L		0.25	06/07/17 07:51 BM	06/07/17 16:25 BM
Sulfate EPA 300.0	Sulfate	3630 mg/L		250	06/07/17 07:51 BM	06/08/17 12:01 BM
Alkalinity, Total (CaCO3) SM2320B	Alkalinity	246 mg/L		10.0	06/13/17 09:00 @AG	06/13/17 09:00 @AG
COD SM5220 D	Chemical Oxygen Demand	82.2 mg/L		15.0	06/12/17 12:20 @AG	06/12/17 13:20 @AG
Hardness, Total - SM2340 C	Hardness	114 mg/L		5.00	06/15/17 11:06 @AG	06/15/17 11:06 @AG
Total Dissolved Solids SM2540 C	Total Dissolved Solids	7350 mg/L		25.0	06/08/17 13:49 @MH	06/12/17 09:00 @MH
Total Solids SM2540 B	Total Solids	7380 mg/L		5.0	06/12/17 13:05 @MV	06/13/17 13:00 @MV
Total Organic Carbon SM5310 C	Total Organic Carbon	12.1 mg/L		0.250	06/07/17 15:08 ALM	06/08/17 04:29 ALM

Sample: **Location Code:** **PWSID#:**

Collection Type: Grab Sample Time: 6/6/17 14:15 **Lab Log#** 7F06138-02

Method/Parameter	Test	Result	Notes	PQL#	Prep Info	Analysis Info
Arsenic (As), Soluble - EPA 6020A	Arsenic	0.038 mg/L		0.005	06/08/17 16:00 PD	06/09/17 16:54 PD
Barium (Ba), Soluble - EPA 6020A	Barium	0.033 mg/L		0.005	06/08/17 16:00 PD	06/09/17 16:54 PD
Boron (B) EPA 6010B	Boron	1.83 mg/L		0.100	06/08/17 16:00 PD	06/12/17 16:41 LF
Calcium (Ca) EPA 6010B	Calcium	45.2 mg/L		1.00	06/08/17 16:00 PD	06/12/17 17:35 LF
Copper (Cu), Soluble - EPA 6020A	Copper	0.014 mg/L		0.010	06/08/17 16:00 PD	06/09/17 16:54 PD
Iron (Fe), Soluble - EPA 6010B	Iron	BPQL mg/L		0.075	06/08/17 16:00 PD	06/12/17 16:27 LF
Potassium (K), Soluble - EPA 6010B	Potassium	241 mg/L		25.0	06/08/17 16:00 PD	06/12/17 17:47 LF
Selenium (Se), Soluble - EPA 6020A	Selenium	0.015 mg/L		0.005	06/08/17 16:00 PD	06/09/17 16:54 PD
Sodium (Na), Soluble EPA 6010B	Sodium	2310 mg/L		50.0	06/08/17 16:00 PD	06/12/17 17:47 LF

Sample: ***MW93-3*** **Location Code:** **PWSID#:**

Collection Type: Grab Sample Time: 6/6/17 14:19 **Lab Log#** 7F06138-03

Method/Parameter	Test	Result	Notes	PQL#	Prep Info	Analysis Info
pH in Field SM4500H+B	pH	6.65 pH Units		0.01	06/06/17 14:19 @KC	06/06/17 14:19 @KC
Temperature in Field SM2550 B	Temperature	24.2 °C		0.00	06/06/17 14:19 @KC	06/06/17 14:19 @KC
Chloride EPA 300.0	Chloride	113 mg/L		5.00	06/07/17 07:51 BM	06/08/17 12:22 BM
Fluoride EPA 300.0	Fluoride	0.24 mg/L		0.10	06/07/17 07:51 BM	06/07/17 16:46 BM
Phosphorus (P), Total - EPA 365.1	Phosphorus	0.048 mg/L		0.025	06/08/17 15:30 ALM	06/09/17 11:42 ALM
Nitrate EPA 300.0	Nitrate as N	1.53 mg/L		0.25	06/07/17 07:51 BM	06/07/17 16:46 BM
Sulfate EPA 300.0	Sulfate	18.2 mg/L		5.00	06/07/17 07:51 BM	06/08/17 12:22 BM
Alkalinity, Total (CaCO3) SM2320B	Alkalinity	304 mg/L		10.0	06/13/17 09:00 @AG	06/13/17 09:00 @AG
COD SM5220 D	Chemical Oxygen Demand	BPQL mg/L		15.0	06/12/17 12:20 @AG	06/12/17 13:20 @AG
Hardness, Total - SM2340 C	Hardness	192 mg/L		5.00	06/15/17 11:06 @AG	06/15/17 11:06 @AG
Total Dissolved Solids SM2540 C	Total Dissolved Solids	780 mg/L		25.0	06/08/17 13:49 @MH	06/12/17 09:00 @MH
Total Solids SM2540 B	Total Solids	830 mg/L		5.0	06/12/17 13:05 @MV	06/13/17 13:00 @MV
Total Organic Carbon SM5310 C	Total Organic Carbon	2.54 mg/L		0.250	06/07/17 15:08 ALM	06/08/17 04:48 ALM
Arsenic (As), Soluble - EPA 6020A	Arsenic	BPQL mg/L		0.005	06/08/17 16:00 PD	06/09/17 17:15 PD
Barium (Ba), Soluble - EPA 6020A	Barium	0.199 mg/L		0.005	06/08/17 16:00 PD	06/09/17 17:15 PD
Boron (B) EPA 6010B	Boron	BPQL mg/L		0.100	06/08/17 16:00 PD	06/12/17 16:44 LF
Calcium (Ca) EPA 6010B	Calcium	56.0 mg/L		2.50	06/08/17 16:00 PD	06/12/17 17:38 LF
Copper (Cu), Soluble - EPA 6020A	Copper	BPQL mg/L		0.010	06/08/17 16:00 PD	06/09/17 17:15 PD
Iron (Fe), Soluble - EPA 6010B	Iron	BPQL mg/L		0.075	06/08/17 16:00 PD	06/12/17 16:30 LF
Potassium (K), Soluble - EPA 6010B	Potassium	4.37 mg/L		0.25	06/08/17 16:00 PD	06/12/17 16:30 LF
Selenium (Se), Soluble - EPA 6020A	Selenium	0.005 mg/L		0.005	06/08/17 16:00 PD	06/09/17 17:15 PD
Sodium (Na), Soluble EPA 6010B	Sodium	301 mg/L		12.5	06/08/17 16:00 PD	06/12/17 17:30 LF

Sample: ***MW03-1*** **Location Code:** **PWSID#:**

Collection Type: Grab Sample Time: 6/6/17 14:52 **Lab Log#** 7F06138-04

Method/Parameter	Test	Result	Notes	PQL#	Prep Info	Analysis Info
pH in Field SM4500H+B	pH	6.64 pH Units		0.01	06/06/17 14:52 @KC	06/06/17 14:52 @KC

Sample: **Location Code:** **PWSID#:**

Collection Type: Grab Sample Time: 6/6/17 14:52 **Lab Log#** 7F06138-04

Method/Parameter	Test	Result	Notes	PQL#	Prep Info	Analysis Info
Temperature in Field SM2550 B	Temperature	24.1 °C		0.00	06/06/17 14:52 @KC	06/06/17 14:52 @KC
Chloride EPA 300.0	Chloride	0.887 mg/L		0.500	06/07/17 07:51 BM	06/07/17 17:08 BM
Fluoride EPA 300.0	Fluoride	BPQL mg/L		0.10	06/07/17 07:51 BM	06/07/17 17:08 BM
Sulfate EPA 300.0	Sulfate	8.92 mg/L		0.500	06/07/17 07:51 BM	06/07/17 17:08 BM
Alkalinity, Total (CaCO3) SM2320B	Alkalinity	56.0 mg/L		10.0	06/13/17 09:00 @AG	06/13/17 09:00 @AG
Arsenic (As), Soluble - EPA 6020A	Arsenic	BPQL mg/L		0.005	06/08/17 16:00 PD	06/09/17 17:20 PD
Boron (B) EPA 6010B	Boron	BPQL mg/L		0.100	06/08/17 16:00 PD	06/12/17 16:47 LF
Sodium (Na), Soluble EPA 6010B	Sodium	6.56 mg/L		0.50	06/08/17 16:00 PD	06/12/17 16:32 LF

Sample: ***MW03-2*** **Location Code:** **PWSID#:**

Collection Type: Grab Sample Time: 6/6/17 14:35 **Lab Log#** 7F06138-05

Method/Parameter	Test	Result	Notes	PQL#	Prep Info	Analysis Info
pH in Field SM4500H+B	pH	6.73 pH Units		0.01	06/06/17 14:35 @KC	06/06/17 14:35 @KC
Temperature in Field SM2550 B	Temperature	21.7 °C		0.00	06/06/17 14:35 @KC	06/06/17 14:35 @KC
Chloride EPA 300.0	Chloride	117 mg/L		12.5	06/07/17 07:51 BM	06/08/17 13:05 BM
Fluoride EPA 300.0	Fluoride	0.10 mg/L		0.10	06/07/17 07:51 BM	06/07/17 17:30 BM
Sulfate EPA 300.0	Sulfate	332 mg/L		12.5	06/07/17 07:51 BM	06/08/17 13:05 BM
Alkalinity, Total (CaCO3) SM2320B	Alkalinity	192 mg/L		10.0	06/13/17 09:00 @AG	06/13/17 09:00 @AG
Arsenic (As), Soluble - EPA 6020A	Arsenic	BPQL mg/L		0.005	06/08/17 16:00 PD	06/09/17 17:25 PD
Boron (B) EPA 6010B	Boron	BPQL mg/L		0.100	06/08/17 16:00 PD	06/12/17 16:55 LF
Sodium (Na), Soluble EPA 6010B	Sodium	96.8 mg/L		2.50	06/08/17 16:00 PD	06/12/17 17:50 LF

Notes and Definitions

#52	Analyte recoveries are outside of acceptance limits for the matrix spike sample. This failure does not invalidate data reported.
MCL	Analyte concentration may exceed Maximum Contaminant Limit (MCL) for EPA Primary or Secondary Drinking Water Regulations.
###	Analyte concentration may exceed regulatory limit.
PQL	Practical Quantitation Limit - the method reporting limit (MRL) adjusted for any dilutions or other changes made to the sample to deal with interferences/matrix effects
BPQL	Below Practical Quantitation Limit (if applicable).

The "Prep Date" of the QC analysis coincides with the characters of the appropriate QC Lab ID. (Example: S 9 A 02 15 - BLK = 2009, Jan 2, Batch #15 - Blank)

Lab Manager

Quality Control Data

Blank Data

QC Lab #	Test Group	Test	Result	PQL	Flags
S7F0704-BLK1	Chloride EPA 300.0	Chloride	BPQL mg/L	0.500	
S7F0704-BLK1	Fluoride EPA 300.0	Fluoride	BPQL mg/L	0.10	
S7F0857-BLK1	Phosphorus (P), Total - EPA 365.1	Phosphorus	BPQL mg/L	0.025	
S7F0704-BLK1	Nitrate EPA 300.0	Nitrate as N	BPQL mg/L	0.25	
S7F0704-BLK1	Sulfate EPA 300.0	Sulfate	BPQL mg/L	0.500	
S7F1307-BLK1	Alkalinity, Total (CaCO3) SM2320B	Alkalinity	BPQL mg/L	10.0	
S7F1212-BLK1	COD SM5220 D	Chemical Oxygen Demand	BPQL mg/L	15.0	
S7F1523-BLK1	Hardness, Total - SM2340 C	Hardness	BPQL mg/L	5.00	
S7F0837-BLK1	Total Dissolved Solids SM2540 C	Total Dissolved Solids	BPQL mg/L	25.0	
S7F1208-BLK1	Total Solids SM2540 B	Total Solids	BPQL mg/L	5.0	
S7F0744-BLK1	Total Organic Carbon SM5310 C	Total Organic Carbon	BPQL mg/L	0.250	
S7F0861-BLK1	Arsenic (As), Soluble - EPA 6020A	Arsenic	BPQL mg/L	0.005	
S7F0861-BLK1	Barium (Ba), Soluble - EPA 6020A	Barium	BPQL mg/L	0.005	
S7F0863-BLK1	Boron (B) EPA 6010B	Boron	BPQL mg/L	0.100	
S7F0863-BLK1	Calcium (Ca) EPA 6010B	Calcium	BPQL mg/L	0.50	
S7F0861-BLK1	Copper (Cu), Soluble - EPA 6020A	Copper	BPQL mg/L	0.010	
S7F0863-BLK1	Iron (Fe), Soluble - EPA 6010B	Iron	BPQL mg/L	0.075	
S7F0863-BLK1	Potassium (K), Soluble - EPA 6010B	Potassium	BPQL mg/L	0.25	
S7F0861-BLK1	Selenium (Se), Soluble - EPA 6020A	Selenium	BPQL mg/L	0.005	
S7F0863-BLK1	Sodium (Na), Soluble EPA 6010B	Sodium	BPQL mg/L	0.50	

Duplicate Sample Data

QC Lab #	Test Group	Test Name	Source	Dup Result	Samp Result	% RPD	RPD Limit	Flags
S7F0651-DUP1	pH in Field SM4500H+B	pH	7F06138-01	6.69	6.69	0	20	
S7F0651-DUP1	Temperature in Field SM2550 B	Temperature	7F06138-01	25.7	25.7	0	20	
S7F0704-DUP1	Chloride EPA 300.0	Chloride	7F06138-01	16.0	16.1	0.8	20	
S7F0704-DUP1	Fluoride EPA 300.0	Fluoride	7F06138-01	0.14	0.14	0.7	20	
S7F0704-DUP1	Nitrate EPA 300.0	Nitrate as N	7F06138-01	0.13	0.12	12	20	
S7F0704-DUP1	Sulfate EPA 300.0	Sulfate	7F06138-01	259	265	2	20	
S7F1307-DUP1	Alkalinity, Total (CaCO3) SM2320B	Alkalinity	7F06138-04	58.0	56.0	4	20	
S7F1523-DUP1	Hardness, Total - SM2340 C	Hardness	7F06138-02	112	114	2	20	
S7F1208-DUP1	Total Solids SM2540 B	Total Solids	7F06138-03	770	830	8	10	
S7F0744-DUP1	Total Organic Carbon SM5310 C	Total Organic Carbon	7F06138-03	2.57	2.54	1	20	

Quality Control Data

Laboratory Control Sample Data

Lab QC#	Test Group	Test Name	LCS Result	Spike Level	Units	% Rec.	Control Limits	Flags
S7F0651-BS1	pH in Field SM4500H+B	pH	7.03	7.000	pH Units	100	98.5 - 101.5	
S7F0704-BS1	Chloride EPA 300.0	Chloride	2.94	3.000	mg/L	98	90 - 110	
S7F0704-BS1	Fluoride EPA 300.0	Fluoride	1.94	2.000	mg/L	97	90 - 110	
S7F0704-BS1	Nitrate EPA 300.0	Nitrate as N	2.28	2.260	mg/L	101	90 - 110	
S7F0704-BS1	Sulfate EPA 300.0	Sulfate	15.9	15.00	mg/L	106	90 - 110	
S7F0744-BS1	Total Organic Carbon SM5310 C	Total Organic Carbon	9.68	10.00	mg/L	97	90 - 110	
S7F0837-BS1	Total Dissolved Solids SM2540 C	Total Dissolved Solids	892	1000	mg/L	89	80 - 120	
S7F0857-BS1	Phosphorus (P), Total - EPA 365.1	Phosphorus	0.091	0.1000	mg/L	91	90 - 110	
S7F1212-BS1	COD SM5220 D	Chemical Oxygen Demand	92.0	100.0	mg/L	92	90 - 110	
S7F1307-BS1	Alkalinity, Total (CaCO3) SM2320B	Alkalinity	94.0	100.0	mg/L	94	80 - 120	
S7F1523-BS1	Hardness, Total - SM2340 C	Hardness	98.0	100.0	mg/L	98	80 - 120	
S7F0861-BS1	Arsenic (As), Soluble - EPA 6020A	Arsenic	0.089	0.1000	mg/L	89	85 - 115	
S7F0861-BS1	Barium (Ba), Soluble - EPA 6020A	Barium	0.100	0.1000	mg/L	100	85 - 115	
S7F0861-BS1	Copper (Cu), Soluble - EPA 6020A	Copper	0.096	0.1000	mg/L	96	85 - 115	
S7F0861-BS1	Selenium (Se), Soluble - EPA 6020A	Selenium	0.093	0.1000	mg/L	93	85 - 115	
S7F0863-BS1	Boron (B) EPA 6010B	Boron	2.11	2.000	mg/L	106	85 - 115	
S7F0863-BS1	Calcium (Ca) EPA 6010B	Calcium	2.24	2.000	mg/L	112	85 - 115	
S7F0863-BS1	Iron (Fe), Soluble - EPA 6010B	Iron	2.06	2.000	mg/L	103	85 - 115	
S7F0863-BS1	Potassium (K), Soluble - EPA 6010B	Potassium	1.99	2.000	mg/L	100	85 - 115	
S7F0863-BS1	Sodium (Na), Soluble EPA 6010B	Sodium	2.14	2.000	mg/L	107	85 - 115	

LCS Duplicate Data

QC Lab#	Test Group	Test Name	LCS % Rec.	LCS Dup % Rec.	Recovery Limits	RPD	RPD Limit	Flags
S7F0861-BSD1	Arsenic (As), Soluble - EPA 6020A	Arsenic	89	88	85 - 115	1	20	
S7F0861-BSD1	Barium (Ba), Soluble - EPA 6020A	Barium	100	94	85 - 115	6	20	
S7F0861-BSD1	Copper (Cu), Soluble - EPA 6020A	Copper	96	93	85 - 115	3	20	
S7F0861-BSD1	Selenium (Se), Soluble - EPA 6020A	Selenium	93	92	85 - 115	1	20	

Quality Control Data

Matrix Spike Data

QC Lab #	Test Group	Test Name	Source Sample	Sample Result	Units	Spike Result	Spike Level	% Rec.	Acceptance Limits	Flags
S7F0704-MS1	Chloride EPA 300.0	Chloride	7F06138-01	16.1	mg/L	98.0	83.35	98	80 - 120	
S7F0704-MS1	Fluoride EPA 300.0	Fluoride	7F06138-01	BPQL	mg/L	83.4	83.35	100	80 - 120	
S7F0704-MS1	Nitrate EPA 300.0	Nitrate as N	7F06138-01	BPQL	mg/L	81.8	83.60	98	80 - 120	
S7F0704-MS1	Sulfate EPA 300.0	Sulfate	7F06138-01	265	mg/L	348	83.35	100	80 - 120	
S7F1307-MS1	Alkalinity, Total (CaCO3) SM2320B	Alkalinity	7F06138-04	56.0	mg/L	104	50.00	96	80 - 120	
S7F1523-MS1	Hardness, Total - SM2340 C	Hardness	7F06138-02	114	mg/L	136	20.00	110	80 - 120	
S7F0863-MS1	Boron (B) EPA 6010B	Boron	7F06138-01	0.371	mg/L	2.19	2.000	91	85 - 115	
S7F0863-MS1	Calcium (Ca) EPA 6010B	Calcium	7F06138-01	206	mg/L	212	2.000	300	85 - 115	#52
S7F0863-MS1	Iron (Fe), Soluble - EPA 6010B	Iron	7F06138-01	BPQL	mg/L	1.84	2.000	92	85 - 115	
S7F0863-MS1	Potassium (K), Soluble - EPA 6010B	Potassium	7F06138-01	0.45	mg/L	2.31	2.000	93	85 - 115	
S7F0863-MS1	Sodium (Na), Soluble EPA 6010B	Sodium	7F06138-01	58.4	mg/L	63.3	2.000	244	85 - 115	#52

Matrix Spike Duplicate Data

QC Lab #	Test Group	Test Name	Sample Result	Spike Result	Spike Level	Units	% Rec.	Rec. Limits	% RPD	RPD Limit	Flags
S7F0863-MSD1	Boron (B) EPA 6010B	Boron	0.371	2.27	2.000	mg/L	95	85-115	4	20	
S7F0863-MSD1	Calcium (Ca) EPA 6010B	Calcium	206	203	2.000	mg/L	-150	85-115	4	20	#52
S7F0863-MSD1	Iron (Fe), Soluble - EPA 6010B	Iron	BPQL	1.75	2.000	mg/L	88	85-115	5	20	
S7F0863-MSD1	Potassium (K), Soluble - EPA 6010B	Potassium	0.45	2.16	2.000	mg/L	86	85-115	7	20	
S7F0863-MSD1	Sodium (Na), Soluble EPA 6010B	Sodium	58.4	66.1	2.000	mg/L	386	85-115	4	20	#52

* Complete Entire COC to be in Compliance*

☐ RUSH Due Date

Chain of Custody

Accurate Environmental Labs

Client Name- GRDA CFC

Project Name- Semi-Annual MW Event

Accurate Work Order #	Date Sample Taken	Time Sample Taken	Matrix or Source (Refer. Below)	Grab (G) or Comp (C)	Client I.D. / Sample Location or DEQ / EPA Location Code	Field Results (pH, Temp, Chlorine, ...) (note analysis & units) pH	Field Results TEMP	Sample Preserv. & Container →	Analysis Requested → # of Container ↓	Dissolved-Fe,Cu,K,Ba,Se,As,Na NO3,Chloride,Sulfate, F	Hardness, Alk.Total Residue, TDS	TOC	COD	Total Phosphorus,	Ca, B	pH and Temp	Alk,Chloride,SO4, B, F, Diss Na &As
								ICE 500 ml Plastic				ICE 40 ml Amber H_3PO_4	ICE 40 mL Clear H_2SO_4	ICE 500 mL Plastic H_2SO_4	ICE 500 mL Plastic HNO_3	#	ICE 500 mL Plastic
TF0638																	
-01	6/6/17	1402	W	G	MW93-1	6.69	25.7		7	1	1	2	1	1	1	#	
-02		1415	W	G	MW93-2	9.29	24.8		7	1	1	2	1	1	1	#	
-03		1419	W	G	MW93-3	6.65	24.2		7	1	1	2	1	1	1	#	
-04		1452	W	G	MW03-1	6.64	24.1		2							#	2
-05		1435	W	G	MW03-2	6.73	24.7		2							#	2

On-Site Info *Raw* Alkalinity *(TOC Raw)=* _____ *mg/L* Turbidity *(E.Coli)=* _____ *ntu*

Matrix Codes DW = *Drinkingwater ;* WW = *Wastewater ;* SL = *Sludge ;* O = *Other*_____

E.Coli Source- FS= *Flowing Stream;* RL= *Reservoir/Lake;* GWUDI= *Groundwater under direct influence of surface water*

Field Instrument Calibration -

Meter Type	Standards	Final Read.	Date , Time	Initials

Comments # - sampled on-site

- - All Glass containers provided by Accurate Labs have Teflon lined lids - -

- - All samples are scheduled to be disposed of in 4 weeks of receipt at Accurate. - -

- - Hazardous samples will be returned to client or will be disposed of for a fee - -

COC Date – 6/6/2017

Certification by Company Official: I hereby certify that the above sampling occurred during a period such that the sample(s) is/are representative of a typical operating day discharge for the above facility. Signature : Date/Time

Sampled By: Kenneth Crawford / GRDA STAFF Company: Accurate Labs / GRDA Sample Method: GRAB

Relinquished By: Date/Time Received By: Date/Time

☐ Relinquished to Lab By: Kenneth Crawford Date/Time 6/6/17 1555 Received at Lab By: ice Rec'd °C 22.3 Date/Time 6-6-17 1555

☐ Relq'd to Log-In Fridge By:

Reporting Requirements (standard 10-15 working days) | **Compliance Reporting?** Yes or No (DMR, PWS,) | **Oklahoma PWS ID #** — — — — — — — — | **RUSH Request** (if available) _____ (Working Days)

Mail Report To: Matthew Butcher

Address: 8142 HWY 412B, Chouteau, OK., 74337

Phone #: (918) 824-7553 Fax #: ( )

Email: mbutcher@grda.com

Mail Invoice To:

Address: P.O. Box 409, Vinita, OK

Bid # -

PO # -

Phone #: (918) 824-7553 Fax #: ( )