A & M Engineering and
Environmental Services, Inc.
Consulting - Design - Construction - Remediation

May 21, 2018

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

RE: First 2018 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 two (2) 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. At your request, and on behalf of GRDA, one complete copy of this report is being forwarded directly to the Oklahoma Department of Environmental Quality.

In accordance with the facility permit, semi-annual groundwater sampling was conducted at the landfill on February 27, 2018. 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, Sulfate, Fluoride, and Boron 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, Levene's 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
Boron	None	None
Chloride	MW-93-2, MW-93-3, MW-03-2	None
Fluoride	MW-93-3	None
pH	MW-93-2	None
Sodium	MW-93-2, MW-93-3	None
Specific Conductance	MW-93-3, MW-03-2	MW-93-3, MW-03-2
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 only MW-93-2 and MW-03-2 had intra-well exceedances for Specific Conductance.

Table 3 presents the results of required monitoring for Specific Conductivity and Sodium (MW-93-3) and Chloride (MW-03-02). Table 4 presents historical groundwater data and recent sampling results for pH, specific conductance and Eh for monitoring well MW93-2 with a comparison to adjacent surface water impoundment FO-8. The results for MW-93-2 do not appear to show a correlation with the adjacent surface water.

A&M Engineering appreciates the opportunity to provide groundwater statistical analysis and reporting services for GRDA. 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

2018 FIRST SEMI-ANNUAL GROUNDWATER SAMPLING AND STATISTICAL ANALYSIS REPORT

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

May 2018

Prepared for

Grand River Dam Authority
Chouteau, Oklahoma

Project No. 1986-002

Prepared by

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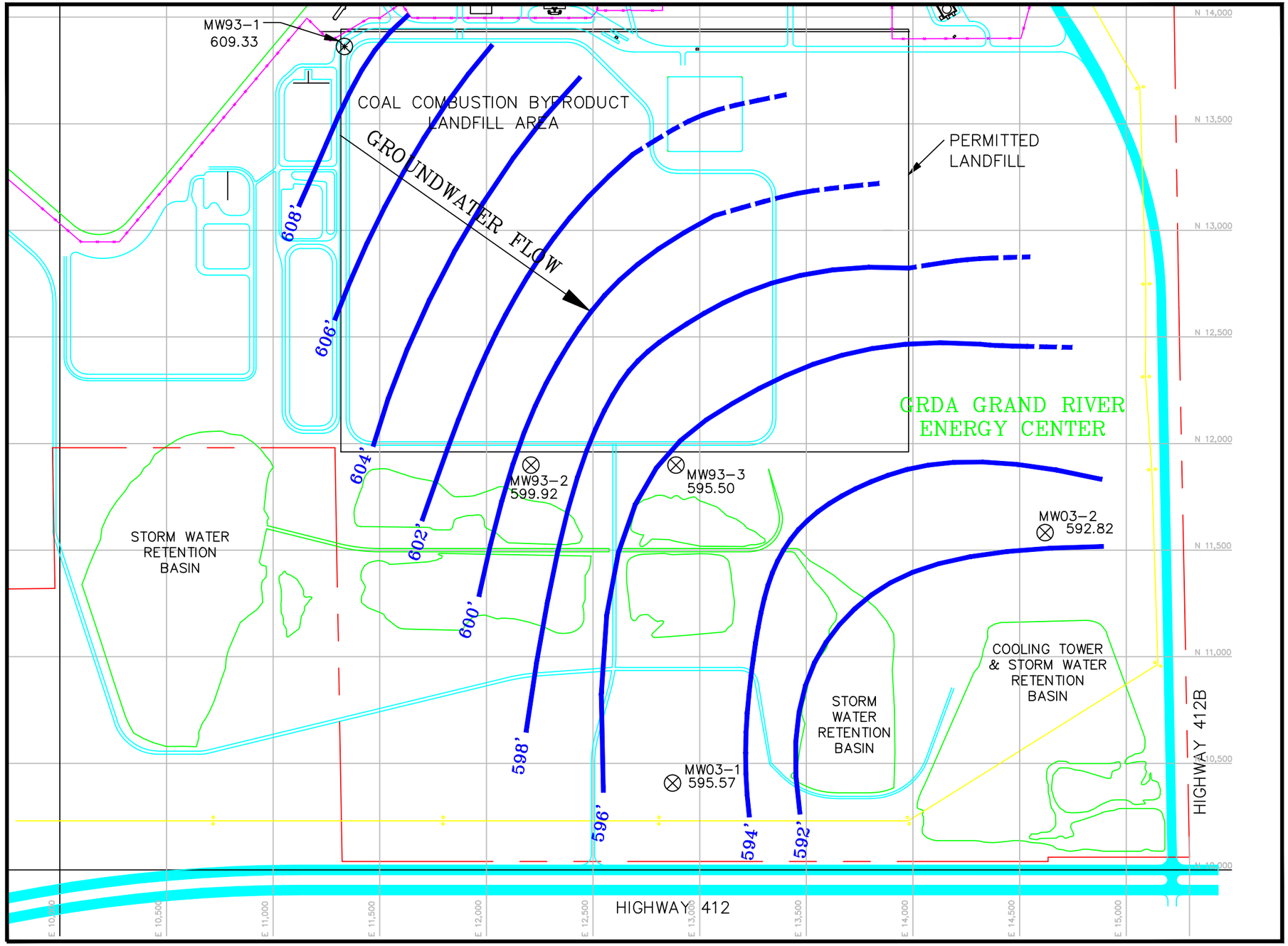
Attachment 1

Tables and Figures



NORTH

SCALE

0 500' 1000'

DJR 4/13/06

GENERAL NOTES

1) GROUNDWATER ELEVATIONS MEASURED ON NOVEMBER 7, 2017.

REVISIONS

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

A & M ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

ENGINEERING – ENVIRONMENTAL – CONSTRUCTION

GROUNDWATER CONTOUR MAP
FEBRUARY 27, 2018
GRAND RIVER DAM AUTHORITY LANDFILL
CHOUTEAU, OK

DRAWN:	CHECKED BY:	MATERIALS BY:	ENGINEER:	APPROVED BY:	SCALE:	PROJECT NUMBER:	DRAWING NUMBER:	REV.:
OC	TAT			TAT	AS SHOWN	1986-002	FIGURE 1	
DATE: 5/21/2018	DATE: 5/21/2018	DATE:	DATE:	DATE: 5/21/2018				

Table 1
First Semi-Annual 2018 Analytical Results
February 27, 2018
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)	609.33	599.92	595.50	595.57	592.82
Temperature °C	16.4	16.2	17.6	13.2	17.2
pH (S.U.)	6.47	9.04	6.49	6.81	6.47
Specific Conductivity (umhos/cm)	1,235	10.9	2,372	186.1	2,080
ORP mv	26.2	-12.5	8.1	-1.2	13.4
Alkalinity (mg/L)	384	282	368	72	196
Chloride (mg/L)	15.6	1,270	435	1.07	247
Sulfate (mg/L)	299	3,870	64.2	12.6	468
Dissolved Arsenic (mg/L)	0.006	0.024	<0.005	<0.005	0.008
Dissolved Sodium (mg/L)	59.6	2,220	272	16.8	104
Hardness (mg/L)	595	207	316	NT	NT
Calcium (mg/L	211	74.7	91.8	NT	NT
Dissolved Copper (mg/L)	<0.01	0.031	0.013	NT	NT
Dissolved Iron (mg/L)	<0.075	0.031	<0.075	NT	NT
Nitrate-Nitrogen (mg/L)	<0.25	<0.25	2.13	NT	NT
Total Phosphorus (mg/L)	<0.025	0.302	0.044	NT	NT
Total Residue (mg/L)	858	8,240	1,250	NT	NT
TDS (mg/L)	830	7,560	1,190	NT	NT
COD (mg/L)	29.3	92.1	18.6	NT	NT
TOC (mg/L)	3.85	12.8	2.89	NT	NT
Dissolved Potassium (mg/L)	<0.25	195	3.38	NT	NT
Dissolved Barium (mg/L)	0.023	0.055	0.246	NT	NT
Fluoride (mg/L	0.16	<0.10	0.210	0.100	0.120
Boron (mg/L)	0.33	0.064	0.089	0.05	<0.05
Dissolved Selenium (mg/L)	<0.005	0.026	0.006	NT	NT

NT = Not Tested

NS = Insufficient Sample for analysis

Table 2
Historical Monitoring Well Analytical Results
February 27, 2018
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	11/7/17	2/27/18
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	6.21	6.47
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	1458	1235
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	394	384
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	16.2	15.6
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	45.2	59.6
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	281	299
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	<0.005	0.006

	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	11/7/17	2/27/18
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	8.86	9.04
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	10520	10900
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	430	282
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	1160	1270
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	2750	2220
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	4340	3870
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	0.028	0.024

*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	11/7/17	2/27/18
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	6.46	6.49
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	2121	2372
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	409	368
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	402	435
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	368	272
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	80.3	64.2
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	<0.005	<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
November 7, 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	11/7/17	2/27/18
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	6.44	6.81
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	444	186
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	217	72
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	1.13	1.07
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	17.6	16.8
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	14.4	12.6
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	<0.005	<0.005

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	11/7/17	2/27/18
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	6.22	6.47
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	2042	2080
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	192.0	196
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	288	247
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	17.6	104
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	516	468
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	<0.005	0.008

Table 3
First Semi-Annual 2018 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*
11/7/2017	368	2121	288*
2/27/2018	272	2372*	247

* 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	9/22/17	11/7/17	2/27/18
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	9.01	8.86	9.04
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	11,320	10520	10900
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	-35.1	-44.5	-12.5

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

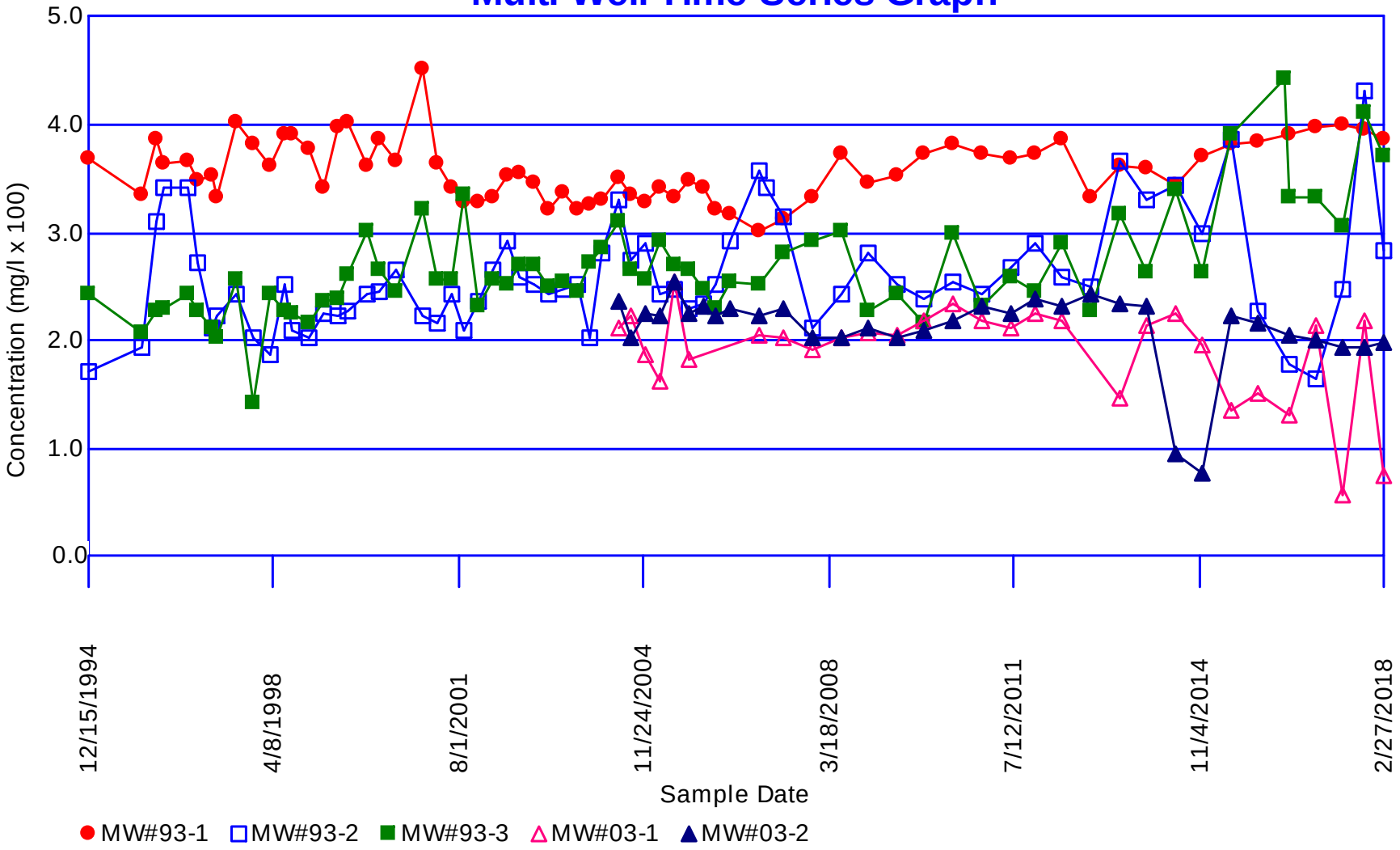
	F08 Surface Pond Adjacent to MW-93-2																																
Parameter	3/24/10	7/13/10	9/21/10	12/22/10	3/31/11	6/29/11	9/29/11	12/7/11	2/22/12	6/6/12	8/23/12	12/12/12	3/6/13	6/19/13	8/28/13	12/11/13	2/21/14	6/11/14	8/28/14	12/3/14	3/12/15	6/17/15	8/13/15	12/1/15	3/4/16	6/22/16	10/11/16	12/20/16	3/8/17	6/6/17	2/27/18
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	7.1
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	740
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	15.6

Attachment 2

Graphs and Statistical Analysis

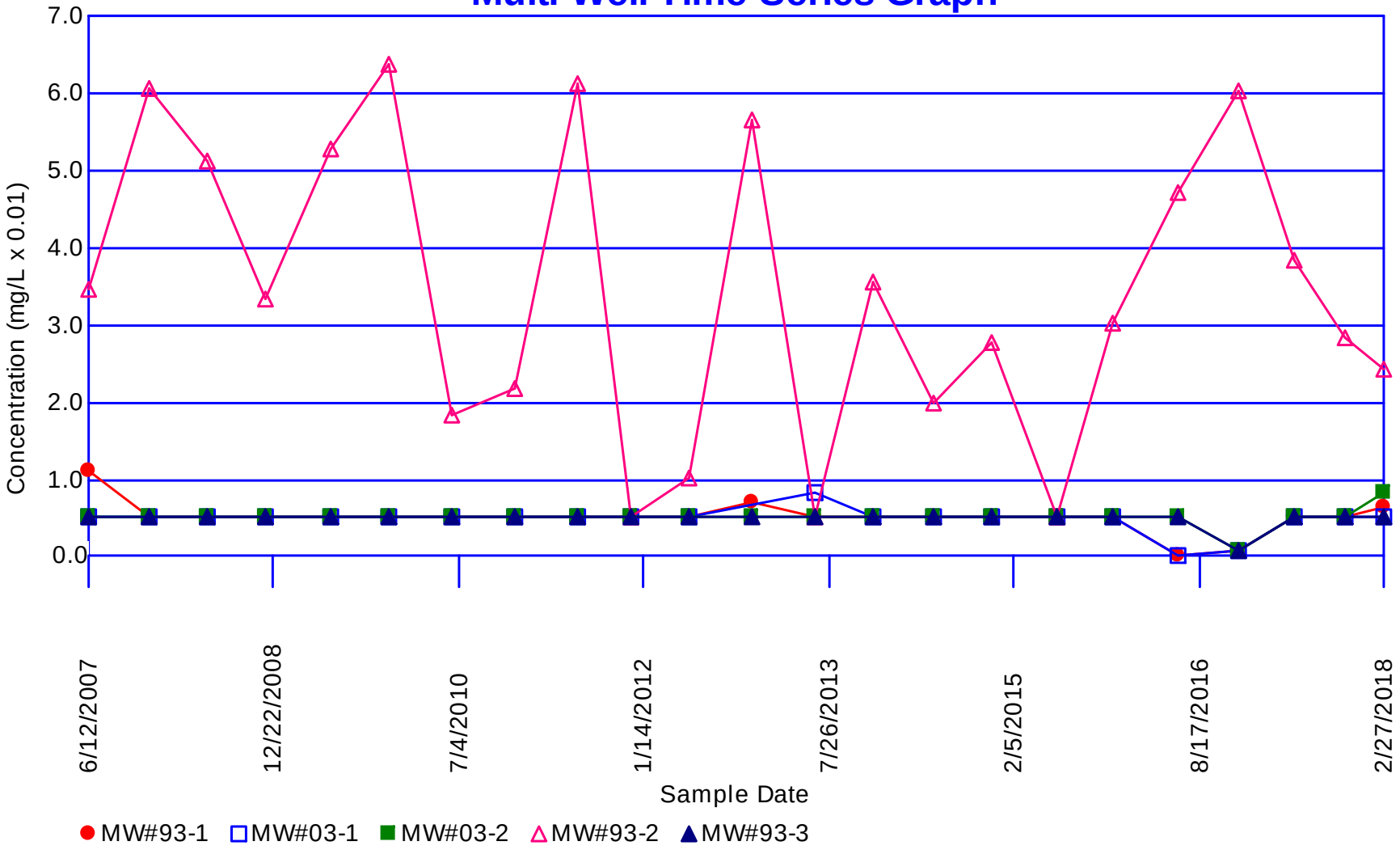
Alkalinity

Multi-Well Time-Series Graph



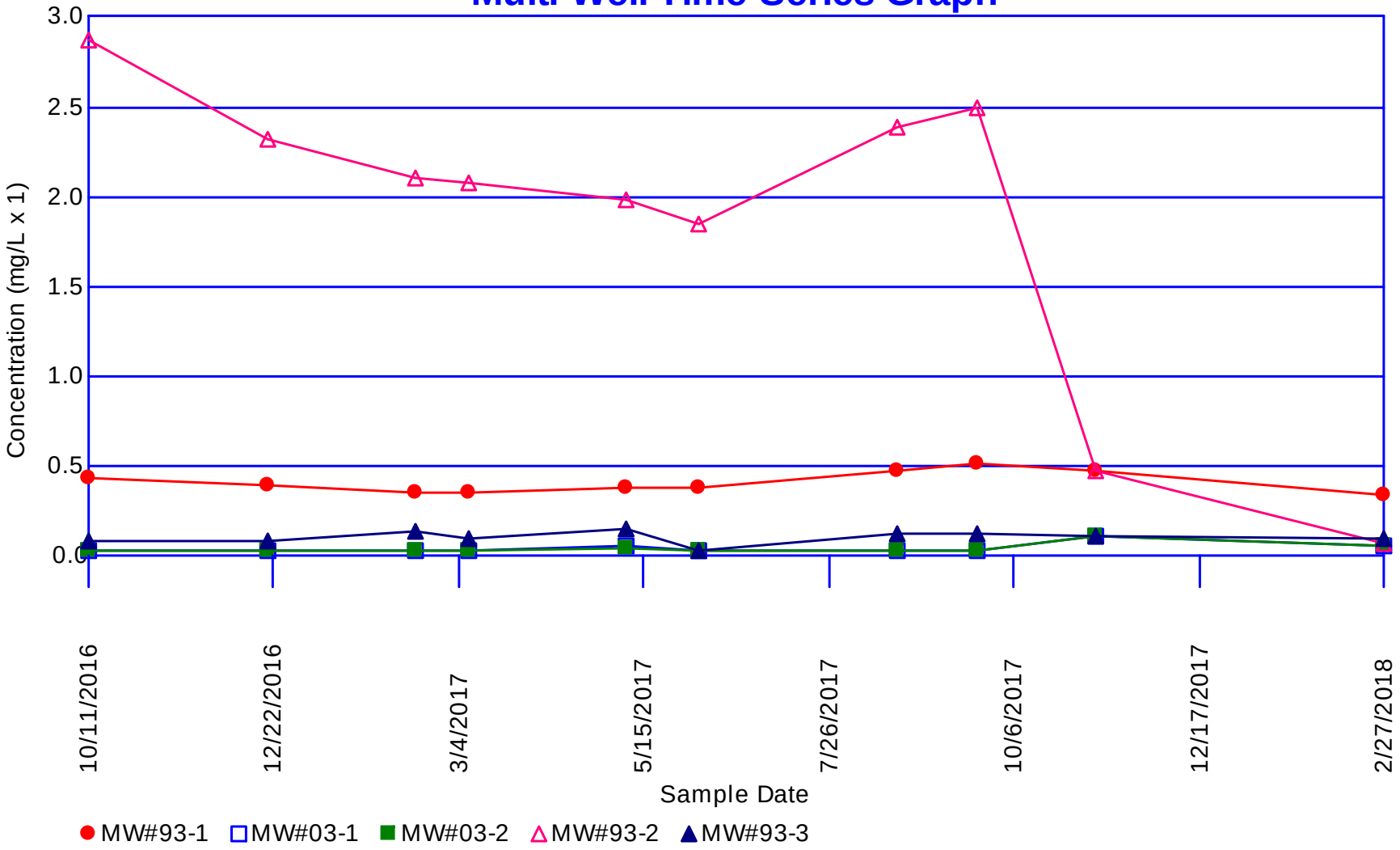
Arsenic

Multi-Well Time-Series Graph



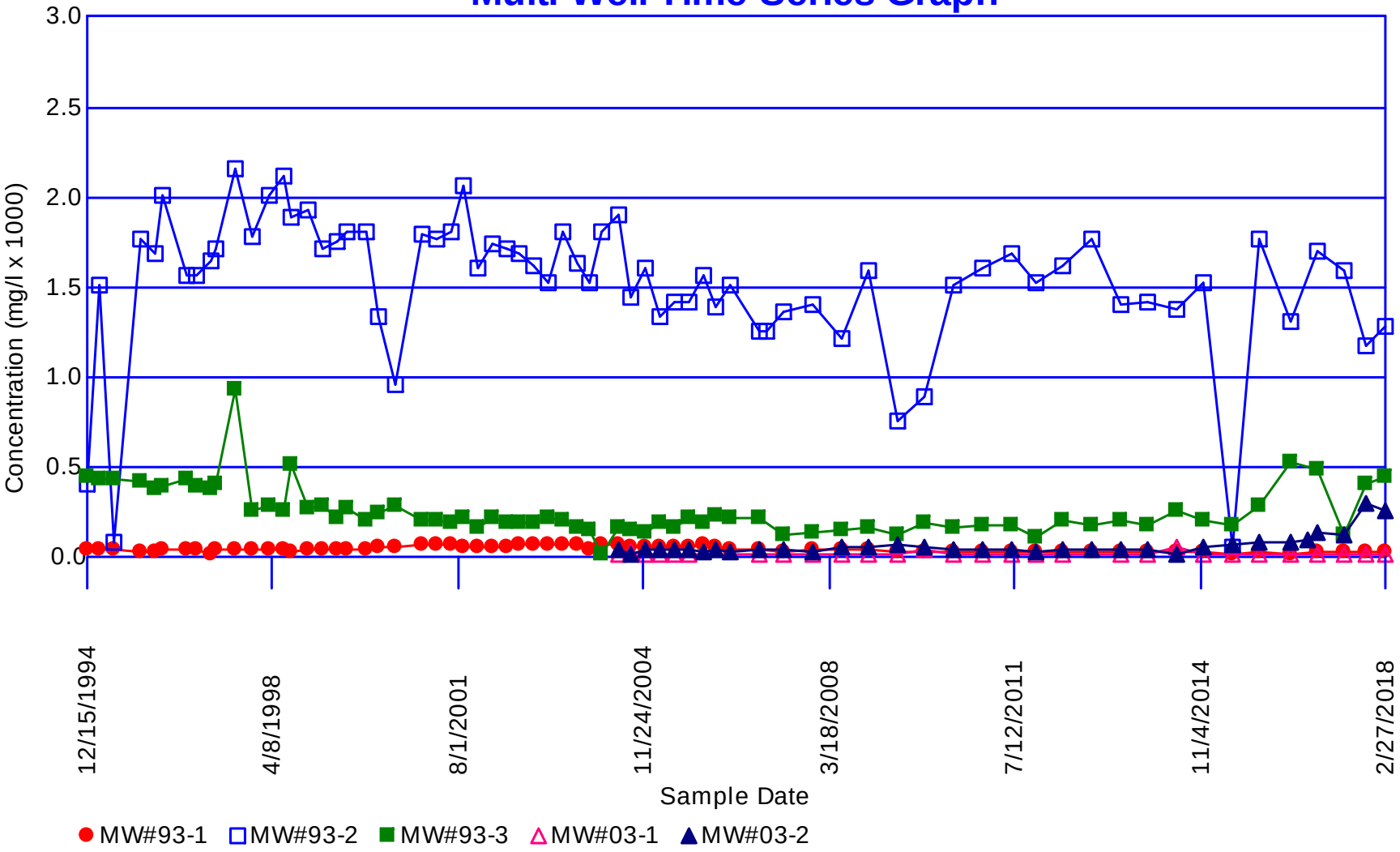
Boron

Multi-Well Time-Series Graph



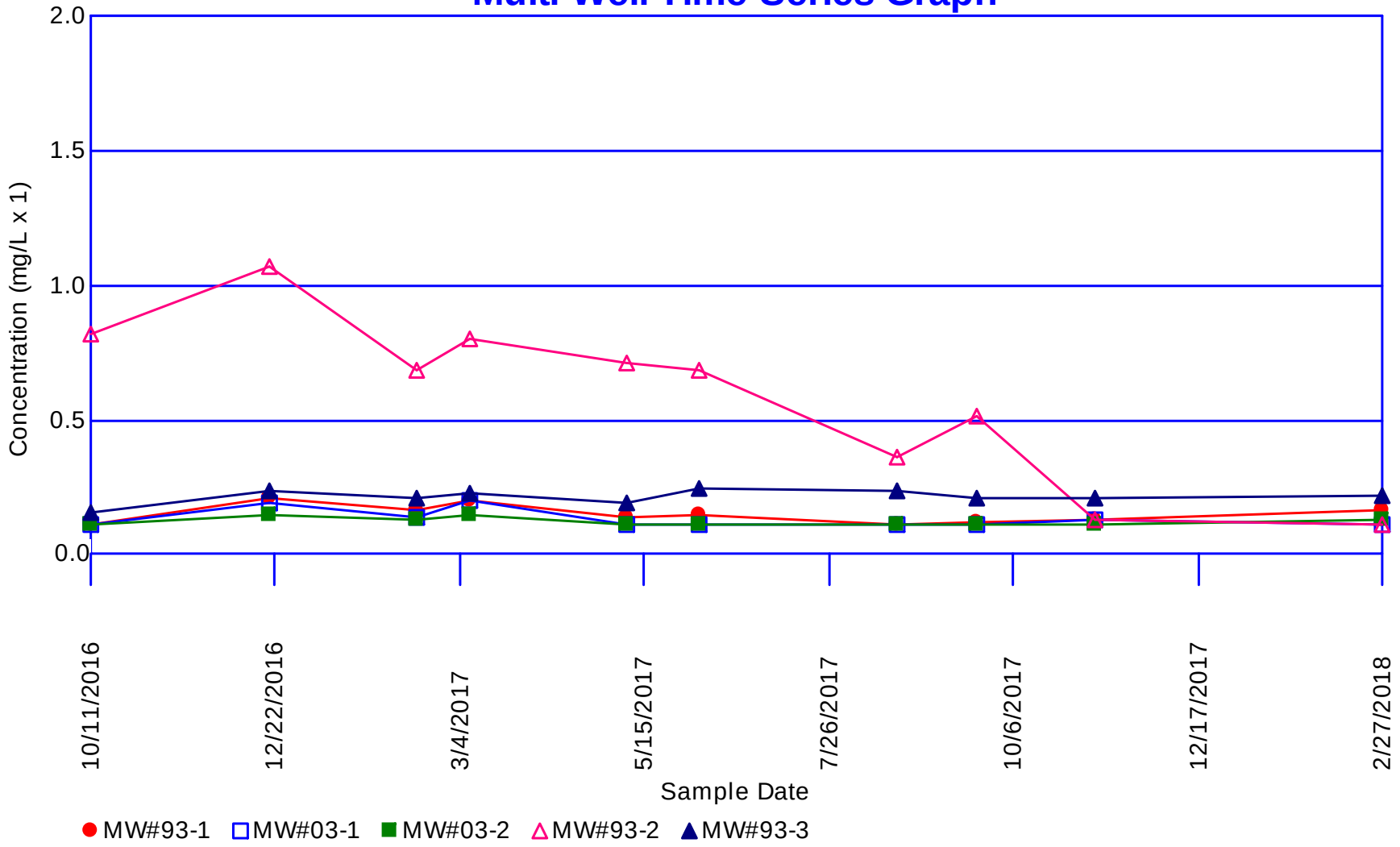
Chloride

Multi-Well Time-Series Graph



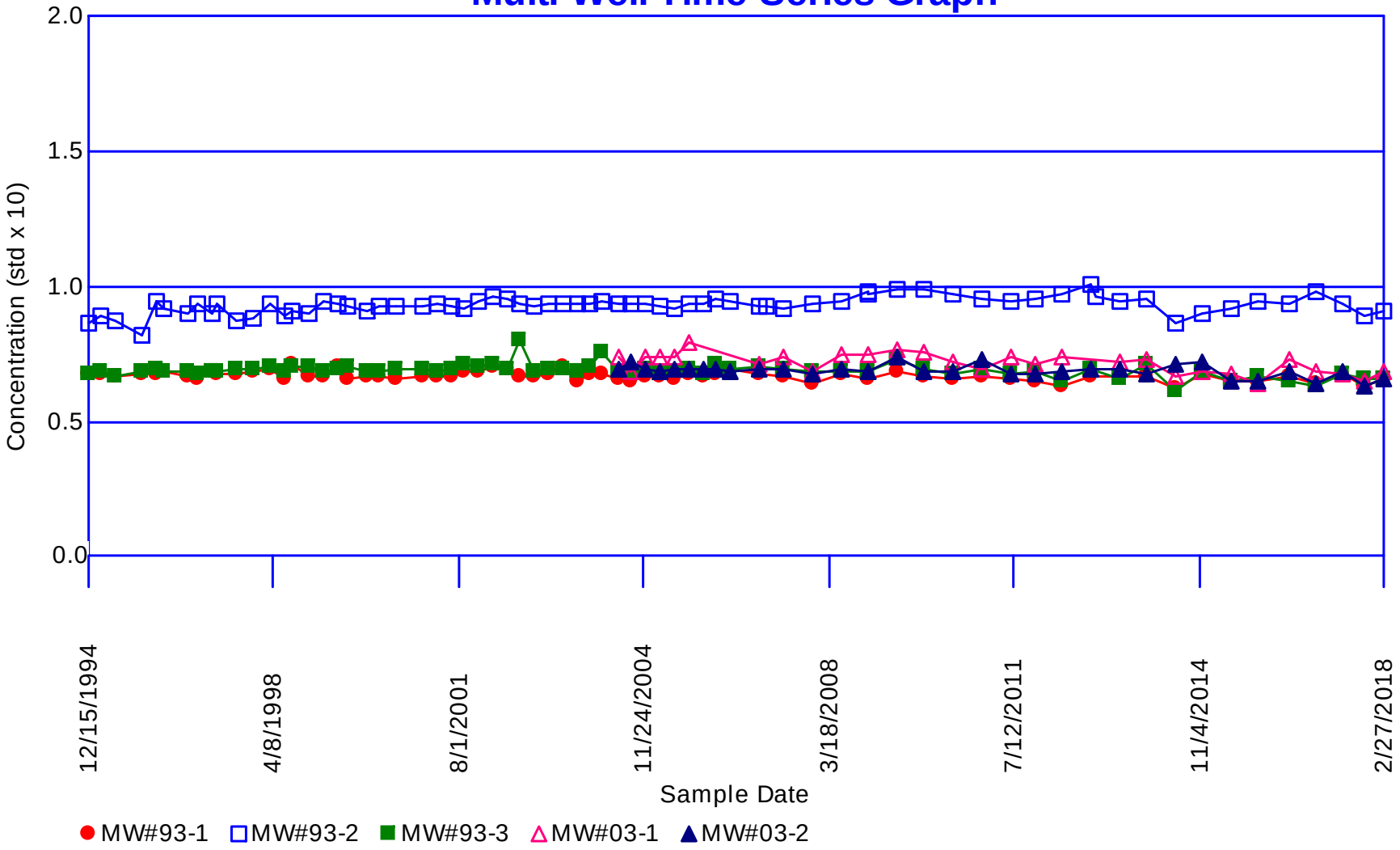
Fluoride

Multi-Well Time-Series Graph



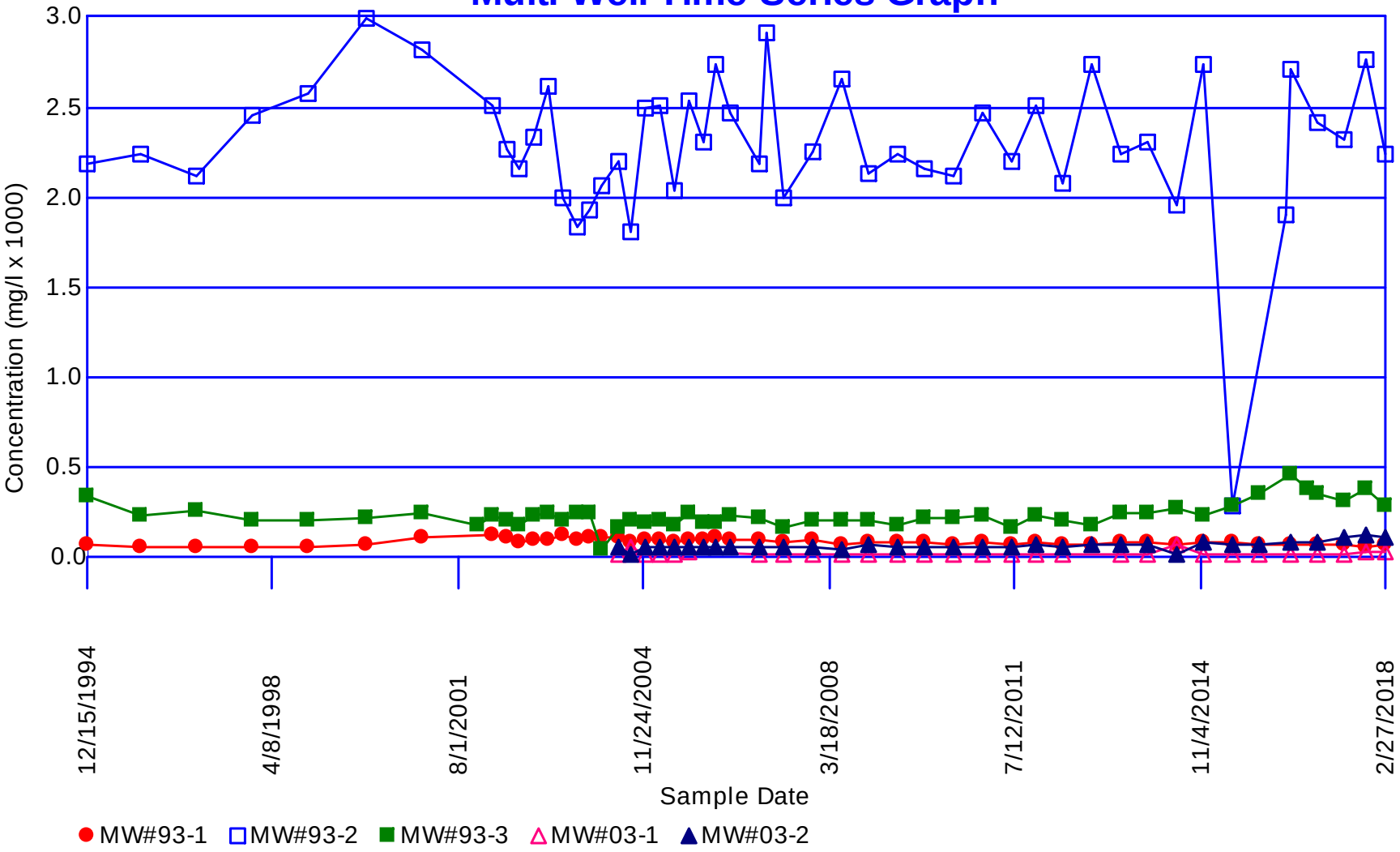
ph

Multi-Well Time-Series Graph



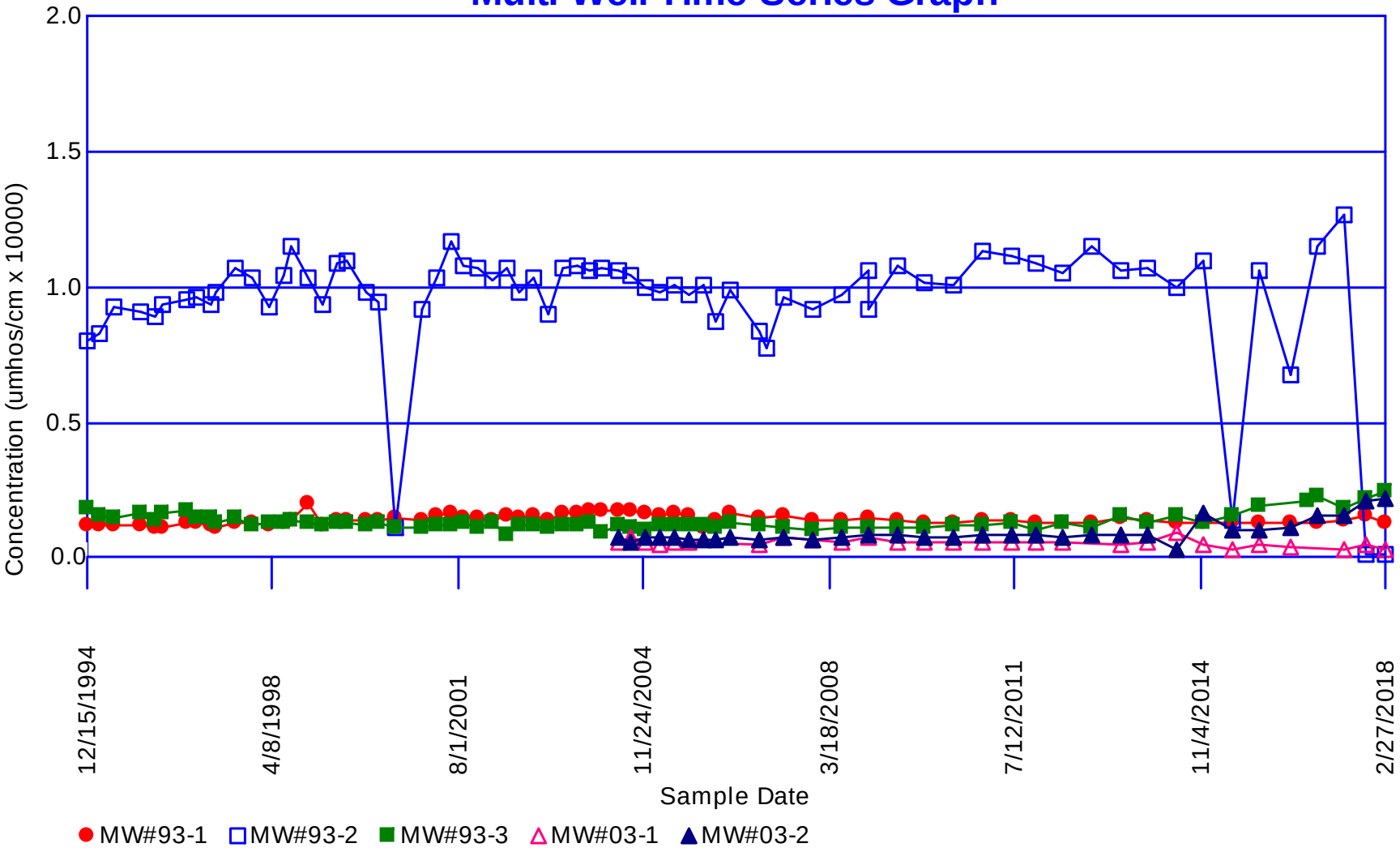
Sodium

Multi-Well Time-Series Graph



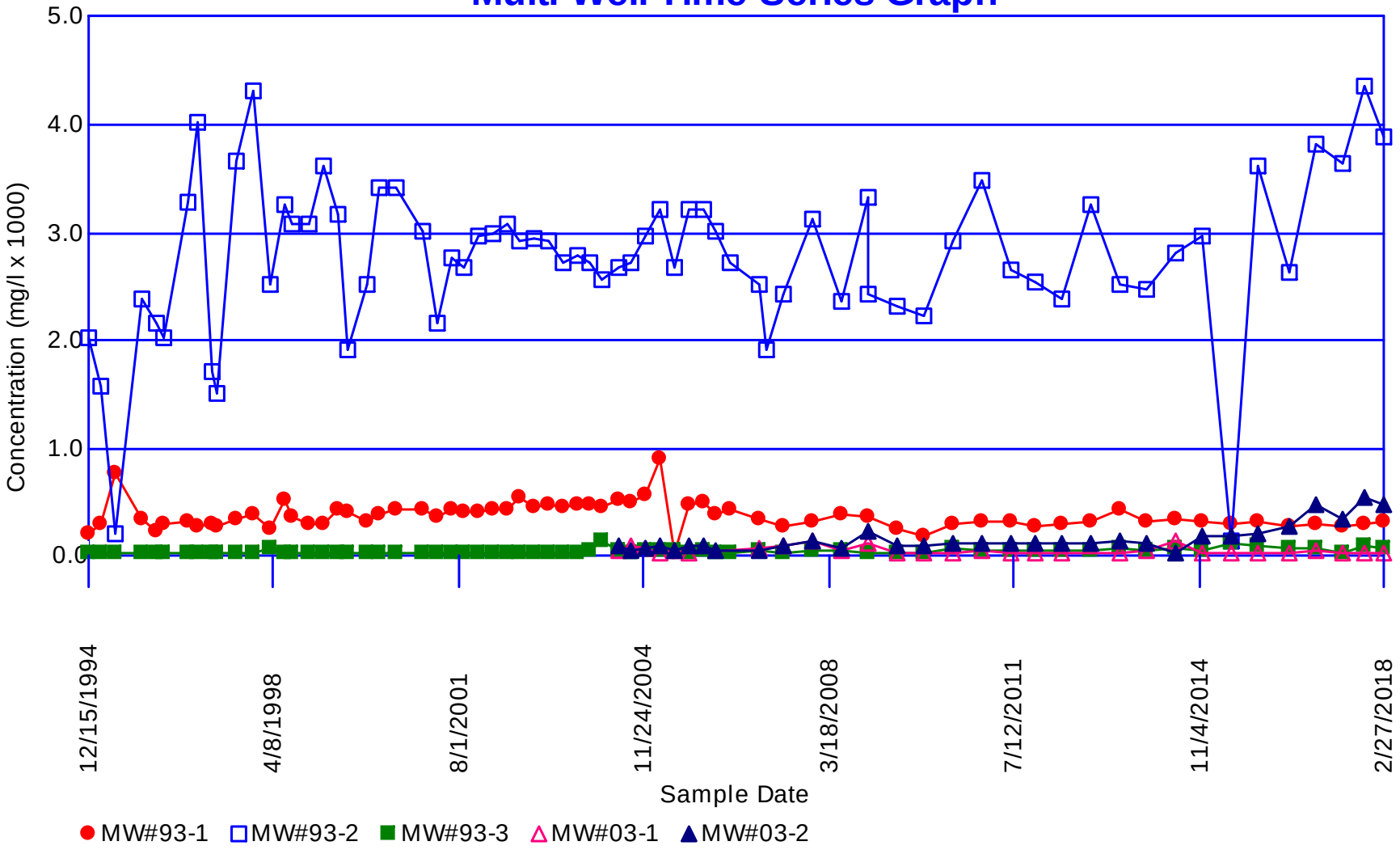
Specific Conductance

Multi-Well Time-Series Graph



Sulfate

Multi-Well Time-Series Graph



Concentrations (mg/l)

Parameter: Alkalinity

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Samples: 264
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	367	367
			12/14/1995	334	334
			3/6/1996	384	384
			4/25/1996	363	363
			10/2/1996	365	365
			12/10/1996	346	346
			3/11/1997	350	350
			4/15/1997	330	330
			8/14/1997	400	400
			12/4/1997	380	380
			3/31/1998	360	360
			6/23/1998	390	390
			8/11/1998	389	389
			12/8/1998	376	376
			3/9/1999	340	340
			6/8/1999	395	395
			8/19/1999	400	400
			12/14/1999	360	360
			3/7/2000	384	384
			6/23/2000	364	364
			12/12/2000	450	450
			3/27/2001	362	362
			6/28/2001	340	340
			9/10/2001	326	326
			12/18/2001	326	326
			3/19/2002	330	330
			6/26/2002	350	350
			9/18/2002	353	353
			12/11/2002	344	344
			3/13/2003	320	320
			6/25/2003	336	336
			9/26/2003	320	320
			12/10/2003	324	324
			3/9/2004	329	329
			6/24/2004	348	348
			9/15/2004	332	332
			12/15/2004	327	327
			3/16/2005	340	340
			6/15/2005	330	330
			9/21/2005	347	347
			12/21/2005	340	340
			3/15/2006	320	320
			6/21/2006	314	314
			12/20/2006	300	300

			6/12/2007	310	310
			12/17/2007	330	330
			6/11/2008	370	370
			12/3/2008	344	344
			6/17/2009	350	350
			12/9/2009	370	370
			6/17/2010	380	380
			12/22/2010	370	370
			6/29/2011	366	366
			12/7/2011	370	370
			6/6/2012	384	384
			12/12/2012	330	330
			6/19/2013	360	360
			12/11/2013	358	358
			6/11/2014	342	342
			12/3/2014	368	368
			6/17/2015	380	380
			12/1/2015	383	383
			6/22/2016	390	390
			12/20/2016	395.4	395.4
			6/6/2017	398	398
			11/7/2017	394	394
			2/27/2018	384	384

There are 4 compliance wells

Well	Samples	ND	Date	Result	Original
MW#93-2	68	0 (0%)	12/15/1994	170	170
			12/14/1995	191	191
			3/6/1996	308	308
			4/25/1996	340	340
			10/2/1996	340	340
			12/10/1996	270	270
			3/11/1997	210	210
			4/15/1997	220	220
			8/14/1997	240	240
			12/4/1997	200	200
			3/31/1998	184	184
			6/23/1998	250	250
			8/11/1998	208	208
			12/8/1998	200	200
			3/9/1999	224	224
			6/8/1999	220	220
			8/19/1999	226	226
			12/14/1999	240	240
			3/7/2000	244	244
			6/23/2000	264	264
			12/12/2000	220	220
			3/27/2001	215	215
			6/28/2001	240	240
			9/10/2001	208	208
			12/18/2001	235	235
			3/19/2002	263	263
			6/26/2002	290	290
			9/18/2002	256	256
			12/11/2002	249	249

			3/13/2003	240	240
			6/25/2003	246	246
			9/26/2003	250	250
			12/10/2003	200	200
			3/9/2004	280	280
			6/24/2004	329	329
			9/15/2004	272	272
			12/15/2004	288	288
			3/16/2005	240	240
			6/15/2005	246	246
			9/21/2005	228	228
			12/21/2005	232	232
			3/15/2006	250	250
			6/21/2006	290	290
			12/20/2006	356	356
			2/21/2007	340	340
			6/12/2007	312	312
			12/17/2007	210	210
			6/11/2008	240	240
			12/3/2008	280	280
			6/17/2009	250	250
			12/9/2009	236	236
			6/17/2010	252	252
			12/22/2010	240	240
			6/29/2011	266	266
			12/7/2011	288	288
			6/6/2012	256	256
			12/12/2012	248	248
			6/19/2013	364	364
			12/11/2013	328	328
			6/11/2014	342	342
			12/3/2014	296	296
			6/17/2015	384	384
			12/1/2015	226	226
			6/22/2016	176	176
			12/20/2016	162.2	162.2
			6/6/2017	246	246
			11/7/2017	430	430
			2/27/2018	282	282
MW#93-3	67	0 (0%)	12/15/1994	240	240
			12/14/1995	206	206
			3/6/1996	226	226
			4/25/1996	228	228
			10/2/1996	240	240
			12/10/1996	225	225
			3/11/1997	210	210
			4/15/1997	200	200
			8/14/1997	255	255
			12/4/1997	140	140
			3/31/1998	240	240
			6/23/1998	225	225
			8/11/1998	224	224
			12/8/1998	214	214
			3/9/1999	234	234
			6/8/1999	236	236
			8/19/1999	260	260

			12/14/1999	300	300
			3/7/2000	264	264
			6/23/2000	244	244
			12/12/2000	320	320
			3/27/2001	254	254
			6/28/2001	255	255
			9/10/2001	332	332
			12/18/2001	230	230
			3/19/2002	255	255
			6/26/2002	250	250
			9/18/2002	268	268
			12/11/2002	268	268
			3/13/2003	247	247
			6/25/2003	252	252
			9/26/2003	244	244
			12/10/2003	271	271
			3/9/2004	284	284
			6/24/2004	309	309
			9/15/2004	264	264
			12/15/2004	254	254
			3/16/2005	290	290
			6/15/2005	268	268
			9/21/2005	264	264
			12/21/2005	246	246
			3/15/2006	227	227
			6/21/2006	253	253
			12/20/2006	250	250
			6/12/2007	280	280
			12/17/2007	290	290
			6/11/2008	300	300
			12/3/2008	226	226
			6/17/2009	240	240
			12/9/2009	214	214
			6/17/2010	296	296
			12/22/2010	230	230
			6/29/2011	256	256
			12/7/2011	244	244
			6/6/2012	288	288
			12/12/2012	226	226
			6/19/2013	316	316
			12/11/2013	262	262
			6/11/2014	338	338
			12/3/2014	262	262
			6/17/2015	388	388
			5/25/2016	440	440
			6/22/2016	330	330
			12/20/2016	330.4	330.4
			6/6/2017	304	304
			11/7/2017	409	409
			2/27/2018	368	368
MW#03-1	29	0 (0%)	6/24/2004	209	209
			9/15/2004	220	220
			12/15/2004	184	184
			3/16/2005	160	160
			6/15/2005	252	252
			9/21/2005	180	180

			12/20/2006	204	204
			6/12/2007	200	200
			12/17/2007	190	190
			6/11/2008	200	200
			12/3/2008	206	206
			6/17/2009	204	204
			12/9/2009	216	216
			6/17/2010	232	232
			12/22/2010	216	216
			6/29/2011	210	210
			12/7/2011	222	222
			6/6/2012	216	216
			6/19/2013	144	144
			12/11/2013	212	212
			6/11/2014	222	222
			12/3/2014	194	194
			6/17/2015	134	134
			12/1/2015	150	150
			6/22/2016	130	130
			12/20/2016	211.6	211.6
			6/6/2017	56	56
			11/7/2017	217	217
			2/27/2018	72	72
MW#03-2	33	0 (0%)	6/24/2004	235	235
			9/15/2004	200	200
			12/15/2004	222	222
			3/16/2005	220	220
			6/15/2005	252	252
			9/21/2005	224	224
			12/21/2005	230	230
			3/15/2006	220	220
			6/21/2006	228	228
			12/20/2006	220	220
			6/12/2007	228	228
			12/17/2007	200	200
			6/11/2008	200	200
			12/3/2008	210	210
			6/17/2009	200	200
			12/9/2009	208	208
			6/17/2010	216	216
			12/22/2010	230	230
			6/29/2011	224	224
			12/7/2011	236	236
			6/6/2012	230	230
			12/12/2012	242	242
			6/19/2013	232	232
			12/11/2013	230	230
			6/11/2014	92	92
			12/3/2014	76	76
			6/17/2015	220	220
			12/1/2015	214	214
			6/22/2016	204	204
			12/20/2016	199.4	199.4
			6/6/2017	192	192
			11/7/2017	192	192
			2/27/2018	196	196

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 = 31.722
Overall Std Dev = 29.7986
Overall Total = 8374.6
SS Wells = 14254.4
SS Total = 233533

ANOVA Table

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	F
Between Wells	14254.4	4	3563.59	4.20912
Error (within wells)	219279	259	846.636	
Totals	233533	263		

4.20912 exceeds 2.37; assumption of equal variance should be rejected

Well: MW#93-1	Sample	Residual
	12/15/1994	10.1134
	12/14/1995	22.8866
	3/6/1996	27.1134
	4/25/1996	6.11343
	10/2/1996	8.11343
	12/10/1996	10.8866
	3/11/1997	6.88657
	4/15/1997	26.8866
	8/14/1997	43.1134
	12/4/1997	23.1134
	3/31/1998	3.11343
	6/23/1998	33.1134
	8/11/1998	32.1134
	12/8/1998	19.1134
	3/9/1999	16.8866
	6/8/1999	38.1134
	8/19/1999	43.1134
	12/14/1999	3.11343
	3/7/2000	27.1134
	6/23/2000	7.11343
	12/12/2000	93.1134
	3/27/2001	5.11343
	6/28/2001	16.8866
	9/10/2001	30.8866
	12/18/2001	30.8866
	3/19/2002	26.8866
	6/26/2002	6.88657
	9/18/2002	3.88657
	12/11/2002	12.8866
	3/13/2003	36.8866
	6/25/2003	20.8866
	9/26/2003	36.8866

12/10/2003	32.8866
3/9/2004	27.8866
6/24/2004	8.88657
9/15/2004	24.8866
12/15/2004	29.8866
3/16/2005	16.8866
6/15/2005	26.8866
9/21/2005	9.88657
12/21/2005	16.8866
3/15/2006	36.8866
6/21/2006	42.8866
12/20/2006	56.8866
6/12/2007	46.8866
12/17/2007	26.8866
6/11/2008	13.1134
12/3/2008	12.8866
6/17/2009	6.88657
12/9/2009	13.1134
6/17/2010	23.1134
12/22/2010	13.1134
6/29/2011	9.11343
12/7/2011	13.1134
6/6/2012	27.1134
12/12/2012	26.8866
6/19/2013	3.11343
12/11/2013	1.11343
6/11/2014	14.8866
12/3/2014	11.1134
6/17/2015	23.1134
12/1/2015	26.1134
6/22/2016	33.1134
12/20/2016	38.5134
6/6/2017	41.1134
11/7/2017	37.1134
2/27/2018	27.1134

Well: MW#93-2

Sample	Residual
12/15/1994	87.7382
12/14/1995	66.7382
3/6/1996	50.2618
4/25/1996	82.2618
10/2/1996	82.2618
12/10/1996	12.2618
3/11/1997	47.7382
4/15/1997	37.7382
8/14/1997	17.7382
12/4/1997	57.7382
3/31/1998	73.7382
6/23/1998	7.73824
8/11/1998	49.7382
12/8/1998	57.7382
3/9/1999	33.7382
6/8/1999	37.7382
8/19/1999	31.7382
12/14/1999	17.7382
3/7/2000	13.7382
6/23/2000	6.26176

12/12/2000	37.7382
3/27/2001	42.7382
6/28/2001	17.7382
9/10/2001	49.7382
12/18/2001	22.7382
3/19/2002	5.26176
6/26/2002	32.2618
9/18/2002	1.73824
12/11/2002	8.73824
3/13/2003	17.7382
6/25/2003	11.7382
9/26/2003	7.73824
12/10/2003	57.7382
3/9/2004	22.2618
6/24/2004	71.2618
9/15/2004	14.2618
12/15/2004	30.2618
3/16/2005	17.7382
6/15/2005	11.7382
9/21/2005	29.7382
12/21/2005	25.7382
3/15/2006	7.73824
6/21/2006	32.2618
12/20/2006	98.2618
2/21/2007	82.2618
6/12/2007	54.2618
12/17/2007	47.7382
6/11/2008	17.7382
12/3/2008	22.2618
6/17/2009	7.73824
12/9/2009	21.7382
6/17/2010	5.73824
12/22/2010	17.7382
6/29/2011	8.26176
12/7/2011	30.2618
6/6/2012	1.73824
12/12/2012	9.73824
6/19/2013	106.262
12/11/2013	70.2618
6/11/2014	84.2618
12/3/2014	38.2618
6/17/2015	126.262
12/1/2015	31.7382
6/22/2016	81.7382
12/20/2016	95.5382
6/6/2017	11.7382
11/7/2017	172.262
2/27/2018	24.2618

Well: MW#93-3	**Sample**	**Residual**
	12/15/1994	25.7224
	12/14/1995	59.7224
	3/6/1996	39.7224
	4/25/1996	37.7224
	10/2/1996	25.7224
	12/10/1996	40.7224
	3/11/1997	55.7224

4/15/1997	65.7224
8/14/1997	10.7224
12/4/1997	125.722
3/31/1998	25.7224
6/23/1998	40.7224
8/11/1998	41.7224
12/8/1998	51.7224
3/9/1999	31.7224
6/8/1999	29.7224
8/19/1999	5.72239
12/14/1999	34.2776
3/7/2000	1.72239
6/23/2000	21.7224
12/12/2000	54.2776
3/27/2001	11.7224
6/28/2001	10.7224
9/10/2001	66.2776
12/18/2001	35.7224
3/19/2002	10.7224
6/26/2002	15.7224
9/18/2002	2.27761
12/11/2002	2.27761
3/13/2003	18.7224
6/25/2003	13.7224
9/26/2003	21.7224
12/10/2003	5.27761
3/9/2004	18.2776
6/24/2004	43.2776
9/15/2004	1.72239
12/15/2004	11.7224
3/16/2005	24.2776
6/15/2005	2.27761
9/21/2005	1.72239
12/21/2005	19.7224
3/15/2006	38.7224
6/21/2006	12.7224
12/20/2006	15.7224
6/12/2007	14.2776
12/17/2007	24.2776
6/11/2008	34.2776
12/3/2008	39.7224
6/17/2009	25.7224
12/9/2009	51.7224
6/17/2010	30.2776
12/22/2010	35.7224
6/29/2011	9.72239
12/7/2011	21.7224
6/6/2012	22.2776
12/12/2012	39.7224
6/19/2013	50.2776
12/11/2013	3.72239
6/11/2014	72.2776
12/3/2014	3.72239
6/17/2015	122.278
5/25/2016	174.278
6/22/2016	64.2776
12/20/2016	64.6776

6/6/2017	38.2776
11/7/2017	143.278
2/27/2018	102.278

Well: MW#03-1	Sample	Residual
	6/24/2004	20.6
	9/15/2004	31.6
	12/15/2004	4.4
	3/16/2005	28.4
	6/15/2005	63.6
	9/21/2005	8.4
	12/20/2006	15.6
	6/12/2007	11.6
	12/17/2007	1.6
	6/11/2008	11.6
	12/3/2008	17.6
	6/17/2009	15.6
	12/9/2009	27.6
	6/17/2010	43.6
	12/22/2010	27.6
	6/29/2011	21.6
	12/7/2011	33.6
	6/6/2012	27.6
	6/19/2013	44.4
	12/11/2013	23.6
	6/11/2014	33.6
	12/3/2014	5.6
	6/17/2015	54.4
	12/1/2015	38.4
	6/22/2016	58.4
	12/20/2016	23.2
	6/6/2017	132.4
	11/7/2017	28.6
	2/27/2018	116.4

Well: MW#03-2	Sample	Residual
	6/24/2004	25.2303
	9/15/2004	9.7697
	12/15/2004	12.2303
	3/16/2005	10.2303
	6/15/2005	42.2303
	9/21/2005	14.2303
	12/21/2005	20.2303
	3/15/2006	10.2303
	6/21/2006	18.2303
	12/20/2006	10.2303
	6/12/2007	18.2303
	12/17/2007	9.7697
	6/11/2008	9.7697
	12/3/2008	0.230303
	6/17/2009	9.7697
	12/9/2009	1.7697
	6/17/2010	6.2303
	12/22/2010	20.2303
	6/29/2011	14.2303
	12/7/2011	26.2303

6/6/2012	20.2303
12/12/2012	32.2303
6/19/2013	22.2303
12/11/2013	20.2303
6/11/2014	117.77
12/3/2014	133.77
6/17/2015	10.2303
12/1/2015	4.2303
6/22/2016	5.7697
12/20/2016	10.3697
6/6/2017	17.7697
11/7/2017	17.7697
2/27/2018	13.7697

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 = 264

i	x(i)	m(i)	sum(m^2)	sum(mx)
0	0	0	0	0
1	56	-2.74777	7.55021	-153.875
2	72	-2.45727	13.5884	-330.799
3	76	-2.29036	18.8342	-504.866
4	92	-2.17009	23.5435	-704.514
5	130	-2.09693	27.9406	-977.115
6	134	-2.01409	31.9972	-1247
7	140	-1.94314	35.7729	-1519.04
8	144	-1.88079	39.3103	-1789.88
9	150	-1.83843	42.6901	-2065.64
10	160	-1.78661	45.8821	-2351.5
11	162.2	-1.7392	48.9069	-2633.6
12	170	-1.6954	51.7813	-2921.81
13	176	-1.65463	54.5191	-3213.03
14	180	-1.62576	57.1622	-3505.67
15	184	-1.58927	59.6879	-3798.09
16	184	-1.55477	62.1053	-4084.17
17	190	-1.52203	64.4218	-4373.36
18	191	-1.49852	66.6674	-4659.57
19	192	-1.46838	68.8235	-4941.5
20	192	-1.43953	70.8958	-5217.89
21	194	-1.41183	72.8891	-5491.79
22	196	-1.38517	74.8078	-5763.28
23	199.4	-1.36581	76.6732	-6035.62
24	200	-1.34075	78.4708	-6303.77
25	200	-1.31652	80.204	-6567.08
26	200	-1.29303	81.876	-6825.68
27	200	-1.27588	83.5038	-7080.86
28	200	-1.25357	85.0753	-7331.57
29	200	-1.23187	86.5928	-7577.95
30	200	-1.21073	88.0586	-7820.09
31	200	-1.19522	89.4872	-8059.14
32	200	-1.17499	90.8678	-8294.13
33	200	-1.15522	92.2023	-8525.18
34	204	-1.1359	93.4926	-8756.9
35	204	-1.11699	94.7402	-8984.77
36	204	-1.10306	95.957	-9209.79
37	206	-1.08482	97.1338	-9433.26
38	206	-1.06694	98.2722	-9653.05
39	208	-1.04939	99.3734	-9871.32
40	208	-1.03643	100.448	-10086.9
41	208	-1.01943	101.487	-10298.9
42	209	-1.00271	102.492	-10508.5
43	210	-0.986272	103.465	-10715.6
44	210	-0.970094	104.406	-10919.3
45	210	-0.958125	105.324	-11120.6
46	210	-0.942375	106.212	-11318.5

47	210	-0.926859	107.071	-11513.1
48	211.6	-0.911562	107.902	-11706
49	212	-0.900227	108.713	-11896.8
50	214	-0.885291	109.496	-12086.3
51	214	-0.87055	110.254	-12272.6
52	214	-0.855996	110.987	-12455.8
53	215	-0.841621	111.695	-12636.7
54	216	-0.830953	112.386	-12816.2
55	216	-0.816874	113.053	-12992.6
56	216	-0.802956	113.698	-13166.1
57	216	-0.789191	114.321	-13336.5
58	217	-0.778966	114.927	-13505.6
59	220	-0.765456	115.513	-13674
60	220	-0.752084	116.079	-13839.4
61	220	-0.738846	116.625	-14002
62	220	-0.729003	117.156	-14162.4
63	220	-0.715986	117.669	-14319.9
64	220	-0.703089	118.163	-14474.6
65	220	-0.690309	118.64	-14626.4
66	220	-0.677639	119.099	-14775.5
67	222	-0.668209	119.545	-14923.9
68	222	-0.655726	119.975	-15069.4
69	222	-0.643345	120.389	-15212.2
70	224	-0.631062	120.788	-15353.6
71	224	-0.621911	121.174	-15492.9
72	224	-0.609791	121.546	-15629.5
73	224	-0.597761	121.903	-15763.4
74	225	-0.585815	122.247	-15895.2
75	225	-0.573953	122.576	-16024.4
76	226	-0.565108	122.895	-16152.1
77	226	-0.553384	123.202	-16277.1
78	226	-0.541736	123.495	-16399.6
79	226	-0.530162	123.776	-16519.4
80	226	-0.521527	124.048	-16637.2
81	227	-0.510074	124.308	-16753
82	228	-0.498687	124.557	-16866.7
83	228	-0.487364	124.795	-16977.9
84	228	-0.478914	125.024	-17087
85	228	-0.467699	125.243	-17193.7
86	230	-0.456542	125.451	-17298.7
87	230	-0.445443	125.65	-17401.1
88	230	-0.434397	125.838	-17501
89	230	-0.426148	126.02	-17599.1
90	230	-0.415193	126.192	-17694.6
91	230	-0.40429	126.356	-17787.5
92	232	-0.393433	126.51	-17878.8
93	232	-0.385321	126.659	-17968.2
94	232	-0.374544	126.799	-18055.1
95	234	-0.363809	126.932	-18140.2
96	235	-0.353118	127.056	-18223.2
97	235	-0.342466	127.174	-18303.7
98	236	-0.334503	127.285	-18382.6
99	236	-0.323919	127.39	-18459.1
100	236	-0.31337	127.489	-18533
101	240	-0.302855	127.58	-18605.7
102	240	-0.294992	127.667	-18676.5
103	240	-0.284535	127.748	-18744.8

104	240	-0.27411	127.823	-18810.6
105	240	-0.263715	127.893	-18873.9
106	240	-0.253347	127.957	-18934.7
107	240	-0.24559	128.017	-18993.6
108	240	-0.235269	128.073	-19050.1
109	240	-0.224974	128.123	-19104.1
110	240	-0.214702	128.169	-19155.6
111	240	-0.207012	128.212	-19205.3
112	242	-0.196779	128.251	-19252.9
113	244	-0.186567	128.286	-19298.5
114	244	-0.176374	128.317	-19341.5
115	244	-0.168741	128.345	-19382.7
116	244	-0.158579	128.371	-19421.4
117	246	-0.148434	128.393	-19457.9
118	246	-0.138305	128.412	-19491.9
119	246	-0.128189	128.428	-19523.4
120	246	-0.12061	128.443	-19553.1
121	247	-0.110516	128.455	-19580.4
122	248	-0.100433	128.465	-19605.3
123	249	-0.0903606	128.473	-19627.8
124	250	-0.0828129	128.48	-19648.5
125	250	-0.0727562	128.485	-19666.7
126	250	-0.0627062	128.489	-19682.4
127	250	-0.0526632	128.492	-19695.5
128	250	-0.0426257	128.494	-19706.2
129	250	-0.0350997	128.495	-19715
130	252	-0.0250691	128.496	-19721.3
131	252	-0.0150408	128.496	-19725.1
132	252	-0.00501359	128.496	-19726.3
133	252	0.00501359	128.496	-19725.1
134	253	0.0150408	128.496	-19721.3
135	254	0.0250691	128.497	-19714.9
136	254	0.0350997	128.498	-19706
137	255	0.0426257	128.5	-19695.1
138	255	0.0526632	128.503	-19681.7
139	255	0.0627062	128.507	-19665.7
140	256	0.0727562	128.512	-19647.1
141	256	0.0828129	128.519	-19625.9
142	256	0.0903606	128.527	-19602.7
143	260	0.100433	128.537	-19576.6
144	262	0.110516	128.549	-19547.7
145	262	0.12061	128.564	-19516.1
146	263	0.128189	128.58	-19482.4
147	264	0.138305	128.599	-19445.8
148	264	0.148434	128.621	-19406.7
149	264	0.158579	128.647	-19364.8
150	264	0.168741	128.675	-19320.2
151	266	0.176374	128.706	-19273.3
152	268	0.186567	128.741	-19223.3
153	268	0.196779	128.78	-19170.6
154	268	0.207012	128.822	-19115.1
155	270	0.214702	128.869	-19057.1
156	271	0.224974	128.919	-18996.2
157	272	0.235269	128.975	-18932.2
158	280	0.24559	129.035	-18863.4
159	280	0.253347	129.099	-18792.5
160	280	0.263715	129.169	-18718.6

161	282	0.27411	129.244	-18641.3
162	284	0.284535	129.325	-18560.5
163	288	0.294992	129.412	-18475.6
164	288	0.302855	129.503	-18388.4
165	288	0.31337	129.602	-18298.1
166	290	0.323919	129.707	-18204.2
167	290	0.334503	129.818	-18107.2
168	290	0.342466	129.936	-18007.8
169	290	0.353118	130.06	-17905.4
170	296	0.363809	130.193	-17797.8
171	296	0.374544	130.333	-17686.9
172	300	0.385321	130.482	-17571.3
173	300	0.393433	130.636	-17453.3
174	300	0.40429	130.8	-17332
175	304	0.415193	130.972	-17205.8
176	308	0.426148	131.154	-17074.5
177	309	0.434397	131.342	-16940.3
178	310	0.445443	131.541	-16802.2
179	312	0.456542	131.749	-16659.7
180	314	0.467699	131.968	-16512.9
181	316	0.478914	132.197	-16361.6
182	320	0.487364	132.435	-16205.6
183	320	0.498687	132.684	-16046
184	320	0.510074	132.944	-15882.8
185	320	0.521527	133.216	-15715.9
186	324	0.530162	133.497	-15544.1
187	326	0.541736	133.79	-15367.5
188	326	0.553384	134.097	-15187.1
189	327	0.565108	134.416	-15002.3
190	328	0.573953	134.745	-14814.1
191	329	0.585815	135.089	-14621.3
192	329	0.597761	135.446	-14424.7
193	330	0.609791	135.818	-14223.4
194	330	0.621911	136.204	-14018.2
195	330	0.631062	136.603	-13810
196	330	0.643345	137.017	-13597.7
197	330	0.655726	137.447	-13381.3
198	330	0.668209	137.893	-13160.8
199	330.4	0.677639	138.352	-12936.9
200	332	0.690309	138.829	-12707.7
201	332	0.703089	139.323	-12474.3
202	334	0.715986	139.836	-12235.1
203	336	0.729003	140.367	-11990.2
204	338	0.738846	140.913	-11740.4
205	340	0.752084	141.479	-11484.7
206	340	0.765456	142.065	-11224.5
207	340	0.778966	142.671	-10959.6
208	340	0.789191	143.294	-10691.3
209	340	0.802956	143.939	-10418.3
210	340	0.816874	144.606	-10140.6
211	340	0.830953	145.297	-9858.05
212	342	0.841621	146.005	-9570.21
213	342	0.855996	146.738	-9277.46
214	344	0.87055	147.496	-8977.99
215	344	0.885291	148.279	-8673.45
216	346	0.900227	149.09	-8361.97
217	347	0.911562	149.921	-8045.66

218	348	0.926859	150.78	-7723.11
219	350	0.942375	151.668	-7393.28
220	350	0.958125	152.586	-7057.94
221	350	0.970094	153.527	-6718.41
222	353	0.986272	154.5	-6370.25
223	356	1.00271	155.505	-6013.29
224	358	1.01943	156.544	-5648.33
225	360	1.03643	157.619	-5275.22
226	360	1.04939	158.72	-4897.44
227	360	1.06694	159.858	-4513.34
228	362	1.08482	161.035	-4120.63
229	363	1.10306	162.252	-3720.22
230	364	1.11699	163.499	-3313.64
231	364	1.1359	164.79	-2900.17
232	365	1.15522	166.124	-2478.52
233	366	1.17499	167.505	-2048.47
234	367	1.19522	168.933	-1609.82
235	368	1.21073	170.399	-1164.28
236	368	1.23187	171.917	-710.95
237	370	1.25357	173.488	-247.131
238	370	1.27588	175.116	224.943
239	370	1.29303	176.788	703.365
240	370	1.31652	178.521	1190.48
241	376	1.34075	180.319	1694.6
242	380	1.36581	182.184	2213.61
243	380	1.38517	184.103	2739.97
244	380	1.41183	186.096	3276.47
245	383	1.43953	188.168	3827.81
246	384	1.46838	190.325	4391.67
247	384	1.49852	192.57	4967.1
248	384	1.52203	194.887	5551.56
249	384	1.55477	197.304	6148.59
250	384	1.58927	199.83	6758.87
251	388	1.62576	202.473	7389.67
252	389	1.65463	205.211	8033.32
253	390	1.6954	208.085	8694.52
254	390	1.7392	211.11	9372.81
255	394	1.78661	214.302	10076.7
256	395	1.83843	217.682	10802.9
257	395.4	1.88079	221.219	11546.6
258	398	1.94314	224.995	12319.9
259	400	2.01409	229.051	13125.6
260	400	2.09693	233.449	13964.4
261	409	2.17009	238.158	14851.9
262	430	2.29036	243.404	15836.8
263	440	2.45727	249.442	16918

Sample Standard Deviation = 71.0807
Numerator = 2.86218e+008
Denominator = 3.31458e+008 = 263 249.442
W Statistic = 0.863512
5% Critical value of 0.976 exceeds 0.863512
Evidence of non-normality at 95% level of significance
1% Critical value of 0.967 exceeds 0.863512
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) = 67
Maximum Background Concentration = 450
Confidence Level = 94.4%
False Positive Rate = 5.6%

Well	Date	Samples	Mean	Impacted
MW#93-2	2/27/2018	1	282	FALSE
MW#93-3	2/27/2018	1	368	FALSE
MW#03-1	2/27/2018	1	72	FALSE
MW#03-2	2/27/2018	1	196	FALSE

Concentrations (mg/L)

Parameter: Arsenic

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Samples: 114
Total Non-Detect: 89
Percent Non-Detects: 78.0702%
Total Background Samples: 23
There is 1 background well

Well	Samples	ND	Date	Result	Original
MW#93-1	23	20 (86.9565%)	6/12/2007	0.0109	0.0109
			12/17/2007	ND<0.005	ND<0.005
			6/11/2008	ND<0.005	ND<0.005
			12/3/2008	ND<0.005	ND<0.005
			6/17/2009	ND<0.005	ND<0.005
			12/9/2009	ND<0.005	ND<0.005
			6/17/2010	ND<0.005	ND<0.005
			12/22/2010	ND<0.005	ND<0.005
			6/29/2011	ND<0.005	ND<0.005
			12/7/2011	ND<0.005	ND<0.005
			6/6/2012	ND<0.005	ND<0.005
			12/12/2012	0.0068	0.0068
			6/19/2013	ND<0.005	ND<0.005
			12/11/2013	ND<0.005	ND<0.005
			6/11/2014	ND<0.005	ND<0.005
			12/3/2014	ND<0.005	ND<0.005
			6/17/2015	ND<0.005	ND<0.005
			12/1/2015	ND<0.005	ND<0.005
			6/22/2016	ND<0	ND<0
			12/20/2016	ND<0.0005	ND<0.0005
			6/6/2017	ND<0.005	ND<0.005
			11/7/2017	ND<0.005	ND<0.005
			2/27/2018	0.006	0.006

There are 4 compliance wells

Well	Samples	ND	Date	Result	Original
MW#03-1	22	21 (95.4545%)	6/12/2007	ND<0.005	ND<0.005
			12/17/2007	ND<0.005	ND<0.005
			6/11/2008	ND<0.005	ND<0.005
			12/3/2008	ND<0.005	ND<0.005
			6/17/2009	ND<0.005	ND<0.005
			12/9/2009	ND<0.005	ND<0.005
			6/17/2010	ND<0.005	ND<0.005
			12/22/2010	ND<0.005	ND<0.005
			6/29/2011	ND<0.005	ND<0.005
			12/7/2011	ND<0.005	ND<0.005
			6/6/2012	ND<0.005	ND<0.005
			6/19/2013	0.008	0.008
			12/11/2013	ND<0.005	ND<0.005
			6/11/2014	ND<0.005	ND<0.005
			12/3/2014	ND<0.005	ND<0.005
			6/17/2015	ND<0.005	ND<0.005

			12/1/2015	ND<0.005	ND<0.005
			6/22/2016	ND<0	ND<0
			12/20/2016	ND<0.0005	ND<0.0005
			6/6/2017	ND<0.005	ND<0.005
			11/7/2017	ND<0.005	ND<0.005
			2/27/2018	ND<0.005	ND<0.005
MW#03-2	23	22 (95.6522%)	6/12/2007	ND<0.005	ND<0.005
			12/17/2007	ND<0.005	ND<0.005
			6/11/2008	ND<0.005	ND<0.005
			12/3/2008	ND<0.005	ND<0.005
			6/17/2009	ND<0.005	ND<0.005
			12/9/2009	ND<0.005	ND<0.005
			6/17/2010	ND<0.005	ND<0.005
			12/22/2010	ND<0.005	ND<0.005
			6/29/2011	ND<0.005	ND<0.005
			12/7/2011	ND<0.005	ND<0.005
			6/6/2012	ND<0.005	ND<0.005
			12/12/2012	ND<0.005	ND<0.005
			6/19/2013	ND<0.005	ND<0.005
			12/11/2013	ND<0.005	ND<0.005
			6/11/2014	ND<0.005	ND<0.005
			12/3/2014	ND<0.005	ND<0.005
			6/17/2015	ND<0.005	ND<0.005
			12/1/2015	ND<0.005	ND<0.005
			6/22/2016	ND<0.005	ND<0.005
			12/20/2016	ND<0.0005	ND<0.0005
			6/6/2017	ND<0.005	ND<0.005
			11/7/2017	ND<0.005	ND<0.005
			2/27/2018	0.008	0.008
MW#93-2	23	3 (13.0435%)	6/12/2007	0.0343	0.0343
			12/17/2007	0.0603	0.0603
			6/11/2008	0.051	0.051
			12/3/2008	0.033	0.033
			6/17/2009	0.0525	0.0525
			12/9/2009	0.0635	0.0635
			6/17/2010	0.0179	0.0179
			12/22/2010	0.0215	0.0215
			6/29/2011	0.061	0.061
			12/7/2011	ND<0.005	ND<0.005
			6/6/2012	0.0098	0.0098
			12/12/2012	0.0562	0.0562
			6/19/2013	ND<0.005	ND<0.005
			12/11/2013	0.0353	0.0353
			6/11/2014	0.0197	0.0197
			12/3/2014	0.0274	0.0274
			6/17/2015	ND<0.005	ND<0.005
			12/1/2015	0.03	0.03
			6/22/2016	0.047	0.047
			12/20/2016	0.06	0.06
			6/6/2017	0.038	0.038
			11/7/2017	0.028	0.028
			2/27/2018	0.024	0.024
MW#93-3	23	23 (100%)	6/12/2007	ND<0.005	ND<0.005
			12/17/2007	ND<0.005	ND<0.005

6/11/2008	ND<0.005	ND<0.005
12/3/2008	ND<0.005	ND<0.005
6/17/2009	ND<0.005	ND<0.005
12/9/2009	ND<0.005	ND<0.005
6/17/2010	ND<0.005	ND<0.005
12/22/2010	ND<0.005	ND<0.005
6/29/2011	ND<0.005	ND<0.005
12/7/2011	ND<0.005	ND<0.005
6/6/2012	ND<0.005	ND<0.005
12/12/2012	ND<0.005	ND<0.005
6/19/2013	ND<0.005	ND<0.005
12/11/2013	ND<0.005	ND<0.005
6/11/2014	ND<0.005	ND<0.005
12/3/2014	ND<0.005	ND<0.005
6/17/2015	ND<0.005	ND<0.005
12/1/2015	ND<0.005	ND<0.005
6/22/2016	ND<0.005	ND<0.005
12/20/2016	ND<0.0005	ND<0.0005
6/6/2017	ND<0.005	ND<0.005
11/7/2017	ND<0.005	ND<0.005
2/27/2018	ND<0.005	ND<0.005

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 = 0.0036939
Overall Std Dev = 0.00777565
Overall Total = 0.421105
SS Wells = 0.0043354
SS Total = 0.00683206

ANOVA Table

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	F
Between Wells	0.0043354	4	0.00108385	47.319
Error (within wells)	0.00249666	109	2.29052e-005	
Totals	0.00683206	113		

47.319 exceeds 2.44724; assumption of equal variance should be rejected

Well: MW#93-1	Sample	Residual
	6/12/2007	0.00593478
	12/17/2007	3.47826e-005
	6/11/2008	3.47826e-005
	12/3/2008	3.47826e-005
	6/17/2009	3.47826e-005
	12/9/2009	3.47826e-005
	6/17/2010	3.47826e-005
	12/22/2010	3.47826e-005
	6/29/2011	3.47826e-005
	12/7/2011	3.47826e-005
	6/6/2012	3.47826e-005
	12/12/2012	0.00183478
	6/19/2013	3.47826e-005
	12/11/2013	3.47826e-005
	6/11/2014	3.47826e-005
	12/3/2014	3.47826e-005
	6/17/2015	3.47826e-005
	12/1/2015	3.47826e-005
	6/22/2016	0.00496522
	12/20/2016	0.00446522
	6/6/2017	3.47826e-005
	11/7/2017	3.47826e-005
	2/27/2018	0.00103478

Well: MW#03-1	Sample	Residual
	6/12/2007	0.000295455
	12/17/2007	0.000295455
	6/11/2008	0.000295455
	12/3/2008	0.000295455
	6/17/2009	0.000295455
	12/9/2009	0.000295455
	6/17/2010	0.000295455

12/22/2010	0.000295455
6/29/2011	0.000295455
12/7/2011	0.000295455
6/6/2012	0.000295455
6/19/2013	0.00329545
12/11/2013	0.000295455
6/11/2014	0.000295455
12/3/2014	0.000295455
6/17/2015	0.000295455
12/1/2015	0.000295455
6/22/2016	0.00470455
12/20/2016	0.00420455
6/6/2017	0.000295455
11/7/2017	0.000295455
2/27/2018	0.000295455

Well: MW#03-2

Sample	Residual
6/12/2007	6.52174e-005
12/17/2007	6.52174e-005
6/11/2008	6.52174e-005
12/3/2008	6.52174e-005
6/17/2009	6.52174e-005
12/9/2009	6.52174e-005
6/17/2010	6.52174e-005
12/22/2010	6.52174e-005
6/29/2011	6.52174e-005
12/7/2011	6.52174e-005
6/6/2012	6.52174e-005
12/12/2012	6.52174e-005
6/19/2013	6.52174e-005
12/11/2013	6.52174e-005
6/11/2014	6.52174e-005
12/3/2014	6.52174e-005
6/17/2015	6.52174e-005
12/1/2015	6.52174e-005
6/22/2016	6.52174e-005
12/20/2016	0.00443478
6/6/2017	6.52174e-005
11/7/2017	6.52174e-005
2/27/2018	0.00306522

Well: MW#93-2

Sample	Residual
6/12/2007	0.000152174
12/17/2007	0.0261522
6/11/2008	0.0168522
12/3/2008	0.00114783
6/17/2009	0.0183522
12/9/2009	0.0293522
6/17/2010	0.0162478
12/22/2010	0.0126478
6/29/2011	0.0268522
12/7/2011	0.0291478
6/6/2012	0.0243478
12/12/2012	0.0220522
6/19/2013	0.0291478
12/11/2013	0.00115217

6/11/2014	0.0144478
12/3/2014	0.00674783
6/17/2015	0.0291478
12/1/2015	0.00414783
6/22/2016	0.0128522
12/20/2016	0.0258522
6/6/2017	0.00385217
11/7/2017	0.00614783
2/27/2018	0.0101478

Well: MW#93-3

Sample	Residual
6/12/2007	0.000195652
12/17/2007	0.000195652
6/11/2008	0.000195652
12/3/2008	0.000195652
6/17/2009	0.000195652
12/9/2009	0.000195652
6/17/2010	0.000195652
12/22/2010	0.000195652
6/29/2011	0.000195652
12/7/2011	0.000195652
6/6/2012	0.000195652
12/12/2012	0.000195652
6/19/2013	0.000195652
12/11/2013	0.000195652
6/11/2014	0.000195652
12/3/2014	0.000195652
6/17/2015	0.000195652
12/1/2015	0.000195652
6/22/2016	0.000195652
12/20/2016	0.00430435
6/6/2017	0.000195652
11/7/2017	0.000195652
2/27/2018	0.000195652

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 = 114

i	x(i)	m(i)	sum(m^2)	sum(mx)
0	0	0	0	0
1	0	-2.40892	5.80292	0
2	0	-2.12007	10.2976	0
3	0.0005	-1.94314	14.0734	-0.000971568
4	0.0005	-1.82501	17.404	-0.00188407
5	0.0005	-1.71688	20.3517	-0.00274251
6	0.0005	-1.62576	22.9948	-0.00355539
7	0.005	-1.55477	25.4121	-0.0113293
8	0.005	-1.48328	27.6123	-0.0187457
9	0.005	-1.41865	29.6248	-0.0258389
10	0.005	-1.36581	31.4903	-0.032668
11	0.005	-1.31058	33.2079	-0.0392209
12	0.005	-1.25908	34.7932	-0.0455163
13	0.005	-1.21073	36.259	-0.0515699
14	0.005	-1.17	37.6279	-0.0574199
15	0.005	-1.12639	38.8967	-0.0630519
16	0.005	-1.08482	40.0735	-0.068476
17	0.005	-1.04939	41.1748	-0.0737229
18	0.005	-1.01104	42.1969	-0.0787781
19	0.005	-0.974114	43.1458	-0.0836487
20	0.005	-0.942375	44.0339	-0.0883605
21	0.005	-0.907769	44.858	-0.0928994
22	0.005	-0.874218	45.6222	-0.0972705
23	0.005	-0.841621	46.3305	-0.101479
24	0.005	-0.813379	46.9921	-0.105545
25	0.005	-0.782366	47.6042	-0.109457
26	0.005	-0.752084	48.1699	-0.113218
27	0.005	-0.725736	48.6965	-0.116846
28	0.005	-0.696684	49.1819	-0.12033
29	0.005	-0.668209	49.6284	-0.123671
30	0.005	-0.643345	50.0423	-0.126888
31	0.005	-0.615839	50.4216	-0.129967
32	0.005	-0.588793	50.7682	-0.132911
33	0.005	-0.565108	51.0876	-0.135736
34	0.005	-0.538836	51.3779	-0.13843
35	0.005	-0.51293	51.641	-0.140995
36	0.005	-0.487364	51.8786	-0.143432
37	0.005	-0.464904	52.0947	-0.145756
38	0.005	-0.439913	52.2882	-0.147956
39	0.005	-0.415193	52.4606	-0.150032
40	0.005	-0.393433	52.6154	-0.151999
41	0.005	-0.369171	52.7517	-0.153845
42	0.005	-0.345126	52.8708	-0.155571
43	0.005	-0.323919	52.9757	-0.15719
44	0.005	-0.300232	53.0659	-0.158691
45	0.005	-0.276714	53.1424	-0.160075
46	0.005	-0.253347	53.2066	-0.161342

47	0.005	-0.232693	53.2608	-0.162505
48	0.005	-0.209575	53.3047	-0.163553
49	0.005	-0.186567	53.3395	-0.164486
50	0.005	-0.166199	53.3671	-0.165317
51	0.005	-0.143367	53.3877	-0.166034
52	0.005	-0.12061	53.4022	-0.166637
53	0.005	-0.100433	53.4123	-0.167139
54	0.005	-0.0777834	53.4183	-0.167528
55	0.005	-0.0551734	53.4214	-0.167804
56	0.005	-0.0350997	53.4226	-0.167979
57	0.005	-0.0125328	53.4228	-0.168042
58	0.005	0.0125328	53.4229	-0.167979
59	0.005	0.0350997	53.4242	-0.167804
60	0.005	0.0551734	53.4272	-0.167528
61	0.005	0.0777834	53.4333	-0.167139
62	0.005	0.100433	53.4433	-0.166637
63	0.005	0.12061	53.4579	-0.166034
64	0.005	0.143367	53.4784	-0.165317
65	0.005	0.166199	53.5061	-0.164486
66	0.005	0.186567	53.5409	-0.163553
67	0.005	0.209575	53.5848	-0.162505
68	0.005	0.232693	53.6389	-0.161342
69	0.005	0.253347	53.7031	-0.160075
70	0.005	0.276714	53.7797	-0.158691
71	0.005	0.300232	53.8698	-0.15719
72	0.005	0.323919	53.9748	-0.155571
73	0.005	0.345126	54.0939	-0.153845
74	0.005	0.369171	54.2302	-0.151999
75	0.005	0.393433	54.385	-0.150032
76	0.005	0.415193	54.5573	-0.147956
77	0.005	0.439913	54.7509	-0.145756
78	0.005	0.464904	54.967	-0.143432
79	0.005	0.487364	55.2045	-0.140995
80	0.005	0.51293	55.4676	-0.13843
81	0.005	0.538836	55.758	-0.135736
82	0.005	0.565108	56.0773	-0.132911
83	0.005	0.588793	56.424	-0.129967
84	0.005	0.615839	56.8032	-0.126888
85	0.005	0.643345	57.2171	-0.123671
86	0.005	0.668209	57.6636	-0.12033
87	0.005	0.696684	58.149	-0.116846
88	0.005	0.725736	58.6757	-0.113218
89	0.005	0.752084	59.2413	-0.109457
90	0.006	0.782366	59.8534	-0.104763
91	0.0068	0.813379	60.515	-0.0992321
92	0.008	0.841621	61.2233	-0.0924992
93	0.008	0.874218	61.9876	-0.0855054
94	0.0098	0.907769	62.8116	-0.0766093
95	0.0109	0.942375	63.6997	-0.0663374
96	0.0179	0.974114	64.6486	-0.0489008
97	0.0197	1.01104	65.6708	-0.0289834
98	0.0215	1.04939	66.772	-0.00642155
99	0.024	1.08482	67.9489	0.0196142
100	0.0274	1.12639	69.2176	0.0504773
101	0.028	1.17	70.5865	0.0832373
102	0.03	1.21073	72.0524	0.119559
103	0.033	1.25908	73.6377	0.161109

104	0.0343	1.31058	75.3553	0.206062
105	0.0353	1.36581	77.2207	0.254275
106	0.038	1.41865	79.2333	0.308184
107	0.047	1.48328	81.4334	0.377898
108	0.051	1.55477	83.8507	0.457191
109	0.0525	1.62576	86.4938	0.542544
110	0.0562	1.71688	89.4415	0.639033
111	0.06	1.82501	92.7722	0.748533
112	0.0603	1.94314	96.548	0.865704
113	0.061	2.12007	101.043	0.995028

Sample Standard Deviation = 0.0146171
Numerator = 0.990081
Denominator = 2.43954 = 113 101.043
W Statistic = 0.405848
5% Critical value of 0.976 exceeds 0.405848
Evidence of non-normality at 95% level of significance
1% Critical value of 0.967 exceeds 0.405848
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 = 78.0702%
Number of comparisons = 4
Future Samples (k) = 4
Recent Dates = 1
Background Samples (n) = 23
Maximum Background Concentration = 0.0109
Confidence Level = 85.2%
False Positive Rate = 14.8%

Well	Date	Samples	Mean	Impacted
MW#03-1	2/27/2018	1	0.005	FALSE
MW#03-2	2/27/2018	1	0.008	FALSE
MW#93-2	2/27/2018	1	0.024	TRUE
MW#93-3	2/27/2018	1	0.005	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 = 13.6364%
Future Samples (k) = 1
Recent Dates = 1
Baseline Samples (n) = 22
Maximum Baseline Concentration = 0.0635
Confidence Level = 95.7%
False Positive Rate = 4.3%

Baseline Samples	Date	Result
	6/12/2007	0.0343
	12/17/2007	0.0603
	6/11/2008	0.051
	12/3/2008	0.033
	6/17/2009	0.0525
	12/9/2009	0.0635
	6/17/2010	0.0179
	12/22/2010	0.0215
	6/29/2011	0.061
	12/7/2011	ND<0.005
	6/6/2012	0.0098
	12/12/2012	0.0562
	6/19/2013	ND<0.005
	12/11/2013	0.0353
	6/11/2014	0.0197
	12/3/2014	0.0274
	6/17/2015	ND<0.005
	12/1/2015	0.03
	6/22/2016	0.047
	12/20/2016	0.06
	6/6/2017	0.038
	11/7/2017	0.028

Date	Samples	Mean	Impacted
2/27/2018	1	0.024	FALSE

Concentrations (mg/L)

Parameter: Boron

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Samples: 50
Total Non-Detect: 18
Percent Non-Detects: 36%
Total Background Samples: 10
There is 1 background well

Well	Samples	ND	Date	Result	Original
MW#93-1	10	0 (0%)	10/11/2016	0.429	0.429
			12/20/2016	0.386	0.386
			2/16/2017	0.341	0.341
			3/8/2017	0.348	0.348
			5/9/2017	0.366	0.366
			6/6/2017	0.371	0.371
			8/22/2017	0.458	0.458
			9/22/2017	0.499	0.499
			11/7/2017	0.46	0.46
			2/27/2018	0.33	0.33

There are 4 compliance wells

Well	Samples	ND	Date	Result	Original
MW#03-1	10	7 (70%)	10/11/2016	ND<0.025	ND<0.025
			12/20/2016	ND<0.025	ND<0.025
			2/16/2017	ND<0.025	ND<0.025
			3/8/2017	ND<0.025	ND<0.025
			5/9/2017	0.041	0.041
			6/6/2017	ND<0.025	ND<0.025
			8/22/2017	ND<0.025	ND<0.025
			9/22/2017	0.025	0.025
			11/7/2017	ND<0.1	ND<0.1
			2/27/2018	0.05	0.05
MW#03-2	10	9 (90%)	10/11/2016	ND<0.025	ND<0.025
			12/20/2016	ND<0.025	ND<0.025
			2/16/2017	ND<0.025	ND<0.025
			3/8/2017	ND<0.025	ND<0.025
			5/9/2017	0.032	0.032
			6/6/2017	ND<0.025	ND<0.025
			8/22/2017	ND<0.025	ND<0.025
			9/22/2017	ND<0.025	ND<0.025
			11/7/2017	ND<0.1	ND<0.1
			2/27/2018	ND<0.05	ND<0.05
MW#93-2	10	0 (0%)	10/11/2016	2.86	2.86
			12/20/2016	2.31	2.31
			2/16/2017	2.09	2.09
			3/8/2017	2.07	2.07
			5/9/2017	1.97	1.97
			6/6/2017	1.83	1.83
			8/22/2017	2.38	2.38

			9/22/2017	2.48	2.48
			11/7/2017	0.46	0.46
			2/27/2018	0.064	0.064
MW#93-3	10	2 (20%)	10/11/2016	0.079	0.079
			12/20/2016	0.08	0.08
			2/16/2017	0.126	0.126
			3/8/2017	0.09	0.09
			5/9/2017	0.139	0.139
			6/6/2017	ND<0.025	ND<0.025
			8/22/2017	0.119	0.119
			9/22/2017	0.118	0.118
			11/7/2017	ND<0.1	ND<0.1
			2/27/2018	0.089	0.089

There are 0 unused wells

Well	Samples	ND	Date	Result	Original

Levene's Test for Equal of Variance

Parameter: Boron

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

Overall Mean = 0.149212
Overall Std Dev = 0.35253
Overall Total = 7.4606
SS Wells = 3.01928
SS Total = 6.0896

ANOVA Table

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	F
Between Wells	3.01928	4	0.75482	11.063
Error (within wells)	3.07031	45	0.0682292	
Totals	6.0896	49		

11.063 exceeds 2.52521; assumption of equal variance should be rejected

Well: MW#93-1	Sample	Residual
	10/11/2016	0.0302
	12/20/2016	0.0128
	2/16/2017	0.0578
	3/8/2017	0.0508
	5/9/2017	0.0328
	6/6/2017	0.0278
	8/22/2017	0.0592
	9/22/2017	0.1002
	11/7/2017	0.0612
	2/27/2018	0.0688

Well: MW#03-1	Sample	Residual
	10/11/2016	0.0116
	12/20/2016	0.0116
	2/16/2017	0.0116
	3/8/2017	0.0116
	5/9/2017	0.0044
	6/6/2017	0.0116
	8/22/2017	0.0116
	9/22/2017	0.0116
	11/7/2017	0.0634
	2/27/2018	0.0134

Well: MW#03-2	Sample	Residual
	10/11/2016	0.0107
	12/20/2016	0.0107
	2/16/2017	0.0107
	3/8/2017	0.0107
	5/9/2017	0.0037
	6/6/2017	0.0107
	8/22/2017	0.0107

9/22/2017	0.0107
11/7/2017	0.0643
2/27/2018	0.0143

Well: MW#93-2	Sample	Residual
	10/11/2016	1.0086
	12/20/2016	0.4586
	2/16/2017	0.2386
	3/8/2017	0.2186
	5/9/2017	0.1186
	6/6/2017	0.0214
	8/22/2017	0.5286
	9/22/2017	0.6286
	11/7/2017	1.3914
	2/27/2018	1.7874

Well: MW#93-3	Sample	Residual
	10/11/2016	0.0175
	12/20/2016	0.0165
	2/16/2017	0.0295
	3/8/2017	0.0065
	5/9/2017	0.0425
	6/6/2017	0.0715
	8/22/2017	0.0225
	9/22/2017	0.0215
	11/7/2017	0.0035
	2/27/2018	0.0075

Shapiro-Wilks Test of Normality

Parameter: Boron

All Wells

Normality Test of Parameter Concentrations

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
K = 25; Samples = 50

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	0.025	2.86	2.835	0.3751	1.06341
2	0.025	2.48	2.455	0.2574	0.631917
3	0.025	2.38	2.355	0.226	0.53223
4	0.025	2.31	2.285	0.2032	0.464312
5	0.025	2.09	2.065	0.1847	0.381406
6	0.025	2.07	2.045	0.1691	0.345809
7	0.025	1.97	1.945	0.1554	0.302253
8	0.025	1.83	1.805	0.143	0.258115
9	0.025	0.499	0.474	0.1317	0.0624258
10	0.025	0.46	0.435	0.1212	0.052722
11	0.025	0.46	0.435	0.1113	0.0484155
12	0.025	0.458	0.433	0.102	0.044166
13	0.025	0.429	0.404	0.0932	0.0376528
14	0.025	0.386	0.361	0.0846	0.0305406
15	0.025	0.371	0.346	0.0764	0.0264344
16	0.032	0.366	0.334	0.0685	0.022879
17	0.041	0.348	0.307	0.0608	0.0186656
18	0.05	0.341	0.291	0.0532	0.0154812
19	0.05	0.33	0.28	0.0459	0.012852
20	0.064	0.139	0.075	0.0386	0.002895
21	0.079	0.126	0.047	0.0314	0.0014758
22	0.08	0.119	0.039	0.0244	0.0009516
23	0.089	0.118	0.029	0.0174	0.0005046
24	0.09	0.1	0.01	0.0104	0.000104
25	0.1	0.1	0	0.0035	0
26	0.1	0.1	0		
27	0.1	0.09	-0.01		
28	0.118	0.089	-0.029		
29	0.119	0.08	-0.039		
30	0.126	0.079	-0.047		
31	0.139	0.064	-0.075		
32	0.33	0.05	-0.28		
33	0.341	0.05	-0.291		
34	0.348	0.041	-0.307		
35	0.366	0.032	-0.334		
36	0.371	0.025	-0.346		
37	0.386	0.025	-0.361		
38	0.429	0.025	-0.404		
39	0.458	0.025	-0.433		
40	0.46	0.025	-0.435		
41	0.46	0.025	-0.435		
42	0.499	0.025	-0.474		
43	1.83	0.025	-1.805		
44	1.97	0.025	-1.945		
45	2.07	0.025	-2.045		
46	2.09	0.025	-2.065		

47	2.31	0.025	-2.285
48	2.38	0.025	-2.355
49	2.48	0.025	-2.455
50	2.86	0.025	-2.835

Sum of b values = 4.35762
Sample Standard Deviation = 0.801608
W Statistic = 0.603084
5% Critical value of 0.947 exceeds 0.603084
Evidence of non-normality at 95% level of significance
1% Critical value of 0.93 exceeds 0.603084
Evidence of non-normality at 99% level of significance

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Boron

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

Total Percent Non-Detects = 36%
Number of comparisons = 4
Future Samples (k) = 4
Recent Dates = 1
Background Samples (n) = 10
Maximum Background Concentration = 0.499
Confidence Level = 71.4%
False Positive Rate = 28.6%

Well	Date	Samples	Mean	Impacted
MW#03-1	2/27/2018	1	0.05	FALSE
MW#03-2	2/27/2018	1	0.05	FALSE
MW#93-2	2/27/2018	1	0.064	FALSE
MW#93-3	2/27/2018	1	0.089	FALSE

Concentrations (mg/l)

Parameter: Chloride

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Samples: 271
Total Non-Detect: 5
Percent Non-Detects: 1.84502%
Total Background Samples: 69
There is 1 background well

Well	Samples	ND	Date	Result	Original
MW#93-1	69	0 (0%)	12/15/1994	30	30
			3/14/1995	38	38
			6/21/1995	37	37
			12/14/1995	24	24
			3/6/1996	20	20
			4/25/1996	32	32
			10/2/1996	40	40
			12/10/1996	30	30
			3/11/1997	4	4
			4/15/1997	28	28
			8/14/1997	33	33
			12/4/1997	29	29
			3/31/1998	30	30
			6/23/1998	37	37
			8/11/1998	24	24
			12/8/1998	31	31
			3/9/1999	30	30
			6/8/1999	35	35
			8/19/1999	40	40
			12/14/1999	40	40
			3/7/2000	50	50
			6/23/2000	52	52
			12/12/2000	54	54
			3/27/2001	60	60
			6/28/2001	58	58
			9/10/2001	46	46
			12/18/2001	46	46
			3/19/2002	42	42
			6/26/2002	51	51
			9/18/2002	57	57
			12/11/2002	56	56
			3/13/2003	56	56
			6/25/2003	63	63
			9/26/2003	59	59
			12/10/2003	40	40
			3/9/2004	58	58
			6/24/2004	61	61
			9/15/2004	44	44
			12/15/2004	48	48
			3/16/2005	42	42
			6/15/2005	42	42
			9/21/2005	42	42
			12/21/2005	58	58
			3/15/2006	50	50

			6/21/2006	31	31
			12/20/2006	35	35
			6/12/2007	24	24
			12/17/2007	27	27
			6/11/2008	29	29
			12/3/2008	28	28
			6/17/2009	20	20
			12/9/2009	24	24
			6/17/2010	17	17
			12/22/2010	20	20
			6/29/2011	20.8	20.8
			12/7/2011	17.6	17.6
			6/6/2012	23.8	23.8
			12/12/2012	22.2	22.2
			6/19/2013	21.5	21.5
			12/11/2013	17.6	17.6
			6/11/2014	19.3	19.3
			12/3/2014	16.9	16.9
			6/17/2015	13	13
			12/1/2015	15.2	15.2
			6/22/2016	13	13
			12/20/2016	15.2	15.2
			6/6/2017	16.1	16.1
			11/7/2017	16.2	16.2
			2/27/2018	15.6	15.6

There are 4 compliance wells

Well	Samples	ND	Date	Result	Original
MW#93-2	70	0 (0%)	12/15/1994	400	400
			3/14/1995	1500	1500
			6/21/1995	75	75
			12/14/1995	1749	1749
			3/6/1996	1674	1674
			4/25/1996	1999	1999
			10/2/1996	1553	1553
			12/10/1996	1560	1560
			3/11/1997	1634	1634
			4/15/1997	1700	1700
			8/14/1997	2149	2149
			12/4/1997	1769	1769
			3/31/1998	2000	2000
			6/23/1998	2099	2099
			8/11/1998	1874	1874
			12/8/1998	1922	1922
			3/9/1999	1700	1700
			6/8/1999	1739	1739
			8/19/1999	1800	1800
			12/14/1999	1800	1800
			3/7/2000	1328	1328
			6/23/2000	950	950
			12/12/2000	1789	1789
			3/27/2001	1749	1749
			6/28/2001	1799	1799
			9/10/2001	2050	2050
			12/18/2001	1600	1600

			3/19/2002	1730	1730
			6/26/2002	1699	1699
			9/18/2002	1674	1674
			12/11/2002	1613	1613
			3/13/2003	1510	1510
			6/25/2003	1800	1800
			9/26/2003	1616	1616
			12/10/2003	1509	1509
			3/9/2004	1800	1800
			6/24/2004	1892	1892
			9/15/2004	1435	1435
			12/15/2004	1600	1600
			3/16/2005	1325	1325
			6/15/2005	1400	1400
			9/21/2005	1412	1412
			12/21/2005	1550	1550
			3/15/2006	1375	1375
			6/21/2006	1500	1500
			12/20/2006	1250	1250
			2/21/2007	1250	1250
			6/12/2007	1350	1350
			12/17/2007	1399	1399
			6/11/2008	1210	1210
			12/3/2008	1584	1584
			6/17/2009	750	750
			12/9/2009	875	875
			6/17/2010	1500	1500
			12/22/2010	1600	1600
			6/29/2011	1670	1670
			12/7/2011	1510	1510
			6/6/2012	1610	1610
			12/12/2012	1750	1750
			6/19/2013	1390	1390
			12/11/2013	1410	1410
			6/11/2014	1360	1360
			12/3/2014	1520	1520
			6/17/2015	47.7	47.7
			12/1/2015	1760	1760
			6/22/2016	1300	1300
			12/20/2016	1690	1690
			6/6/2017	1580	1580
			11/7/2017	1160	1160
			2/27/2018	1270	1270
MW#93-3	69	0 (0%)	12/15/1994	440	440
			3/14/1995	420	420
			6/21/1995	420	420
			12/14/1995	406	406
			3/6/1996	368	368
			4/25/1996	384	384
			10/2/1996	430	430
			12/10/1996	377	377
			3/11/1997	375	375
			4/15/1997	400	400
			8/14/1997	916	916
			12/4/1997	249	249
			3/31/1998	275	275

6/23/1998	246	246
8/11/1998	500	500
12/8/1998	260	260
3/9/1999	280	280
6/8/1999	214	214
8/19/1999	260	260
12/14/1999	200	200
3/7/2000	232	232
6/23/2000	270	270
12/12/2000	196	196
3/27/2001	190	190
6/28/2001	180	180
9/10/2001	202	202
12/18/2001	149	149
3/19/2002	203	203
6/26/2002	180	180
9/18/2002	185	185
12/11/2002	178	178
3/13/2003	207	207
6/25/2003	190	190
9/26/2003	158	158
12/10/2003	140	140
3/9/2004	13	13
6/24/2004	160	160
9/15/2004	139	139
12/15/2004	122	122
3/16/2005	180	180
6/15/2005	150	150
9/21/2005	215	215
12/21/2005	180	180
3/15/2006	221	221
6/21/2006	210	210
12/20/2006	210	210
6/12/2007	110	110
12/17/2007	131	131
6/11/2008	144	144
12/3/2008	152	152
6/17/2009	120	120
12/9/2009	175	175
6/17/2010	150	150
12/22/2010	170	170
6/29/2011	170	170
12/7/2011	98.9	98.9
6/6/2012	194	194
12/12/2012	168	168
6/19/2013	194	194
12/11/2013	173	173
6/11/2014	254	254
12/3/2014	194	194
6/17/2015	168	168
12/1/2015	280	280
6/22/2016	518	518
12/20/2016	475	475
6/6/2017	113	113
11/7/2017	402	402
2/27/2018	435	435

MW#03-1	29	4 (13.7931%)	6/24/2004	10	10
			9/15/2004	22	22
			12/15/2004	6	6
			3/16/2005	4	4
			6/15/2005	6	6
			9/21/2005	5	5
			12/20/2006	5	5
			6/12/2007	4	4
			12/17/2007	3	3
			6/11/2008	11	11
			12/3/2008	11	11
			6/17/2009	4	4
			12/9/2009	32	32
			6/17/2010	5	5
			12/22/2010	8.7	8.7
			6/29/2011	4.86	4.86
			12/7/2011	5.88	5.88
			6/6/2012	9.36	9.36
			6/19/2013	ND<5	ND<5
			12/11/2013	ND<5	ND<5
			6/11/2014	44	44
			12/3/2014	ND<5	ND<5
			6/17/2015	ND<5	ND<5
			12/1/2015	0.777	0.777
			6/22/2016	0.628	0.628
			12/20/2016	0.786	0.786
			6/6/2017	0.887	0.887
			11/7/2017	1.13	1.13
			2/27/2018	1.07	1.07
MW#03-2	34	1 (2.94118%)	6/24/2004	36	36
			9/15/2004	4	4
			12/15/2004	28	28
			3/16/2005	30	30
			6/15/2005	30	30
			9/21/2005	27	27
			12/21/2005	26	26
			3/15/2006	27	27
			6/21/2006	23	23
			12/20/2006	35	35
			6/12/2007	30	30
			12/17/2007	20	20
			6/11/2008	41	41
			12/3/2008	46	46
			6/17/2009	60	60
			12/9/2009	45	45
			6/17/2010	33	33
			12/22/2010	29	29
			6/29/2011	28.4	28.4
			12/7/2011	23.5	23.5
			6/6/2012	29.3	29.3
			12/12/2012	28.3	28.3
			6/19/2013	32.1	32.1
			12/11/2013	32.8	32.8
			6/11/2014	ND<5	ND<5
			12/3/2014	51.2	51.2
			6/17/2015	54.7	54.7

12/1/2015	67.8	67.8
6/22/2016	79.7	79.7
10/11/2016	88.4	88.4
12/20/2016	126	126
6/6/2017	117	117
11/7/2017	288	288
2/27/2018	247	247

There are 0 unused wells

Well	Samples	ND	Date	Result	Original

Levene's Test for Equal of Variance

Parameter: Chloride

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

Overall Mean = 102.299
Overall Std Dev = 183.953
Overall Total = 27723.1
SS Wells = 2.80034e+006
SS Total = 9.13646e+006

ANOVA Table

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	F
Between Wells	2.80034e+006	4	700086	29.3907
Error (within wells)	6.33612e+006	266	23820	
Totals	9.13646e+006	270		

29.3907 exceeds 2.37; assumption of equal variance should be rejected

Well: MW#93-1	Sample	Residual
	12/15/1994	4.28986
	3/14/1995	3.71014
	6/21/1995	2.71014
	12/14/1995	10.2899
	3/6/1996	14.2899
	4/25/1996	2.28986
	10/2/1996	5.71014
	12/10/1996	4.28986
	3/11/1997	30.2899
	4/15/1997	6.28986
	8/14/1997	1.28986
	12/4/1997	5.28986
	3/31/1998	4.28986
	6/23/1998	2.71014
	8/11/1998	10.2899
	12/8/1998	3.28986
	3/9/1999	4.28986
	6/8/1999	0.710145
	8/19/1999	5.71014
	12/14/1999	5.71014
	3/7/2000	15.7101
	6/23/2000	17.7101
	12/12/2000	19.7101
	3/27/2001	25.7101
	6/28/2001	23.7101
	9/10/2001	11.7101
	12/18/2001	11.7101
	3/19/2002	7.71014
	6/26/2002	16.7101
	9/18/2002	22.7101
	12/11/2002	21.7101
	3/13/2003	21.7101

6/25/2003	28.7101
9/26/2003	24.7101
12/10/2003	5.71014
3/9/2004	23.7101
6/24/2004	26.7101
9/15/2004	9.71014
12/15/2004	13.7101
3/16/2005	7.71014
6/15/2005	7.71014
9/21/2005	7.71014
12/21/2005	23.7101
3/15/2006	15.7101
6/21/2006	3.28986
12/20/2006	0.710145
6/12/2007	10.2899
12/17/2007	7.28986
6/11/2008	5.28986
12/3/2008	6.28986
6/17/2009	14.2899
12/9/2009	10.2899
6/17/2010	17.2899
12/22/2010	14.2899
6/29/2011	13.4899
12/7/2011	16.6899
6/6/2012	10.4899
12/12/2012	12.0899
6/19/2013	12.7899
12/11/2013	16.6899
6/11/2014	14.9899
12/3/2014	17.3899
6/17/2015	21.2899
12/1/2015	19.0899
6/22/2016	21.2899
12/20/2016	19.0899
6/6/2017	18.1899
11/7/2017	18.0899
2/27/2018	18.6899

Well: MW#93-2

Sample	Residual
12/15/1994	1117.1
3/14/1995	17.0957
6/21/1995	1442.1
12/14/1995	231.904
3/6/1996	156.904
4/25/1996	481.904
10/2/1996	35.9043
12/10/1996	42.9043
3/11/1997	116.904
4/15/1997	182.904
8/14/1997	631.904
12/4/1997	251.904
3/31/1998	482.904
6/23/1998	581.904
8/11/1998	356.904
12/8/1998	404.904
3/9/1999	182.904
6/8/1999	221.904

8/19/1999	282.904
12/14/1999	282.904
3/7/2000	189.096
6/23/2000	567.096
12/12/2000	271.904
3/27/2001	231.904
6/28/2001	281.904
9/10/2001	532.904
12/18/2001	82.9043
3/19/2002	212.904
6/26/2002	181.904
9/18/2002	156.904
12/11/2002	95.9043
3/13/2003	7.09571
6/25/2003	282.904
9/26/2003	98.9043
12/10/2003	8.09571
3/9/2004	282.904
6/24/2004	374.904
9/15/2004	82.0957
12/15/2004	82.9043
3/16/2005	192.096
6/15/2005	117.096
9/21/2005	105.096
12/21/2005	32.9043
3/15/2006	142.096
6/21/2006	17.0957
12/20/2006	267.096
2/21/2007	267.096
6/12/2007	167.096
12/17/2007	118.096
6/11/2008	307.096
12/3/2008	66.9043
6/17/2009	767.096
12/9/2009	642.096
6/17/2010	17.0957
12/22/2010	82.9043
6/29/2011	152.904
12/7/2011	7.09571
6/6/2012	92.9043
12/12/2012	232.904
6/19/2013	127.096
12/11/2013	107.096
6/11/2014	157.096
12/3/2014	2.90429
6/17/2015	1469.4
12/1/2015	242.904
6/22/2016	217.096
12/20/2016	172.904
6/6/2017	62.9043
11/7/2017	357.096
2/27/2018	247.096

Well: MW#93-3	**Sample**	**Residual**
	12/15/1994	192.625
	3/14/1995	172.625
	6/21/1995	172.625

12/14/1995	158.625
3/6/1996	120.625
4/25/1996	136.625
10/2/1996	182.625
12/10/1996	129.625
3/11/1997	127.625
4/15/1997	152.625
8/14/1997	668.625
12/4/1997	1.62464
3/31/1998	27.6246
6/23/1998	1.37536
8/11/1998	252.625
12/8/1998	12.6246
3/9/1999	32.6246
6/8/1999	33.3754
8/19/1999	12.6246
12/14/1999	47.3754
3/7/2000	15.3754
6/23/2000	22.6246
12/12/2000	51.3754
3/27/2001	57.3754
6/28/2001	67.3754
9/10/2001	45.3754
12/18/2001	98.3754
3/19/2002	44.3754
6/26/2002	67.3754
9/18/2002	62.3754
12/11/2002	69.3754
3/13/2003	40.3754
6/25/2003	57.3754
9/26/2003	89.3754
12/10/2003	107.375
3/9/2004	234.375
6/24/2004	87.3754
9/15/2004	108.375
12/15/2004	125.375
3/16/2005	67.3754
6/15/2005	97.3754
9/21/2005	32.3754
12/21/2005	67.3754
3/15/2006	26.3754
6/21/2006	37.3754
12/20/2006	37.3754
6/12/2007	137.375
12/17/2007	116.375
6/11/2008	103.375
12/3/2008	95.3754
6/17/2009	127.375
12/9/2009	72.3754
6/17/2010	97.3754
12/22/2010	77.3754
6/29/2011	77.3754
12/7/2011	148.475
6/6/2012	53.3754
12/12/2012	79.3754
6/19/2013	53.3754
12/11/2013	74.3754

6/11/2014	6.62464
12/3/2014	53.3754
6/17/2015	79.3754
12/1/2015	32.6246
6/22/2016	270.625
12/20/2016	227.625
6/6/2017	134.375
11/7/2017	154.625
2/27/2018	187.625

Well: MW#03-1	Sample	Residual
	6/24/2004	2.20421
	9/15/2004	14.2042
	12/15/2004	1.79579
	3/16/2005	3.79579
	6/15/2005	1.79579
	9/21/2005	2.79579
	12/20/2006	2.79579
	6/12/2007	3.79579
	12/17/2007	4.79579
	6/11/2008	3.20421
	12/3/2008	3.20421
	6/17/2009	3.79579
	12/9/2009	24.2042
	6/17/2010	2.79579
	12/22/2010	0.904207
	6/29/2011	2.93579
	12/7/2011	1.91579
	6/6/2012	1.56421
	6/19/2013	2.79579
	12/11/2013	2.79579
	6/11/2014	36.2042
	12/3/2014	2.79579
	6/17/2015	2.79579
	12/1/2015	7.01879
	6/22/2016	7.16779
	12/20/2016	7.00979
	6/6/2017	6.90879
	11/7/2017	6.66579
	2/27/2018	6.72579

Well: MW#03-2	Sample	Residual
	6/24/2004	18.9765
	9/15/2004	50.9765
	12/15/2004	26.9765
	3/16/2005	24.9765
	6/15/2005	24.9765
	9/21/2005	27.9765
	12/21/2005	28.9765
	3/15/2006	27.9765
	6/21/2006	31.9765
	12/20/2006	19.9765
	6/12/2007	24.9765
	12/17/2007	34.9765
	6/11/2008	13.9765
	12/3/2008	8.97647

6/17/2009	5.02353
12/9/2009	9.97647
6/17/2010	21.9765
12/22/2010	25.9765
6/29/2011	26.5765
12/7/2011	31.4765
6/6/2012	25.6765
12/12/2012	26.6765
6/19/2013	22.8765
12/11/2013	22.1765
6/11/2014	49.9765
12/3/2014	3.77647
6/17/2015	0.276471
12/1/2015	12.8235
6/22/2016	24.7235
10/11/2016	33.4235
12/20/2016	71.0235
6/6/2017	62.0235
11/7/2017	233.024
2/27/2018	192.024

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 = 271

i	x(i)	m(i)	sum(m^2)	sum(mx)
0	0	0	0	0
1	0.628	-2.74777	7.55021	-1.7256
2	0.777	-2.45727	13.5884	-3.6349
3	0.786	-2.29036	18.8342	-5.43512
4	0.887	-2.19728	23.6622	-7.38411
5	1.07	-2.09693	28.0593	-9.62783
6	1.13	-2.01409	32.1159	-11.9038
7	3	-1.95996	35.9574	-17.7836
8	4	-1.8957	39.551	-25.3664
9	4	-1.83843	42.9308	-32.7201
10	4	-1.79912	46.1677	-39.9166
11	4	-1.75069	49.2326	-46.9193
12	4	-1.70604	52.1431	-53.7435
13	4.86	-1.67466	54.9476	-61.8824
14	5	-1.63524	57.6216	-70.0585
15	5	-1.59819	60.1758	-78.0495
16	5	-1.57179	62.6464	-85.9084
17	5	-1.5382	65.0124	-93.5995
18	5	-1.50626	67.2812	-101.131
19	5	-1.48328	69.4814	-108.547
20	5	-1.4538	71.5949	-115.816
21	5	-1.42554	73.6271	-122.944
22	5.88	-1.40507	75.6013	-131.206
23	6	-1.37866	77.502	-139.478
24	6	-1.35317	79.3331	-147.597
25	8.7	-1.33462	81.1143	-159.208
26	9.36	-1.31058	82.8319	-171.475
27	10	-1.28727	84.489	-184.348
28	11	-1.27024	86.1025	-198.32
29	11	-1.24809	87.6602	-212.049
30	13	-1.22653	89.1646	-227.994
31	13	-1.21073	90.6305	-243.734
32	13	-1.19012	92.0469	-259.205
33	15.2	-1.17	93.4158	-276.989
34	15.2	-1.15035	94.7391	-294.474
35	15.6	-1.1359	96.0293	-312.194
36	16.1	-1.11699	97.277	-330.178
37	16.2	-1.09847	98.4836	-347.973
38	16.9	-1.08482	99.6605	-366.307
39	17	-1.06694	100.799	-384.445
40	17.6	-1.04939	101.9	-402.914
41	17.6	-1.03643	102.974	-421.155
42	19.3	-1.01943	104.013	-440.83
43	20	-1.00271	105.019	-460.884
44	20	-0.990356	106	-480.691
45	20	-0.974114	106.949	-500.174
46	20	-0.958125	107.867	-519.336

47	20.8	-0.946291	108.762	-539.019
48	21.5	-0.930718	109.628	-559.029
49	22	-0.915365	110.466	-579.167
50	22.2	-0.903992	111.283	-599.236
51	23	-0.889006	112.074	-619.683
52	23.5	-0.874218	112.838	-640.227
53	23.8	-0.863249	113.583	-660.773
54	24	-0.848786	114.304	-681.143
55	24	-0.834498	115	-701.171
56	24	-0.823893	115.679	-720.945
57	24	-0.809896	116.335	-740.382
58	26	-0.796056	116.968	-761.08
59	27	-0.785774	117.586	-782.296
60	27	-0.772193	118.182	-803.145
61	27	-0.758753	118.758	-823.631
62	28	-0.748762	119.318	-844.597
63	28	-0.735557	119.86	-865.192
64	28	-0.722479	120.382	-885.422
65	28.3	-0.712751	120.89	-905.592
66	28.4	-0.699883	121.379	-925.469
67	29	-0.687131	121.852	-945.396
68	29	-0.67449	122.306	-964.956
69	29	-0.665079	122.749	-984.243
70	29.3	-0.652622	123.175	-1003.37
71	30	-0.640266	123.585	-1022.57
72	30	-0.631062	123.983	-1041.51
73	30	-0.618872	124.366	-1060.07
74	30	-0.606775	124.734	-1078.27
75	30	-0.597761	125.091	-1096.21
76	30	-0.585815	125.435	-1113.78
77	30	-0.573953	125.764	-1131
78	31	-0.565108	126.083	-1148.52
79	31	-0.553384	126.39	-1165.67
80	32	-0.541736	126.683	-1183.01
81	32	-0.533048	126.967	-1200.07
82	32.1	-0.521527	127.239	-1216.81
83	32.8	-0.510074	127.499	-1233.54
84	33	-0.501527	127.751	-1250.09
85	33	-0.490189	127.991	-1266.26
86	35	-0.478914	128.221	-1283.03
87	35	-0.470498	128.442	-1299.49
88	35	-0.459327	128.653	-1315.57
89	36	-0.448213	128.854	-1331.71
90	37	-0.439913	129.047	-1347.98
91	37	-0.428895	129.231	-1363.85
92	38	-0.417928	129.406	-1379.73
93	40	-0.409735	129.574	-1396.12
94	40	-0.398855	129.733	-1412.08
95	40	-0.388022	129.883	-1427.6
96	40	-0.379927	130.028	-1442.79
97	41	-0.369171	130.164	-1457.93
98	42	-0.358459	130.293	-1472.99
99	42	-0.350451	130.415	-1487.71
100	42	-0.33981	130.531	-1501.98
101	42	-0.329206	130.639	-1515.8
102	44	-0.318639	130.741	-1529.82
103	44	-0.310738	130.837	-1543.5

104	45	-0.300232	130.927	-1557.01
105	46	-0.28976	131.011	-1570.34
106	46	-0.281926	131.091	-1583.3
107	46	-0.271509	131.165	-1595.79
108	47.7	-0.26112	131.233	-1608.25
109	48	-0.253347	131.297	-1620.41
110	50	-0.243007	131.356	-1632.56
111	50	-0.232693	131.41	-1644.2
112	51	-0.224974	131.461	-1655.67
113	51.2	-0.214702	131.507	-1666.66
114	52	-0.204452	131.549	-1677.29
115	54	-0.196779	131.587	-1687.92
116	54.7	-0.186567	131.622	-1698.12
117	56	-0.176374	131.653	-1708
118	56	-0.168741	131.682	-1717.45
119	57	-0.158579	131.707	-1726.49
120	58	-0.148434	131.729	-1735.1
121	58	-0.140835	131.749	-1743.27
122	58	-0.130716	131.766	-1750.85
123	59	-0.12061	131.78	-1757.96
124	60	-0.113039	131.793	-1764.75
125	60	-0.102953	131.804	-1770.92
126	61	-0.0928787	131.812	-1776.59
127	63	-0.0853288	131.82	-1781.97
128	67.8	-0.0752698	131.825	-1787.07
129	75	-0.0652187	131.83	-1791.96
130	79.7	-0.0576847	131.833	-1796.56
131	88.4	-0.0476439	131.835	-1800.77
132	98.9	-0.0376076	131.837	-1804.49
133	110	-0.0300838	131.838	-1807.8
134	113	-0.0200544	131.838	-1810.06
135	117	-0.0100272	131.838	-1811.24
136	120	0	131.838	-1811.24
137	122	0.0100272	131.838	-1810.01
138	126	0.0200544	131.839	-1807.49
139	131	0.0300838	131.839	-1803.55
140	139	0.0376076	131.841	-1798.32
141	140	0.0476439	131.843	-1791.65
142	144	0.0576847	131.846	-1783.34
143	149	0.0652187	131.851	-1773.62
144	150	0.0752698	131.856	-1762.33
145	150	0.0853288	131.864	-1749.53
146	152	0.0928787	131.872	-1735.42
147	158	0.102953	131.883	-1719.15
148	160	0.113039	131.896	-1701.06
149	168	0.12061	131.91	-1680.8
150	168	0.130716	131.927	-1658.84
151	170	0.140835	131.947	-1634.9
152	170	0.148434	131.969	-1609.67
153	173	0.158579	131.994	-1582.23
154	175	0.168741	132.023	-1552.7
155	178	0.176374	132.054	-1521.31
156	180	0.186567	132.089	-1487.73
157	180	0.196779	132.127	-1452.31
158	180	0.204452	132.169	-1415.5
159	180	0.214702	132.215	-1376.86
160	185	0.224974	132.266	-1335.24

161	190	0.232693	132.32	-1291.03
162	190	0.243007	132.379	-1244.85
163	194	0.253347	132.443	-1195.7
164	194	0.26112	132.512	-1145.05
165	194	0.271509	132.585	-1092.37
166	196	0.281926	132.665	-1037.12
167	200	0.28976	132.749	-979.165
168	202	0.300232	132.839	-918.518
169	203	0.310738	132.935	-855.438
170	207	0.318639	133.037	-789.48
171	210	0.329206	133.145	-720.347
172	210	0.33981	133.261	-648.987
173	214	0.350451	133.384	-573.99
174	215	0.358459	133.512	-496.921
175	221	0.369171	133.648	-415.335
176	232	0.379927	133.793	-327.192
177	246	0.388022	133.943	-231.738
178	247	0.398855	134.102	-133.221
179	249	0.409735	134.27	-31.1969
180	254	0.417928	134.445	74.9567
181	260	0.428895	134.629	186.469
182	260	0.439913	134.822	300.847
183	270	0.448213	135.023	421.864
184	275	0.459327	135.234	548.179
185	280	0.470498	135.456	679.918
186	280	0.478914	135.685	814.014
187	288	0.490189	135.925	955.189
188	368	0.501527	136.177	1139.75
189	375	0.510074	136.437	1331.03
190	377	0.521527	136.709	1527.64
191	384	0.533048	136.993	1732.33
192	400	0.541736	137.287	1949.03
193	400	0.553384	137.593	2170.38
194	402	0.565108	137.912	2397.56
195	406	0.573953	138.242	2630.58
196	420	0.585815	138.585	2876.62
197	420	0.597761	138.942	3127.68
198	430	0.606775	139.31	3388.6
199	435	0.618872	139.693	3657.81
200	440	0.631062	140.091	3935.47
201	475	0.640266	140.501	4239.6
202	500	0.652622	140.927	4565.91
203	518	0.665079	141.37	4910.42
204	750	0.67449	141.825	5416.29
205	875	0.687131	142.297	6017.53
206	916	0.699883	142.787	6658.62
207	950	0.712751	143.295	7335.73
208	1160	0.722479	143.817	8173.81
209	1210	0.735557	144.358	9063.83
210	1250	0.748762	144.918	9999.79
211	1250	0.758753	145.494	10948.2
212	1270	0.772193	146.09	11928.9
213	1300	0.785774	146.708	12950.4
214	1325	0.796056	147.341	14005.2
215	1328	0.809896	147.997	15080.7
216	1350	0.823893	148.676	16193
217	1360	0.834498	149.373	17327.9

218	1375	0.848786	150.093	18495
219	1390	0.863249	150.838	19694.9
220	1399	0.874218	151.602	20917.9
221	1400	0.889006	152.393	22162.5
222	1410	0.903992	153.21	23437.2
223	1412	0.915365	154.048	24729.7
224	1435	0.930718	154.914	26065.2
225	1500	0.946291	155.81	27484.7
226	1500	0.958125	156.728	28921.9
227	1500	0.974114	157.676	30383
228	1509	0.990356	158.657	31877.5
229	1510	1.00271	159.663	33391.6
230	1510	1.01943	160.702	34930.9
231	1520	1.03643	161.776	36506.3
232	1550	1.04939	162.877	38132.8
233	1553	1.06694	164.016	39789.8
234	1560	1.08482	165.193	41482.1
235	1580	1.09847	166.399	43217.7
236	1584	1.11699	167.647	44987
237	1600	1.1359	168.937	46804.4
238	1600	1.15035	170.26	48645
239	1600	1.17	171.629	50517
240	1610	1.19012	173.046	52433.1
241	1613	1.21073	174.512	54386
242	1616	1.22653	176.016	56368.1
243	1634	1.24809	177.574	58407.4
244	1670	1.27024	179.187	60528.7
245	1674	1.28727	180.844	62683.6
246	1674	1.31058	182.562	64877.5
247	1690	1.33462	184.343	67133.1
248	1699	1.35317	186.174	69432.1
249	1700	1.37866	188.075	71775.8
250	1700	1.40507	190.049	74164.4
251	1730	1.42554	192.081	76630.6
252	1739	1.4538	194.195	79158.8
253	1749	1.48328	196.395	81753.1
254	1749	1.50626	198.664	84387.5
255	1750	1.5382	201.03	87079.4
256	1760	1.57179	203.5	89845.7
257	1769	1.59819	206.054	92672.9
258	1789	1.63524	208.728	95598.3
259	1799	1.67466	211.533	98611.1
260	1800	1.70604	214.444	101682
261	1800	1.75069	217.508	104833
262	1800	1.79912	220.745	108072
263	1800	1.83843	224.125	111381
264	1874	1.8957	227.719	114933
265	1892	1.95996	231.56	118642
266	1922	2.01409	235.617	122513
267	1999	2.09693	240.014	126704
268	2000	2.19728	244.842	131099
269	2050	2.29036	250.088	135794
270	2099	2.45727	256.126	140952

Sample Standard Deviation = 659.1
Numerator = 1.98675e+010
Denominator = 3.00413e+010 = 270 256.126

W Statistic = 0.661338
5% Critical value of 0.976 exceeds 0.661338
Evidence of non-normality at 95% level of significance
1% Critical value of 0.967 exceeds 0.661338
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 = 1.84502%
Number of comparisons = 4
Future Samples (k) = 4
Recent Dates = 1
Background Samples (n) = 69
Maximum Background Concentration = 63
Confidence Level = 94.5%
False Positive Rate = 5.5%

Well	Date	Samples	Mean	Impacted
MW#93-2	2/27/2018	1	1270	TRUE
MW#93-3	2/27/2018	1	435	TRUE
MW#03-1	2/27/2018	1	1.07	FALSE
MW#03-2	2/27/2018	1	247	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) = 69
Maximum Baseline Concentration = 2149
Confidence Level = 98.6%
False Positive Rate = 1.4%

Baseline Samples	Date	Result
	12/15/1994	400
	3/14/1995	1500
	6/21/1995	75
	12/14/1995	1749
	3/6/1996	1674
	4/25/1996	1999
	10/2/1996	1553
	12/10/1996	1560
	3/11/1997	1634
	4/15/1997	1700
	8/14/1997	2149
	12/4/1997	1769
	3/31/1998	2000
	6/23/1998	2099
	8/11/1998	1874
	12/8/1998	1922
	3/9/1999	1700
	6/8/1999	1739
	8/19/1999	1800
	12/14/1999	1800
	3/7/2000	1328
	6/23/2000	950
	12/12/2000	1789
	3/27/2001	1749
	6/28/2001	1799
	9/10/2001	2050
	12/18/2001	1600
	3/19/2002	1730
	6/26/2002	1699
	9/18/2002	1674
	12/11/2002	1613
	3/13/2003	1510
	6/25/2003	1800
	9/26/2003	1616
	12/10/2003	1509
	3/9/2004	1800
	6/24/2004	1892
	9/15/2004	1435
	12/15/2004	1600
	3/16/2005	1325
	6/15/2005	1400

9/21/2005	1412
12/21/2005	1550
3/15/2006	1375
6/21/2006	1500
12/20/2006	1250
2/21/2007	1250
6/12/2007	1350
12/17/2007	1399
6/11/2008	1210
12/3/2008	1584
6/17/2009	750
12/9/2009	875
6/17/2010	1500
12/22/2010	1600
6/29/2011	1670
12/7/2011	1510
6/6/2012	1610
12/12/2012	1750
6/19/2013	1390
12/11/2013	1410
6/11/2014	1360
12/3/2014	1520
6/17/2015	47.7
12/1/2015	1760
6/22/2016	1300
12/20/2016	1690
6/6/2017	1580
11/7/2017	1160

Date	Samples	Mean	Impacted
2/27/2018	1	1270	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) = 68
Maximum Baseline Concentration = 916
Confidence Level = 98.6%
False Positive Rate = 1.4%

Baseline Samples	Date	Result
	12/15/1994	440
	3/14/1995	420
	6/21/1995	420
	12/14/1995	406
	3/6/1996	368
	4/25/1996	384
	10/2/1996	430
	12/10/1996	377
	3/11/1997	375
	4/15/1997	400
	8/14/1997	916
	12/4/1997	249
	3/31/1998	275
	6/23/1998	246
	8/11/1998	500
	12/8/1998	260
	3/9/1999	280
	6/8/1999	214
	8/19/1999	260
	12/14/1999	200
	3/7/2000	232
	6/23/2000	270
	12/12/2000	196
	3/27/2001	190
	6/28/2001	180
	9/10/2001	202
	12/18/2001	149
	3/19/2002	203
	6/26/2002	180
	9/18/2002	185
	12/11/2002	178
	3/13/2003	207
	6/25/2003	190
	9/26/2003	158
	12/10/2003	140
	3/9/2004	13
	6/24/2004	160
	9/15/2004	139
	12/15/2004	122
	3/16/2005	180
	6/15/2005	150

9/21/2005	215
12/21/2005	180
3/15/2006	221
6/21/2006	210
12/20/2006	210
6/12/2007	110
12/17/2007	131
6/11/2008	144
12/3/2008	152
6/17/2009	120
12/9/2009	175
6/17/2010	150
12/22/2010	170
6/29/2011	170
12/7/2011	98.9
6/6/2012	194
12/12/2012	168
6/19/2013	194
12/11/2013	173
6/11/2014	254
12/3/2014	194
6/17/2015	168
12/1/2015	280
6/22/2016	518
12/20/2016	475
6/6/2017	113
11/7/2017	402

Date	Samples	Mean	Impacted
2/27/2018	1	435	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 = 3.0303%
Future Samples (k) = 1
Recent Dates = 1
Baseline Samples (n) = 33
Maximum Baseline Concentration = 288
Confidence Level = 97.1%
False Positive Rate = 2.9%

Baseline Samples	Date	Result
	6/24/2004	36
	9/15/2004	4
	12/15/2004	28
	3/16/2005	30
	6/15/2005	30
	9/21/2005	27
	12/21/2005	26
	3/15/2006	27
	6/21/2006	23
	12/20/2006	35
	6/12/2007	30
	12/17/2007	20
	6/11/2008	41
	12/3/2008	46
	6/17/2009	60
	12/9/2009	45
	6/17/2010	33
	12/22/2010	29
	6/29/2011	28.4
	12/7/2011	23.5
	6/6/2012	29.3
	12/12/2012	28.3
	6/19/2013	32.1
	12/11/2013	32.8
	6/11/2014	ND<5
	12/3/2014	51.2
	6/17/2015	54.7
	12/1/2015	67.8
	6/22/2016	79.7
	10/11/2016	88.4
	12/20/2016	126
	6/6/2017	117
	11/7/2017	288

Date	Samples	Mean	Impacted
2/27/2018	1	247	FALSE

Concentrations (mg/L)

Parameter: Fluoride

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Samples: 50
Total Non-Detect: 7
Percent Non-Detects: 14%
Total Background Samples: 10
There is 1 background well

Well	Samples	ND	Date	Result	Original
MW#93-1	10	0 (0%)	10/11/2016	0.1	0.1
			12/20/2016	0.2	0.2
			2/16/2017	0.16	0.16
			3/8/2017	0.19	0.19
			5/9/2017	0.13	0.13
			6/6/2017	0.14	0.14
			8/22/2017	0.1	0.1
			9/22/2017	0.11	0.11
			11/7/2017	0.12	0.12
			2/27/2018	0.16	0.16

There are 4 compliance wells

Well	Samples	ND	Date	Result	Original
MW#03-1	10	2 (20%)	10/11/2016	ND<0.1	ND<0.1
			12/20/2016	0.18	0.18
			2/16/2017	0.13	0.13
			3/8/2017	0.19	0.19
			5/9/2017	0.1	0.1
			6/6/2017	ND<0.1	ND<0.1
			8/22/2017	0.1	0.1
			9/22/2017	0.1	0.1
			11/7/2017	0.12	0.12
			2/27/2018	0.1	0.1
MW#03-2	10	4 (40%)	10/11/2016	ND<0.1	ND<0.1
			12/20/2016	0.14	0.14
			2/16/2017	0.12	0.12
			3/8/2017	0.14	0.14
			5/9/2017	ND<0.1	ND<0.1
			6/6/2017	0.1	0.1
			8/22/2017	ND<0.1	ND<0.1
			9/22/2017	ND<0.1	ND<0.1
			11/7/2017	0.1	0.1
			2/27/2018	0.12	0.12
MW#93-2	10	1 (10%)	10/11/2016	0.81	0.81
			12/20/2016	1.06	1.06
			2/16/2017	0.68	0.68
			3/8/2017	0.79	0.79
			5/9/2017	0.7	0.7
			6/6/2017	0.68	0.68
			8/22/2017	0.35	0.35

			9/22/2017	0.51	0.51
			11/7/2017	0.12	0.12
			2/27/2018	ND<0.1	ND<0.1
MW#93-3	10	0 (0%)	10/11/2016	0.15	0.15
			12/20/2016	0.23	0.23
			2/16/2017	0.2	0.2
			3/8/2017	0.22	0.22
			5/9/2017	0.18	0.18
			6/6/2017	0.24	0.24
			8/22/2017	0.23	0.23
			9/22/2017	0.2	0.2
			11/7/2017	0.2	0.2
			2/27/2018	0.21	0.21

There are 0 unused wells

Well	Samples	ND	Date	Result	Original

Levene's Test for Equal of Variance

Parameter: Fluoride

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

Overall Mean = 0.06768
Overall Std Dev = 0.116411
Overall Total = 3.384
SS Wells = 0.407793
SS Total = 0.664021

ANOVA Table

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	F
Between Wells	0.407793	4	0.101948	17.9047
Error (within wells)	0.256228	45	0.00569395	
Totals	0.664021	49		

17.9047 exceeds 2.52521; assumption of equal variance should be rejected

Well: MW#93-1	Sample	Residual
	10/11/2016	0.041
	12/20/2016	0.059
	2/16/2017	0.019
	3/8/2017	0.049
	5/9/2017	0.011
	6/6/2017	0.001
	8/22/2017	0.041
	9/22/2017	0.031
	11/7/2017	0.021
	2/27/2018	0.019

Well: MW#03-1	Sample	Residual
	10/11/2016	0.022
	12/20/2016	0.058
	2/16/2017	0.008
	3/8/2017	0.068
	5/9/2017	0.022
	6/6/2017	0.022
	8/22/2017	0.022
	9/22/2017	0.022
	11/7/2017	0.002
	2/27/2018	0.022

Well: MW#03-2	Sample	Residual
	10/11/2016	0.012
	12/20/2016	0.028
	2/16/2017	0.008
	3/8/2017	0.028
	5/9/2017	0.012
	6/6/2017	0.012
	8/22/2017	0.012

9/22/2017	0.012
11/7/2017	0.012
2/27/2018	0.008

Well: MW#93-2	Sample	Residual
	10/11/2016	0.23
	12/20/2016	0.48
	2/16/2017	0.1
	3/8/2017	0.21
	5/9/2017	0.12
	6/6/2017	0.1
	8/22/2017	0.23
	9/22/2017	0.07
	11/7/2017	0.46
	2/27/2018	0.48

Well: MW#93-3	Sample	Residual
	10/11/2016	0.056
	12/20/2016	0.024
	2/16/2017	0.006
	3/8/2017	0.014
	5/9/2017	0.026
	6/6/2017	0.034
	8/22/2017	0.024
	9/22/2017	0.006
	11/7/2017	0.006
	2/27/2018	0.004

Shapiro-Wilks Test of Normality

Parameter: Fluoride

All Wells

Normality Test of Parameter Concentrations

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
K = 25; Samples = 50

i	x(i)	x(n-i+1)	x(n-1+1)-x(i)	a(n-i+1)	b(i)
1	0.1	1.06	0.96	0.3751	0.360096
2	0.1	0.81	0.71	0.2574	0.182754
3	0.1	0.79	0.69	0.226	0.15594
4	0.1	0.7	0.6	0.2032	0.12192
5	0.1	0.68	0.58	0.1847	0.107126
6	0.1	0.68	0.58	0.1691	0.098078
7	0.1	0.51	0.41	0.1554	0.063714
8	0.1	0.35	0.25	0.143	0.03575
9	0.1	0.24	0.14	0.1317	0.018438
10	0.1	0.23	0.13	0.1212	0.015756
11	0.1	0.23	0.13	0.1113	0.014469
12	0.1	0.22	0.12	0.102	0.01224
13	0.1	0.21	0.11	0.0932	0.010252
14	0.1	0.2	0.1	0.0846	0.00846
15	0.1	0.2	0.1	0.0764	0.00764
16	0.11	0.2	0.09	0.0685	0.006165
17	0.12	0.2	0.08	0.0608	0.004864
18	0.12	0.19	0.07	0.0532	0.003724
19	0.12	0.19	0.07	0.0459	0.003213
20	0.12	0.18	0.06	0.0386	0.002316
21	0.12	0.18	0.06	0.0314	0.001884
22	0.13	0.16	0.03	0.0244	0.000732
23	0.13	0.16	0.03	0.0174	0.000522
24	0.14	0.15	0.01	0.0104	0.000104
25	0.14	0.14	0	0.0035	0
26	0.14	0.14	0		
27	0.15	0.14	-0.01		
28	0.16	0.13	-0.03		
29	0.16	0.13	-0.03		
30	0.18	0.12	-0.06		
31	0.18	0.12	-0.06		
32	0.19	0.12	-0.07		
33	0.19	0.12	-0.07		
34	0.2	0.12	-0.08		
35	0.2	0.11	-0.09		
36	0.2	0.1	-0.1		
37	0.2	0.1	-0.1		
38	0.21	0.1	-0.11		
39	0.22	0.1	-0.12		
40	0.23	0.1	-0.13		
41	0.23	0.1	-0.13		
42	0.24	0.1	-0.14		
43	0.35	0.1	-0.25		
44	0.51	0.1	-0.41		
45	0.68	0.1	-0.58		
46	0.68	0.1	-0.58		

47	0.7	0.1	-0.6
48	0.79	0.1	-0.69
49	0.81	0.1	-0.71
50	1.06	0.1	-0.96

Sum of b values = 1.23616
Sample Standard Deviation = 0.224002
W Statistic = 0.621511
5% Critical value of 0.947 exceeds 0.621511
Evidence of non-normality at 95% level of significance
1% Critical value of 0.93 exceeds 0.621511
Evidence of non-normality at 99% level of significance

Non-Parametric Prediction Interval

Inter-Well Comparison

Parameter: Fluoride

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

Total Percent Non-Detects = 14%
Number of comparisons = 4
Future Samples (k) = 4
Recent Dates = 1
Background Samples (n) = 10
Maximum Background Concentration = 0.2
Confidence Level = 71.4%
False Positive Rate = 28.6%

Well	Date	Samples	Mean	Impacted
MW#03-1	2/27/2018	1	0.1	FALSE
MW#03-2	2/27/2018	1	0.12	FALSE
MW#93-2	2/27/2018	1	0.1	FALSE
MW#93-3	2/27/2018	1	0.21	TRUE

Non-Parametric Prediction Interval

Intra-Well Comparison for MW#93-3

Parameter: Fluoride

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) = 9
Maximum Baseline Concentration = 0.24
Confidence Level = 90%
False Positive Rate = 10%

Baseline Samples	Date	Result
	10/11/2016	0.15
	12/20/2016	0.23
	2/16/2017	0.2
	3/8/2017	0.22
	5/9/2017	0.18
	6/6/2017	0.24
	8/22/2017	0.23
	9/22/2017	0.2
	11/7/2017	0.2

Date	Samples	Mean	Impacted
2/27/2018	1	0.21	FALSE

Concentrations (std)

Parameter: ph

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Samples: 272
Total Non-Detect: 0
Percent Non-Detects: 0%
Total Background Samples: 69
There is 1 background well

Well	Samples	ND	Date	Result	Original
MW#93-1	69	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
			11/7/2017	6.21	6.21
			2/27/2018	6.47	6.47

There are 4 compliance wells

Well	Samples	ND	Date	Result	Original
MW#93-2	72	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
			11/7/2017	8.86	8.86
			2/27/2018	9.04	9.04
MW#93-3	69	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
11/7/2017	6.46	6.46

			2/27/2018	6.49	6.49
MW#03-1	29	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
			11/7/2017	6.44	6.44
			2/27/2018	6.81	6.81
MW#03-2	33	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
11/7/2017	6.22	6.22
2/27/2018	6.47	6.47

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 = 0.180016
Overall Std Dev = 0.188842
Overall Total = 48.9643
SS Wells = 0.874864
SS Total = 9.66416

ANOVA Table

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	F
Between Wells	0.874864	4	0.218716	6.64412
Error (within wells)	8.7893	267	0.0329187	
Totals	9.66416	271		

6.64412 exceeds 2.37; assumption of equal variance should be rejected

Well: MW#93-1	Sample	Residual
	12/15/1994	0.0618841
	3/14/1995	0.111884
	6/21/1995	0.0281159
	12/14/1995	0.111884
	3/6/1996	0.111884
	4/25/1996	0.181884
	10/2/1996	0.00188406
	12/10/1996	0.0981159
	3/11/1997	0.161884
	4/15/1997	0.0518841
	8/14/1997	0.0518841
	12/4/1997	0.171884
	3/31/1998	0.261884
	6/23/1998	0.108116
	8/11/1998	0.441884
	12/8/1998	0.0118841
	3/9/1999	0.00811594
	6/8/1999	0.321884
	8/19/1999	0.0681159
	12/14/1999	0.0581159
	3/7/2000	0.0181159
	6/23/2000	0.0881159
	12/12/2000	0.0481159
	3/27/2001	0.00811594
	6/28/2001	0.0181159
	9/10/2001	0.151884
	12/18/2001	0.151884
	3/19/2002	0.321884
	6/26/2002	0.241884
	9/18/2002	0.0118841
	12/11/2002	0.0281159
	3/13/2003	0.0518841

6/25/2003	0.331884
9/26/2003	0.188116
12/10/2003	0.0318841
3/9/2004	0.0718841
6/24/2004	0.0781159
9/15/2004	0.178116
12/15/2004	0.00188406
3/16/2005	0.0381159
6/15/2005	0.0781159
9/21/2005	0.0418841
12/21/2005	0.00188406
3/15/2006	0.0318841
6/21/2006	0.241884
12/20/2006	0.0618841
6/12/2007	0.0281159
12/17/2007	0.278116
6/11/2008	0.0918841
12/3/2008	0.108116
6/17/2009	0.191884
12/9/2009	0.00811594
6/17/2010	0.108116
12/22/2010	0.0581159
6/29/2011	0.108116
12/7/2011	0.198116
6/6/2012	0.378116
12/12/2012	0.00188406
6/19/2013	0.0281159
12/11/2013	0.0381159
6/11/2014	0.508116
12/3/2014	0.0818841
6/17/2015	0.228116
12/1/2015	0.158116
6/22/2016	0.0181159
12/20/2016	0.328116
6/6/2017	0.0818841
11/7/2017	0.398116
2/27/2018	0.138116

Well: MW#93-2

Sample	Residual
12/15/1994	0.693056
3/14/1995	0.413056
6/21/1995	0.553056
12/14/1995	1.07306
3/6/1996	0.136944
4/25/1996	0.0930556
10/2/1996	0.293056
12/10/1996	0.0369444
3/11/1997	0.283056
4/15/1997	0.0169444
8/14/1997	0.563056
12/4/1997	0.463056
3/31/1998	0.0869444
6/23/1998	0.363056
8/11/1998	0.233056
12/8/1998	0.333056
3/9/1999	0.156944
6/8/1999	0.0169444

8/19/1999	0.0830556
12/14/1999	0.253056
3/7/2000	0.0330556
6/23/2000	0.0530556
12/12/2000	0.0530556
3/27/2001	0.0569444
6/28/2001	0.0130556
9/10/2001	0.133056
12/18/2001	0.166944
3/19/2002	0.306944
6/26/2002	0.206944
9/18/2002	0.00694444
12/11/2002	0.0730556
3/13/2003	0.0469444
6/25/2003	0.0369444
9/26/2003	0.0869444
12/10/2003	0.0169444
3/9/2004	0.136944
6/24/2004	0.00694444
9/15/2004	0.0869444
12/15/2004	0.0269444
3/16/2005	0.00305556
6/15/2005	0.133056
9/21/2005	0.0169444
12/21/2005	0.0769444
3/15/2006	0.236944
6/21/2006	0.166944
12/20/2006	0.0530556
2/21/2007	0.0330556
6/12/2007	0.133056
12/17/2007	0.0669444
6/11/2008	0.166944
12/3/2008	0.466944
12/15/2008	0.366944
6/17/2009	0.566944
12/9/2009	0.566944
6/17/2010	0.366944
12/22/2010	0.266944
6/29/2011	0.166944
12/7/2011	0.266944
6/6/2012	0.446944
12/12/2012	0.786944
1/9/2013	0.276944
6/19/2013	0.166944
12/11/2013	0.226944
6/11/2014	0.683056
12/3/2014	0.283056
6/17/2015	0.103056
12/1/2015	0.136944
6/22/2016	0.0469444
12/20/2016	0.486944
6/6/2017	0.0569444
11/7/2017	0.373056
2/27/2018	0.193056

Well: MW#93-3	**Sample**	**Residual**
	12/15/1994	0.121884

3/14/1995	0.0618841
6/21/1995	0.191884
12/14/1995	0.0518841
3/6/1996	0.0481159
4/25/1996	0.0218841
10/2/1996	0.0518841
12/10/1996	0.101884
3/11/1997	0.00188406
4/15/1997	0.0618841
8/14/1997	0.0781159
12/4/1997	0.0781159
3/31/1998	0.118116
6/23/1998	0.0418841
8/11/1998	0.108116
12/8/1998	0.128116
3/9/1999	0.0218841
6/8/1999	0.0481159
8/19/1999	0.168116
12/14/1999	0.00188406
3/7/2000	0.0318841
6/23/2000	0.0181159
12/12/2000	0.0581159
3/27/2001	0.0118841
6/28/2001	0.0581159
9/10/2001	0.238116
12/18/2001	0.128116
3/19/2002	0.198116
6/26/2002	0.0881159
9/18/2002	1.15812
12/11/2002	0.0618841
3/13/2003	0.0681159
6/25/2003	0.0481159
9/26/2003	0.0318841
12/10/2003	0.188116
3/9/2004	0.648116
6/24/2004	0.00188406
9/15/2004	0.101884
12/15/2004	0.0781159
3/16/2005	0.111884
6/15/2005	0.00811594
9/21/2005	0.0481159
12/21/2005	0.101884
3/15/2006	0.268116
6/21/2006	0.0381159
12/20/2006	0.128116
6/12/2007	0.0881159
12/17/2007	0.00188406
6/11/2008	0.00188406
12/3/2008	0.00188406
6/17/2009	0.398116
12/9/2009	0.0981159
6/17/2010	0.101884
12/22/2010	0.0181159
6/29/2011	0.101884
12/7/2011	0.0318841
6/6/2012	0.381884
12/12/2012	0.0481159

6/19/2013	0.311884
12/11/2013	0.268116
6/11/2014	0.721884
12/3/2014	0.00188406
6/17/2015	0.401884
12/1/2015	0.201884
6/22/2016	0.371884
12/20/2016	0.531884
6/6/2017	0.151884
11/7/2017	0.341884
2/27/2018	0.311884

Well: MW#03-1	**Sample**	**Residual**
	6/24/2004	0.200345
	9/15/2004	0.289655
	12/15/2004	0.250345
	3/16/2005	0.230345
	6/15/2005	0.210345
	9/21/2005	0.810345
	12/20/2006	0.0696552
	6/12/2007	0.220345
	12/17/2007	0.269655
	6/11/2008	0.330345
	12/3/2008	0.330345
	6/17/2009	0.530345
	12/9/2009	0.430345
	6/17/2010	0.0303448
	12/22/2010	0.179655
	6/29/2011	0.230345
	12/7/2011	0.0196552
	6/6/2012	0.260345
	6/19/2013	0.0803448
	12/11/2013	0.120345
	6/11/2014	0.449655
	12/3/2014	0.339655
	6/17/2015	0.409655
	12/1/2015	0.729655
	6/22/2016	0.130345
	12/20/2016	0.319655
	6/6/2017	0.429655
	11/7/2017	0.629655
	2/27/2018	0.259655

Well: MW#03-2	**Sample**	**Residual**
	6/24/2004	0.0460606
	9/15/2004	0.376061
	12/15/2004	0.0660606
	3/16/2005	0.00606061
	6/15/2005	0.0760606
	9/21/2005	0.0760606
	12/21/2005	0.0360606
	3/15/2006	0.0860606
	6/21/2006	0.0139394
	12/20/2006	0.0860606
	6/12/2007	0.0760606
	12/17/2007	0.0939394

6/11/2008	0.106061
12/3/2008	0.00606061
6/17/2009	0.506061
12/9/2009	0.00606061
6/17/2010	0.00606061
12/22/2010	0.406061
6/29/2011	0.0939394
12/7/2011	0.103939
6/6/2012	0.0639394
12/12/2012	0.0260606
6/19/2013	0.0860606
12/11/2013	0.0739394
6/11/2014	0.206061
12/3/2014	0.346061
6/17/2015	0.343939
12/1/2015	0.403939
6/22/2016	0.0439394
12/20/2016	0.433939
6/6/2017	0.0639394
11/7/2017	0.573939
2/27/2018	0.323939

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 = 272

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	6.21	-2.32634	19.0003	-46.1424
4	6.22	-2.19728	23.8283	-59.8095
5	6.23	-2.09693	28.2255	-72.8734
6	6.27	-2.03352	32.3607	-85.6235
7	6.28	-1.95996	36.2021	-97.9321
8	6.33	-1.8957	39.7958	-109.932
9	6.34	-1.85218	43.2263	-121.675
10	6.36	-1.79912	46.4632	-133.117
11	6.38	-1.75069	49.5281	-144.286
12	6.39	-1.71688	52.4757	-155.257
13	6.4	-1.67466	55.2802	-165.975
14	6.41	-1.63524	57.9542	-176.457
15	6.42	-1.60725	60.5375	-186.776
16	6.42	-1.57179	63.008	-196.866
17	6.43	-1.5382	65.3741	-206.757
18	6.43	-1.5141	67.6666	-216.493
19	6.44	-1.48328	69.8667	-226.045
20	6.45	-1.4538	71.9802	-235.422
21	6.45	-1.4325	74.0323	-244.662
22	6.46	-1.40507	76.0066	-253.739
23	6.47	-1.37866	77.9072	-262.658
24	6.47	-1.35946	79.7554	-271.454
25	6.49	-1.33462	81.5366	-280.116
26	6.49	-1.31058	83.2542	-288.622
27	6.5	-1.29303	84.9262	-297.026
28	6.5	-1.27024	86.5397	-305.283
29	6.5	-1.24809	88.0974	-313.395
30	6.5	-1.23187	89.6149	-321.402
31	6.51	-1.21073	91.0807	-329.284
32	6.52	-1.19012	92.4971	-337.044
33	6.53	-1.17499	93.8777	-344.717
34	6.53	-1.15522	95.2123	-352.26
35	6.54	-1.1359	96.5025	-359.689
36	6.55	-1.12168	97.7607	-367.036
37	6.55	-1.10306	98.9774	-374.261
38	6.56	-1.08482	100.154	-381.377
39	6.57	-1.07138	101.302	-388.416
40	6.57	-1.05375	102.412	-395.339
41	6.58	-1.03643	103.487	-402.159
42	6.58	-1.02365	104.535	-408.895
43	6.58	-1.00687	105.548	-415.52
44	6.58	-0.990356	106.529	-422.037
45	6.59	-0.97815	107.486	-428.483
46	6.59	-0.9621	108.412	-434.823

47	6.59	-0.946291	109.307	-441.059
48	6.6	-0.93459	110.18	-447.227
49	6.6	-0.919183	111.025	-453.294
50	6.6	-0.903992	111.843	-459.26
51	6.6	-0.892733	112.64	-465.152
52	6.61	-0.877897	113.41	-470.955
53	6.61	-0.863249	114.155	-476.661
54	6.61	-0.852385	114.882	-482.295
55	6.61	-0.838054	115.584	-487.835
56	6.61	-0.823893	116.263	-493.281
57	6.62	-0.813379	116.925	-498.665
58	6.62	-0.7995	117.564	-503.958
59	6.62	-0.785774	118.181	-509.16
60	6.64	-0.775574	118.783	-514.31
61	6.64	-0.7621	119.364	-519.37
62	6.64	-0.748762	119.924	-524.342
63	6.65	-0.738846	120.47	-529.255
64	6.65	-0.725736	120.997	-534.081
65	6.66	-0.712751	121.505	-538.828
66	6.66	-0.703089	121.999	-543.511
67	6.66	-0.690309	122.476	-548.108
68	6.66	-0.677639	122.935	-552.621
69	6.67	-0.668209	123.381	-557.078
70	6.67	-0.655726	123.811	-561.452
71	6.68	-0.643345	124.225	-565.75
72	6.68	-0.634124	124.627	-569.986
73	6.69	-0.621911	125.014	-574.146
74	6.69	-0.609791	125.386	-578.226
75	6.69	-0.60076	125.747	-582.245
76	6.69	-0.588793	126.094	-586.184
77	6.7	-0.576911	126.426	-590.049
78	6.7	-0.568052	126.749	-593.855
79	6.7	-0.556308	127.059	-597.582
80	6.7	-0.544642	127.355	-601.231
81	6.7	-0.53594	127.643	-604.822
82	6.7	-0.524401	127.918	-608.336
83	6.7	-0.51293	128.181	-611.772
84	6.7	-0.504372	128.435	-615.152
85	6.72	-0.493018	128.678	-618.465
86	6.72	-0.481728	128.91	-621.702
87	6.72	-0.473299	129.134	-624.882
88	6.72	-0.462114	129.348	-627.988
89	6.73	-0.450985	129.551	-631.023
90	6.73	-0.442676	129.747	-634.002
91	6.73	-0.431644	129.933	-636.907
92	6.74	-0.423405	130.113	-639.761
93	6.74	-0.412463	130.283	-642.541
94	6.74	-0.401571	130.444	-645.247
95	6.75	-0.393433	130.599	-647.903
96	6.75	-0.382622	130.745	-650.486
97	6.75	-0.371856	130.883	-652.996
98	6.75	-0.363809	131.016	-655.452
99	6.76	-0.353118	131.141	-657.839
100	6.76	-0.342466	131.258	-660.154
101	6.76	-0.334503	131.37	-662.415
102	6.77	-0.323919	131.475	-664.608
103	6.77	-0.31337	131.573	-666.729

104	6.77	-0.305481	131.666	-668.797
105	6.77	-0.294992	131.753	-670.795
106	6.78	-0.284535	131.834	-672.724
107	6.78	-0.276714	131.911	-674.6
108	6.78	-0.266311	131.982	-676.405
109	6.78	-0.255936	132.047	-678.141
110	6.78	-0.248174	132.109	-679.823
111	6.79	-0.237847	132.165	-681.438
112	6.79	-0.227545	132.217	-682.983
113	6.8	-0.219834	132.265	-684.478
114	6.8	-0.209575	132.309	-685.903
115	6.8	-0.199336	132.349	-687.259
116	6.8	-0.191671	132.386	-688.562
117	6.8	-0.181468	132.419	-689.796
118	6.8	-0.171285	132.448	-690.961
119	6.8	-0.163659	132.475	-692.074
120	6.8	-0.153505	132.498	-693.118
121	6.8	-0.143367	132.519	-694.092
122	6.8	-0.135774	132.537	-695.016
123	6.8	-0.125661	132.553	-695.87
124	6.8	-0.115562	132.567	-696.656
125	6.8	-0.107995	132.578	-697.39
126	6.81	-0.0979139	132.588	-698.057
127	6.81	-0.0878447	132.596	-698.655
128	6.82	-0.0802981	132.602	-699.203
129	6.82	-0.0702426	132.607	-699.682
130	6.82	-0.0601949	132.611	-700.093
131	6.83	-0.0526632	132.613	-700.452
132	6.84	-0.0426257	132.615	-700.744
133	6.84	-0.0325917	132.616	-700.967
134	6.85	-0.0250691	132.617	-701.139
135	6.85	-0.0150408	132.617	-701.242
136	6.85	-0.00501359	132.617	-701.276
137	6.85	0.00501359	132.617	-701.242
138	6.85	0.0150408	132.617	-701.139
139	6.85	0.0250691	132.618	-700.967
140	6.85	0.0325917	132.619	-700.744
141	6.86	0.0426257	132.621	-700.451
142	6.86	0.0526632	132.624	-700.09
143	6.86	0.0601949	132.627	-699.677
144	6.87	0.0702426	132.632	-699.194
145	6.87	0.0802981	132.639	-698.643
146	6.87	0.0878447	132.646	-698.039
147	6.87	0.0979139	132.656	-697.367
148	6.87	0.107995	132.668	-696.625
149	6.88	0.115562	132.681	-695.83
150	6.88	0.125661	132.697	-694.965
151	6.88	0.135774	132.715	-694.031
152	6.88	0.143367	132.736	-693.045
153	6.88	0.153505	132.759	-691.988
154	6.88	0.163659	132.786	-690.862
155	6.89	0.171285	132.815	-689.682
156	6.89	0.181468	132.848	-688.432
157	6.89	0.191671	132.885	-687.111
158	6.9	0.199336	132.925	-685.736
159	6.9	0.209575	132.969	-684.29
160	6.91	0.219834	133.017	-682.771

161	6.92	0.227545	133.069	-681.196
162	6.93	0.237847	133.125	-679.548
163	6.93	0.248174	133.187	-677.828
164	6.93	0.255936	133.252	-676.054
165	6.93	0.266311	133.323	-674.209
166	6.93	0.276714	133.4	-672.291
167	6.94	0.284535	133.481	-670.317
168	6.97	0.294992	133.568	-668.261
169	6.99	0.305481	133.661	-666.125
170	7	0.31337	133.759	-663.932
171	7	0.323919	133.864	-661.664
172	7	0.334503	133.976	-659.323
173	7.04	0.342466	134.094	-656.912
174	7.05	0.353118	134.218	-654.422
175	7.05	0.363809	134.351	-651.857
176	7.07	0.371856	134.489	-649.228
177	7.07	0.382622	134.635	-646.523
178	7.1	0.393433	134.79	-643.73
179	7.14	0.401571	134.951	-640.863
180	7.15	0.412463	135.121	-637.914
181	7.17	0.423405	135.301	-634.878
182	7.19	0.431644	135.487	-631.774
183	7.2	0.442676	135.683	-628.587
184	7.2	0.450985	135.886	-625.34
185	7.2	0.462114	136.1	-622.013
186	7.27	0.473299	136.324	-618.572
187	7.28	0.481728	136.556	-615.065
188	7.29	0.493018	136.799	-611.471
189	7.3	0.504372	137.053	-607.789
190	7.3	0.51293	137.317	-604.044
191	7.3	0.524401	137.592	-600.216
192	7.32	0.53594	137.879	-596.293
193	7.33	0.544642	138.175	-592.301
194	7.4	0.556308	138.485	-588.184
195	7.4	0.568052	138.808	-583.981
196	7.45	0.576911	139.14	-579.683
197	7.5	0.588793	139.487	-575.267
198	7.6	0.60076	139.848	-570.701
199	7.88	0.609791	140.22	-565.896
200	7.96	0.621911	140.607	-560.945
201	8.16	0.634124	141.009	-555.771
202	8.54	0.643345	141.423	-550.277
203	8.55	0.655726	141.853	-544.67
204	8.67	0.668209	142.299	-538.877
205	8.68	0.677639	142.758	-532.995
206	8.77	0.690309	143.235	-526.941
207	8.82	0.703089	143.729	-520.74
208	8.86	0.712751	144.237	-514.425
209	8.87	0.725736	144.764	-507.988
210	8.9	0.738846	145.31	-501.412
211	8.94	0.748762	145.87	-494.718
212	8.95	0.7621	146.451	-487.897
213	8.95	0.775574	147.053	-480.956
214	8.98	0.785774	147.67	-473.899
215	9	0.7995	148.309	-466.704
216	9.04	0.813379	148.971	-459.351
217	9.1	0.823893	149.65	-451.854

218	9.1	0.838054	150.352	-444.227
219	9.1	0.852385	151.079	-436.471
220	9.13	0.863249	151.824	-428.589
221	9.14	0.877897	152.595	-420.565
222	9.15	0.892733	153.392	-412.397
223	9.16	0.903992	154.209	-404.116
224	9.18	0.919183	155.054	-395.678
225	9.18	0.93459	155.927	-387.098
226	9.18	0.946291	156.823	-378.411
227	9.2	0.9621	157.748	-369.56
228	9.2	0.97815	158.705	-360.561
229	9.22	0.990356	159.686	-351.43
230	9.23	1.00687	160.7	-342.137
231	9.24	1.02365	161.747	-332.678
232	9.24	1.03643	162.822	-323.102
233	9.25	1.05375	163.932	-313.354
234	9.25	1.07138	165.08	-303.444
235	9.25	1.08482	166.257	-293.41
236	9.25	1.10306	167.473	-283.206
237	9.26	1.12168	168.732	-272.819
238	9.27	1.1359	170.022	-262.29
239	9.27	1.15522	171.356	-251.581
240	9.28	1.17499	172.737	-240.677
241	9.28	1.19012	174.153	-229.633
242	9.29	1.21073	175.619	-218.385
243	9.29	1.23187	177.137	-206.941
244	9.3	1.24809	178.694	-195.334
245	9.31	1.27024	180.308	-183.508
246	9.32	1.29303	181.98	-171.457
247	9.32	1.31058	183.697	-159.242
248	9.32	1.33462	185.479	-146.803
249	9.37	1.35946	187.327	-134.065
250	9.37	1.37866	189.228	-121.147
251	9.37	1.40507	191.202	-107.982
252	9.39	1.4325	193.254	-94.5305
253	9.4	1.4538	195.367	-80.8647
254	9.4	1.48328	197.568	-66.9219
255	9.4	1.5141	199.86	-52.6893
256	9.4	1.5382	202.226	-38.2302
257	9.4	1.57179	204.697	-23.4554
258	9.44	1.60725	207.28	-8.28297
259	9.46	1.63524	209.954	7.18636
260	9.47	1.67466	212.758	23.0454
261	9.5	1.71688	215.706	39.3558
262	9.5	1.75069	218.771	55.9873
263	9.51	1.79912	222.008	73.0969
264	9.54	1.85218	225.438	90.7667
265	9.6	1.8957	229.032	108.965
266	9.6	1.95996	232.873	127.781
267	9.68	2.03352	237.009	147.465
268	9.7	2.09693	241.406	167.806
269	9.72	2.19728	246.234	189.163
270	9.8	2.32634	251.646	211.961
271	9.8	2.45727	257.684	236.043

Sample Standard Deviation = 1.12583
Numerator = 55716.2

Denominator = 88511.6 = 271 257.684
W Statistic = 0.629479
5% Critical value of 0.976 exceeds 0.629479
Evidence of non-normality at 95% level of significance
1% Critical value of 0.967 exceeds 0.629479
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) = 69
Maximum Background Concentration = 7.05
Confidence Level = 94.5%
False Positive Rate = 5.5%

Well	Date	Samples	Mean	Impacted
MW#93-2	2/27/2018	1	9.04	TRUE
MW#93-3	2/27/2018	1	6.49	FALSE
MW#03-1	2/27/2018	1	6.81	FALSE
MW#03-2	2/27/2018	1	6.47	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) = 71
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
6/6/2017	9.29
11/7/2017	8.86

Date	Samples	Mean	Impacted
2/27/2018	1	9.04	FALSE

Concentrations (mg/l)

Parameter: Sodium

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Samples: 212
Total Non-Detect: 0
Percent Non-Detects: 0%
Total Background Samples: 49
There is 1 background well

Well	Samples	ND	Date	Result	Original
MW#93-1	49	0 (0%)	12/15/1994	54.7	54.7
			12/14/1995	51.9	51.9
			12/10/1996	51.6	51.6
			12/4/1997	51.2	51.2
			12/8/1998	47	47
			12/14/1999	64.4	64.4
			12/12/2000	100	100
			3/19/2002	112	112
			6/26/2002	95	95
			9/18/2002	78	78
			12/11/2002	83	83
			3/13/2003	94	94
			6/25/2003	113	113
			9/26/2003	84.6	84.6
			12/10/2003	98.1	98.1
			3/9/2004	95.4	95.4
			6/24/2004	94.7	94.7
			9/15/2004	71	71
			12/15/2004	92.3	92.3
			3/16/2005	86.3	86.3
			6/15/2005	77.4	77.4
			9/21/2005	92.8	92.8
			12/21/2005	81.9	81.9
			3/15/2006	99.7	99.7
			6/21/2006	82	82
			12/20/2006	85.1	85.1
			6/12/2007	74.9	74.9
			12/17/2007	81.8	81.8
			6/11/2008	56.5	56.5
			12/3/2008	75.2	75.2
			6/17/2009	67.4	67.4
			12/9/2009	76.9	76.9
			6/17/2010	55	55
			12/22/2010	70.5	70.5
			6/29/2011	55.4	55.4
			12/7/2011	69.1	69.1
			6/6/2012	55.6	55.6
			12/12/2012	58.9	58.9
			6/19/2013	70	70
			12/11/2013	72.9	72.9
			6/11/2014	56.5	56.5
			12/3/2014	69.4	69.4
			6/17/2015	69.7	69.7
			12/1/2015	57.5	57.5

			6/22/2016	66.9	66.9
			12/20/2016	54.8	54.8
			6/6/2017	58.4	58.4
			11/7/2017	45.2	45.2
			2/27/2018	59.6	59.6

There are 4 compliance wells

Well	Samples	ND	Date	Result	Original
MW#93-2	50	0 (0%)	12/15/1994	2170	2170
			12/14/1995	2220	2220
			12/10/1996	2100	2100
			12/4/1997	2440	2440
			12/8/1998	2565	2565
			12/14/1999	2980	2980
			12/12/2000	2800	2800
			3/19/2002	2500	2500
			6/26/2002	2260	2260
			9/18/2002	2140	2140
			12/11/2002	2320	2320
			3/13/2003	2600	2600
			6/25/2003	1990	1990
			9/26/2003	1820	1820
			12/10/2003	1920	1920
			3/9/2004	2050	2050
			6/24/2004	2180	2180
			9/15/2004	1800	1800
			12/15/2004	2480	2480
			3/16/2005	2490	2490
			6/15/2005	2030	2030
			9/21/2005	2520	2520
			12/21/2005	2300	2300
			3/15/2006	2720	2720
			6/21/2006	2450	2450
			12/20/2006	2170	2170
			2/21/2007	2900	2900
			6/12/2007	1980	1980
			12/17/2007	2244	2244
			6/11/2008	2649	2649
			12/3/2008	2120	2120
			6/17/2009	2230	2230
			12/9/2009	2140	2140
			6/17/2010	2100	2100
			12/22/2010	2460	2460
			6/29/2011	2190	2190
			12/7/2011	2500	2500
			6/6/2012	2060	2060
			12/12/2012	2730	2730
			6/19/2013	2230	2230
			12/11/2013	2290	2290
			6/11/2014	1940	1940
			12/3/2014	2730	2730
			6/17/2015	270	270
			5/25/2016	1890	1890
			6/22/2016	2700	2700
			12/20/2016	2400	2400

			6/6/2017	2310	2310
			11/7/2017	2750	2750
			2/27/2018	2220	2220
MW#93-3	51	0 (0%)	12/15/1994	330	330
			12/14/1995	219	219
			12/10/1996	248	248
			12/4/1997	201	201
			12/8/1998	199	199
			12/14/1999	208	208
			12/12/2000	230	230
			12/18/2001	172	172
			3/19/2002	222	222
			6/26/2002	189	189
			9/18/2002	163	163
			12/11/2002	216	216
			3/13/2003	230	230
			6/25/2003	190	190
			9/26/2003	229	229
			12/10/2003	231	231
			3/9/2004	30.8	30.8
			6/24/2004	150	150
			9/15/2004	200	200
			12/15/2004	186	186
			3/16/2005	196	196
			6/15/2005	170	170
			9/21/2005	239	239
			12/21/2005	180	180
			3/15/2006	180	180
			6/21/2006	227	227
			12/20/2006	211	211
			6/12/2007	159	159
			12/17/2007	194	194
			6/11/2008	195	195
			12/3/2008	190	190
			6/17/2009	173	173
			12/9/2009	202	202
			6/17/2010	202	202
			12/22/2010	216	216
			6/29/2011	158	158
			12/7/2011	218	218
			6/6/2012	201	201
			12/12/2012	168	168
			6/19/2013	235	235
			12/11/2013	234	234
			6/11/2014	258	258
			12/3/2014	220	220
			6/17/2015	280	280
			12/1/2015	339	339
			6/22/2016	449	449
			10/11/2016	368	368
			12/20/2016	337	337
			6/6/2017	301	301
			11/7/2017	368	368
			2/27/2018	272	272
MW#03-1	29	0 (0%)	6/24/2004	10.2	10.2

			9/15/2004	42	42
			12/15/2004	8.04	8.04
			3/16/2005	5.99	5.99
			6/15/2005	7.3	7.3
			9/21/2005	14.1	14.1
			12/20/2006	8	8
			6/12/2007	7.96	7.96
			12/17/2007	9.88	9.88
			6/11/2008	5.71	5.71
			12/3/2008	7.01	7.01
			6/17/2009	7.34	7.34
			12/9/2009	6.77	6.77
			6/17/2010	9.31	9.31
			12/22/2010	7.11	7.11
			6/29/2011	7.04	7.04
			12/7/2011	8.87	8.87
			6/6/2012	7.94	7.94
			6/19/2013	10.3	10.3
			12/11/2013	9.78	9.78
			6/11/2014	55.9	55.9
			12/3/2014	9.8	9.8
			6/17/2015	9.7	9.7
			12/1/2015	12	12
			6/22/2016	8.59	8.59
			12/20/2016	7.94	7.94
			6/6/2017	6.56	6.56
			11/7/2017	17.6	17.6
			2/27/2018	16.8	16.8
MW#03-2	33	0 (0%)	6/24/2004	47.4	47.4
			9/15/2004	8.7	8.7
			12/15/2004	51.3	51.3
			3/16/2005	47	47
			6/15/2005	42.8	42.8
			9/21/2005	52.6	52.6
			12/21/2005	46.5	46.5
			3/15/2006	50.4	50.4
			6/21/2006	44.9	44.9
			12/20/2006	50.5	50.5
			6/12/2007	47	47
			12/17/2007	50.2	50.2
			6/11/2008	33.8	33.8
			12/3/2008	54.4	54.4
			6/17/2009	48.2	48.2
			12/9/2009	47.3	47.3
			6/17/2010	52.9	52.9
			12/22/2010	51.7	51.7
			6/29/2011	51	51
			12/7/2011	60.1	60.1
			6/6/2012	52	52
			12/12/2012	61.3	61.3
			6/19/2013	57.3	57.3
			12/11/2013	54	54
			6/11/2014	9.78	9.78
			12/3/2014	68	68
			6/17/2015	66.3	66.3
			12/1/2015	63.8	63.8

6/22/2016	76.8	76.8
12/20/2016	80.2	80.2
6/6/2017	96.8	96.8
11/7/2017	120	120
2/27/2018	104	104

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 = 81.9555
Overall Std Dev = 182.665
Overall Total = 17374.6
SS Wells = 2.44456e+006
SS Total = 7.04033e+006

ANOVA Table

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	F
Between Wells	2.44456e+006	4	611139	27.5265
Error (within wells)	4.59577e+006	207	22201.8	
Totals	7.04033e+006	211		

27.5265 exceeds 2.37; assumption of equal variance should be rejected

Well: MW#93-1	Sample	Residual
	12/15/1994	19.0796
	12/14/1995	21.8796
	12/10/1996	22.1796
	12/4/1997	22.5796
	12/8/1998	26.7796
	12/14/1999	9.37959
	12/12/2000	26.2204
	3/19/2002	38.2204
	6/26/2002	21.2204
	9/18/2002	4.22041
	12/11/2002	9.22041
	3/13/2003	20.2204
	6/25/2003	39.2204
	9/26/2003	10.8204
	12/10/2003	24.3204
	3/9/2004	21.6204
	6/24/2004	20.9204
	9/15/2004	2.77959
	12/15/2004	18.5204
	3/16/2005	12.5204
	6/15/2005	3.62041
	9/21/2005	19.0204
	12/21/2005	8.12041
	3/15/2006	25.9204
	6/21/2006	8.22041
	12/20/2006	11.3204
	6/12/2007	1.12041
	12/17/2007	8.02041
	6/11/2008	17.2796
	12/3/2008	1.42041
	6/17/2009	6.37959
	12/9/2009	3.12041

6/17/2010	18.7796
12/22/2010	3.27959
6/29/2011	18.3796
12/7/2011	4.67959
6/6/2012	18.1796
12/12/2012	14.8796
6/19/2013	3.77959
12/11/2013	0.879592
6/11/2014	17.2796
12/3/2014	4.37959
6/17/2015	4.07959
12/1/2015	16.2796
6/22/2016	6.87959
12/20/2016	18.9796
6/6/2017	15.3796
11/7/2017	28.5796
2/27/2018	14.1796

Well: MW#93-2

Sample	Residual
12/15/1994	110.96
12/14/1995	60.96
12/10/1996	180.96
12/4/1997	159.04
12/8/1998	284.04
12/14/1999	699.04
12/12/2000	519.04
3/19/2002	219.04
6/26/2002	20.96
9/18/2002	140.96
12/11/2002	39.04
3/13/2003	319.04
6/25/2003	290.96
9/26/2003	460.96
12/10/2003	360.96
3/9/2004	230.96
6/24/2004	100.96
9/15/2004	480.96
12/15/2004	199.04
3/16/2005	209.04
6/15/2005	250.96
9/21/2005	239.04
12/21/2005	19.04
3/15/2006	439.04
6/21/2006	169.04
12/20/2006	110.96
2/21/2007	619.04
6/12/2007	300.96
12/17/2007	36.96
6/11/2008	368.04
12/3/2008	160.96
6/17/2009	50.96
12/9/2009	140.96
6/17/2010	180.96
12/22/2010	179.04
6/29/2011	90.96
12/7/2011	219.04
6/6/2012	220.96

12/12/2012	449.04
6/19/2013	50.96
12/11/2013	9.04
6/11/2014	340.96
12/3/2014	449.04
6/17/2015	2010.96
5/25/2016	390.96
6/22/2016	419.04
12/20/2016	119.04
6/6/2017	29.04
11/7/2017	469.04
2/27/2018	60.96

Well: MW#93-3

Sample	Residual
12/15/1994	106.788
12/14/1995	4.21176
12/10/1996	24.7882
12/4/1997	22.2118
12/8/1998	24.2118
12/14/1999	15.2118
12/12/2000	6.78824
12/18/2001	51.2118
3/19/2002	1.21176
6/26/2002	34.2118
9/18/2002	60.2118
12/11/2002	7.21176
3/13/2003	6.78824
6/25/2003	33.2118
9/26/2003	5.78824
12/10/2003	7.78824
3/9/2004	192.412
6/24/2004	73.2118
9/15/2004	23.2118
12/15/2004	37.2118
3/16/2005	27.2118
6/15/2005	53.2118
9/21/2005	15.7882
12/21/2005	43.2118
3/15/2006	43.2118
6/21/2006	3.78824
12/20/2006	12.2118
6/12/2007	64.2118
12/17/2007	29.2118
6/11/2008	28.2118
12/3/2008	33.2118
6/17/2009	50.2118
12/9/2009	21.2118
6/17/2010	21.2118
12/22/2010	7.21176
6/29/2011	65.2118
12/7/2011	5.21176
6/6/2012	22.2118
12/12/2012	55.2118
6/19/2013	11.7882
12/11/2013	10.7882
6/11/2014	34.7882
12/3/2014	3.21176

6/17/2015	56.7882
12/1/2015	115.788
6/22/2016	225.788
10/11/2016	144.788
12/20/2016	113.788
6/6/2017	77.7882
11/7/2017	144.788
2/27/2018	48.7882

Well: MW#03-1	Sample	Residual
	6/24/2004	1.71517
	9/15/2004	30.0848
	12/15/2004	3.87517
	3/16/2005	5.92517
	6/15/2005	4.61517
	9/21/2005	2.18483
	12/20/2006	3.91517
	6/12/2007	3.95517
	12/17/2007	2.03517
	6/11/2008	6.20517
	12/3/2008	4.90517
	6/17/2009	4.57517
	12/9/2009	5.14517
	6/17/2010	2.60517
	12/22/2010	4.80517
	6/29/2011	4.87517
	12/7/2011	3.04517
	6/6/2012	3.97517
	6/19/2013	1.61517
	12/11/2013	2.13517
	6/11/2014	43.9848
	12/3/2014	2.11517
	6/17/2015	2.21517
	12/1/2015	0.0848276
	6/22/2016	3.32517
	12/20/2016	3.97517
	6/6/2017	5.35517
	11/7/2017	5.68483
	2/27/2018	4.88483

Well: MW#03-2	Sample	Residual
	6/24/2004	8.6297
	9/15/2004	47.3297
	12/15/2004	4.7297
	3/16/2005	9.0297
	6/15/2005	13.2297
	9/21/2005	3.4297
	12/21/2005	9.5297
	3/15/2006	5.6297
	6/21/2006	11.1297
	12/20/2006	5.5297
	6/12/2007	9.0297
	12/17/2007	5.8297
	6/11/2008	22.2297
	12/3/2008	1.6297
	6/17/2009	7.8297

12/9/2009	8.7297
6/17/2010	3.1297
12/22/2010	4.3297
6/29/2011	5.0297
12/7/2011	4.0703
6/6/2012	4.0297
12/12/2012	5.2703
6/19/2013	1.2703
12/11/2013	2.0297
6/11/2014	46.2497
12/3/2014	11.9703
6/17/2015	10.2703
12/1/2015	7.7703
6/22/2016	20.7703
12/20/2016	24.1703
6/6/2017	40.7703
11/7/2017	63.9703
2/27/2018	47.9703

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 = 212

i	x(i)	m(i)	sum(m^2)	sum(mx)
0	0	0	0	0
1	5.71	-2.65209	7.03356	-15.1434
2	5.99	-2.36561	12.6297	-29.3134
3	6.56	-2.19728	17.4578	-43.7276
4	6.77	-2.09693	21.8549	-57.9239
5	7.01	-1.99539	25.8365	-71.9116
6	7.04	-1.91103	29.4885	-85.3652
7	7.11	-1.85218	32.9191	-98.5342
8	7.3	-1.78661	36.111	-111.576
9	7.34	-1.72793	39.0968	-124.259
10	7.94	-1.68494	41.9358	-137.638
11	7.94	-1.63524	44.6098	-150.622
12	7.96	-1.58927	47.1356	-163.272
13	8	-1.54643	49.527	-175.644
14	8.04	-1.5141	51.8195	-187.817
15	8.59	-1.47579	53.9975	-200.494
16	8.7	-1.43953	56.0698	-213.018
17	8.87	-1.41183	58.063	-225.541
18	9.31	-1.37866	59.9637	-238.376
19	9.7	-1.34694	61.778	-251.442
20	9.78	-1.32251	63.527	-264.376
21	9.78	-1.29303	65.1989	-277.022
22	9.8	-1.26464	66.7982	-289.415
23	9.88	-1.24264	68.3424	-301.692
24	10.2	-1.21596	69.821	-314.095
25	10.3	-1.19012	71.2373	-326.353
26	12	-1.16505	72.5947	-340.334
27	14.1	-1.1455	73.9069	-356.486
28	16.8	-1.12168	75.165	-375.33
29	17.6	-1.09847	76.3716	-394.663
30	30.8	-1.08032	77.5387	-427.937
31	33.8	-1.05812	78.6584	-463.701
32	42	-1.03643	79.7326	-507.231
33	42.8	-1.01943	80.7718	-550.863
34	44.9	-0.998575	81.7689	-595.699
35	45.2	-0.97815	82.7257	-639.911
36	46.5	-0.958125	83.6437	-684.464
37	47	-0.942375	84.5318	-728.756
38	47	-0.923014	85.3837	-772.137
39	47	-0.903992	86.201	-814.625
40	47.3	-0.889006	86.9913	-856.675
41	47.4	-0.87055	87.7491	-897.939
42	48.2	-0.852385	88.4757	-939.024
43	50.2	-0.838054	89.178	-981.094
44	50.4	-0.820379	89.8511	-1022.44
45	50.5	-0.802956	90.4958	-1062.99
46	51	-0.789191	91.1186	-1103.24

47	51.2	-0.772193	91.7149	-1142.78
48	51.3	-0.755415	92.2856	-1181.53
49	51.6	-0.738846	92.8314	-1219.65
50	51.7	-0.725736	93.3581	-1257.17
51	51.9	-0.709522	93.8616	-1294
52	52	-0.693493	94.3425	-1330.06
53	52.6	-0.680797	94.806	-1365.87
54	52.9	-0.665079	95.2483	-1401.05
55	54	-0.649522	95.6702	-1436.13
56	54.4	-0.637192	96.0762	-1470.79
57	54.7	-0.621911	96.463	-1504.81
58	54.8	-0.606775	96.8312	-1538.06
59	55	-0.594766	97.1849	-1570.77
60	55.4	-0.579873	97.5212	-1602.9
61	55.6	-0.565108	97.8405	-1634.32
62	55.9	-0.550465	98.1435	-1665.09
63	56.5	-0.538836	98.4339	-1695.53
64	56.5	-0.524401	98.7088	-1725.16
65	57.3	-0.510074	98.969	-1754.39
66	57.5	-0.498687	99.2177	-1783.06
67	58.4	-0.484544	99.4525	-1811.36
68	58.9	-0.470498	99.6739	-1839.07
69	59.6	-0.459327	99.8848	-1866.45
70	60.1	-0.445443	100.083	-1893.22
71	61.3	-0.431644	100.27	-1919.68
72	63.8	-0.417928	100.444	-1946.34
73	64.4	-0.40701	100.61	-1972.55
74	66.3	-0.393433	100.765	-1998.64
75	66.9	-0.379927	100.909	-2024.06
76	67.4	-0.369171	101.045	-2048.94
77	68	-0.355788	101.172	-2073.13
78	69.1	-0.342466	101.289	-2096.8
79	69.4	-0.331854	101.399	-2119.83
80	69.7	-0.318639	101.501	-2142.04
81	70	-0.305481	101.594	-2163.42
82	70.5	-0.294992	101.681	-2184.22
83	71	-0.281926	101.761	-2204.23
84	72.9	-0.268908	101.833	-2223.84
85	74.9	-0.255936	101.898	-2243.01
86	75.2	-0.24559	101.959	-2261.47
87	76.8	-0.232693	102.013	-2279.34
88	76.9	-0.219834	102.061	-2296.25
89	77.4	-0.209575	102.105	-2312.47
90	78	-0.196779	102.144	-2327.82
91	80.2	-0.184017	102.178	-2342.58
92	81.8	-0.173829	102.208	-2356.8
93	81.9	-0.161119	102.234	-2369.99
94	82	-0.148434	102.256	-2382.16
95	83	-0.135774	102.274	-2393.43
96	84.6	-0.125661	102.29	-2404.06
97	85.1	-0.113039	102.303	-2413.68
98	86.3	-0.100433	102.313	-2422.35
99	92.3	-0.0903606	102.321	-2430.69
100	92.8	-0.0777834	102.327	-2437.91
101	94	-0.0652187	102.332	-2444.04
102	94.7	-0.0551734	102.335	-2449.27
103	95	-0.0426257	102.336	-2453.32

104	95.4	-0.0300838	102.337	-2456.19
105	96.8	-0.0200544	102.338	-2458.13
106	98.1	-0.00751925	102.338	-2458.86
107	99.7	0.00751925	102.338	-2458.11
108	100	0.0200544	102.338	-2456.11
109	104	0.0300838	102.339	-2452.98
110	112	0.0426257	102.341	-2448.21
111	113	0.0551734	102.344	-2441.97
112	120	0.0652187	102.348	-2434.15
113	150	0.0777834	102.354	-2422.48
114	158	0.0903606	102.362	-2408.2
115	159	0.100433	102.373	-2392.23
116	163	0.113039	102.385	-2373.81
117	168	0.125661	102.401	-2352.7
118	170	0.135774	102.42	-2329.61
119	172	0.148434	102.442	-2304.08
120	173	0.161119	102.468	-2276.21
121	180	0.173829	102.498	-2244.92
122	180	0.184017	102.532	-2211.8
123	186	0.196779	102.57	-2175.2
124	189	0.209575	102.614	-2135.59
125	190	0.219834	102.663	-2093.82
126	190	0.232693	102.717	-2049.61
127	194	0.24559	102.777	-2001.96
128	195	0.255936	102.843	-1952.05
129	196	0.268908	102.915	-1899.35
130	199	0.281926	102.994	-1843.25
131	200	0.294992	103.081	-1784.25
132	201	0.305481	103.175	-1722.85
133	201	0.318639	103.276	-1658.8
134	202	0.331854	103.386	-1591.76
135	202	0.342466	103.504	-1522.59
136	208	0.355788	103.63	-1448.58
137	211	0.369171	103.767	-1370.69
138	216	0.379927	103.911	-1288.62
139	216	0.393433	104.066	-1203.64
140	218	0.40701	104.231	-1114.91
141	219	0.417928	104.406	-1023.39
142	220	0.431644	104.592	-928.426
143	222	0.445443	104.791	-829.537
144	227	0.459327	105.002	-725.27
145	229	0.470498	105.223	-617.526
146	230	0.484544	105.458	-506.081
147	230	0.498687	105.707	-391.383
148	231	0.510074	105.967	-273.556
149	234	0.524401	106.242	-150.846
150	235	0.538836	106.532	-24.2198
151	239	0.550465	106.835	107.341
152	248	0.565108	107.154	247.488
153	258	0.579873	107.491	397.095
154	270	0.594766	107.844	557.682
155	272	0.606775	108.213	722.725
156	280	0.621911	108.599	896.86
157	301	0.637192	109.005	1088.66
158	330	0.649522	109.427	1303
159	337	0.665079	109.87	1527.13
160	339	0.680797	110.333	1757.92

161	368	0.693493	110.814	2013.12
162	368	0.709522	111.317	2274.23
163	449	0.725736	111.844	2600.08
164	1800	0.738846	112.39	3930.01
165	1820	0.755415	112.961	5304.86
166	1890	0.772193	113.557	6764.31
167	1920	0.789191	114.18	8279.55
168	1940	0.802956	114.824	9837.29
169	1980	0.820379	115.498	11461.6
170	1990	0.838054	116.2	13129.4
171	2030	0.852385	116.926	14859.7
172	2050	0.87055	117.684	16644.3
173	2060	0.889006	118.475	18475.7
174	2100	0.903992	119.292	20374.1
175	2100	0.923014	120.144	22312.4
176	2120	0.942375	121.032	24310.2
177	2140	0.958125	121.95	26360.6
178	2140	0.97815	122.907	28453.9
179	2170	0.998575	123.904	30620.8
180	2170	1.01943	124.943	32832.9
181	2180	1.03643	126.017	35092.4
182	2190	1.05812	127.137	37409.6
183	2220	1.08032	128.304	39808
184	2220	1.09847	129.511	42246.6
185	2230	1.12168	130.769	44747.9
186	2230	1.1455	132.081	47302.4
187	2244	1.16505	133.438	49916.7
188	2260	1.19012	134.855	52606.4
189	2290	1.21596	136.333	55391
190	2300	1.24264	137.877	58249
191	2310	1.26464	139.477	61170.4
192	2320	1.29303	141.149	64170.2
193	2400	1.32251	142.898	67344.2
194	2440	1.34694	144.712	70630.7
195	2450	1.37866	146.613	74008.4
196	2460	1.41183	148.606	77481.6
197	2480	1.43953	150.678	81051.6
198	2490	1.47579	152.856	84726.3
199	2500	1.5141	155.149	88511.6
200	2500	1.54643	157.54	92377.6
201	2520	1.58927	160.066	96382.6
202	2565	1.63524	162.74	100577
203	2600	1.68494	165.579	104958
204	2649	1.72793	168.564	109535
205	2700	1.78661	171.756	114359
206	2720	1.85218	175.187	119397
207	2730	1.91103	178.839	124614
208	2730	1.99539	182.821	130061
209	2750	2.09693	187.218	135828
210	2800	2.19728	192.046	141980
211	2900	2.36561	197.642	148841

Sample Standard Deviation = 949.611
Numerator = 2.21535e+010
Denominator = 3.76057e+010 = 211 197.642
W Statistic = 0.589101
5% Critical value of 0.976 exceeds 0.589101

Evidence of non-normality at 95% level of significance
1% Critical value of 0.967 exceeds 0.589101
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) = 49
Maximum Background Concentration = 113
Confidence Level = 92.5%
False Positive Rate = 7.5%

Well	Date	Samples	Mean	Impacted
MW#93-2	2/27/2018	1	2220	TRUE
MW#93-3	2/27/2018	1	272	TRUE
MW#03-1	2/27/2018	1	16.8	FALSE
MW#03-2	2/27/2018	1	104	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) = 49
Maximum Baseline Concentration = 2980
Confidence Level = 98%
False Positive Rate = 2%

Baseline Samples	Date	Result
	12/15/1994	2170
	12/14/1995	2220
	12/10/1996	2100
	12/4/1997	2440
	12/8/1998	2565
	12/14/1999	2980
	12/12/2000	2800
	3/19/2002	2500
	6/26/2002	2260
	9/18/2002	2140
	12/11/2002	2320
	3/13/2003	2600
	6/25/2003	1990
	9/26/2003	1820
	12/10/2003	1920
	3/9/2004	2050
	6/24/2004	2180
	9/15/2004	1800
	12/15/2004	2480
	3/16/2005	2490
	6/15/2005	2030
	9/21/2005	2520
	12/21/2005	2300
	3/15/2006	2720
	6/21/2006	2450
	12/20/2006	2170
	2/21/2007	2900
	6/12/2007	1980
	12/17/2007	2244
	6/11/2008	2649
	12/3/2008	2120
	6/17/2009	2230
	12/9/2009	2140
	6/17/2010	2100
	12/22/2010	2460
	6/29/2011	2190
	12/7/2011	2500
	6/6/2012	2060
	12/12/2012	2730
	6/19/2013	2230
	12/11/2013	2290

6/11/2014	1940
12/3/2014	2730
6/17/2015	270
5/25/2016	1890
6/22/2016	2700
12/20/2016	2400
6/6/2017	2310
11/7/2017	2750

Date	Samples	Mean	Impacted
2/27/2018	1	2220	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) = 50
Maximum Baseline Concentration = 449
Confidence Level = 98%
False Positive Rate = 2%

Baseline Samples	Date	Result
	12/15/1994	330
	12/14/1995	219
	12/10/1996	248
	12/4/1997	201
	12/8/1998	199
	12/14/1999	208
	12/12/2000	230
	12/18/2001	172
	3/19/2002	222
	6/26/2002	189
	9/18/2002	163
	12/11/2002	216
	3/13/2003	230
	6/25/2003	190
	9/26/2003	229
	12/10/2003	231
	3/9/2004	30.8
	6/24/2004	150
	9/15/2004	200
	12/15/2004	186
	3/16/2005	196
	6/15/2005	170
	9/21/2005	239
	12/21/2005	180
	3/15/2006	180
	6/21/2006	227
	12/20/2006	211
	6/12/2007	159
	12/17/2007	194
	6/11/2008	195
	12/3/2008	190
	6/17/2009	173
	12/9/2009	202
	6/17/2010	202
	12/22/2010	216
	6/29/2011	158
	12/7/2011	218
	6/6/2012	201
	12/12/2012	168
	6/19/2013	235
	12/11/2013	234

6/11/2014	258
12/3/2014	220
6/17/2015	280
12/1/2015	339
6/22/2016	449
10/11/2016	368
12/20/2016	337
6/6/2017	301
11/7/2017	368

Date	Samples	Mean	Impacted
2/27/2018	1	272	FALSE

Concentrations (umhos/cm)

Parameter: Specific Conductance

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Samples: 270
Total Non-Detect: 0
Percent Non-Detects: 0%
Total Background Samples: 69
There is 1 background well

Well	Samples	ND	Date	Result	Original
MW#93-1	69	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
			11/7/2017	1458	1458
			2/27/2018	1235	1235

There are 4 compliance wells

Well	Samples	ND	Date	Result	Original
MW#93-2	71	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
			11/7/2017	10.52	10.52
			2/27/2018	10.9	10.9
MW#93-3	69	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
11/7/2017	2121	2121
2/27/2018	2372	2372

MW#03-1	28	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
			11/7/2017	444	444
			2/27/2018	186.1	186.1
MW#03-2	33	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
11/7/2017	2042	2042
2/27/2018	2080	2080

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 = 497.102
Overall Std Dev = 1138.8
Overall Total = 134217
SS Wells = 7.38343e+007
SS Total = 3.4886e+008

ANOVA Table

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	F
Between Wells	7.38343e+007	4	1.84586e+007	17.7857
Error (within wells)	2.75025e+008	265	1.03783e+006	
Totals	3.4886e+008	269		

17.7857 exceeds 2.37; assumption of equal variance should be rejected

Well: MW#93-1	Sample	Residual
	12/15/1994	239.348
	3/14/1995	216.348
	6/21/1995	165.348
	12/14/1995	210.348
	3/6/1996	309.348
	4/25/1996	256.348
	10/2/1996	150.348
	12/10/1996	132.348
	3/11/1997	242.348
	4/15/1997	249.348
	8/14/1997	102.348
	12/4/1997	149.348
	3/31/1998	227.348
	6/23/1998	109.348
	8/11/1998	46.3478
	12/8/1998	568.652
	3/9/1999	239.348
	6/8/1999	18.3478
	8/19/1999	18.3478
	12/14/1999	49.3478
	3/7/2000	29.3478
	6/23/2000	73.6522
	12/12/2000	10.3478
	3/27/2001	149.652
	6/28/2001	240.652
	9/10/2001	54.6522
	12/18/2001	54.6522
	3/19/2002	6.65217
	6/26/2002	196.652
	9/18/2002	103.652
	12/11/2002	195.652
	3/13/2003	12.6522

6/25/2003	288.652
9/26/2003	282.652
12/10/2003	300.652
3/9/2004	310.652
6/24/2004	300.652
9/15/2004	298.652
12/15/2004	266.652
3/16/2005	201.652
6/15/2005	211.652
9/21/2005	121.652
12/21/2005	289.348
3/15/2006	1.34783
6/21/2006	227.652
12/20/2006	50.6522
6/12/2007	146.652
12/17/2007	7.65217
6/11/2008	14.6522
12/3/2008	32.6522
6/17/2009	18.3478
12/9/2009	101.348
6/17/2010	140.348
12/22/2010	49.3478
6/29/2011	44.3478
12/7/2011	83.3478
6/6/2012	134.348
12/12/2012	92.3478
6/19/2013	46.6522
12/11/2013	9.65217
6/11/2014	119.348
12/3/2014	89.3478
6/17/2015	109.348
12/1/2015	89.3478
6/22/2016	134.348
12/20/2016	133.348
6/6/2017	30.3478
11/7/2017	138.652
2/27/2018	84.3478

Well: MW#93-2

Sample	Residual
12/15/1994	1500.98
3/14/1995	1233.98
6/21/1995	240.978
12/14/1995	450.978
3/6/1996	630.978
4/25/1996	140.978
10/2/1996	30.9777
12/10/1996	139.022
3/11/1997	200.978
4/15/1997	239.022
8/14/1997	1209.02
12/4/1997	789.022
3/31/1998	213.978
6/23/1998	949.022
8/11/1998	2009.02
12/8/1998	829.022
3/9/1999	210.978
6/8/1999	1399.02

8/19/1999	1422.02
12/14/1999	239.022
3/7/2000	110.978
6/23/2000	8416.98
12/12/2000	370.978
3/27/2001	809.022
6/28/2001	2149.02
9/10/2001	1249.02
12/18/2001	1209.02
3/19/2002	746.022
6/26/2002	1139.02
9/18/2002	239.022
12/11/2002	832.022
3/13/2003	530.978
6/25/2003	1139.02
9/26/2003	1242.02
12/10/2003	1099.02
3/9/2004	1169.02
6/24/2004	1043.02
9/15/2004	889.022
12/15/2004	489.022
3/16/2005	239.022
6/15/2005	559.022
9/21/2005	209.022
12/21/2005	549.022
3/15/2006	800.978
6/21/2006	379.022
12/20/2006	1140.98
2/21/2007	1790.98
6/12/2007	139.022
12/17/2007	350.978
6/11/2008	149.022
12/3/2008	1069.02
12/15/2008	380.978
6/17/2009	1239.02
12/9/2009	599.022
6/17/2010	569.022
12/22/2010	1779.02
6/29/2011	1659.02
12/7/2011	1319.02
6/6/2012	1039.02
12/12/2012	2009.02
6/19/2013	1049.02
12/11/2013	1199.02
6/11/2014	489.022
12/3/2014	1449.02
6/17/2015	8180.98
12/1/2015	1109.02
6/22/2016	2740.98
12/20/2016	1949.02
6/6/2017	3139.02
11/7/2017	9440.46
2/27/2018	9440.08

Well: MW#93-3	**Sample**	**Residual**
	12/15/1994	498.536
	3/14/1995	226.536

6/21/1995	157.536
12/14/1995	270.536
3/6/1996	63.5362
4/25/1996	306.536
10/2/1996	393.536
12/10/1996	163.536
3/11/1997	106.536
4/15/1997	19.4638
8/14/1997	87.5362
12/4/1997	123.464
3/31/1998	91.4638
6/23/1998	49.4638
8/11/1998	32.5362
12/8/1998	86.4638
3/9/1999	126.464
6/8/1999	83.4638
8/19/1999	10.4638
12/14/1999	175.464
3/7/2000	13.4638
6/23/2000	193.464
12/12/2000	212.464
3/27/2001	114.464
6/28/2001	108.464
9/10/2001	13.4638
12/18/2001	199.464
3/19/2002	23.4638
6/26/2002	476.464
9/18/2002	154.464
12/11/2002	138.464
3/13/2003	229.464
6/25/2003	152.464
9/26/2003	154.464
12/10/2003	90.4638
3/9/2004	382.464
6/24/2004	134.464
9/15/2004	195.464
12/15/2004	291.464
3/16/2005	129.464
6/15/2005	183.464
9/21/2005	108.464
12/21/2005	123.464
3/15/2006	228.464
6/21/2006	37.4638
12/20/2006	176.464
6/12/2007	232.464
12/17/2007	353.464
6/11/2008	240.464
12/3/2008	190.464
6/17/2009	190.464
12/9/2009	225.464
6/17/2010	155.464
12/22/2010	173.464
6/29/2011	85.4638
12/7/2011	333.464
6/6/2012	60.4638
12/12/2012	253.464
6/19/2013	174.536

12/11/2013	11.4638
6/11/2014	236.536
12/3/2014	63.4638
6/17/2015	216.536
12/1/2015	543.536
10/11/2016	741.536
12/20/2016	936.536
6/6/2017	479.536
11/7/2017	857.536
2/27/2018	1108.54

Well: MW#03-1	Sample	Residual
	6/24/2004	27.9964
	9/15/2004	217.996
	12/15/2004	44.9964
	3/16/2005	47.0036
	6/15/2005	4.00357
	9/21/2005	47.9964
	12/20/2006	22.0036
	6/12/2007	160.996
	12/17/2007	70.9964
	6/11/2008	2.00357
	12/3/2008	179.996
	6/17/2009	49.9964
	12/9/2009	0.00357143
	6/17/2010	30.9964
	12/22/2010	34.9964
	6/29/2011	6.00357
	12/7/2011	31.9964
	6/6/2012	12.0036
	6/19/2013	96.0036
	12/11/2013	6.99643
	6/11/2014	356.996
	12/3/2014	60.0036
	6/17/2015	202.004
	12/1/2015	84.0036
	6/22/2016	149.004
	6/6/2017	271.004
	11/7/2017	25.0036
	2/27/2018	282.904

Well: MW#03-2	Sample	Residual
	6/24/2004	163.576
	9/15/2004	333.576
	12/15/2004	200.576
	3/16/2005	194.576
	6/15/2005	181.576
	9/21/2005	230.576
	12/21/2005	283.576
	3/15/2006	261.576
	6/21/2006	219.576
	12/20/2006	275.576
	6/12/2007	175.576
	12/17/2007	238.576
	6/11/2008	181.576
	12/3/2008	103.576

6/17/2009	135.576
12/9/2009	165.576
6/17/2010	170.576
12/22/2010	127.576
6/29/2011	107.576
12/7/2011	100.576
6/6/2012	139.576
12/12/2012	48.5758
6/19/2013	48.5758
12/11/2013	50.5758
6/11/2014	636.576
12/3/2014	684.424
6/17/2015	109.424
12/1/2015	111.424
6/22/2016	218.424
12/20/2016	598.424
6/6/2017	642.424
11/7/2017	1186.42
2/27/2018	1224.42

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 = 270

i	x(i)	m(i)	sum(m^2)	sum(mx)
0	0	0	0	0
1	10.52	-2.74777	7.55021	-28.9065
2	10.9	-2.45727	13.5884	-55.6908
3	186.1	-2.29036	18.8342	-481.927
4	198	-2.19728	23.6622	-916.99
5	219	-2.09693	28.0593	-1376.22
6	267	-2.01409	32.1159	-1913.98
7	320	-1.95996	35.9574	-2541.17
8	373	-1.8957	39.551	-3248.26
9	385	-1.83843	42.9308	-3956.06
10	409	-1.79912	46.1677	-4691.9
11	422	-1.75069	49.2326	-5430.69
12	444	-1.70604	52.1431	-6188.17
13	447	-1.67466	54.9476	-6936.74
14	457	-1.63524	57.6216	-7684.04
15	463	-1.59819	60.1758	-8424.01
16	465	-1.56322	62.6195	-9150.91
17	467	-1.5382	64.9856	-9869.25
18	469	-1.50626	67.2544	-10575.7
19	476	-1.47579	69.4324	-11278.2
20	497	-1.4538	71.5459	-12000.7
21	500	-1.42554	73.5781	-12713.5
22	501	-1.39838	75.5335	-13414.1
23	504	-1.37866	77.4342	-14108.9
24	514	-1.35317	79.2653	-14804.4
25	517	-1.32854	81.0303	-15491.3
26	519	-1.31058	82.7479	-16171.5
27	522	-1.28727	84.405	-16843.4
28	540	-1.26464	86.0043	-17526.3
29	572	-1.24264	87.5485	-18237.1
30	580	-1.22653	89.0529	-18948.5
31	594	-1.20553	90.5062	-19664.6
32	617	-1.18504	91.9105	-20395.8
33	625	-1.17	93.2794	-21127
34	630	-1.15035	94.6027	-21851.7
35	636	-1.13113	95.8821	-22571.1
36	649	-1.11699	97.1298	-23296.1
37	655	-1.09847	98.3364	-24015.6
38	661	-1.08032	99.5035	-24729.7
39	674	-1.06694	100.642	-25448.8
40	674	-1.04939	101.743	-26156.1
41	680	-1.03215	102.808	-26857.9
42	685	-1.01943	103.848	-27556.2
43	687	-1.00271	104.853	-28245.1
44	690	-0.986272	105.826	-28925.6
45	692	-0.970094	106.767	-29596.9
46	716	-0.958125	107.685	-30282.9

47	720	-0.942375	108.573	-30961.5
48	728	-0.926859	109.432	-31636.2
49	748	-0.915365	110.27	-32320.9
50	752	-0.900227	111.08	-32997.9
51	755	-0.885291	111.864	-33666.3
52	787	-0.874218	112.628	-34354.3
53	805	-0.859618	113.367	-35046.3
54	807	-0.845198	114.082	-35728.3
55	807	-0.834498	114.778	-36401.8
56	826	-0.820379	115.451	-37079.4
57	881	-0.806422	116.101	-37789.9
58	910	-0.792618	116.73	-38511.2
59	930	-0.782366	117.342	-39238.8
60	965	-0.768821	117.933	-39980.7
61	967	-0.755415	118.503	-40711.2
62	972	-0.745449	119.059	-41435.7
63	1010	-0.732275	119.595	-42175.3
64	1010	-0.719228	120.113	-42901.7
65	1023	-0.709522	120.616	-43627.6
66	1030	-0.696684	121.101	-44345.2
67	1031	-0.68396	121.569	-45050.3
68	1034	-0.67449	122.024	-45747.8
69	1034	-0.661955	122.462	-46432.2
70	1035	-0.649522	122.884	-47104.5
71	1038	-0.640266	123.294	-47769.1
72	1051	-0.628006	123.689	-48429.1
73	1063	-0.615839	124.068	-49083.7
74	1064	-0.603765	124.432	-49726.2
75	1068	-0.594766	124.786	-50361.4
76	1070	-0.582841	125.126	-50985
77	1070	-0.570999	125.452	-51596
78	1073	-0.56217	125.768	-52199.2
79	1073	-0.550465	126.071	-52789.8
80	1074	-0.538836	126.361	-53368.5
81	1077	-0.530162	126.642	-53939.5
82	1080	-0.518658	126.911	-54499.7
83	1080	-0.507221	127.169	-55047.5
84	1080	-0.498687	127.417	-55586.1
85	1087	-0.487364	127.655	-56115.8
86	1088	-0.476105	127.882	-56633.8
87	1090	-0.464904	128.098	-57140.6
88	1092	-0.456542	128.306	-57639.1
89	1103	-0.445443	128.504	-58130.4
90	1108	-0.434397	128.693	-58611.7
91	1109	-0.426148	128.875	-59084.3
92	1109	-0.415193	129.047	-59544.8
93	1109	-0.40429	129.211	-59993.2
94	1111	-0.396142	129.368	-60433.3
95	1125	-0.385321	129.516	-60866.8
96	1129	-0.374544	129.656	-61289.6
97	1134	-0.36649	129.791	-61705.2
98	1137	-0.355788	129.917	-62109.7
99	1140	-0.345126	130.036	-62503.2
100	1140	-0.334503	130.148	-62884.5
101	1149	-0.326561	130.255	-63259.7
102	1154	-0.316004	130.355	-63624.4
103	1155	-0.305481	130.448	-63977.2

104	1155	-0.297612	130.537	-64321
105	1169	-0.287147	130.619	-64656.7
106	1170	-0.276714	130.696	-64980.4
107	1172	-0.268908	130.768	-65295.6
108	1173	-0.258527	130.835	-65598.8
109	1177	-0.248174	130.896	-65890.9
110	1178	-0.240426	130.954	-66174.1
111	1179	-0.230118	131.007	-66445.5
112	1180	-0.219834	131.055	-66704.9
113	1185	-0.212137	131.1	-66956.2
114	1185	-0.201894	131.141	-67195.5
115	1186	-0.191671	131.178	-67422.8
116	1187	-0.181468	131.211	-67638.2
117	1200	-0.173829	131.241	-67846.8
118	1200	-0.163659	131.268	-68043.2
119	1203	-0.153505	131.291	-68227.9
120	1210	-0.1459	131.313	-68404.4
121	1210	-0.135774	131.331	-68568.7
122	1214	-0.125661	131.347	-68721.2
123	1217	-0.118085	131.361	-68864.9
124	1218	-0.107995	131.373	-68996.5
125	1226	-0.0979139	131.382	-69116.5
126	1227	-0.0903606	131.39	-69227.4
127	1230	-0.0802981	131.397	-69326.2
128	1230	-0.0702426	131.402	-69412.6
129	1235	-0.0601949	131.405	-69486.9
130	1236	-0.0526632	131.408	-69552
131	1240	-0.0426257	131.41	-69604.9
132	1244	-0.0325917	131.411	-69645.4
133	1250	-0.0250691	131.412	-69676.7
134	1250	-0.0150408	131.412	-69695.5
135	1252	-0.00501359	131.412	-69701.8
136	1253	0.00501359	131.412	-69695.5
137	1270	0.0150408	131.412	-69676.4
138	1270	0.0250691	131.413	-69644.6
139	1270	0.0325917	131.414	-69603.2
140	1273	0.0426257	131.416	-69548.9
141	1275	0.0526632	131.418	-69481.8
142	1289	0.0601949	131.422	-69404.2
143	1290	0.0702426	131.427	-69313.6
144	1296	0.0802981	131.433	-69209.5
145	1301	0.0903606	131.442	-69092
146	1301	0.0979139	131.451	-68964.6
147	1301	0.107995	131.463	-68824.1
148	1309	0.118085	131.477	-68669.5
149	1318	0.125661	131.493	-68503.9
150	1326	0.135774	131.511	-68323.8
151	1327	0.1459	131.532	-68130.2
152	1327	0.153505	131.556	-67926.5
153	1329	0.163659	131.583	-67709
154	1332	0.173829	131.613	-67477.5
155	1334	0.181468	131.646	-67235.4
156	1351	0.191671	131.683	-66976.5
157	1352	0.201894	131.723	-66703.5
158	1366	0.212137	131.768	-66413.7
159	1370	0.219834	131.817	-66112.5
160	1370	0.230118	131.87	-65797.3

161	1374	0.240426	131.927	-65466.9
162	1374	0.248174	131.989	-65126
163	1393	0.258527	132.056	-64765.8
164	1421	0.268908	132.128	-64383.7
165	1423	0.276714	132.205	-63989.9
166	1427	0.287147	132.287	-63580.2
167	1438	0.297612	132.376	-63152.2
168	1441	0.305481	132.469	-62712
169	1454	0.316004	132.569	-62252.5
170	1458	0.326561	132.676	-61776.4
171	1466	0.334503	132.787	-61286
172	1469	0.345126	132.907	-60779.1
173	1480	0.355788	133.033	-60252.5
174	1490	0.36649	133.167	-59706.4
175	1498	0.374544	133.308	-59145.3
176	1500	0.385321	133.456	-58567.4
177	1515	0.396142	133.613	-57967.2
178	1516	0.40429	133.777	-57354.3
179	1521	0.415193	133.949	-56722.8
180	1531	0.426148	134.131	-56070.4
181	1534	0.434397	134.319	-55404
182	1540	0.445443	134.518	-54718
183	1547	0.456542	134.726	-54011.7
184	1560	0.464904	134.942	-53286.5
185	1570	0.476105	135.169	-52539
186	1586	0.487364	135.406	-51766.1
187	1602	0.498687	135.655	-50967.2
188	1608	0.507221	135.912	-50151.5
189	1618	0.518658	136.181	-49312.4
190	1620	0.530162	136.462	-48453.5
191	1620	0.538836	136.753	-47580.6
192	1630	0.550465	137.056	-46683.3
193	1657	0.56217	137.372	-45751.8
194	1743	0.570999	137.698	-44756.6
195	1762	0.582841	138.038	-43729.6
196	1807	0.594766	138.391	-42654.8
197	1888	0.603765	138.756	-41514.9
198	2005	0.615839	139.135	-40280.2
199	2042	0.628006	139.53	-38997.8
200	2080	0.640266	139.939	-37666
201	2121	0.649522	140.361	-36288.4
202	2200	0.661955	140.8	-34832.1
203	2372	0.67449	141.254	-33232.2
204	6710	0.68396	141.722	-28642.8
205	7660	0.696684	142.208	-23306.2
206	7950	0.709522	142.711	-17665.5
207	8217	0.719228	143.228	-11755.6
208	8310	0.732275	143.765	-5670.43
209	8650	0.745449	144.32	777.704
210	8820	0.755415	144.891	7440.46
211	8920	0.768821	145.482	14298.3
212	9000	0.782366	146.094	21339.6
213	9070	0.792618	146.722	28528.7
214	9080	0.806422	147.373	35851
215	9100	0.820379	148.046	43316.4
216	9210	0.834498	148.742	51002.2
217	9237	0.845198	149.456	58809.3

218	9240	0.859618	150.195	66752.1
219	9250	0.874218	150.96	74838.6
220	9310	0.885291	151.743	83080.7
221	9340	0.900227	152.554	91488.8
222	9420	0.915365	153.392	100112
223	9590	0.926859	154.251	109000
224	9590	0.942375	155.139	118038
225	9600	0.958125	156.057	127236
226	9660	0.970094	156.998	136607
227	9690	0.986272	157.971	146164
228	9690	1.00271	158.976	155880
229	9690	1.01943	160.015	165758
230	9690	1.03215	161.081	175760
231	9830	1.04939	162.182	186075
232	9940	1.06694	163.32	196681
233	9940	1.08032	164.487	207419
234	10000	1.09847	165.694	218404
235	10010	1.11699	166.942	229585
236	10020	1.13113	168.221	240919
237	10050	1.15035	169.544	252480
238	10197	1.17	170.913	264410
239	10240	1.18504	172.318	276545
240	10260	1.20553	173.771	288914
241	10280	1.22653	175.275	301522
242	10283	1.24264	176.819	314300
243	10340	1.26464	178.419	327377
244	10400	1.28727	180.076	340764
245	10490	1.31058	181.793	354512
246	10494	1.32854	183.558	368454
247	10500	1.35317	185.39	382662
248	10520	1.37866	187.29	397166
249	10550	1.39838	189.246	411919
250	10560	1.42554	191.278	426973
251	10590	1.4538	193.391	442368
252	10590	1.47579	195.569	457997
253	10620	1.50626	197.838	473993
254	10650	1.5382	200.204	490375
255	10660	1.56322	202.648	507039
256	10660	1.59819	205.202	524076
257	10690	1.63524	207.876	541557
258	10693	1.67466	210.681	559464
259	10700	1.70604	213.591	577718
260	10770	1.75069	216.656	596573
261	10850	1.79912	219.893	616094
262	10873	1.83843	223.273	636083
263	10900	1.8957	226.866	656746
264	11110	1.95996	230.708	678521
265	11230	2.01409	234.764	701139
266	11400	2.09693	239.162	725045
267	11460	2.19728	243.99	750225
268	11460	2.29036	249.235	776473
269	11600	2.45727	255.274	804977

Sample Standard Deviation = 3894.65
Numerator = 6.47988e+011
Denominator = 1.04159e+012 = 269 255.274
W Statistic = 0.622116

5% Critical value of 0.976 exceeds 0.622116
Evidence of non-normality at 95% level of significance
1% Critical value of 0.967 exceeds 0.622116
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) = 69
Maximum Background Concentration = 1888
Confidence Level = 94.5%
False Positive Rate = 5.5%

Well	Date	Samples	Mean	Impacted
MW#93-2	2/27/2018	1	10.9	FALSE
MW#93-3	2/27/2018	1	2372	TRUE
MW#03-1	2/27/2018	1	186.1	FALSE
MW#03-2	2/27/2018	1	2080	TRUE

Non-Parametric Prediction Interval

Intra-Well Comparison for MW#93-3

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 = 2200
Confidence Level = 98.6%
False Positive Rate = 1.4%

Baseline Samples	Date	Result
	12/15/1994	1762
	3/14/1995	1490
	6/21/1995	1421
	12/14/1995	1534
	3/6/1996	1327
	4/25/1996	1570
	10/2/1996	1657
	12/10/1996	1427
	3/11/1997	1370
	4/15/1997	1244
	8/14/1997	1351
	12/4/1997	1140
	3/31/1998	1172
	6/23/1998	1214
	8/11/1998	1296
	12/8/1998	1177
	3/9/1999	1137
	6/8/1999	1180
	8/19/1999	1253
	12/14/1999	1088
	3/7/2000	1250
	6/23/2000	1070
	12/12/2000	1051
	3/27/2001	1149
	6/28/2001	1155
	9/10/2001	1250
	12/18/2001	1064
	3/19/2002	1240
	6/26/2002	787
	9/18/2002	1109
	12/11/2002	1125
	3/13/2003	1034
	6/25/2003	1111
	9/26/2003	1109
	12/10/2003	1173
	3/9/2004	881
	6/24/2004	1129
	9/15/2004	1068
	12/15/2004	972
	3/16/2005	1134
	6/15/2005	1080

9/21/2005	1155
12/21/2005	1140
3/15/2006	1035
6/21/2006	1226
12/20/2006	1087
6/12/2007	1031
12/17/2007	910
6/11/2008	1023
12/3/2008	1073
6/17/2009	1073
12/9/2009	1038
6/17/2010	1108
12/22/2010	1090
6/29/2011	1178
12/7/2011	930
6/6/2012	1203
12/12/2012	1010
6/19/2013	1438
12/11/2013	1252
6/11/2014	1500
12/3/2014	1200
6/17/2015	1480
12/1/2015	1807
10/11/2016	2005
12/20/2016	2200
6/6/2017	1743
11/7/2017	2121

Date	Samples	Mean	Impacted
2/27/2018	1	2372	TRUE

Non-Parametric Prediction Interval

Intra-Well Comparison for MW#03-2

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) = 32
Maximum Baseline Concentration = 2042
Confidence Level = 97%
False Positive Rate = 3%

Baseline Samples	Date	Result
	6/24/2004	692
	9/15/2004	522
	12/15/2004	655
	3/16/2005	661
	6/15/2005	674
	9/21/2005	625
	12/21/2005	572
	3/15/2006	594
	6/21/2006	636
	12/20/2006	580
	6/12/2007	680
	12/17/2007	617
	6/11/2008	674
	12/3/2008	752
	6/17/2009	720
	12/9/2009	690
	6/17/2010	685
	12/22/2010	728
	6/29/2011	748
	12/7/2011	755
	6/6/2012	716
	12/12/2012	807
	6/19/2013	807
	12/11/2013	805
	6/11/2014	219
	12/3/2014	1540
	6/17/2015	965
	12/1/2015	967
	6/22/2016	1074
	12/20/2016	1454
	6/6/2017	1498
	11/7/2017	2042

Date	Samples	Mean	Impacted
2/27/2018	1	2080	TRUE

Concentrations (mg/l)

Parameter: Sulfate

Original Data (Not Transformed)
Non-Detects Replaced with Detection Limit
Total Samples: 270
Total Non-Detect: 8
Percent Non-Detects: 2.96296%
Total Background Samples: 69
There is 1 background well

Well	Samples	ND	Date	Result	Original
MW#93-1	69	0 (0%)	12/15/1994	195	195
			3/14/1995	275	275
			6/21/1995	750	750
			12/14/1995	320	320
			3/6/1996	215	215
			4/25/1996	272	272
			10/2/1996	300	300
			12/10/1996	260	260
			3/11/1997	278	278
			4/15/1997	250	250
			8/14/1997	320	320
			12/4/1997	360	360
			3/31/1998	230	230
			6/23/1998	500	500
			8/11/1998	350	350
			12/8/1998	270	270
			3/9/1999	290	290
			6/8/1999	408	408
			8/19/1999	388	388
			12/14/1999	310	310
			3/7/2000	373	373
			6/23/2000	410	410
			12/12/2000	420	420
			3/27/2001	350	350
			6/28/2001	425	425
			9/10/2001	390	390
			12/18/2001	390	390
			3/19/2002	425	425
			6/26/2002	420	420
			9/18/2002	517	517
			12/11/2002	430	430
			3/13/2003	450	450
			6/25/2003	434	434
			9/26/2003	460	460
			12/10/2003	470	470
			3/9/2004	444	444
			6/24/2004	500	500
			9/15/2004	475	475
			12/15/2004	558	558
			3/16/2005	880	880
			6/15/2005	22	22
			9/21/2005	467	467
			12/21/2005	475	475
			3/15/2006	375	375

			6/21/2006	420	420
			12/20/2006	330	330
			6/12/2007	260	260
			12/17/2007	300	300
			6/11/2008	375	375
			12/3/2008	340	340
			6/17/2009	240	240
			12/9/2009	160	160
			6/17/2010	290	290
			12/22/2010	304	304
			6/29/2011	306	306
			12/7/2011	255	255
			6/6/2012	275	275
			12/12/2012	301	301
			6/19/2013	409	409
			12/11/2013	306	306
			6/11/2014	316	316
			12/3/2014	292	292
			6/17/2015	286	286
			12/1/2015	299	299
			6/22/2016	250	250
			12/20/2016	275	275
			6/6/2017	265	265
			11/7/2017	281	281
			2/27/2018	299	299

There are 4 compliance wells

Well	Samples	ND	Date	Result	Original
MW#93-2	71	0 (0%)	12/15/1994	2000	2000
			3/14/1995	1550	1550
			6/21/1995	185	185
			12/14/1995	2367	2367
			3/6/1996	2150	2150
			4/25/1996	2000	2000
			10/2/1996	3267	3267
			12/10/1996	4000	4000
			3/11/1997	1700	1700
			4/15/1997	1500	1500
			8/14/1997	3650	3650
			12/4/1997	4300	4300
			3/31/1998	2500	2500
			6/23/1998	3250	3250
			8/11/1998	3050	3050
			12/8/1998	3050	3050
			3/9/1999	3600	3600
			6/8/1999	3150	3150
			8/19/1999	1897	1897
			12/14/1999	2500	2500
			3/7/2000	3400	3400
			6/23/2000	3400	3400
			12/12/2000	3000	3000
			3/27/2001	2133	2133
			6/28/2001	2750	2750
			9/10/2001	2650	2650
			12/18/2001	2950	2950

			3/19/2002	2967	2967
			6/26/2002	3050	3050
			9/18/2002	2900	2900
			12/11/2002	2933	2933
			3/13/2003	2900	2900
			6/25/2003	2700	2700
			9/26/2003	2767	2767
			12/10/2003	2700	2700
			3/9/2004	2550	2550
			6/24/2004	2650	2650
			9/15/2004	2700	2700
			12/15/2004	2950	2950
			3/16/2005	3200	3200
			6/15/2005	2650	2650
			9/21/2005	3200	3200
			12/21/2005	3200	3200
			3/15/2006	3000	3000
			6/21/2006	2700	2700
			12/20/2006	2500	2500
			2/21/2007	1900	1900
			6/12/2007	2400	2400
			12/17/2007	3100	3100
			6/11/2008	2350	2350
			12/3/2008	3300	3300
			12/15/2008	2400	2400
			6/17/2009	2300	2300
			12/9/2009	2200	2200
			6/17/2010	2900	2900
			12/22/2010	3460	3460
			6/29/2011	2630	2630
			12/7/2011	2520	2520
			6/6/2012	2360	2360
			12/12/2012	3240	3240
			6/19/2013	2510	2510
			12/11/2013	2460	2460
			6/11/2014	2790	2790
			12/3/2014	2940	2940
			6/17/2015	114	114
			12/1/2015	3600	3600
			6/22/2016	2620	2620
			12/20/2016	3800	3800
			6/6/2017	3630	3630
			11/7/2017	4340	4340
			2/27/2018	3870	3870
MW#93-3	69	8 (11.5942%)	12/15/1994	ND<10	ND<10
			3/14/1995	ND<10	ND<10
			6/21/1995	10	10
			12/14/1995	ND<10	ND<10
			3/6/1996	10	10
			4/25/1996	ND<10	ND<10
			10/2/1996	11	11
			12/10/1996	10	10
			3/11/1997	12	12
			4/15/1997	15	15
			8/14/1997	11	11
			12/4/1997	8	8

3/31/1998	45	45
6/23/1998	4	4
8/11/1998	9	9
12/8/1998	2	2
3/9/1999	ND<10	ND<10
6/8/1999	3	3
8/19/1999	ND<10	ND<10
12/14/1999	ND<10	ND<10
3/7/2000	13	13
6/23/2000	14	14
12/12/2000	7	7
3/27/2001	3	3
6/28/2001	ND<10	ND<10
9/10/2001	20	20
12/18/2001	19	19
3/19/2002	8	8
6/26/2002	8	8
9/18/2002	8	8
12/11/2002	6	6
3/13/2003	18	18
6/25/2003	13	13
9/26/2003	16	16
12/10/2003	34	34
3/9/2004	130	130
6/24/2004	24	24
9/15/2004	17	17
12/15/2004	26	26
3/16/2005	29	29
6/15/2005	26	26
9/21/2005	19	19
12/21/2005	23	23
3/15/2006	19	19
6/21/2006	21	21
12/20/2006	42	42
6/12/2007	3	3
12/17/2007	28	28
6/11/2008	27	27
12/3/2008	11	11
6/17/2009	16	16
12/9/2009	12	12
6/17/2010	45	45
12/22/2010	25.8	25.8
6/29/2011	34.2	34.2
12/7/2011	37.4	37.4
6/6/2012	38.3	38.3
12/12/2012	25.8	25.8
6/19/2013	61.6	61.6
12/11/2013	26.5	26.5
6/11/2014	56.2	56.2
12/3/2014	36	36
6/17/2015	109	109
12/1/2015	81	81
6/22/2016	58.5	58.5
12/20/2016	66.6	66.6
6/6/2017	18.2	18.2
11/7/2017	80.3	80.3
2/27/2018	64.2	64.2

MW#03-1	29	0 (0%)	6/24/2004	42	42
			9/15/2004	76	76
			12/15/2004	62	62
			3/16/2005	22	22
			6/15/2005	23	23
			9/21/2005	17	17
			12/20/2006	55	55
			6/12/2007	88	88
			12/17/2007	120	120
			6/11/2008	23	23
			12/3/2008	90	90
			6/17/2009	21	21
			12/9/2009	15	15
			6/17/2010	16	16
			12/22/2010	22.9	22.9
			6/29/2011	21.6	21.6
			12/7/2011	18.1	18.1
			6/6/2012	14.3	14.3
			6/19/2013	16.2	16.2
			12/11/2013	29.1	29.1
			6/11/2014	127	127
			12/3/2014	19.7	19.7
			6/17/2015	7.86	7.86
			12/1/2015	12.1	12.1
			6/22/2016	10.3	10.3
			12/20/2016	30.9	30.9
			6/6/2017	8.92	8.92
			11/7/2017	14.4	14.4
			2/27/2018	12.6	12.6
MW#03-2	32	0 (0%)	6/24/2004	72	72
			9/15/2004	32	32
			12/15/2004	54	54
			3/16/2005	78	78
			6/15/2005	23	23
			9/21/2005	80	80
			12/21/2005	72	72
			3/15/2006	30	30
			12/20/2006	34	34
			6/12/2007	68	68
			12/17/2007	130	130
			6/11/2008	67	67
			12/3/2008	210	210
			6/17/2009	84	84
			12/9/2009	80	80
			6/17/2010	106	106
			12/22/2010	98.9	98.9
			6/29/2011	101	101
			12/7/2011	98.8	98.8
			6/6/2012	107	107
			12/12/2012	111	111
			6/19/2013	113	113
			12/11/2013	106	106
			6/11/2014	10.3	10.3
			12/3/2014	158	158
			6/17/2015	179	179

12/1/2015	197	197
6/22/2016	254	254
12/20/2016	451	451
6/6/2017	332	332
11/7/2017	516	516
2/27/2018	468	468

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 = 180.521
Overall Std Dev = 341.246
Overall Total = 48740.8
SS Wells = 1.19462e+007
SS Total = 3.13247e+007

ANOVA Table

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	F
Between Wells	1.19462e+007	4	2.98655e+006	40.841
Error (within wells)	1.93785e+007	265	73126.4	
Totals	3.13247e+007	269		

40.841 exceeds 2.37; assumption of equal variance should be rejected

Well: MW#93-1	Sample	Residual
	12/15/1994	160.58
	3/14/1995	80.5797
	6/21/1995	394.42
	12/14/1995	35.5797
	3/6/1996	140.58
	4/25/1996	83.5797
	10/2/1996	55.5797
	12/10/1996	95.5797
	3/11/1997	77.5797
	4/15/1997	105.58
	8/14/1997	35.5797
	12/4/1997	4.42029
	3/31/1998	125.58
	6/23/1998	144.42
	8/11/1998	5.57971
	12/8/1998	85.5797
	3/9/1999	65.5797
	6/8/1999	52.4203
	8/19/1999	32.4203
	12/14/1999	45.5797
	3/7/2000	17.4203
	6/23/2000	54.4203
	12/12/2000	64.4203
	3/27/2001	5.57971
	6/28/2001	69.4203
	9/10/2001	34.4203
	12/18/2001	34.4203
	3/19/2002	69.4203
	6/26/2002	64.4203
	9/18/2002	161.42
	12/11/2002	74.4203
	3/13/2003	94.4203

6/25/2003	78.4203
9/26/2003	104.42
12/10/2003	114.42
3/9/2004	88.4203
6/24/2004	144.42
9/15/2004	119.42
12/15/2004	202.42
3/16/2005	524.42
6/15/2005	333.58
9/21/2005	111.42
12/21/2005	119.42
3/15/2006	19.4203
6/21/2006	64.4203
12/20/2006	25.5797
6/12/2007	95.5797
12/17/2007	55.5797
6/11/2008	19.4203
12/3/2008	15.5797
6/17/2009	115.58
12/9/2009	195.58
6/17/2010	65.5797
12/22/2010	51.5797
6/29/2011	49.5797
12/7/2011	100.58
6/6/2012	80.5797
12/12/2012	54.5797
6/19/2013	53.4203
12/11/2013	49.5797
6/11/2014	39.5797
12/3/2014	63.5797
6/17/2015	69.5797
12/1/2015	56.5797
6/22/2016	105.58
12/20/2016	80.5797
6/6/2017	90.5797
11/7/2017	74.5797
2/27/2018	56.5797

Well: MW#93-2

Sample	Residual
12/15/1994	759.155
3/14/1995	1209.15
6/21/1995	2574.15
12/14/1995	392.155
3/6/1996	609.155
4/25/1996	759.155
10/2/1996	507.845
12/10/1996	1240.85
3/11/1997	1059.15
4/15/1997	1259.15
8/14/1997	890.845
12/4/1997	1540.85
3/31/1998	259.155
6/23/1998	490.845
8/11/1998	290.845
12/8/1998	290.845
3/9/1999	840.845
6/8/1999	390.845

8/19/1999	862.155
12/14/1999	259.155
3/7/2000	640.845
6/23/2000	640.845
12/12/2000	240.845
3/27/2001	626.155
6/28/2001	9.15493
9/10/2001	109.155
12/18/2001	190.845
3/19/2002	207.845
6/26/2002	290.845
9/18/2002	140.845
12/11/2002	173.845
3/13/2003	140.845
6/25/2003	59.1549
9/26/2003	7.84507
12/10/2003	59.1549
3/9/2004	209.155
6/24/2004	109.155
9/15/2004	59.1549
12/15/2004	190.845
3/16/2005	440.845
6/15/2005	109.155
9/21/2005	440.845
12/21/2005	440.845
3/15/2006	240.845
6/21/2006	59.1549
12/20/2006	259.155
2/21/2007	859.155
6/12/2007	359.155
12/17/2007	340.845
6/11/2008	409.155
12/3/2008	540.845
12/15/2008	359.155
6/17/2009	459.155
12/9/2009	559.155
6/17/2010	140.845
12/22/2010	700.845
6/29/2011	129.155
12/7/2011	239.155
6/6/2012	399.155
12/12/2012	480.845
6/19/2013	249.155
12/11/2013	299.155
6/11/2014	30.8451
12/3/2014	180.845
6/17/2015	2645.15
12/1/2015	840.845
6/22/2016	139.155
12/20/2016	1040.85
6/6/2017	870.845
11/7/2017	1580.85
2/27/2018	1110.85

Well: MW#93-3	**Sample**	**Residual**
	12/15/1994	15.429
	3/14/1995	15.429

6/21/1995	15.429
12/14/1995	15.429
3/6/1996	15.429
4/25/1996	15.429
10/2/1996	14.429
12/10/1996	15.429
3/11/1997	13.429
4/15/1997	10.429
8/14/1997	14.429
12/4/1997	17.429
3/31/1998	19.571
6/23/1998	21.429
8/11/1998	16.429
12/8/1998	23.429
3/9/1999	15.429
6/8/1999	22.429
8/19/1999	15.429
12/14/1999	15.429
3/7/2000	12.429
6/23/2000	11.429
12/12/2000	18.429
3/27/2001	22.429
6/28/2001	15.429
9/10/2001	5.42899
12/18/2001	6.42899
3/19/2002	17.429
6/26/2002	17.429
9/18/2002	17.429
12/11/2002	19.429
3/13/2003	7.42899
6/25/2003	12.429
9/26/2003	9.42899
12/10/2003	8.57101
3/9/2004	104.571
6/24/2004	1.42899
9/15/2004	8.42899
12/15/2004	0.571014
3/16/2005	3.57101
6/15/2005	0.571014
9/21/2005	6.42899
12/21/2005	2.42899
3/15/2006	6.42899
6/21/2006	4.42899
12/20/2006	16.571
6/12/2007	22.429
12/17/2007	2.57101
6/11/2008	1.57101
12/3/2008	14.429
6/17/2009	9.42899
12/9/2009	13.429
6/17/2010	19.571
12/22/2010	0.371014
6/29/2011	8.77101
12/7/2011	11.971
6/6/2012	12.871
12/12/2012	0.371014
6/19/2013	36.171

12/11/2013	1.07101
6/11/2014	30.771
12/3/2014	10.571
6/17/2015	83.571
12/1/2015	55.571
6/22/2016	33.071
12/20/2016	41.171
6/6/2017	7.22899
11/7/2017	54.871
2/27/2018	38.771

Well: MW#03-1	**Sample**	**Residual**
	6/24/2004	6.27655
	9/15/2004	40.2766
	12/15/2004	26.2766
	3/16/2005	13.7234
	6/15/2005	12.7234
	9/21/2005	18.7234
	12/20/2006	19.2766
	6/12/2007	52.2766
	12/17/2007	84.2766
	6/11/2008	12.7234
	12/3/2008	54.2766
	6/17/2009	14.7234
	12/9/2009	20.7234
	6/17/2010	19.7234
	12/22/2010	12.8234
	6/29/2011	14.1234
	12/7/2011	17.6234
	6/6/2012	21.4234
	6/19/2013	19.5234
	12/11/2013	6.62345
	6/11/2014	91.2766
	12/3/2014	16.0234
	6/17/2015	27.8634
	12/1/2015	23.6234
	6/22/2016	25.4234
	12/20/2016	4.82345
	6/6/2017	26.8034
	11/7/2017	21.3234
	2/27/2018	23.1234

Well: MW#03-2	**Sample**	**Residual**
	6/24/2004	69.2813
	9/15/2004	109.281
	12/15/2004	87.2813
	3/16/2005	63.2813
	6/15/2005	118.281
	9/21/2005	61.2813
	12/21/2005	69.2813
	3/15/2006	111.281
	12/20/2006	107.281
	6/12/2007	73.2813
	12/17/2007	11.2813
	6/11/2008	74.2813
	12/3/2008	68.7188

6/17/2009	57.2813
12/9/2009	61.2813
6/17/2010	35.2813
12/22/2010	42.3812
6/29/2011	40.2813
12/7/2011	42.4813
6/6/2012	34.2813
12/12/2012	30.2813
6/19/2013	28.2813
12/11/2013	35.2813
6/11/2014	130.981
12/3/2014	16.7188
6/17/2015	37.7188
12/1/2015	55.7188
6/22/2016	112.719
12/20/2016	309.719
6/6/2017	190.719
11/7/2017	374.719
2/27/2018	326.719

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 = 270

i	x(i)	m(i)	sum(m^2)	sum(mx)
0	0	0	0	0
1	2	-2.74777	7.55021	-5.49553
2	3	-2.45727	13.5884	-12.8673
3	3	-2.29036	18.8342	-19.7384
4	3	-2.19728	23.6622	-26.3303
5	4	-2.09693	28.0593	-34.718
6	6	-2.01409	32.1159	-46.8026
7	7	-1.95996	35.9574	-60.5223
8	7.86	-1.8957	39.551	-75.4225
9	8	-1.83843	42.9308	-90.1299
10	8	-1.79912	46.1677	-104.523
11	8	-1.75069	49.2326	-118.528
12	8	-1.70604	52.1431	-132.177
13	8.92	-1.67466	54.9476	-147.115
14	9	-1.63524	57.6216	-161.832
15	10	-1.59819	60.1758	-177.814
16	10	-1.56322	62.6195	-193.446
17	10	-1.5382	64.9856	-208.828
18	10	-1.50626	67.2544	-223.89
19	10	-1.47579	69.4324	-238.648
20	10	-1.4538	71.5459	-253.186
21	10	-1.42554	73.5781	-267.442
22	10	-1.39838	75.5335	-281.426
23	10	-1.37866	77.4342	-295.212
24	10	-1.35317	79.2653	-308.744
25	10	-1.32854	81.0303	-322.029
26	10.3	-1.31058	82.7479	-335.528
27	10.3	-1.28727	84.405	-348.787
28	11	-1.26464	86.0043	-362.698
29	11	-1.24264	87.5485	-376.367
30	11	-1.22653	89.0529	-389.859
31	12	-1.20553	90.5062	-404.325
32	12	-1.18504	91.9105	-418.546
33	12.1	-1.17	93.2794	-432.703
34	12.6	-1.15035	94.6027	-447.197
35	13	-1.13113	95.8821	-461.902
36	13	-1.11699	97.1298	-476.423
37	14	-1.09847	98.3364	-491.802
38	14.3	-1.08032	99.5035	-507.25
39	14.4	-1.06694	100.642	-522.614
40	15	-1.04939	101.743	-538.355
41	15	-1.03215	102.808	-553.837
42	16	-1.01943	103.848	-570.148
43	16	-1.00271	104.853	-586.191
44	16	-0.986272	105.826	-601.972
45	16.2	-0.970094	106.767	-617.687
46	17	-0.958125	107.685	-633.975

47	17	-0.942375	108.573	-649.996
48	18	-0.926859	109.432	-666.679
49	18.1	-0.915365	110.27	-683.247
50	18.2	-0.900227	111.08	-699.631
51	19	-0.885291	111.864	-716.452
52	19	-0.874218	112.628	-733.062
53	19	-0.859618	113.367	-749.395
54	19.7	-0.845198	114.082	-766.045
55	20	-0.834498	114.778	-782.735
56	21	-0.820379	115.451	-799.963
57	21	-0.806422	116.101	-816.898
58	21.6	-0.792618	116.73	-834.019
59	22	-0.782366	117.342	-851.231
60	22	-0.768821	117.933	-868.145
61	22.9	-0.755415	118.503	-885.444
62	23	-0.745449	119.059	-902.589
63	23	-0.732275	119.595	-919.431
64	23	-0.719228	120.113	-935.974
65	23	-0.709522	120.616	-952.293
66	24	-0.696684	121.101	-969.013
67	25.8	-0.68396	121.569	-986.659
68	25.8	-0.67449	122.024	-1004.06
69	26	-0.661955	122.462	-1021.27
70	26	-0.649522	122.884	-1038.16
71	26.5	-0.640266	123.294	-1055.13
72	27	-0.628006	123.689	-1072.08
73	28	-0.615839	124.068	-1089.33
74	29	-0.603765	124.432	-1106.84
75	29.1	-0.594766	124.786	-1124.14
76	30	-0.582841	125.126	-1141.63
77	30.9	-0.570999	125.452	-1159.27
78	32	-0.56217	125.768	-1177.26
79	34	-0.550465	126.071	-1195.98
80	34	-0.538836	126.361	-1214.3
81	34.2	-0.530162	126.642	-1232.43
82	36	-0.518658	126.911	-1251.1
83	37.4	-0.507221	127.169	-1270.07
84	38.3	-0.498687	127.417	-1289.17
85	42	-0.487364	127.655	-1309.64
86	42	-0.476105	127.882	-1329.64
87	45	-0.464904	128.098	-1350.56
88	45	-0.456542	128.306	-1371.1
89	54	-0.445443	128.504	-1395.16
90	55	-0.434397	128.693	-1419.05
91	56.2	-0.426148	128.875	-1443
92	58.5	-0.415193	129.047	-1467.29
93	61.6	-0.40429	129.211	-1492.19
94	62	-0.396142	129.368	-1516.75
95	64.2	-0.385321	129.516	-1541.49
96	66.6	-0.374544	129.656	-1566.43
97	67	-0.36649	129.791	-1590.99
98	68	-0.355788	129.917	-1615.18
99	72	-0.345126	130.036	-1640.03
100	72	-0.334503	130.148	-1664.11
101	76	-0.326561	130.255	-1688.93
102	78	-0.316004	130.355	-1713.58
103	80	-0.305481	130.448	-1738.02

104	80	-0.297612	130.537	-1761.83
105	80.3	-0.287147	130.619	-1784.89
106	81	-0.276714	130.696	-1807.3
107	84	-0.268908	130.768	-1829.89
108	88	-0.258527	130.835	-1852.64
109	90	-0.248174	130.896	-1874.97
110	98.8	-0.240426	130.954	-1898.73
111	98.9	-0.230118	131.007	-1921.49
112	101	-0.219834	131.055	-1943.69
113	106	-0.212137	131.1	-1966.18
114	106	-0.201894	131.141	-1987.58
115	107	-0.191671	131.178	-2008.09
116	109	-0.181468	131.211	-2027.87
117	111	-0.173829	131.241	-2047.16
118	113	-0.163659	131.268	-2065.66
119	114	-0.153505	131.291	-2083.16
120	120	-0.1459	131.313	-2100.66
121	127	-0.135774	131.331	-2117.91
122	130	-0.125661	131.347	-2134.24
123	130	-0.118085	131.361	-2149.59
124	158	-0.107995	131.373	-2166.66
125	160	-0.0979139	131.382	-2182.32
126	179	-0.0903606	131.39	-2198.5
127	185	-0.0802981	131.397	-2213.35
128	195	-0.0702426	131.402	-2227.05
129	197	-0.0601949	131.405	-2238.91
130	210	-0.0526632	131.408	-2249.97
131	215	-0.0426257	131.41	-2259.13
132	230	-0.0325917	131.411	-2266.63
133	240	-0.0250691	131.412	-2272.64
134	250	-0.0150408	131.412	-2276.41
135	250	-0.00501359	131.412	-2277.66
136	254	0.00501359	131.412	-2276.38
137	255	0.0150408	131.412	-2272.55
138	260	0.0250691	131.413	-2266.03
139	260	0.0325917	131.414	-2257.56
140	265	0.0426257	131.416	-2246.26
141	270	0.0526632	131.418	-2232.04
142	272	0.0601949	131.422	-2215.67
143	275	0.0702426	131.427	-2196.35
144	275	0.0802981	131.433	-2174.27
145	275	0.0903606	131.442	-2149.42
146	278	0.0979139	131.451	-2122.2
147	281	0.107995	131.463	-2091.86
148	286	0.118085	131.477	-2058.08
149	290	0.125661	131.493	-2021.64
150	290	0.135774	131.511	-1982.27
151	292	0.1459	131.532	-1939.66
152	299	0.153505	131.556	-1893.77
153	299	0.163659	131.583	-1844.83
154	300	0.173829	131.613	-1792.68
155	300	0.181468	131.646	-1738.24
156	301	0.191671	131.683	-1680.55
157	304	0.201894	131.723	-1619.17
158	306	0.212137	131.768	-1554.26
159	306	0.219834	131.817	-1486.99
160	310	0.230118	131.87	-1415.65

161	316	0.240426	131.927	-1339.68
162	320	0.248174	131.989	-1260.26
163	320	0.258527	132.056	-1177.54
164	330	0.268908	132.128	-1088.8
165	332	0.276714	132.205	-996.927
166	340	0.287147	132.287	-899.297
167	350	0.297612	132.376	-795.133
168	350	0.305481	132.469	-688.214
169	360	0.316004	132.569	-574.453
170	373	0.326561	132.676	-452.645
171	375	0.334503	132.787	-327.207
172	375	0.345126	132.907	-197.785
173	388	0.355788	133.033	-59.7391
174	390	0.36649	133.167	83.192
175	390	0.374544	133.308	229.264
176	408	0.385321	133.456	386.475
177	409	0.396142	133.613	548.497
178	410	0.40429	133.777	714.256
179	420	0.415193	133.949	888.637
180	420	0.426148	134.131	1067.62
181	420	0.434397	134.319	1250.07
182	425	0.445443	134.518	1439.38
183	425	0.456542	134.726	1633.41
184	430	0.464904	134.942	1833.32
185	434	0.476105	135.169	2039.95
186	444	0.487364	135.406	2256.34
187	450	0.498687	135.655	2480.75
188	451	0.507221	135.912	2709.5
189	460	0.518658	136.181	2948.09
190	467	0.530162	136.462	3195.67
191	468	0.538836	136.753	3447.85
192	470	0.550465	137.056	3706.57
193	475	0.56217	137.372	3973.6
194	475	0.570999	137.698	4244.82
195	500	0.582841	138.038	4536.24
196	500	0.594766	138.391	4833.62
197	516	0.603765	138.756	5145.17
198	517	0.615839	139.135	5463.56
199	558	0.628006	139.53	5813.98
200	750	0.640266	139.939	6294.18
201	880	0.649522	140.361	6865.76
202	1500	0.661955	140.8	7858.7
203	1550	0.67449	141.254	8904.16
204	1700	0.68396	141.722	10066.9
205	1897	0.696684	142.208	11388.5
206	1900	0.709522	142.711	12736.6
207	2000	0.719228	143.228	14175
208	2000	0.732275	143.765	15639.6
209	2133	0.745449	144.32	17229.6
210	2150	0.755415	144.891	18853.8
211	2200	0.768821	145.482	20545.2
212	2300	0.782366	146.094	22344.6
213	2350	0.792618	146.722	24207.3
214	2360	0.806422	147.373	26110.4
215	2367	0.820379	148.046	28052.3
216	2400	0.834498	148.742	30055.1
217	2400	0.845198	149.456	32083.5

218	2460	0.859618	150.195	34198.2
219	2500	0.874218	150.96	36383.7
220	2500	0.885291	151.743	38597
221	2500	0.900227	152.554	40847.5
222	2510	0.915365	153.392	43145.1
223	2520	0.926859	154.251	45480.8
224	2550	0.942375	155.139	47883.9
225	2620	0.958125	156.057	50394.1
226	2630	0.970094	156.998	52945.5
227	2650	0.986272	157.971	55559.1
228	2650	1.00271	158.976	58216.3
229	2650	1.01943	160.015	60917.8
230	2700	1.03215	161.081	63704.6
231	2700	1.04939	162.182	66537.9
232	2700	1.06694	163.32	69418.7
233	2700	1.08032	164.487	72335.5
234	2750	1.09847	165.694	75356.3
235	2767	1.11699	166.942	78447
236	2790	1.13113	168.221	81602.9
237	2900	1.15035	169.544	84938.9
238	2900	1.17	170.913	88331.9
239	2900	1.18504	172.318	91768.5
240	2933	1.20553	173.771	95304.3
241	2940	1.22653	175.275	98910.3
242	2950	1.24264	176.819	102576
243	2950	1.26464	178.419	106307
244	2967	1.28727	180.076	110126
245	3000	1.31058	181.793	114058
246	3000	1.32854	183.558	118044
247	3050	1.35317	185.39	122171
248	3050	1.37866	187.29	126376
249	3050	1.39838	189.246	130641
250	3100	1.42554	191.278	135060
251	3150	1.4538	193.391	139639
252	3200	1.47579	195.569	144362
253	3200	1.50626	197.838	149182
254	3200	1.5382	200.204	154104
255	3240	1.56322	202.648	159169
256	3250	1.59819	205.202	164363
257	3267	1.63524	207.876	169705
258	3300	1.67466	210.681	175232
259	3400	1.70604	213.591	181032
260	3400	1.75069	216.656	186985
261	3460	1.79912	219.893	193210
262	3600	1.83843	223.273	199828
263	3600	1.8957	226.866	206652
264	3630	1.95996	230.708	213767
265	3650	2.01409	234.764	221119
266	3800	2.09693	239.162	229087
267	3870	2.19728	243.99	237590
268	4000	2.29036	249.235	246752
269	4300	2.45727	255.274	257318

Sample Standard Deviation = 1216.34
Numerator = 6.62126e+010
Denominator = 1.01594e+011 = 269 255.274
W Statistic = 0.651738

5% Critical value of 0.976 exceeds 0.651738
Evidence of non-normality at 95% level of significance
1% Critical value of 0.967 exceeds 0.651738
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 = 2.96296%
Number of comparisons = 4
Future Samples (k) = 4
Recent Dates = 1
Background Samples (n) = 69
Maximum Background Concentration = 880
Confidence Level = 94.5%
False Positive Rate = 5.5%

Well	Date	Samples	Mean	Impacted
MW#93-2	2/27/2018	1	3870	TRUE
MW#93-3	2/27/2018	1	64.2	FALSE
MW#03-1	2/27/2018	1	12.6	FALSE
MW#03-2	2/27/2018	1	468	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) = 70
Maximum Baseline Concentration = 4340
Confidence Level = 98.6%
False Positive Rate = 1.4%

Baseline Samples	Date	Result
	12/15/1994	2000
	3/14/1995	1550
	6/21/1995	185
	12/14/1995	2367
	3/6/1996	2150
	4/25/1996	2000
	10/2/1996	3267
	12/10/1996	4000
	3/11/1997	1700
	4/15/1997	1500
	8/14/1997	3650
	12/4/1997	4300
	3/31/1998	2500
	6/23/1998	3250
	8/11/1998	3050
	12/8/1998	3050
	3/9/1999	3600
	6/8/1999	3150
	8/19/1999	1897
	12/14/1999	2500
	3/7/2000	3400
	6/23/2000	3400
	12/12/2000	3000
	3/27/2001	2133
	6/28/2001	2750
	9/10/2001	2650
	12/18/2001	2950
	3/19/2002	2967
	6/26/2002	3050
	9/18/2002	2900
	12/11/2002	2933
	3/13/2003	2900
	6/25/2003	2700
	9/26/2003	2767
	12/10/2003	2700
	3/9/2004	2550
	6/24/2004	2650
	9/15/2004	2700
	12/15/2004	2950
	3/16/2005	3200
	6/15/2005	2650

9/21/2005	3200
12/21/2005	3200
3/15/2006	3000
6/21/2006	2700
12/20/2006	2500
2/21/2007	1900
6/12/2007	2400
12/17/2007	3100
6/11/2008	2350
12/3/2008	3300
12/15/2008	2400
6/17/2009	2300
12/9/2009	2200
6/17/2010	2900
12/22/2010	3460
6/29/2011	2630
12/7/2011	2520
6/6/2012	2360
12/12/2012	3240
6/19/2013	2510
12/11/2013	2460
6/11/2014	2790
12/3/2014	2940
6/17/2015	114
12/1/2015	3600
6/22/2016	2620
12/20/2016	3800
6/6/2017	3630
11/7/2017	4340

Date	Samples	Mean	Impacted
2/27/2018	1	3870	FALSE

Attachment 3

Groundwater Sampling and Analysis Data

GRDA GROUNDWATER SAMPLING

DATE: 02/27/18

Logbook Entry By: WSH
Reviewed By:
Final Review By:

Well Number	Total Depth	TOC Elev.	Depth to Water Level	Stabilized Water Level
MW93-1	15.6'	619.83	10.5	609.33
MW93-2	22.2'	607.62	7.7	599.92
MW93-3	27.3'	608.10	12.6	595.50
MW03-1	12.3'	602.87	7.3	595.57
MW03-2	26.9'	607.82	15.0	592.82
F0-8				

Well Number	Date Sampled	Time Sampled	Sampler
MW93-1	2/27/18	907	MB
MW93-2	2/27/18	923	MB
MW93-3	2/27/18	934	MB
MW03-1	2/27/18	958	MB
MW03-2	2/27/18	941	MB
F0-8	2/27/18	1025	MB

Well Number	Date Sample Analyzed	Time Sample Analyzed	Analyst	Temp. ° C	pH	Specific Conductivity	ORP mv	Fluoride mg/L	Boron mg/L
MW93-1	2/27/18	907	MB	16.4	6.47	1235	26.2	0.160	0.330
MW93-2	2/27/18	923	MB	16.2	9.04	10.90	-12.5	< .10	0.064
MW93-3	2/27/18	934	MB	17.6	6.49	2,372	8.1	0.210	0.089
MW03-1	2/27/18	958	MB	13.2	6.81	186.1	-1.2	0.100	0.050
MW03-2	2/27/18	941	MB	17.2	6.47	2,080	13.4	0.120	< .05
F0-8	2/27/18	1025	MB	12.00	7.10	740	15.6		

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	15.6	< .25	299	0.006	0.023	211.00	< .010	< .075	< .25	< .005	59.6	384	29.3	595	< .025	830	3.85	858
MW93-2	1270	< .25	3870	0.024	0.055	74.70	0.031	0.088	195	0.026	2220	282	92.1	207	0.302	7560	12.8	8240
MW93-3	435	2.13	64.2	< .005	0.246	91.80	0.013	< .075	3.38	0.006	272	368	18.6	316	0.044	1190	2.89	1250
MW03-1	1.07		12.6	< .005							16.8	72						
MW03-2	247		468	0.008							104	196						