Rio Algom Mining LLC

April 19, 2010

CERTIFIED MAIL (7006 0100 0002 9977 4936)

Mr. Larry Shore
Groundwater Section
New Mexico Environment Department
P.O. Box 26110
Santa Fe, NM 87502

Re: **Discharge Plan - 169**
2009 Annual Report

Dear Mr. Schoeppner,

Please find attached Rio Algom Mining LLC's 2009 annual groundwater monitoring report for the above referenced discharge permit. This annual report for the Ambrosia Lake facility was prepared pursuant to the New Mexico Environment Department (NMED) approved plan, Discharge Plan - 169, dated November 15, 1995.

If you have any questions or need additional information, please call me at 287-8851, ext 15.

Regards,

Chuck Wentz

Chuck Wentz
Radiation Safety Officer
Environmental Department Supervisor

Attachment: As stated

xc: NRC (MD) – License SUA-1473, Docket No. 40-8905
D. Traub (DOE-GJO)
file

NM5501

RIO ALGOM MINING LLC - AMBROSIA LAKE FACILITY

DISCHARGE PLAN - 169
2009 ANNUAL REPORT

Review of Discharge Plan - 169

Discharge Permit DP-169 establishes monitoring requirements for the alluvium that has been affected as a result of byproduct material disposal at the Ambrosia Lake site. Additionally, alluvial remediation is to be consistent with that prescribed under the NRC groundwater program.

Progress towards remediation of the alluvium continued throughout 2006 with the site obtaining the Alternate Concentration Limits (ACL) as part of the NRC approved groundwater remediation for the site. The NRC program for the alluvium was consistent with the program established under DP-169. The ACLs established for the site address byproduct material seepage from the tailings disposal area; it includes hazardous constituents as well as non-hazardous constituents. The ACLs for the alluvium, which were established through review and consultation between NRC, NMED and Rio Algom, are presented in Table 1.

Table 1
NRC Approved Alternate Concentration Limits
Alluvium

Constituent	ACL		Constituent	ACL
molybdenum	176 mg/l		sulfate	12,000 mg/l
nickel	98 mg/l		total dissolved solids	26,100 mg/l
selenium	49 mg/l		gross alpha	8,402 pCi/l
natural uranium	23 mg/l		lead-210	1,274 pCi/l
chloride	7,110 mg/l		radium-226 & -228	3,167 pCi/l
nitrate	351 mg/l		thorium-230	13,627 pCi/l

The operation of the interceptor trench, located along the toe of tailings impoundment #1, has been discontinued and backfilled. The interceptor trench effectively isolated the tailings impoundment and its solutions from the down dip alluvial material. The ACL modeling projected that closure of the trench would result in the residual seepage migrating into the down dip alluvium. The seepage would then be observed within monitoring wells adjacent to the former interceptor trench. Based on the well data for these adjacent wells, this appears to be confirmed.

Modeling predictions project that the alluvium will drain/dewater within 65 years. Field observations has provided supporting data to the model with alluvial wells indicating an average drop in water level of 3.3 feet with a maximum drop of approximately 13 feet observed for wells located away from the intercept trench. Water elevation drops were from 2006 to 2009. As described above, Rio Algom anticipated that a slight water level rise would be expected in wells located close to the trench following cessation of pumping. The average increase in water level for these few wells was 2.2 feet. The water level contour map for the alluvium is contained in Appendix E.

The 2009 monitoring results for the alluvium are contained in Appendix A. Additionally, a computer diskette containing the 2009 data for the alluvial wells is included.

Appendix B presents the time versus concentration plots for the parameters chloride, sulfate, and total dissolved solids (TDS).

From 1995 to 2005, the nitrate concentration for well 32-43 averaged 230 milligrams per liter. In 2006, the nitrate concentration observed in monitor well 32-43 increased dramatically (2006 average was 625 mg/L). Rio Algom believed that the historic and 2006 nitrate levels in the well did not reflect concentrations associated with the tailings; since other wells, including those located closer to the tailings disposal areas, have historically indicated minimal nitrate concentrations.

The anomalous increase in 2006 coincides with well cleaning activities performed at well 32-43 in April 2006. While cleaning the well using air to lift out water and accumulated sediment, field personnel observed the evacuated water drained down an animal burrow that was located next to the well. The discovery of this subsurface drainage back to the well appears to indicate that the well integrity may have been compromised for some time as the water recycled back into the well via the burrow and annulus. A replacement well, 32-43N, was installed in close proximity of the existing compromised well in July 2007. Sampling of this well has shown the average nitrate concentration for the remainder of 2007 to be 0.11 mg/L. The average nitrate value for 2009 was 10.2 mg/L.

Appendix C contains the current water level contour map for the alluvial unit. The water level map was developed using the depth to water measurements from the alluvial monitoring wells and the groundwater saturation limits. Appendix D contains the current TDS contour map for the alluvium as required by the Discharge Plan.

APPENDIX A

ANALYTICAL RESULTS - 2009
ALLUVIAL WELLS

RIO ALGOM MINING LLC

DISCARGE PLAN DP- 169 - - - ANALYTICAL RESULTS - - - 1ST HALF 2009

	Monitor Well	Date	Depth to Water (ft)	Total Depth (ft)	Spec. Cond. (µS/cm)	Temp (C)	pH	Chloride (mg/l)	Nitrate (mg/l)	Sulfate (mg/l)	TDS (mg/l)
#	30-03	3-Mar-09		17.91							
#	30-04	3-Mar-09		31.89							
#	30-46	2-Mar-09		38.21							
	30-47	2-Feb-09	40.13	77.97	5010	12.1	6.5	850	No Detect	1730	3950
	30-48	2-Feb-09	47.19	73.27	4580	11.9	6.47	810	No Detect	1900	4040
	30-49	2-Feb-09	55.10	67.65	5140	12.3	7.24	860	No Detect	2310	4590
#	30-53	2-Mar-09		49.87							
#	30-68	2-Mar-09		63.17							
	31-05	2-Mar-09	38.38	63.17	5630	13.7	7.8	520	3.6	3300	5160
!	31-61	19-Jan-09	11.61	27.7	1108	11.8	6.48	1800	3.62	4400	11500
	31-61	11-May-09	11.47	27.7	9590	12.8	6.34	2080	16.7	4800	11800
	31-65	19-Jan-09	14.82	45.95	8940	11.7	6.93	1430	0.02	3500	9010
	31-65	11-May-09	14.74	45.95	8230	13.4	6.75	1440	1.44	3900	9580
	31-70	2-Mar-09	25.73	31.74	7101	13.4	6.6	570	14	4300	7700
	31-71	2-Mar-09	35.15	62.98	4790	14.4	7.13	610	3.7	2510	4890
	32-01	3-Mar-09	16.41	52.12	2810	12.3	7.38	36	0.04	1170	1850
	32-02	8-Feb-05	42.57	58.28	2590	13.1	7.25	290	No Detect	910	1880
	32-41	3-Mar-09	33.24	60.37	5420	11.9	7.78	1180	0.03	1270	3500
#	32-42	3-Feb-09		21.72							
	32-43N	3-Feb-09	20.52	76.18	8230	12.2	7.2	1290	10	3100	8240
	32-51	3-Feb-09	29.24	74.56	5060	13.7	7.35	370	10.1	2870	4990
	32-52	3-Feb-09	29.26	66.18	3450	12.7	8.7	240	0.2	1240	2380
#	32-56	2-Feb-09		57.27							
	32-57	2-Feb-09	41.40	53.12	6120	11.9	7.22	550	10.3	2910	5180
	32-58	2-Feb-09	12.60	34.16	5730	11.7	7.12	930	9.6	2000	4690
	32-59	19-Jan-09	15.21	27.9	4830	13.5	7.31	590	-0.02	1910	4160
	32-59	5-May-09	15.66	27.9	4890	12.5	7.28	560	-0.02	1900	4150
	32-60	3-Mar-09	12.14	27.45	9560	11.4	6.69	1440	0.22	4140	9320
	32-69	2-Mar-09	45.34	78.21	4400	13.8	7.21	530	0.45	1990	3950
	32-72	3-Feb-09	15.81	40	6100	12.9	7.04	880	8.6	2520	5370
	5-01	3-Feb-09	24.16	44.45	4200	11.7	9.21	350	No Detect	2440	3930
	5-02	3-Feb-09	21.67	38.24	3430	11.7	8.31	860	0.3	230	1570
	5-03	19-Jan-09	21.10	41.44	4390	13.1	9.05	500	0.09	1850	3680
	5-03	5-May-09	21.56	41.44	4310	13.3	7.39	470	0.04	1700	3540
	5-04	12-Jan-09	18.38	64.13	4310	12.6	8.02	490	0.03	2100	3520
	5-04	5-May-09	18.81	64.13	4490	13.5	7.39	530	0.02	2100	3970
	5-08	12-Jan-09	37.72	87.33	4090	12.1	6.59	450	0.02	1700	3520
	5-08	5-May-09	32.39	87.34	4190	12.9	6.7	470	0.03	1800	3470
	5-73	12-Jan-09	13.31	31.42	5170	11.5	7.18	750	0.10	1900	4080
	5-73	5-May-09	13.77	31.42	5100	11.9	7.26	730	0.08	1700	4180
	AW-1	3-Mar-09	46.83	81.11	5350	12.1	7.08	610	0.71	2490	4800
	AW-2	2-Feb-09	31.10	85.83	4930	12.5	7.42	340	1.92	2530	4730
#	MW-24	12-Jan-09		50.11							
#	MW-24	12-May-09		50.11							
	S-12	3-Mar-09	11.46	27.89	9340	12.7	6.99	1300	0.52	4590	9510
	S-9	2-Feb-09	8.47	22.84	9930	11.8	8.98	2430	No Detect	4100	9970

Notes: # - Dry Well

! - It is believed that the specfic conductivity for Well No. 31-61 on 19Jan09 should be 11080.
Proper instrument reading and reporting has been reviewed with the personnel performing the tests.

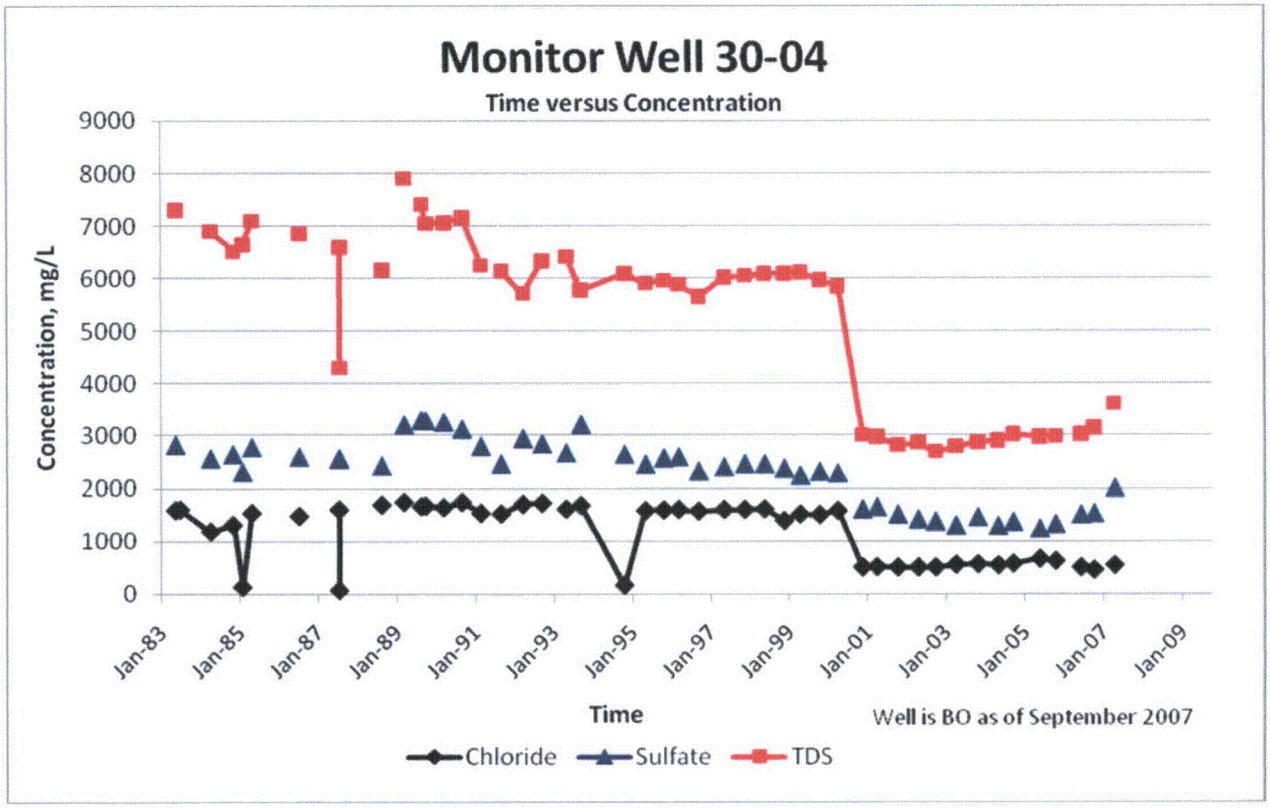
RIO ALGOM MINING LLC

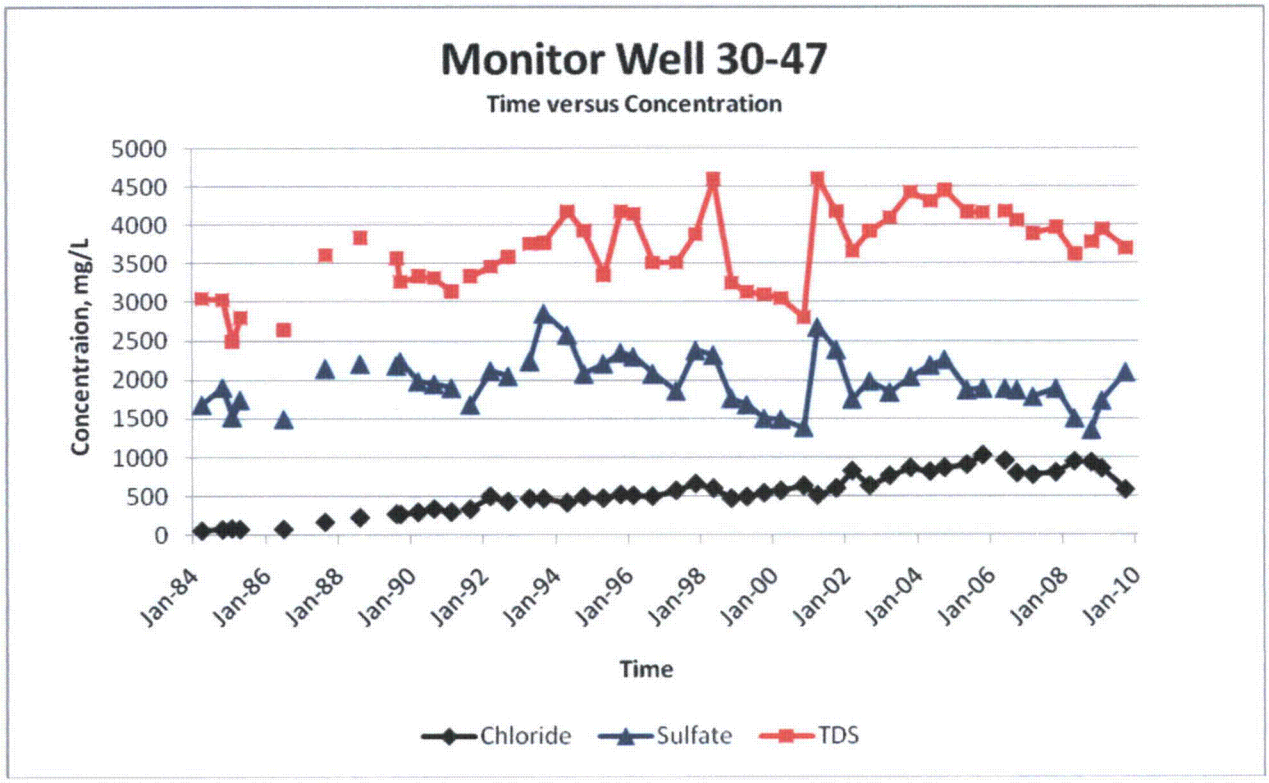
DISCHARGE PLAN DP-169 - - - ANALYTICAL RESULTS - - - 2ND HALF 2009

Monitor Well	Sample Date	Depth To Water	Total Depth	Specific Cond. (µS/cm)	Temp. (C)	pH Std. Units	Chloride (mg/l)	Nitrate (mg/l)	Sulfate (mg/l)	TDS (mg/l)
30-03	09-Oct-09	Dry	17.90							
30-04	09-Oct-09	Dry	22.68							
30-46	06-Oct-09	Dry	38.23							
30-47	28-Sep-09	38.86	77.96	4870	14.6	6.83	580	0.04	2100	3700
30-48	28-Sep-09	46.10	73.27	5000	15.2	6.40	830	0.02	2000	3920
30-49	28-Sep-09	56.30	67.65	5760	15.6	7.18	770	0.11	2500	4570
30-53	06-Oct-09	Dry	49.86							
30-68	06-Oct-09	Dry	63.17							
31-05	06-Oct-09	39.81	63.93	6040	12.8	7.42	500	0.14	3100	5290
31-61	31-Aug-09	11.25	27.72	12770	15.0	6.55	1910	26.4	4300	11300
31-61	02-Nov-09	13.08	29.37	13620	15.1	6.57	3350	0.26	5000	13000
31-65	31-Aug-09	14.65	46.03	11540	13.1	6.50	1550	1.2	4100	10100
31-65	02-Nov-09	14.90	46.04	11440	13.8	6.61	1820	1.25	3900	10400
31-70	29-Sep-09	26.37	31.73	7910	15.2	6.64	560	11	3980	7140
31-71	29-Sep-09	35.64	62.99	5690	14.6	7.19	600	8.6	2510	4780
32-01	06-Oct-09	16.39	52.08	2260	14.4	7.56	62	-0.02	1200	1920
32-02	22-Sep-09	43.86	58.30	3970	13.2	7.04	17	0.03	70	230
32-41	06-Oct-09	33.84	60.33	5220	13.5	9.04	1130	-0.02	1300	3310
32-42	09-Oct-09	Dry	21.73							
32-42	09-Oct-09	Dry	21.73							
32-43N	29-Sep-09	20.80	76.20	9260	14.9	7.21	1290	10.3	3670	8210
32-51	06-Oct-09	29.77	74.62	5560	12.6	7.57	360	15.4	2900	5030
32-52	29-Sep-09	29.59	66.18	3600	14.4	8.72	250	0.15	1320	2490
32-56	29-Sep-09	Dry	57.24							
32-57	29-Sep-09	42.06	53.17	6430	14.6	7.09	480	11.6	3000	5230
32-58	29-Sep-09	11.53	34.16	7330	15.0	6.85	1430	13	1870	5290
32-59	18-Aug-09	15.16	27.94	5630	15.3	7.12	570	0.18	1900	4140
32-59	02-Nov-09	15.55	27.92	5270	14.4	7.34	620	-0.02	1800	4220
32-60	06-Oct-09	11.83	27.44	11210	15.4	6.56	1680	-0.02	4600	10300
32-69	29-Sep-09	46.52	78.23	4950	14.6	7.03	530	1.17	2050	3990
32-72	22-Sep-09	15.62	40.01	6480	15.1	6.95	790	5.37	2550	5320
5-01	22-Sep-09	24.62	44.45	4600	13.9	9.16	310	-0.02	2440	3950
5-02	22-Sep-09	22.17	38.24	1516	14.2	7.36	216	0.16	20	730
5-03	18-Aug-09	21.23	41.45	4870	16.0	7.26	480	0.06	1700	3530
5-03	02-Nov-09	21.61	41.48	4640	14.6	7.42	570	0.07	1710	3560
5-04	17-Aug-09	16.69	64.12	5390	15.8	7.25	550	0.11	2000	4590
5-04	02-Nov-09	18.11	64.13	5370	14.4	7.21	680	-0.02	2300	4530
5-08	17-Aug-09	31.67	87.32	4580	16.1	6.59	480	-0.02	1800	3520
5-08	02-Nov-09	31.41	87.32	4400	13.3	6.61	510	-0.02	1820	3510
5-73	17-Aug-09	14.13	31.42	3810	15.8	7.07	480	0.12	1070	2640
5-73	02-Nov-09	13.97	31.42	5460	13.9	7.29	930	0.1	1710	4190
AW-1	22-Sep-09	48.16	81.10	6080	13.5	6.95	590	1.32	2730	5060
AW-2	29-Sep-09	31.39	85.82	5310	14.1	7.32	320	1.56	2740	4760
MW-24	31-Aug-09	Dry								
MW-24	03-Nov-09	Dry	50.11							
S-12	06-Oct-09	11.11	27.74	10560	14.5	7.14	1600	0.06	4400	9470
S-9	22-Sep-09	8.13	22.85	12060	15.5	8.74	2240	0.05	4100	10200

APPENDIX B

TIME vs CONCENTRATION PLOTS
ALLUVIAL WELLS


Monitor Well 30-04
Time versus Concentration
Concentration, mg/L
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
Jan-83
Jan-85
Jan-87
Jan-89
Jan-91
Jan-93
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Time
Well is BO as of September 2007
Chloride
Sulfate
TDS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Time versus Concentration
Concentraion, mg/L
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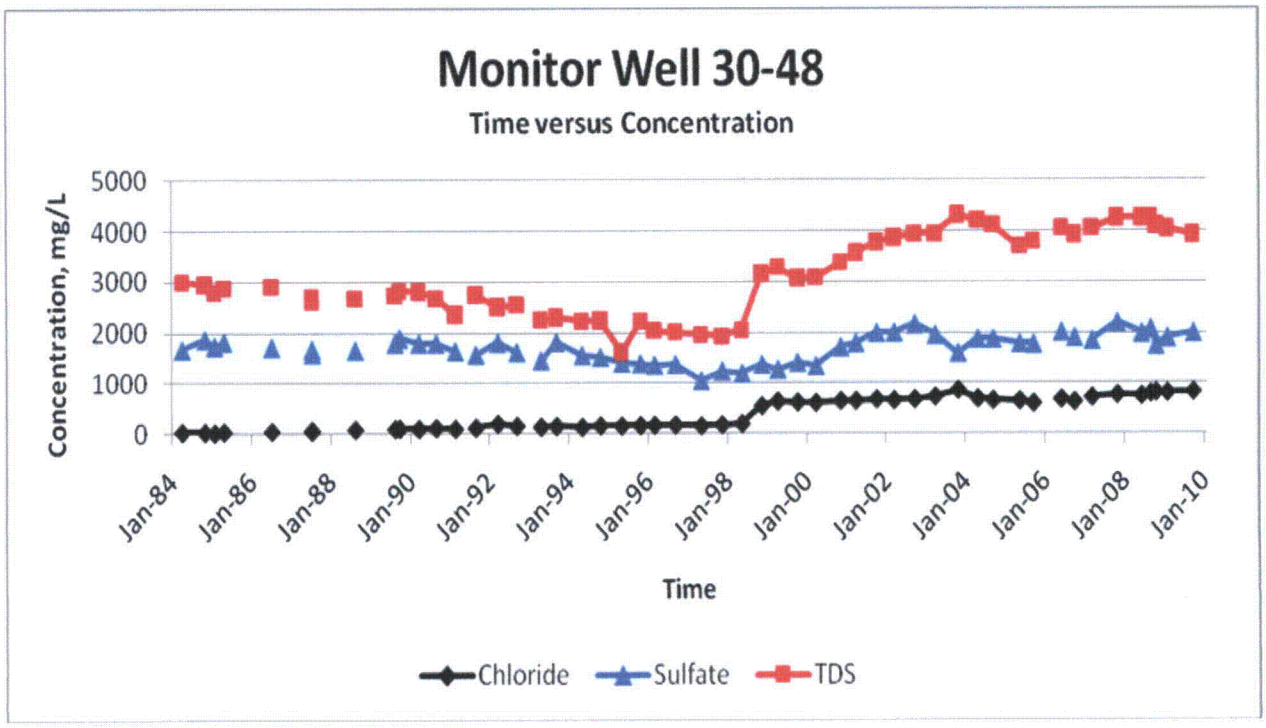
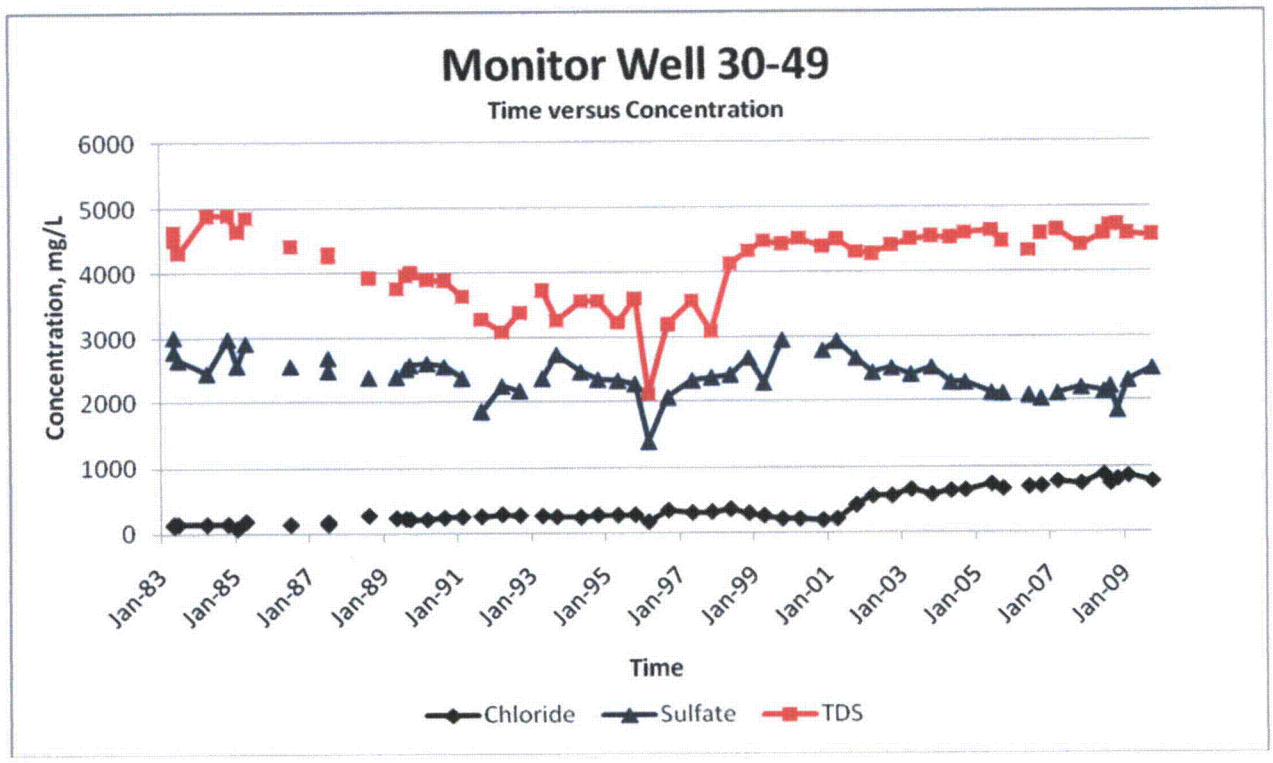
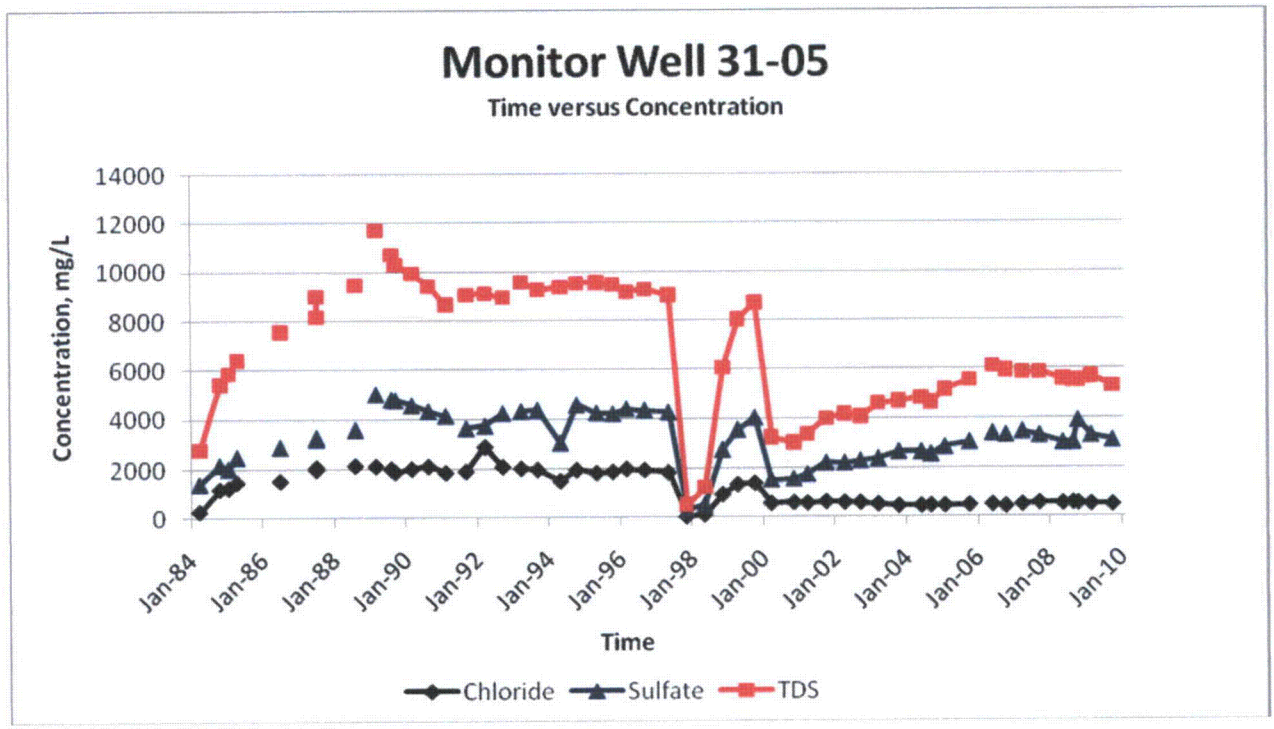
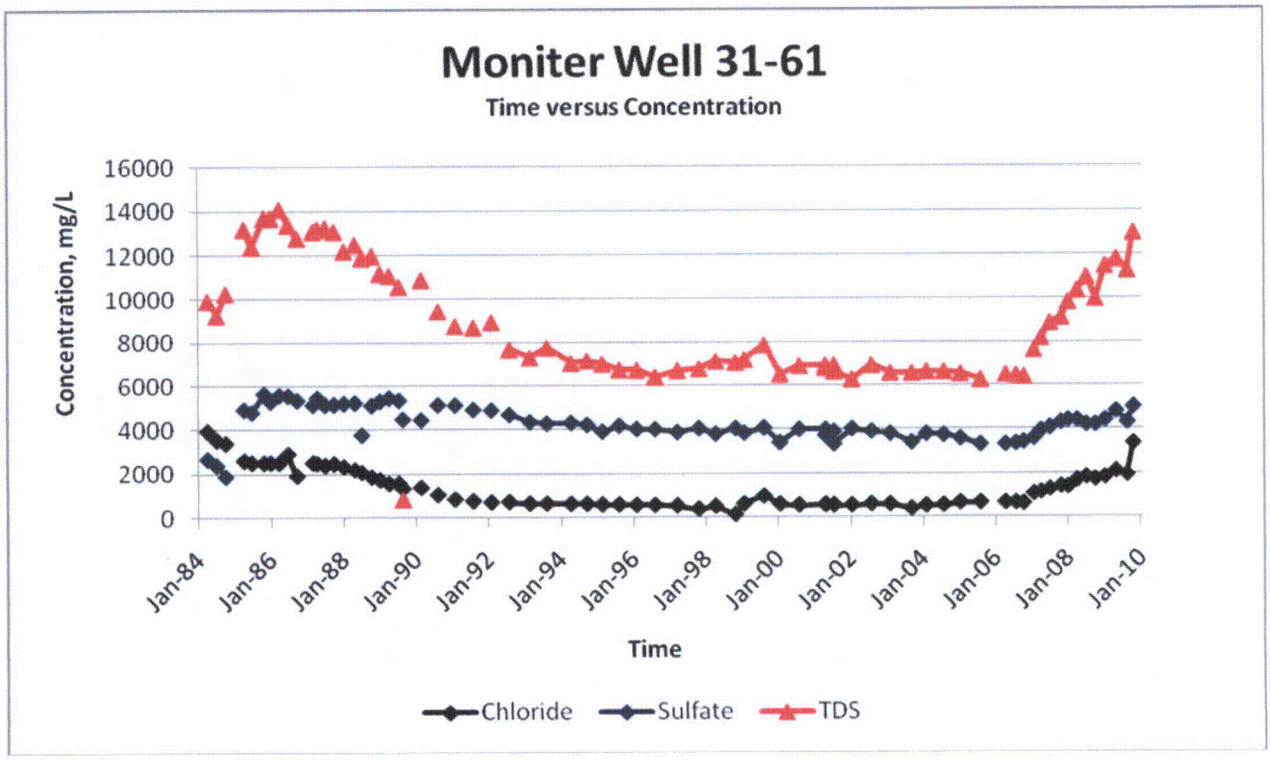
4500
4000
3500
3000
2500
2000
1500
1000
500
0
Jan-84
Jan-86
Jan-88
Jan-90
Jan-92
Jan-94
Jan-96
Jan-98
Jan-00
Jan-02
Jan-04
Jan-06
Jan-08
Jan-10
Time
Chloride
Sulfate
TDS


Monitor Well 30-48
Time versus Concentration
Concentration, mg/L
5000
4000
3000
2000
1000
0
Jan-84
Jan-86
Jan-88
Jan-90
Jan-92
Jan-94
Jan-96
Jan-98
Jan-00
Jan-02
Jan-04
Jan-06
Jan-08
Jan-10
Time
Chloride
Sulfate
TDS


Monitor Well 30-49
Time versus Concentration
Concentration, mg/L
6000
5000
4000
3000
2000
1000
0
Jan-83
Jan-85
Jan-87
Jan-89
Jan-91
Jan-93
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Time
Chloride
Sulfate
TDS


Monitor Well 31-05
Time versus Concentration
Concentration, mg/L
14000
12000
10000
8000
6000
4000
2000
0
Jan-84
Jan-86
Jan-88
Jan-90
Jan-92
Jan-94
Jan-96
Jan-98
Jan-00
Jan-02
Jan-04
Jan-06
Jan-08
Jan-10
Time
Chloride
Sulfate
TDS


Moniter Well 31-61
Time versus Concentration
Concentration, mg/L
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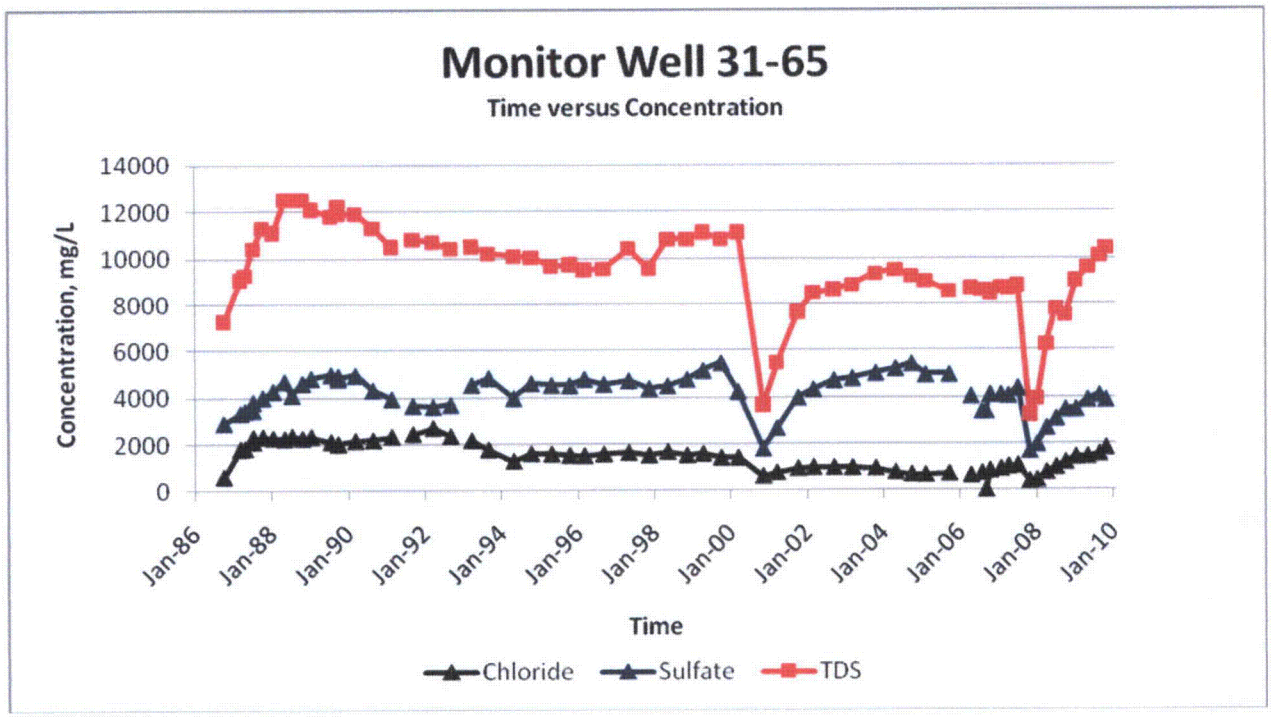
14000
12000
10000
8000
6000
4000
2000
0
Jan-84
Jan-86
Jan-88
Jan-90
Jan-92
Jan-94
Jan-96
Jan-98
Jan-00
Jan-02
Jan-04
Jan-06
Jan-08
Jan-10
Time
Chloride
Sulfate
TDS


Monitor Well 31-65
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Concentration, mg/L
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12000
10000
8000
6000
4000
2000
0
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Jan-88
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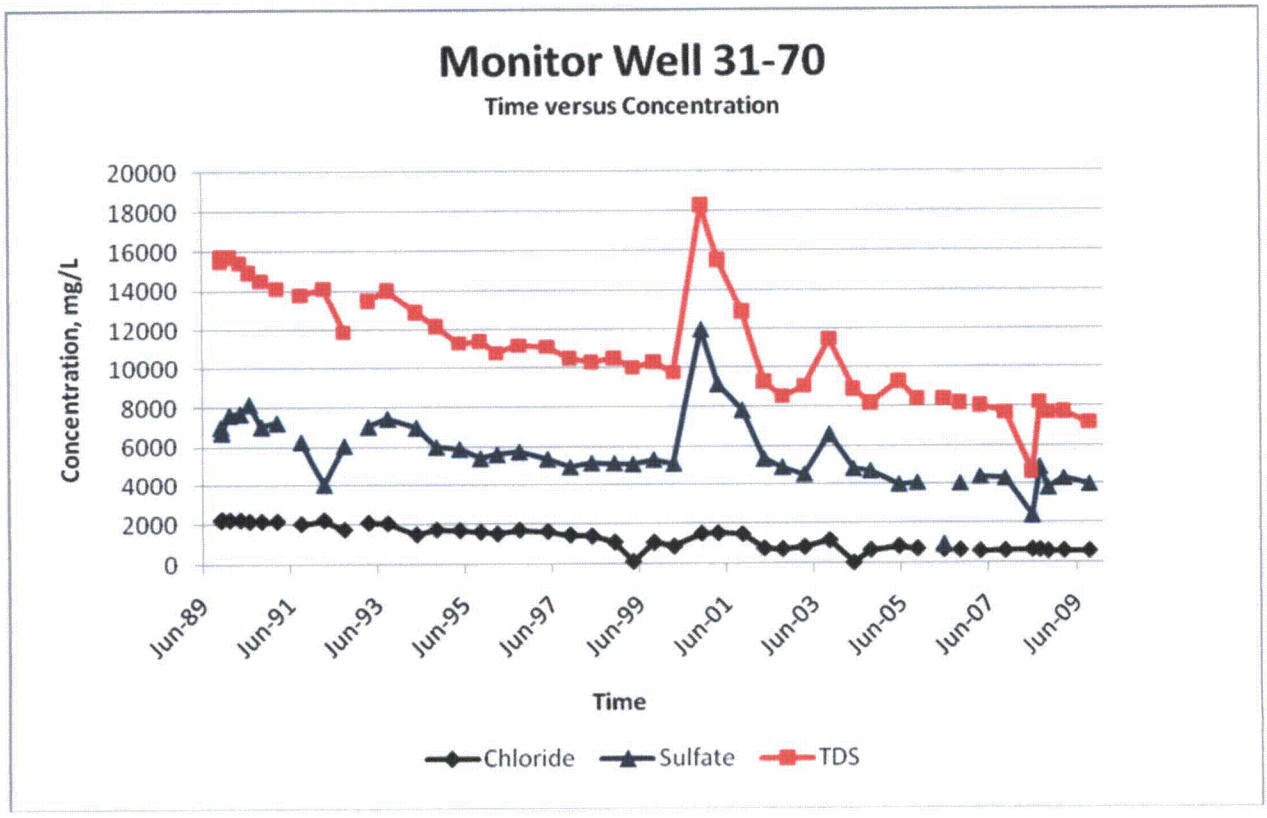
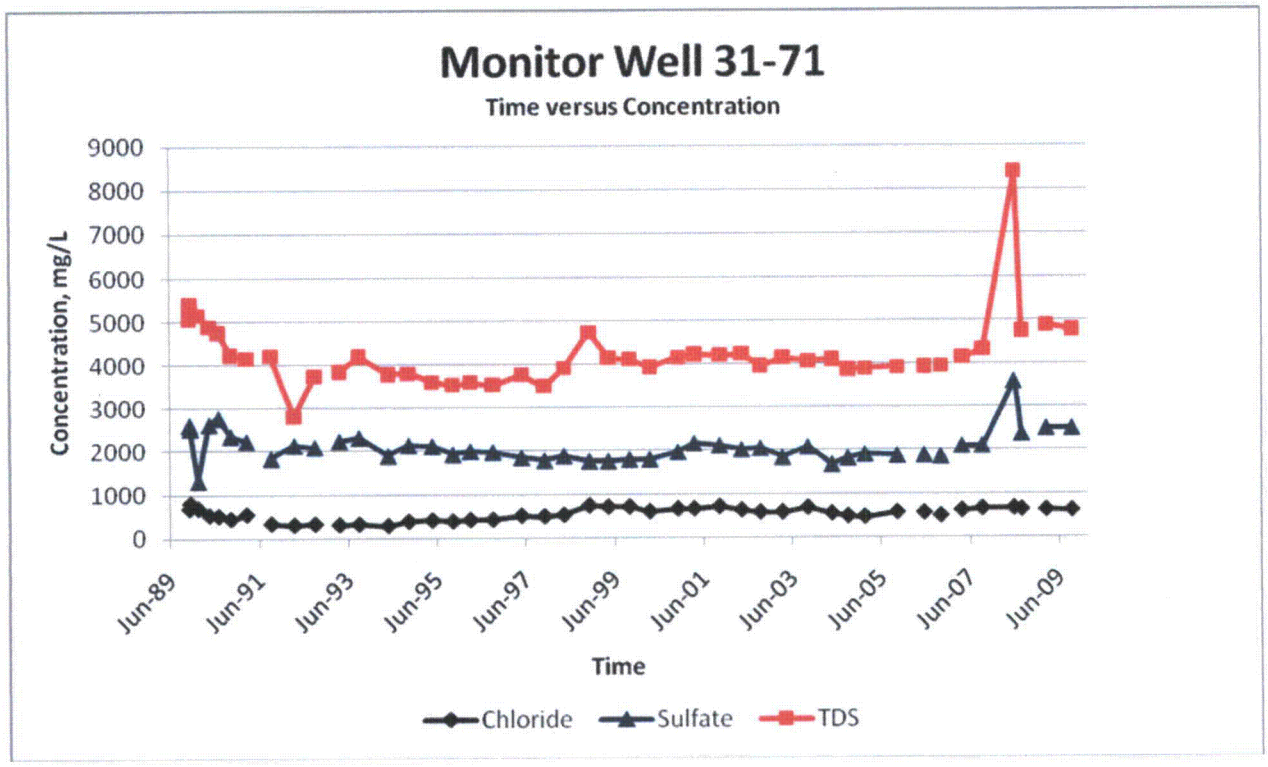
Jan-92
Jan-94
Jan-96
Jan-98
Jan-00
Jan-02
Jan-04
Jan-06
Jan-08
Jan-10
Time
Chloride
Sulfate
TDS


Monitor Well 31-70
Time versus Concentration
Concentration, mg/L
20000
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
Jun-89
Jun-91
Jun-93
Jun-95
Jun-97
Jun-99
Jun-01
Jun-03
Jun-05
Jun-07
Jun-09
Time
Chloride
Sulfate
TDS


Monitor Well 31-71
Time versus Concentration
Concentration, mg/L
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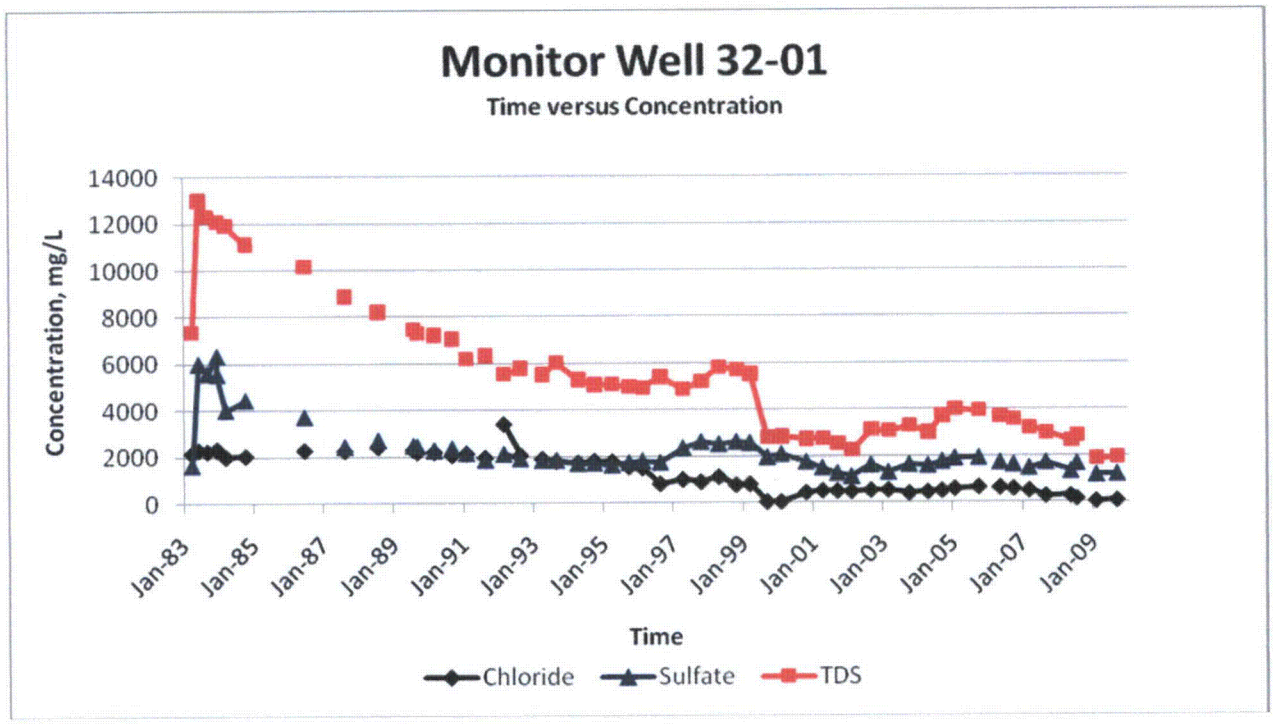
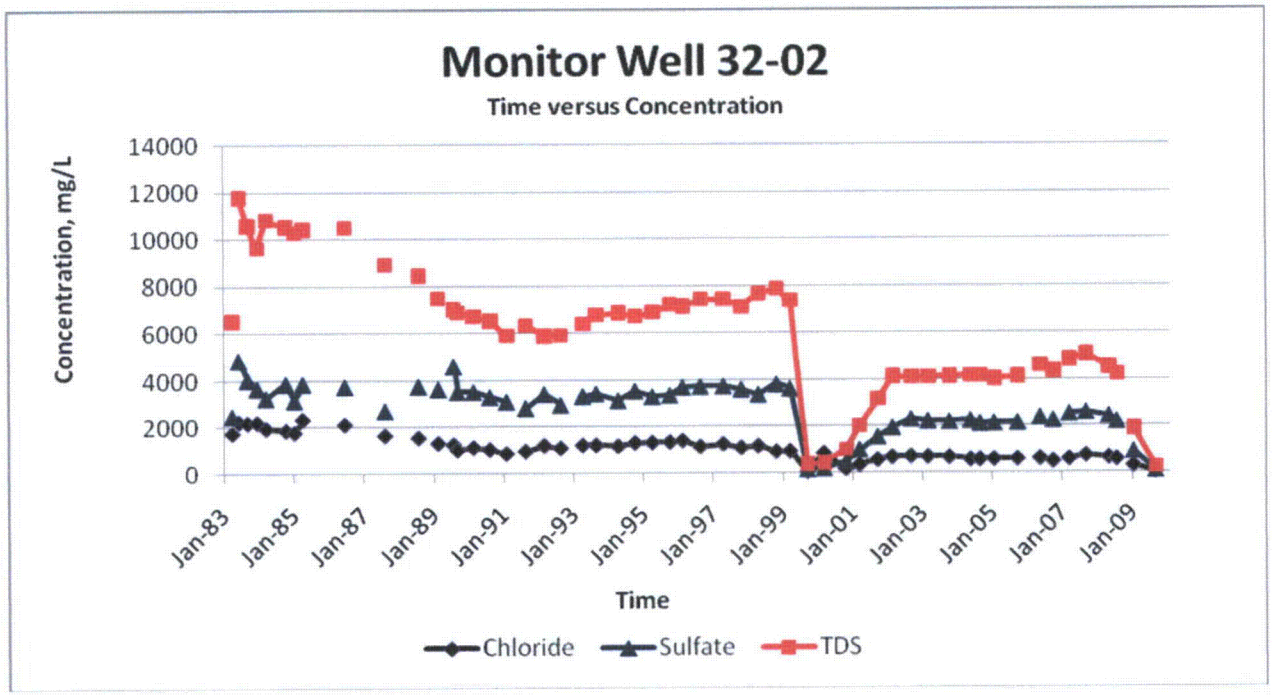
8000
7000
6000
5000
4000
3000
2000
1000
0
Jun-89
Jun-91
Jun-93
Jun-95
Jun-97
Jun-99
Jun-01
Jun-03
Jun-05
Jun-07
Jun-09
Time
Chloride
Sulfate
TDS


Monitor Well 32-01
Time versus Concentration
Concentration, mg/L
14000
12000
10000
8000
6000
4000
2000
0
Jan-83
Jan-85
Jan-87
Jan-89
Jan-91
Jan-93
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Time
Chloride
Sulfate
TDS


Monitor Well 32-02
Time versus Concentration
Concentration, mg/L
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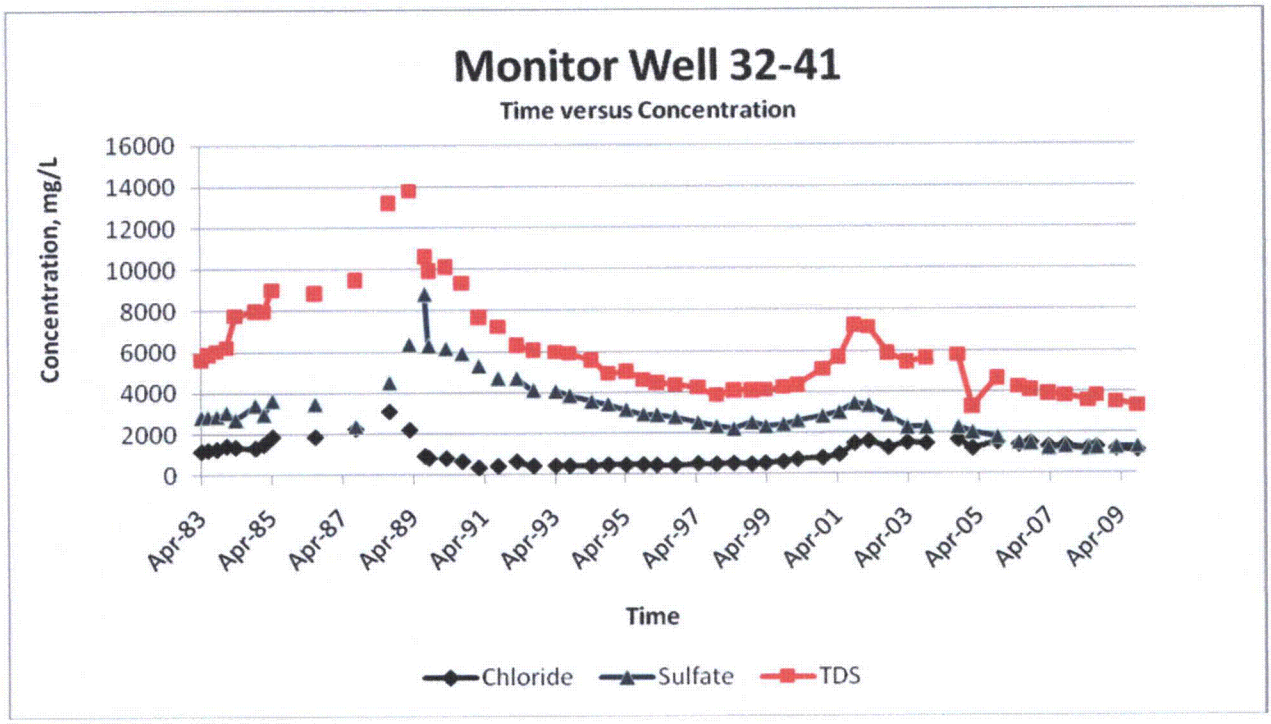
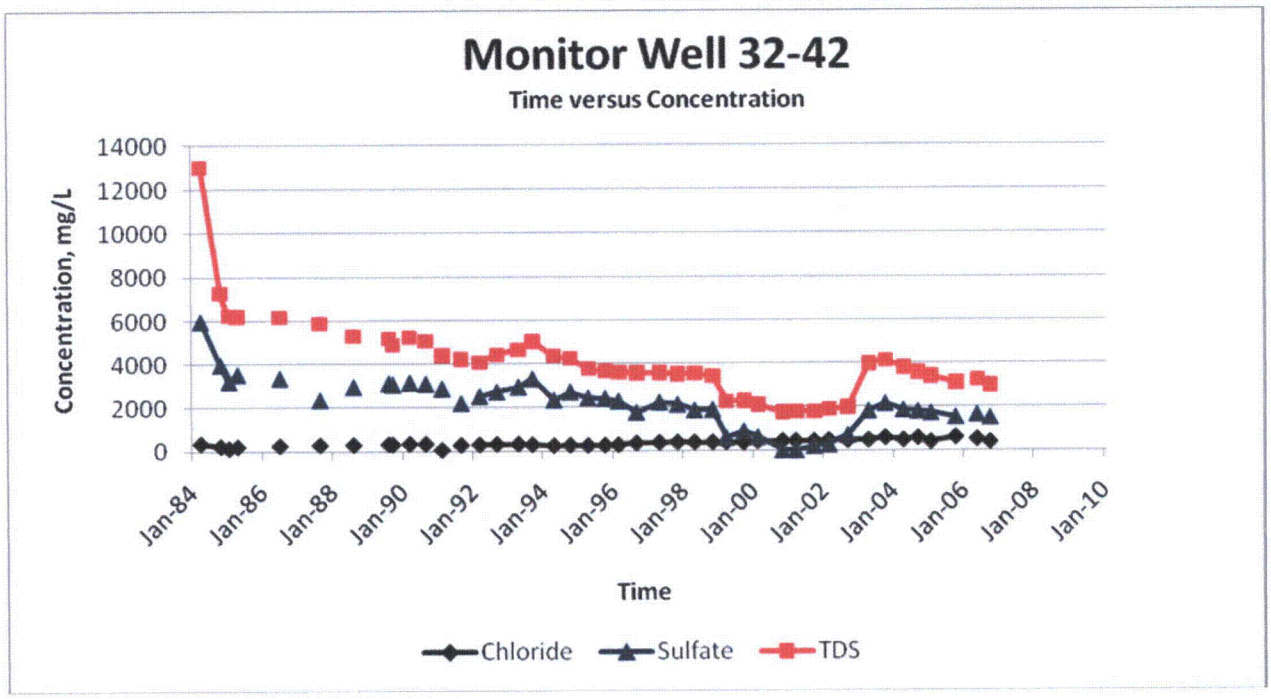
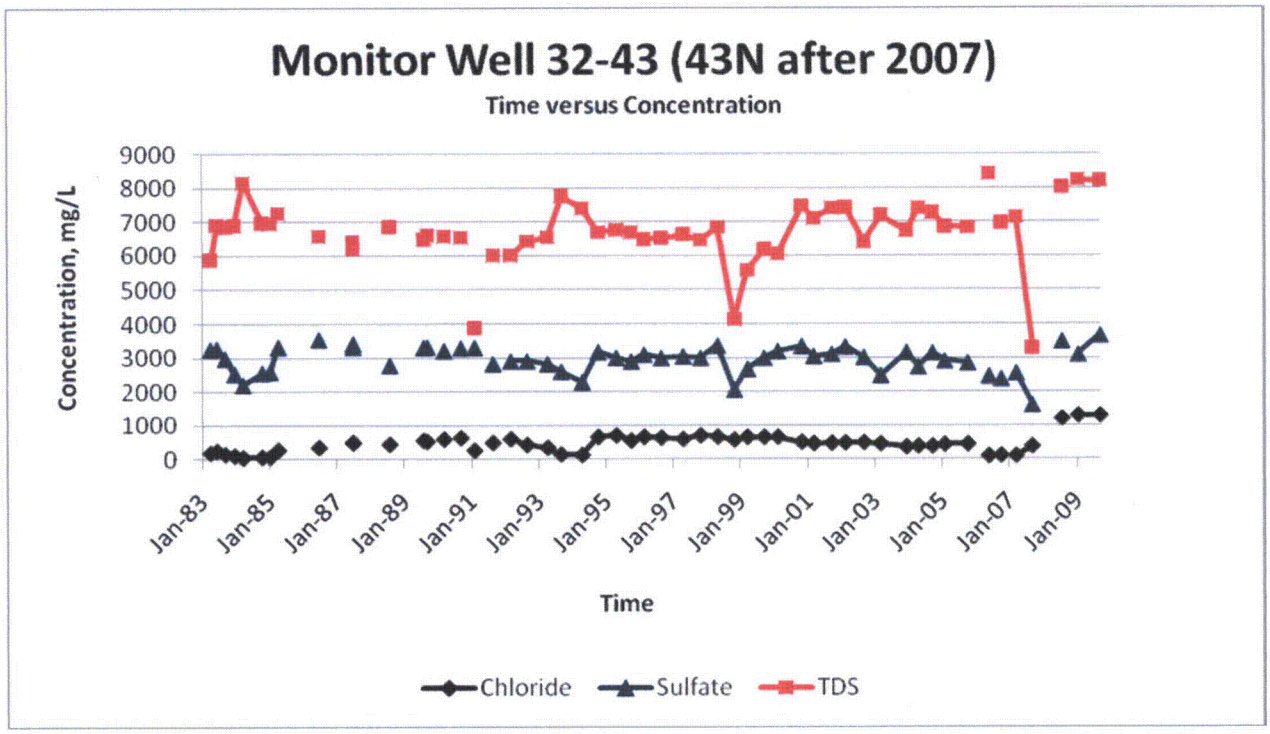
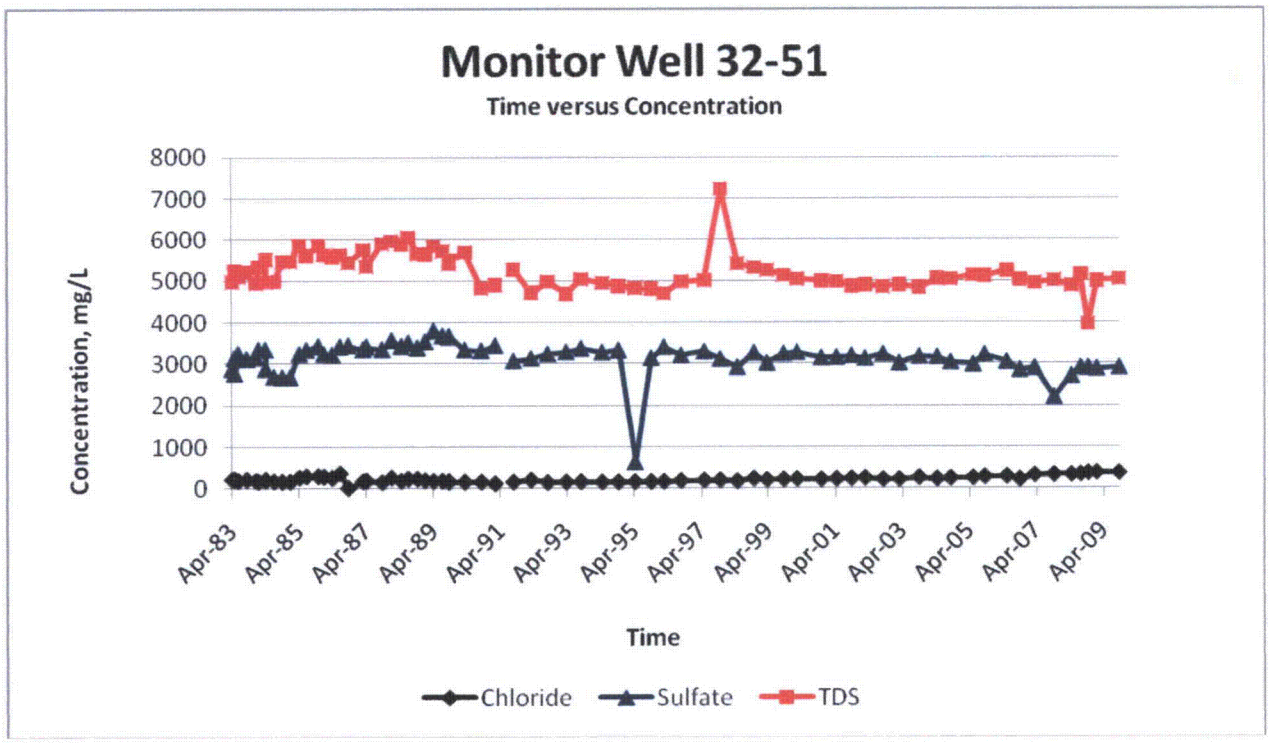
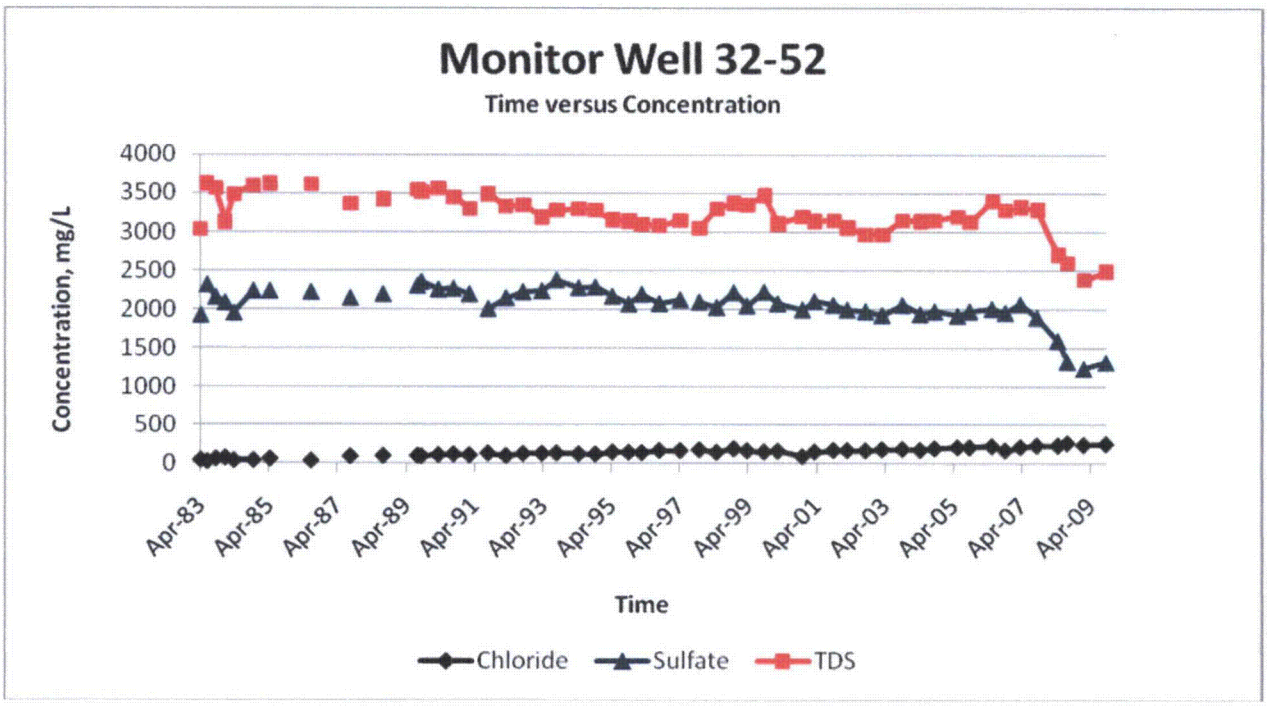
12000
10000
8000
6000
4000
2000
0
Jan-83
Jan-85
Jan-87
Jan-89
Jan-91
Jan-93
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Time
Chloride
Sulfate
TDS

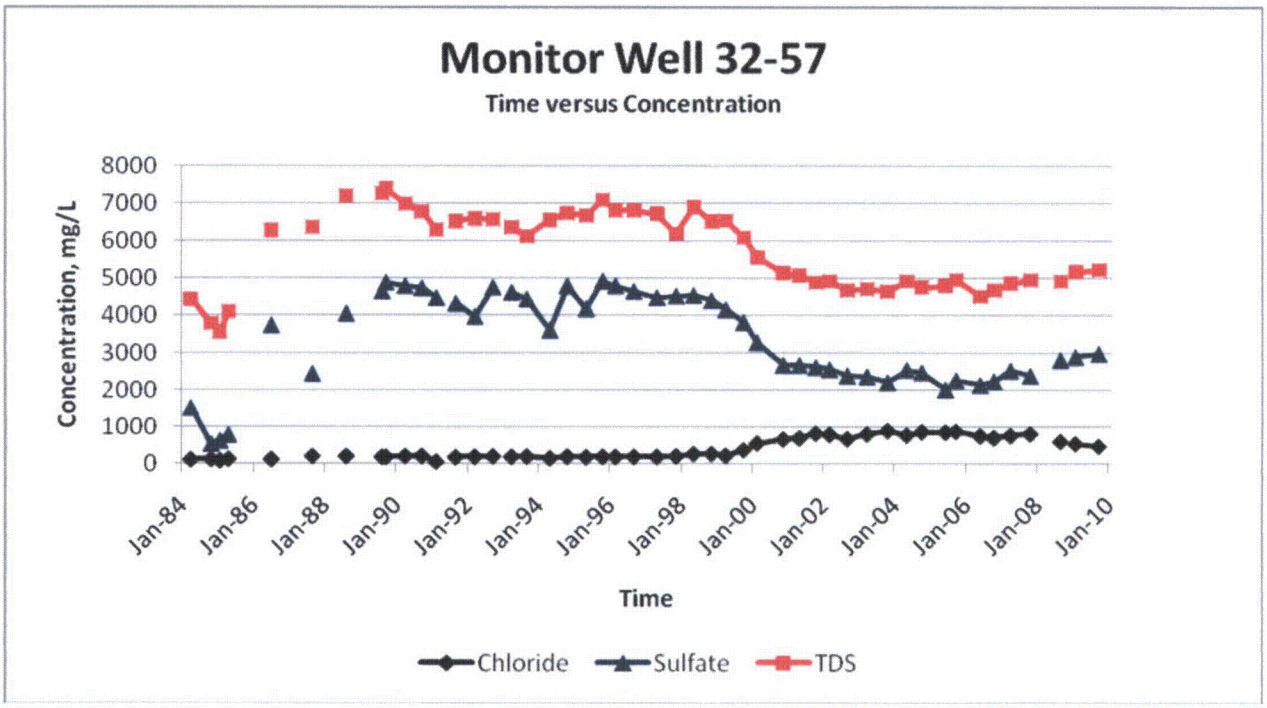

Monitor Well 32-41
Time versus Concentration
Concentration, mg/L
16000
14000
12000
10000
8000
6000
4000
2000
0
Apr-83
Apr-85
Apr-87
Apr-89
Apr-91
Apr-93
Apr-95
Apr-97
Apr-99
Apr-01
Apr-03
Apr-05
Apr-07
Apr-09
Time
Chloride
Sulfate
TDS

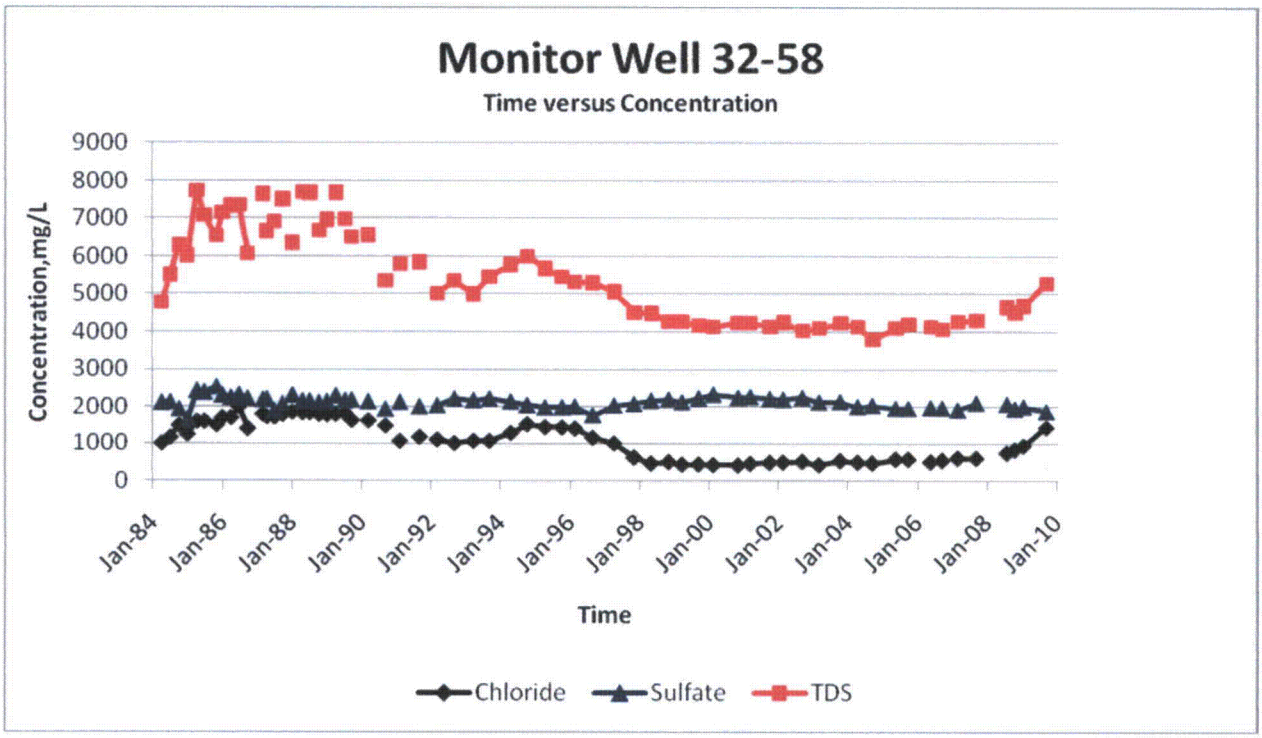

Monitor Well 32-42
Time versus Concentration
Concentration, mg/L
14000
12000
10000
8000
6000
4000
2000
0
Jan-84
Jan-86
Jan-88
Jan-90
Jan-92
Jan-94
Jan-96
Jan-98
Jan-00
Jan-02
Jan-04
Jan-06
Jan-08
Jan-10
Time
Chloride
Sulfate
TDS

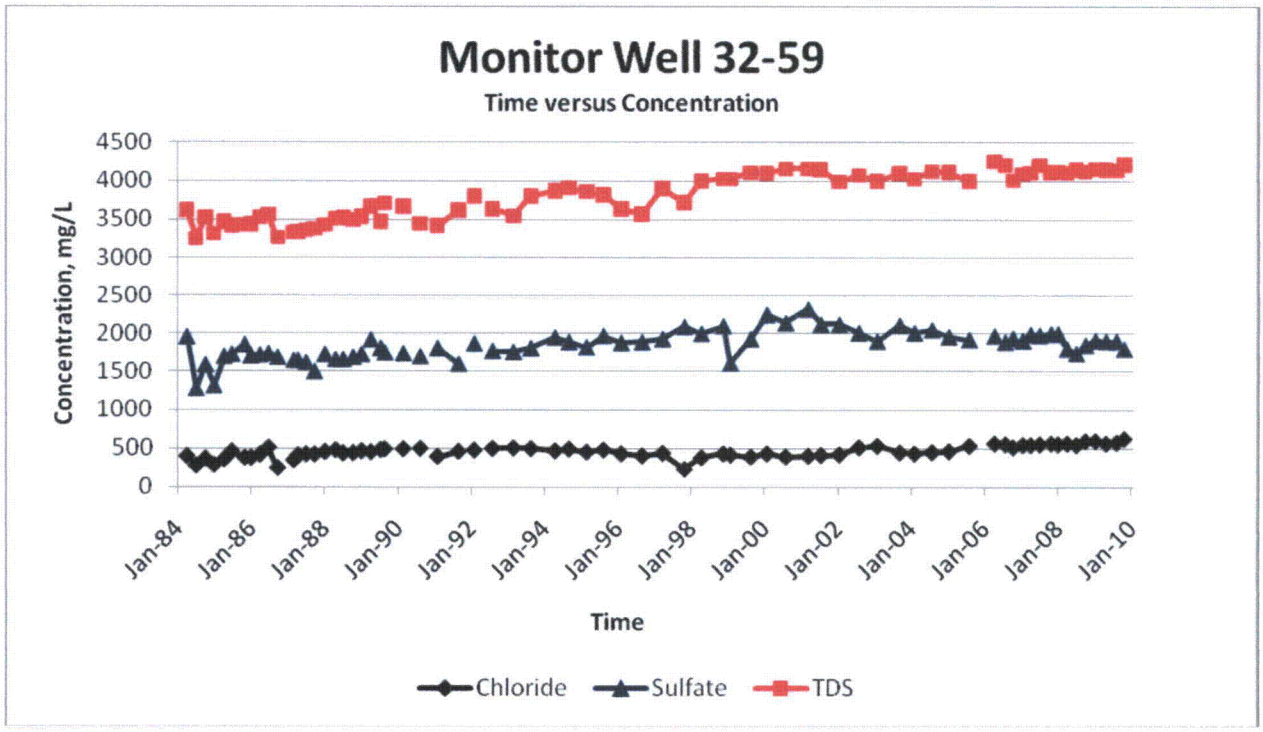

Monitor Well 32-43 (43N after 2007)
Time versus Concentration
Concentration, mg/L
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
Jan-83
Jan-85
Jan-87
Jan-89
Jan-91
Jan-93
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Time
Chloride
Sulfate
TDS

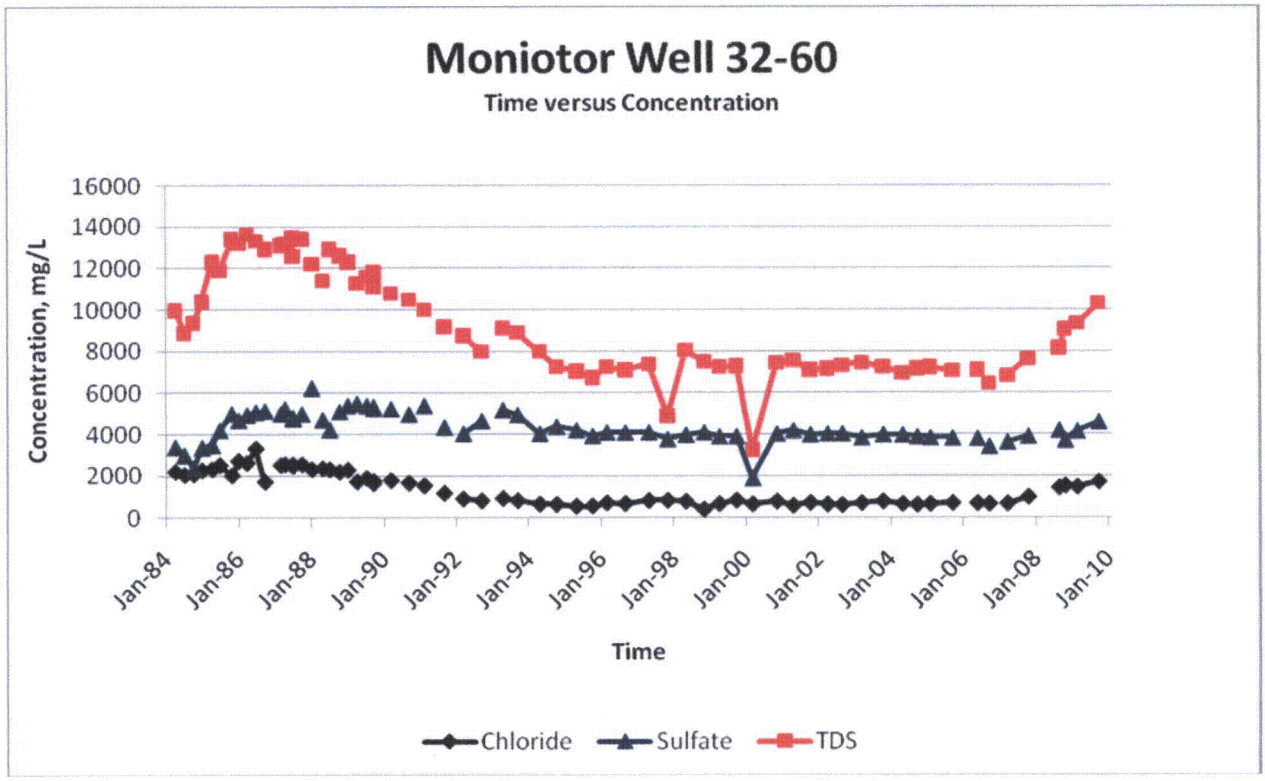

Monitor Well 32-51
Time versus Concentration
Concentration, mg/L
8000
7000
6000
5000
4000
3000
2000
1000
0
Apr-83
Apr-85
Apr-87
Apr-89
Apr-91
Apr-93
Apr-95
Apr-97
Apr-99
Apr-01
Apr-03
Apr-05
Apr-07
Apr-09
Time
Chloride
Sulfate
TDS

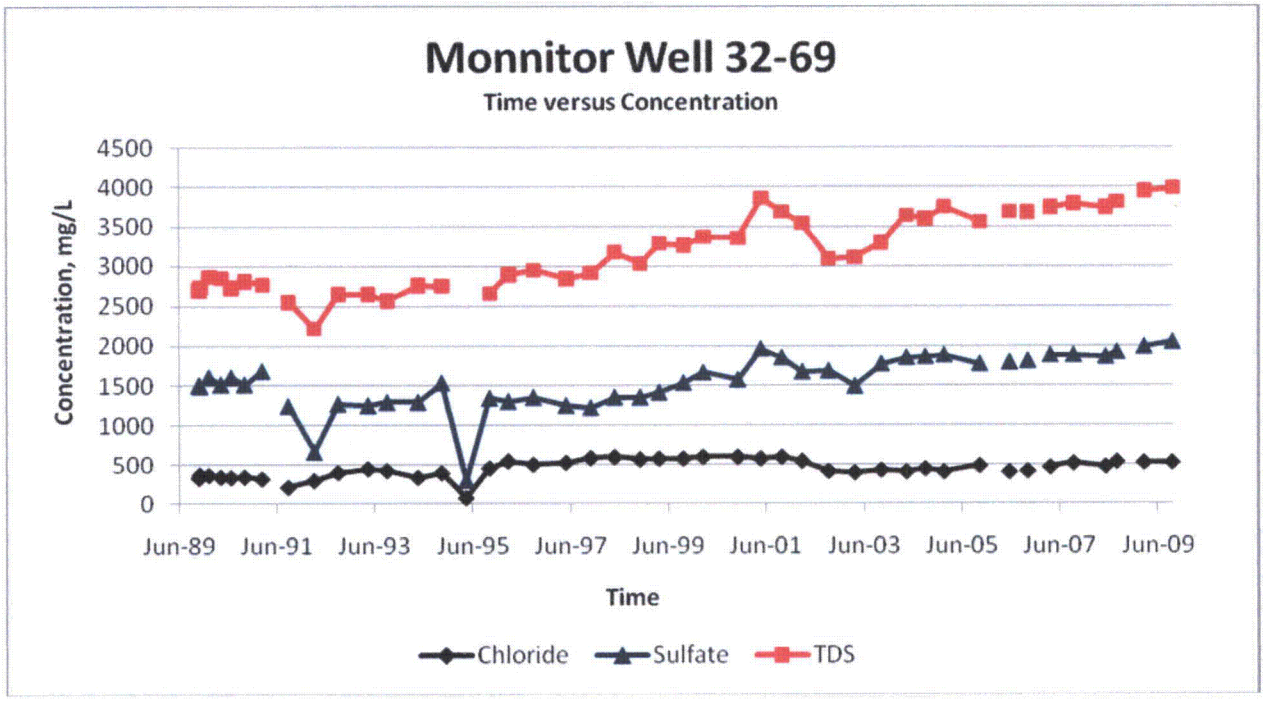

Monitor Well 32-52
Time versus Concentration
Concentration, mg/L
4000
3500
3000
2500
2000
1500
1000
500
0
Apr-83
Apr-85
Apr-87
Apr-89
Apr-91
Apr-93
Apr-95
Apr-97
Apr-99
Apr-01
Apr-03
Apr-05
Apr-07
Apr-09
Time
Chloride
Sulfate
TDS

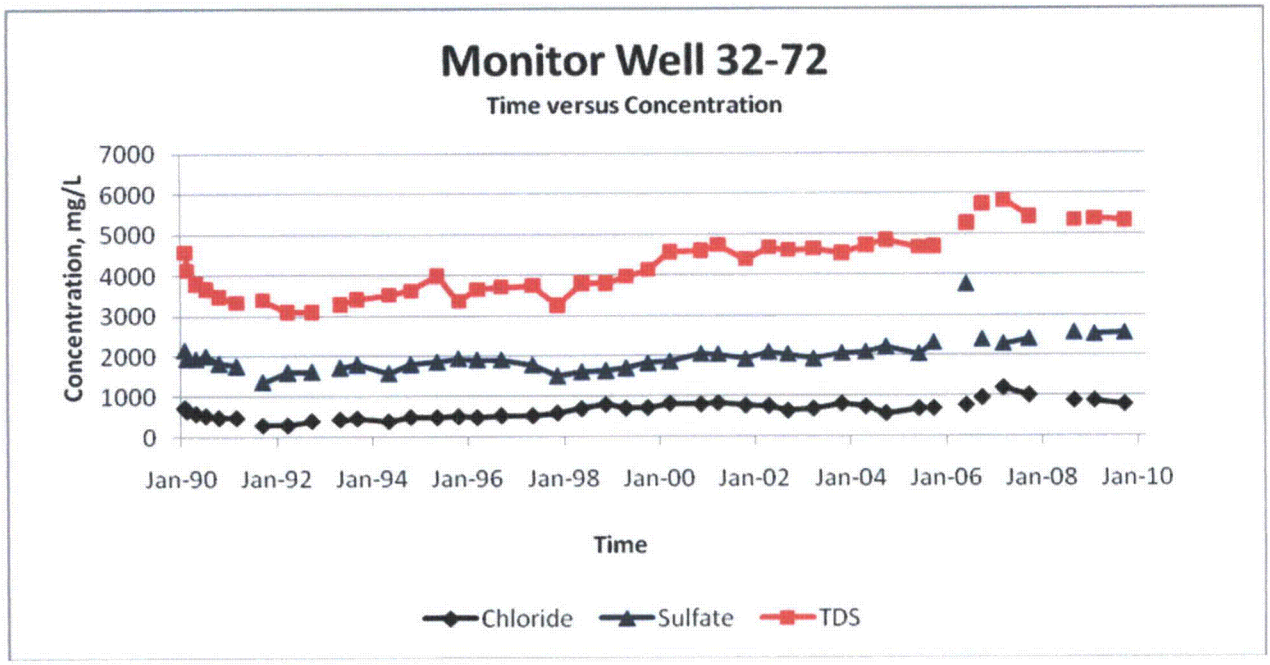

Monitor Well 32-57
Time versus Concentration
Concentration, mg/L
8000
7000
6000
5000
4000
3000
2000
1000
0
Jan-84
Jan-86
Jan-88
Jan-90
Jan-92
Jan-94
Jan-96
Jan-98
Jan-00
Jan-02
Jan-04
Jan-06
Jan-08
Jan-10
Time
Chloride
Sulfate
TDS

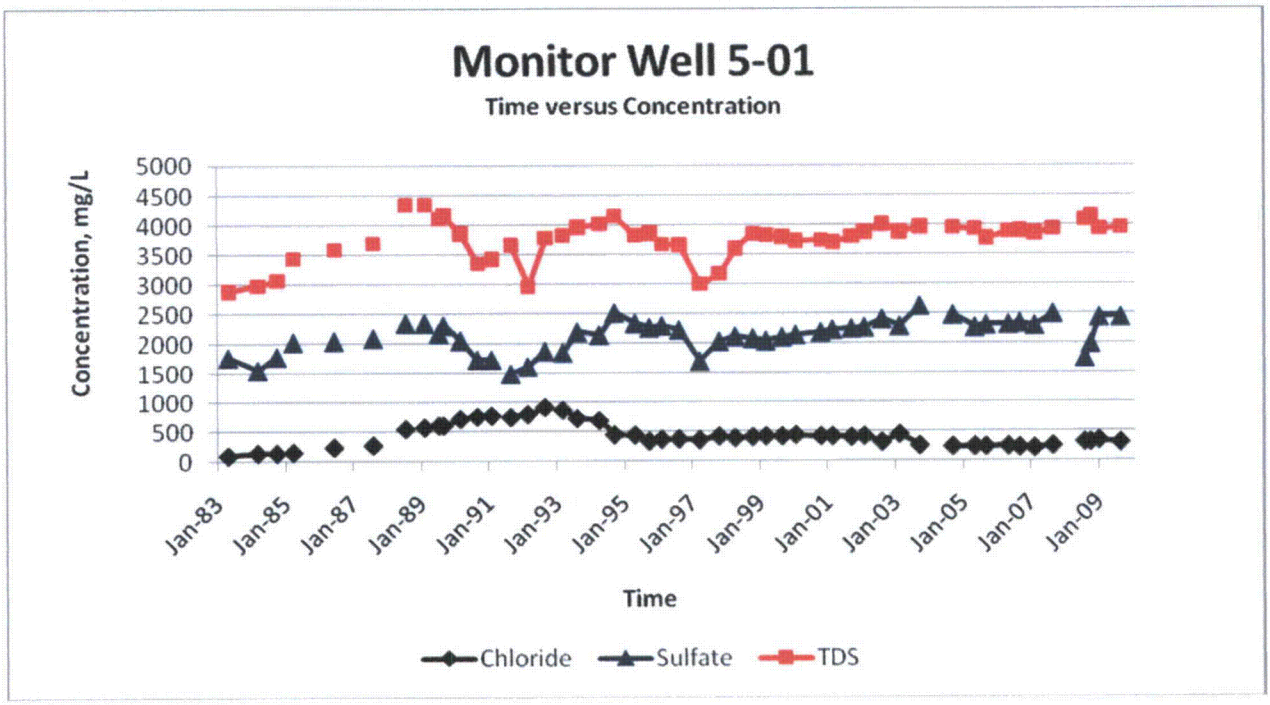

Monitor Well 32-58
Time versus Concentration
Concentration,mg/L
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
Jan-84
Jan-86
Jan-88
Jan-90
Jan-92
Jan-94
Jan-96
Jan-98
Jan-00
Jan-02
Jan-04
Jan-06
Jan-08
Jan-10
Time
Chloride
Sulfate
TDS

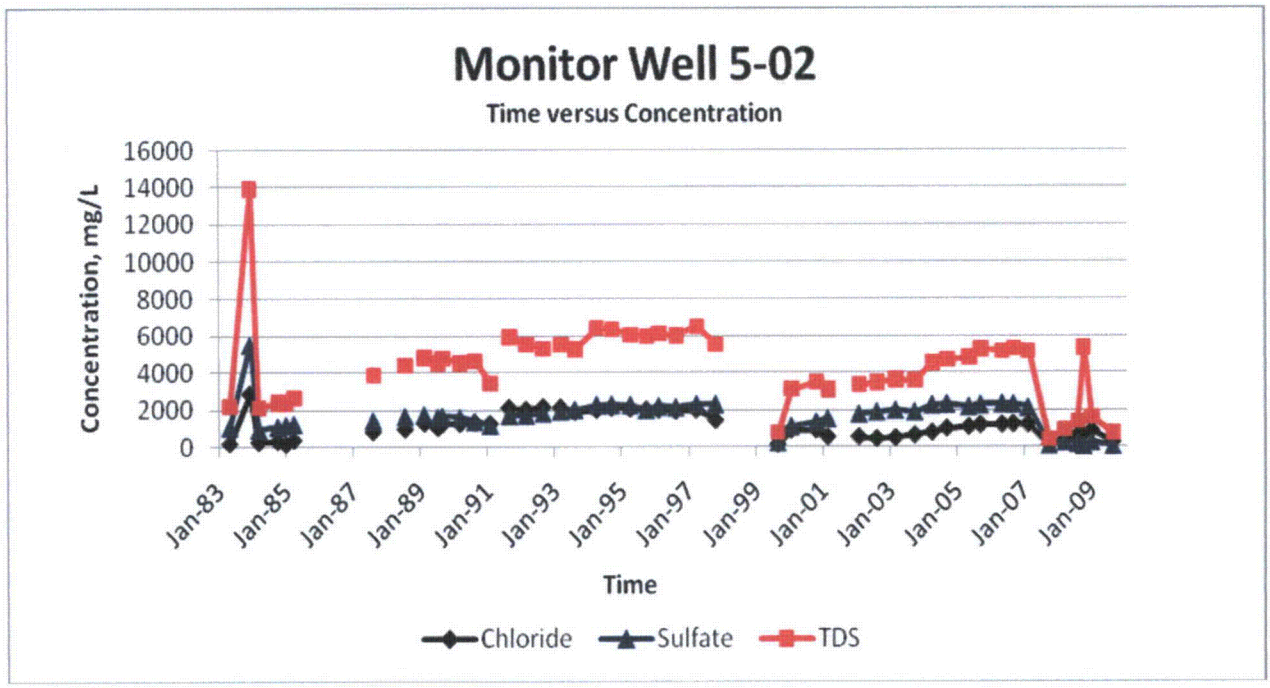

Monitor Well 32-59
Time versus Concentration
Concentration, mg/L
4500
4000
3500
3000
2500
2000
1500
1000
500
0
Jan-84
Jan-86
Jan-88
Jan-90
Jan-92
Jan-94
Jan-96
Jan-98
Jan-00
Jan-02
Jan-04
Jan-06
Jan-08
Jan-10
Time
Chloride
Sulfate
TDS

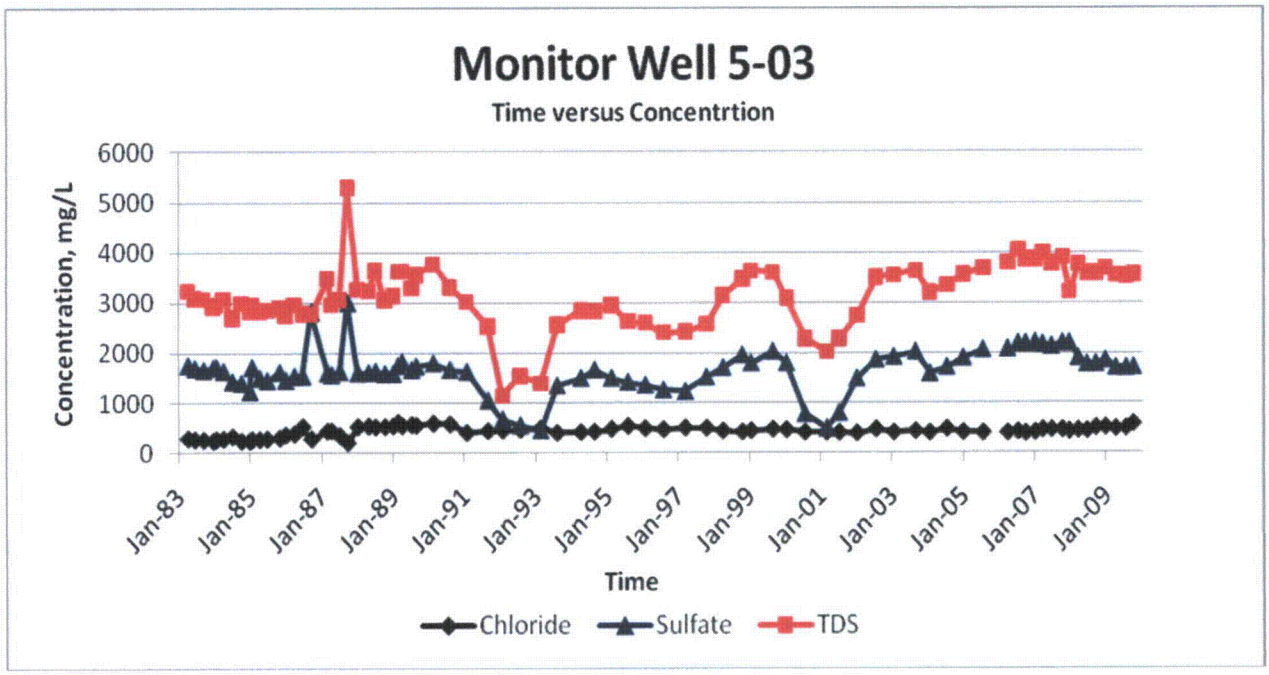

Moniotor Well 32-60
Time versus Concentration
Concentration, mg/L
16000
14000
12000
10000
8000
6000
4000
2000
0
Jan-84
Jan-86
Jan-88
Jan-90
Jan-92
Jan-94
Jan-96
Jan-98
Jan-00
Jan-02
Jan-04
Jan-06
Jan-08
Jan-10
Time
Chloride
Sulfate
TDS

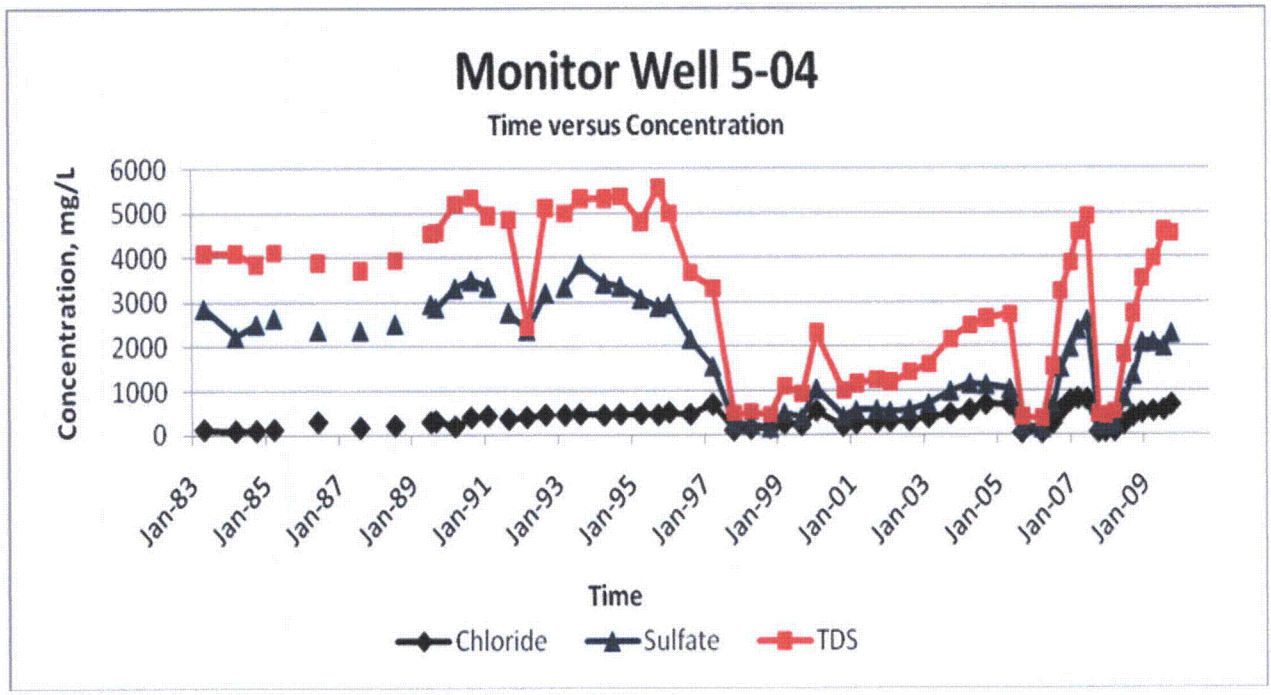

Monnitor Well 32-69
Time versus Concentration
Concentration, mg/L
4500
4000
3500
3000
2500
2000
1500
1000
500
0
Jun-89
Jun-91
Jun-93
Jun-95
Jun-97
Jun-99
Jun-01
Jun-03
Jun-05
Jun-07
Jun-09
Time
Chloride
Sulfate
TDS

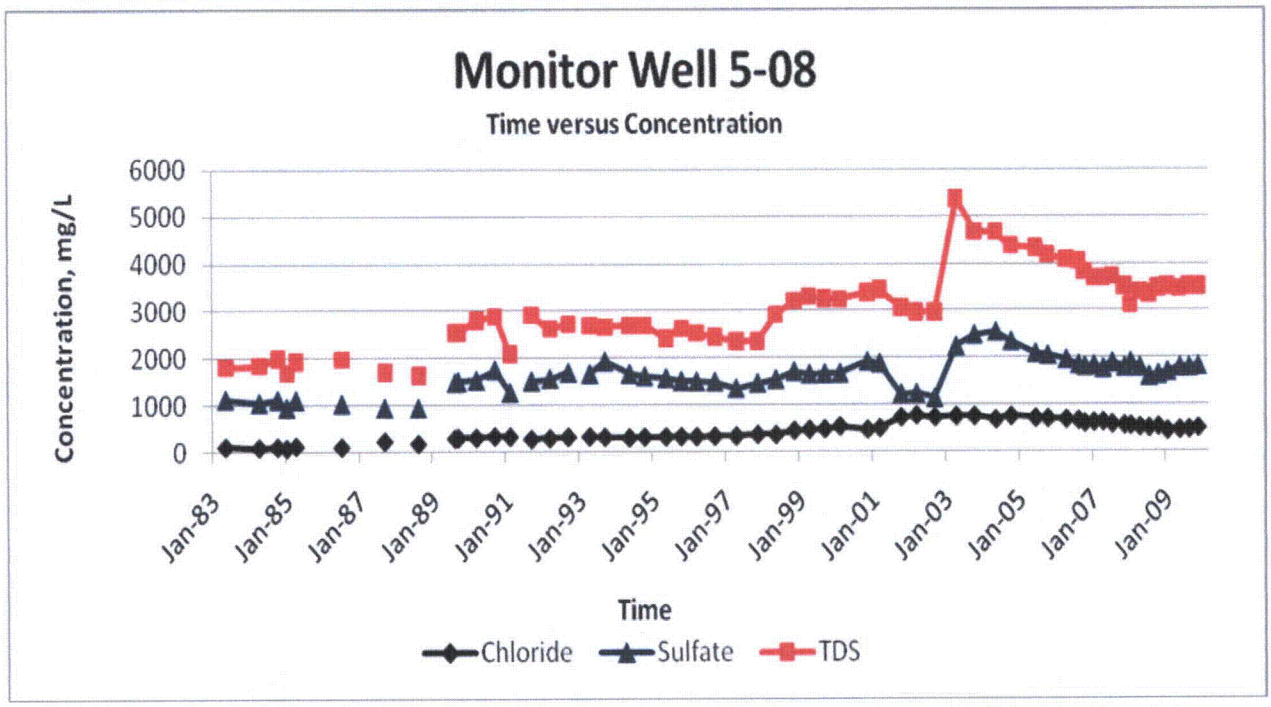

Monitor Well 32-72
Time versus Concentration
Concentration, mg/L
7000
6000
5000
4000
3000
2000
1000
0
Jan-90
Jan-92
Jan-94
Jan-96
Jan-98
Jan-00
Jan-02
Jan-04
Jan-06
Jan-08
Jan-10
Time
Chloride
Sulfate
TDS

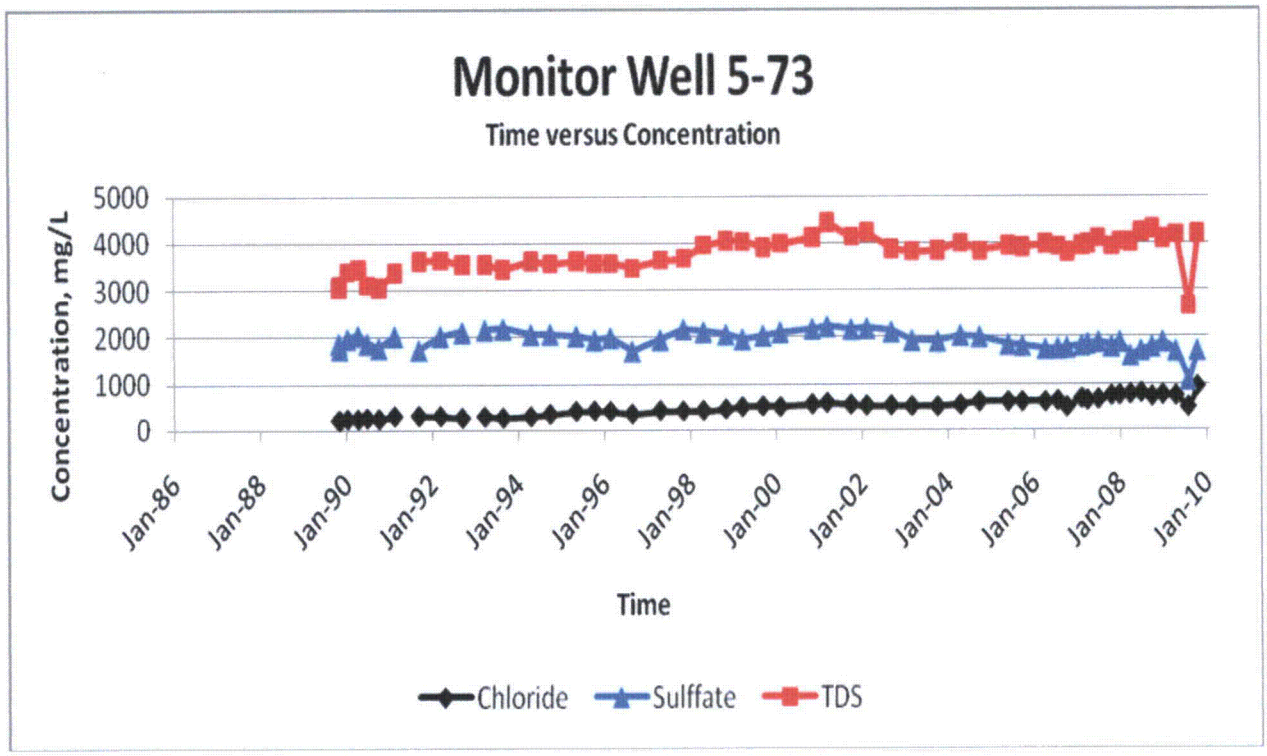

Monitor Well 5-01
Time versus Concentration
Concentration, mg/L
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
Jan-83
Jan-85
Jan-87
Jan-89
Jan-91
Jan-93
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Time
Chloride
Sulfate
TDS

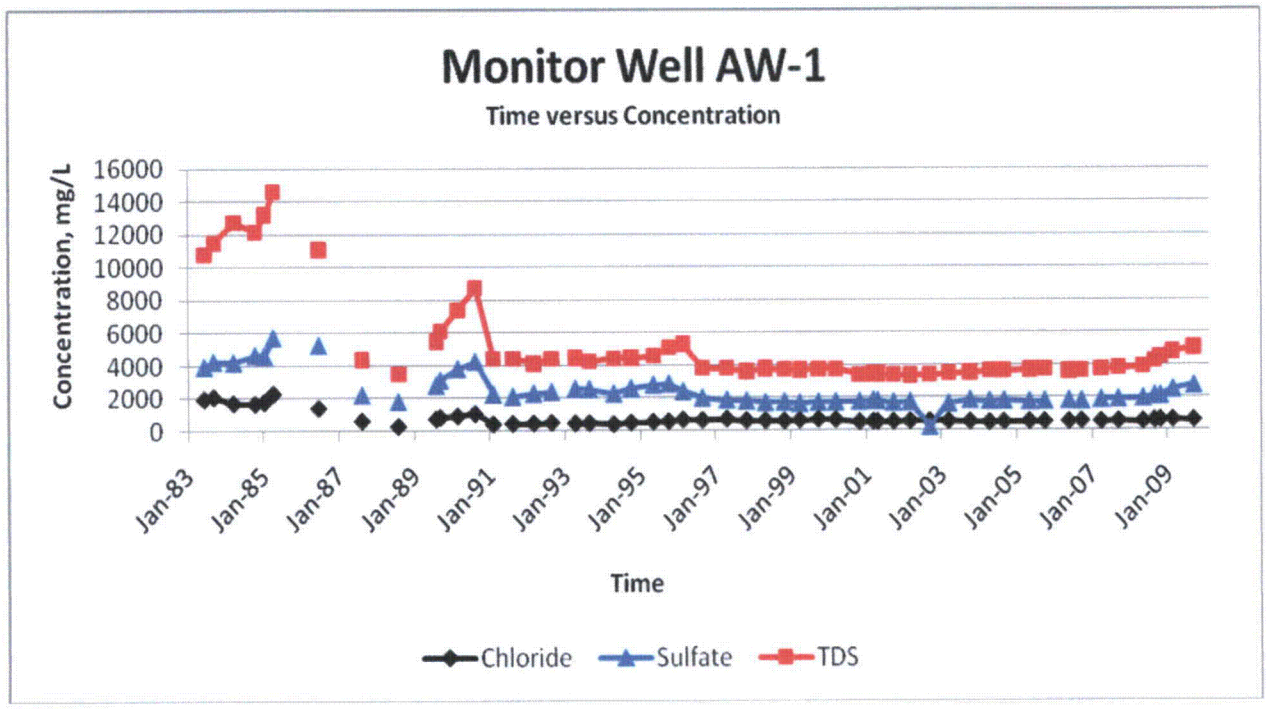

Monitor Well 5-02
Time versus Concentration
Concentration, mg/L
16000
14000
12000
10000
8000
6000
4000
2000
0
Jan-83
Jan-85
Jan-87
Jan-89
Jan-91
Jan-93
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Time
Chloride
Sulfate
TDS

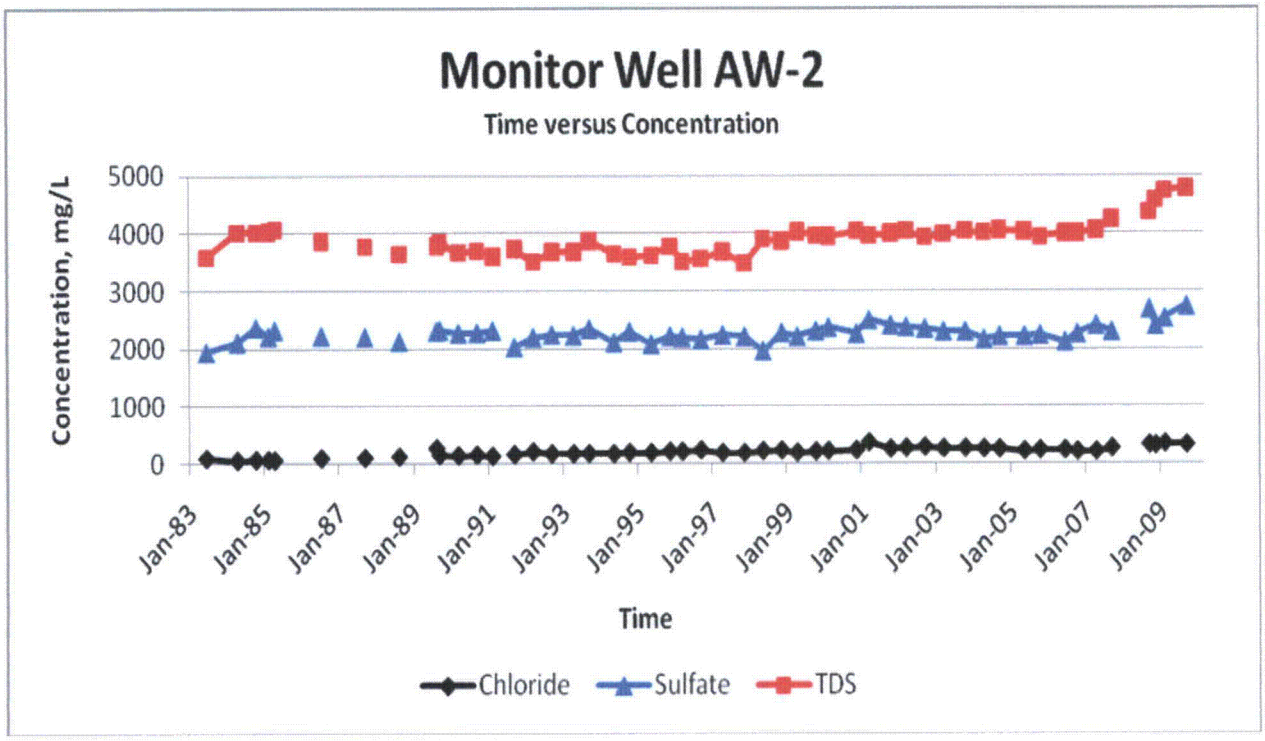

Monitor Well 5-03
Time versus Concentrtion
Concentration, mg/L
6000
5000
4000
3000
2000
1000
0
Jan-83
Jan-85
Jan-87
Jan-89
Jan-91
Jan-93
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Time
Chloride
Sulfate
TDS

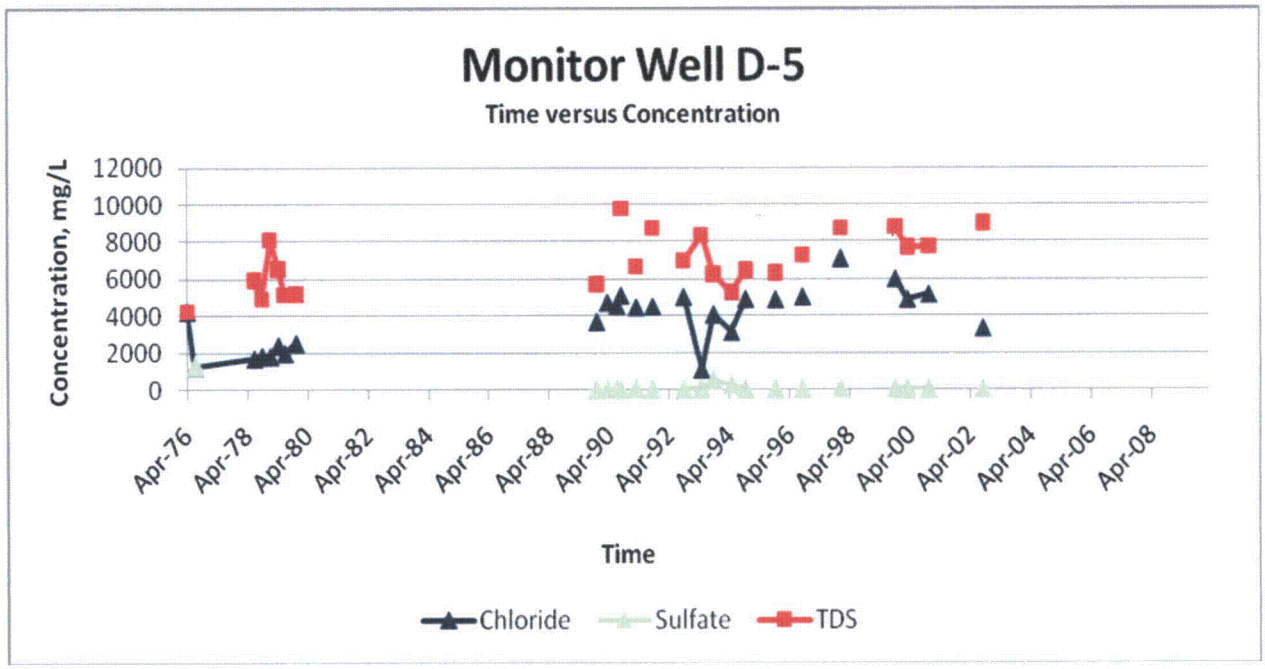

Monitor Well 5-04
Time versus Concentration
Concentration, mg/L
6000
5000
4000
3000
2000
1000
0
Jan-83
Jan-85
Jan-87
Jan-89
Jan-91
Jan-93
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Time
Chloride
Sulfate
TDS

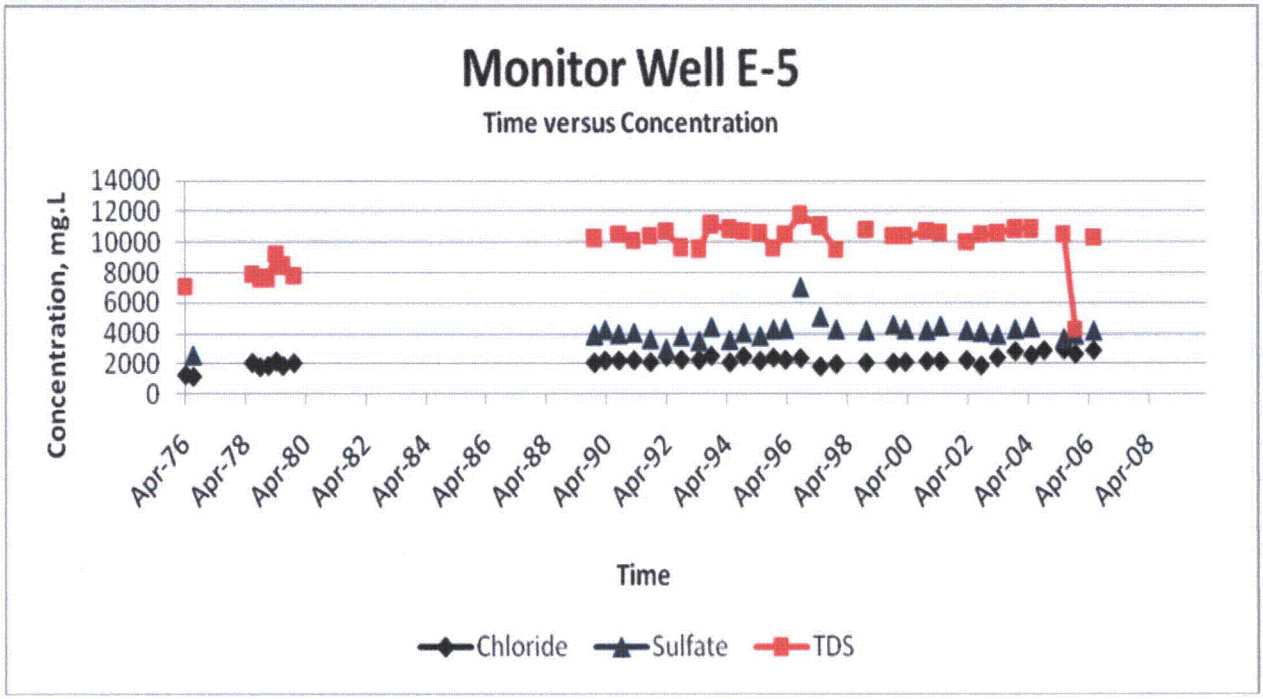

Monitor Well 5-08
Time versus Concentration
Concentration, mg/L
6000
5000
4000
3000
2000
1000
0
Jan-83
Jan-85
Jan-87
Jan-89
Jan-91
Jan-93
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Time
Chloride
Sulfate
TDS

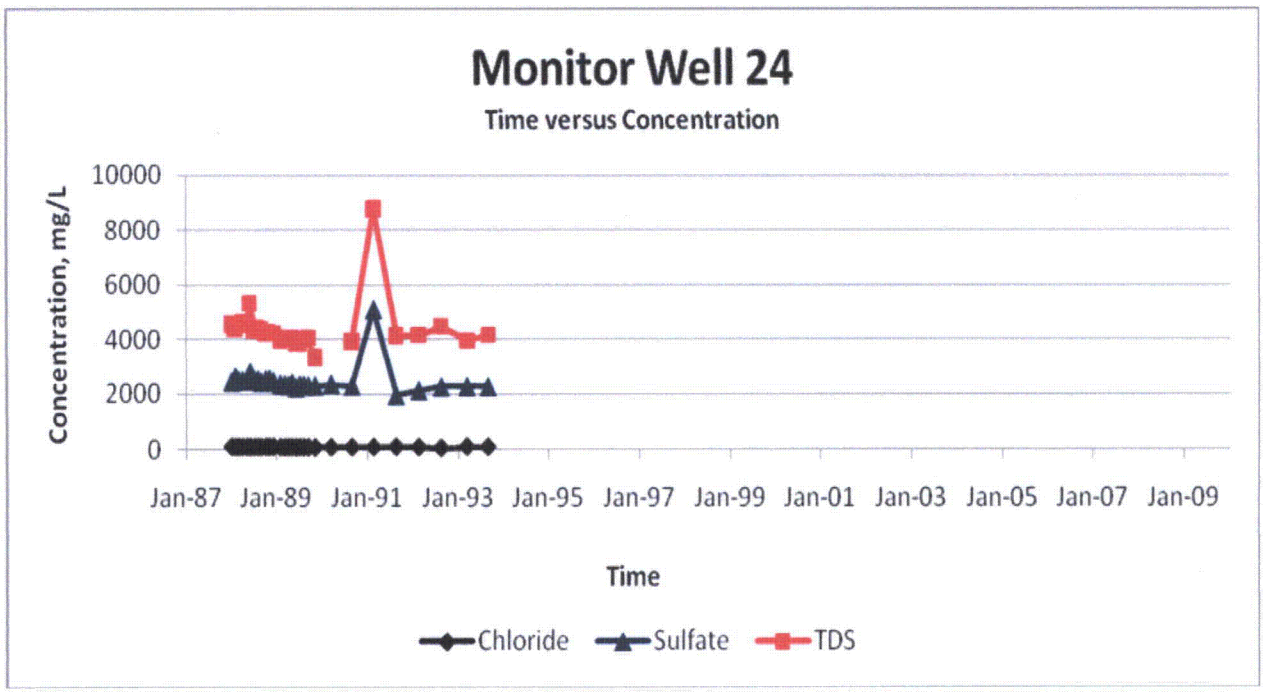

Monitor Well 5-73
Time versus Concentration
Concentration, mg/L
5000
4000
3000
2000
1000
0
Jan-86
Jan-88
Jan-90
Jan-92
Jan-94
Jan-96
Jan-98
Jan-00
Jan-02
Jan-04
Jan-06
Jan-08
Jan-10
Time
Chloride
Sulffate
TDS

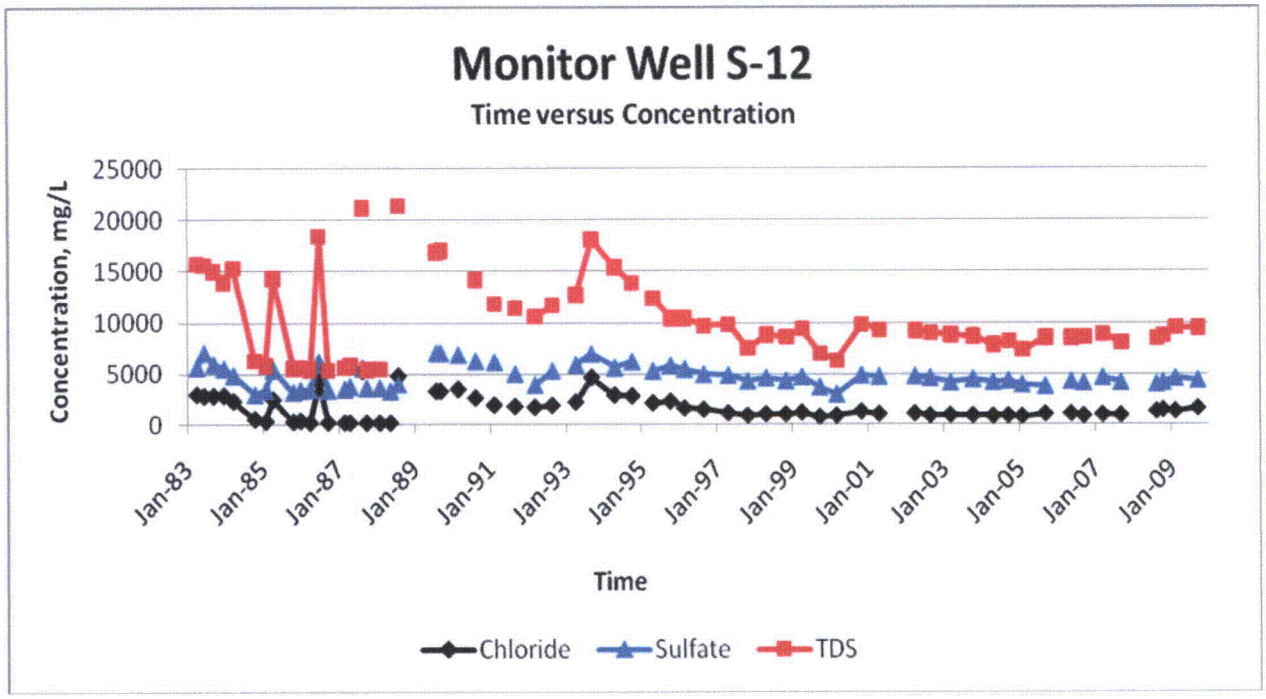

Monitor Well AW-1
Time versus Concentration
Concentration, mg/L
16000
14000
12000
10000
8000
6000
4000
2000
0
Jan-83
Jan-85
Jan-87
Jan-89
Jan-91
Jan-93
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Time
Chloride
Sulfate
TDS

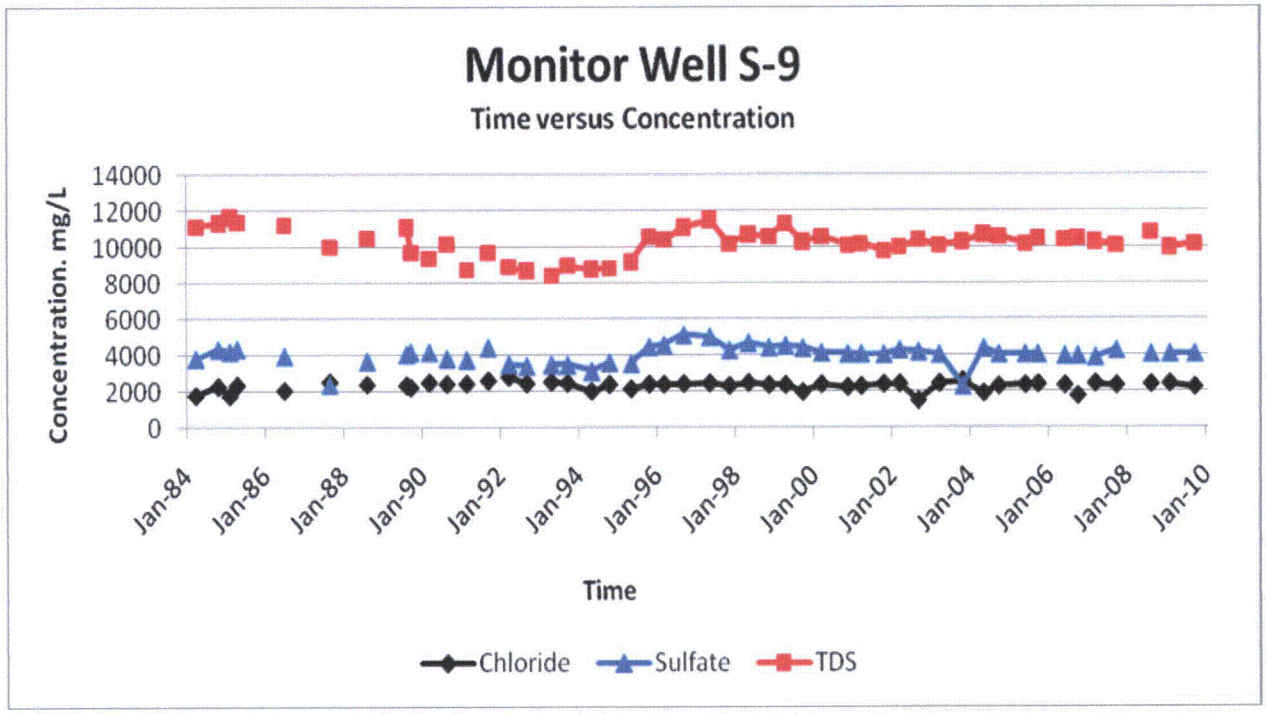

Monitor Well AW-2
Time versus Concentration
Concentration, mg/L
5000
4000
3000
2000
1000
0
Jan-83
Jan-85
Jan-87
Jan-89
Jan-91
Jan-93
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Time
Chloride
Sulfate
TDS


Monitor Well D-5
Time versus Concentration
Concentration, mg/L
12000
10000
8000
6000
4000
2000
0
Apr-76
Apr-78
Apr-80
Apr-82
Apr-84
Apr-86
Apr-88
Apr-90
Apr-92
Apr-94
Apr-96
Apr-98
Apr-00
Apr-02
Apr-04
Apr-06
Apr-08
Time
Chloride
Sulfate
TDS


Monitor Well E-5
Time versus Concentration
Concentration, mg.L
14000
12000
10000
8000
6000
4000
2000
0
Apr-76
Apr-78
Apr-80
Apr-82
Apr-84
Apr-86
Apr-88
Apr-90
Apr-92
Apr-94
Apr-96
Apr-98
Apr-00
Apr-02
Apr-04
Apr-06
Apr-08
Time
Chloride
Sulfate
TDS


Monitor Well 24
Time versus Concentration
Concentration, mg/L
10000
8000
6000
4000
2000
0
Jan-87
Jan-89
Jan-91
Jan-93
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Time
Chloride
Sulfate
TDS

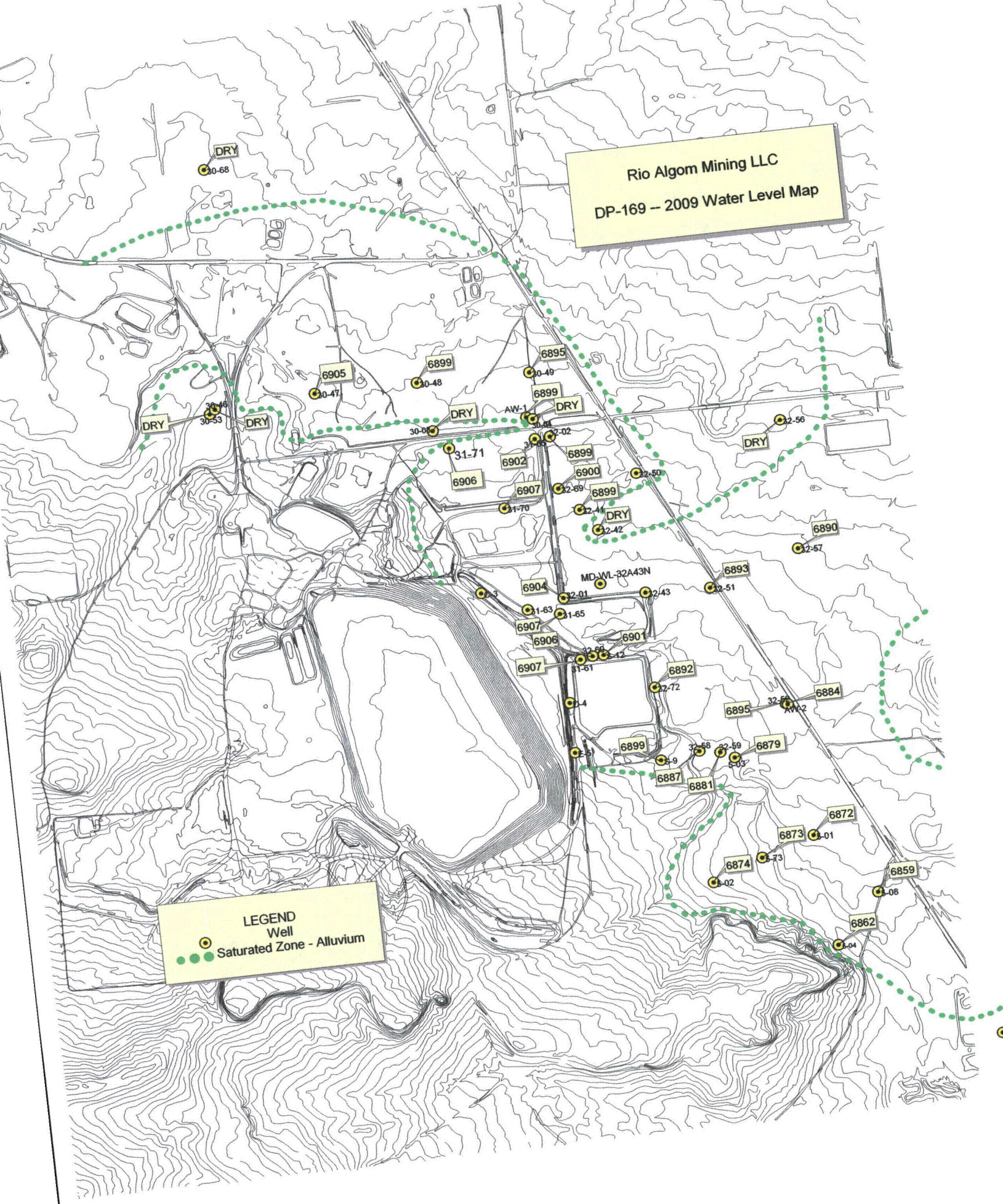

Monitor Well S-12
Time versus Concentration
Concentration, mg/L
25000
20000
15000
10000
5000
0
Jan-83
Jan-85
Jan-87
Jan-89
Jan-91
Jan-93
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Time
Chloride
Sulfate
TDS


Monitor Well S-9
Time versus Concentration
Concentration. mg/L
14000
12000
10000
8000
6000
4000
2000
0
Jan-84
Jan-86
Jan-88
Jan-90
Jan-92
Jan-94
Jan-96
Jan-98
Jan-00
Jan-02
Jan-04
Jan-06
Jan-08
Jan-10
Time
Chloride
Sulfate
TDS

APPENDIX C

WATER LEVEL ELEVATION MAP

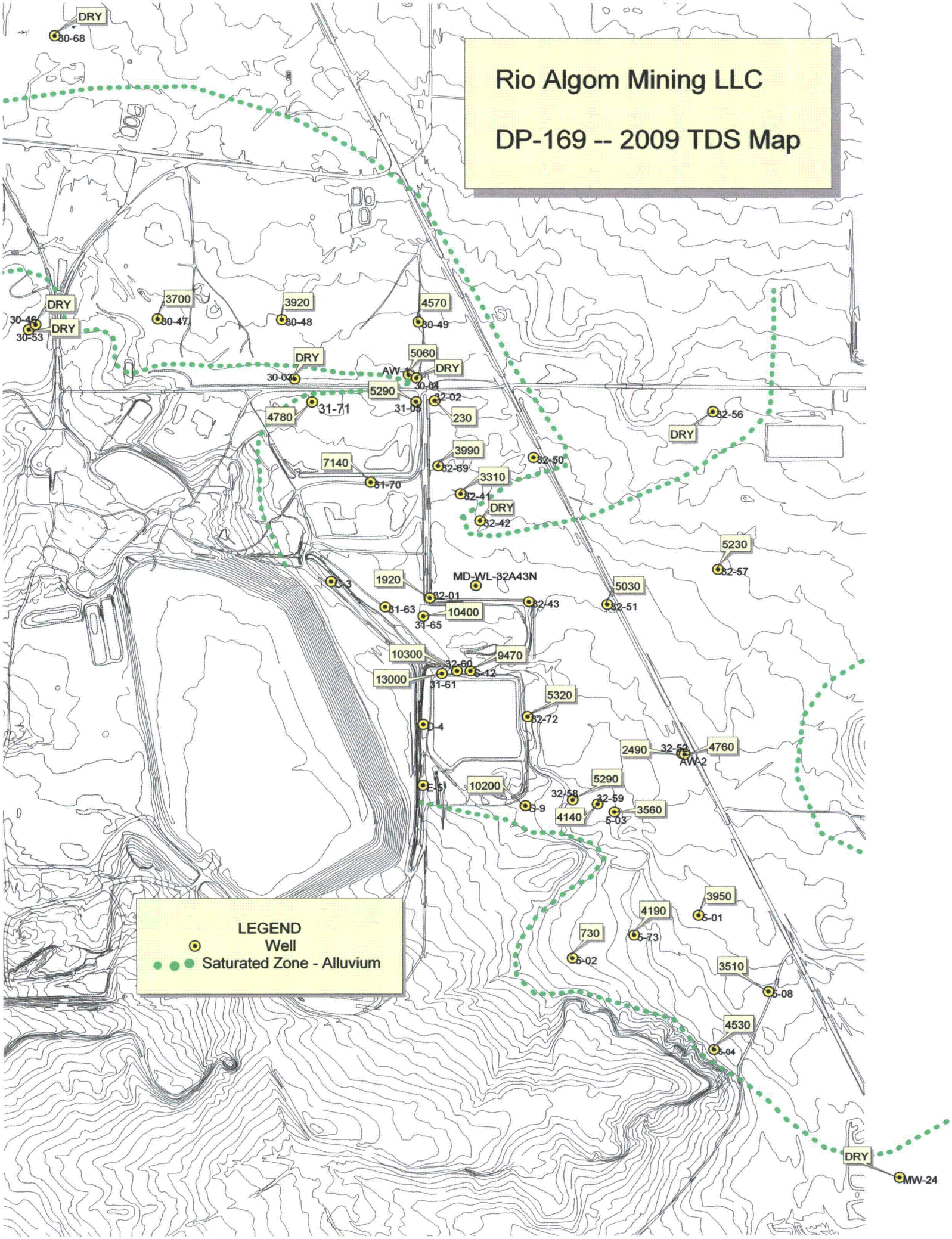
ALLUVIUM


Rio Algom Mining LLC
DP-169 -- 2009 Water Level Map
LEGEND
Well
Saturated Zone - Alluvium
DRY
30-68
6905
30-47
6899
30-48
6895
30-49
6899
AW-1
DRY
30-46
30-53
DRY
DRY
30-08
31-71
6902
6899
6906
6900
32-69
6907
31-70
6899
32-41
DRY
32-42
32-50
DRY
32-56
6890
32-57
6893
32-51
MD-WL-32A43N
6904
32-01
32-43
31-63
31-65
6907
6906
6901
32-60
31-61
6907
6892
32-72
6884
6895
AW-2
6899
32-58
32-59
6879
6887
6881
6872
6873
6874
6859
6862

APPENDIX D

TDS CONTOUR MAP

ALLUVIUM


Rio Algom Mining LLC
DP-169 -- 2009 TDS Map
LEGEND
Well
Saturated Zone - Alluvium
DRY
30-68
30-46
30-53
3700
30-47
3920
30-48
4570
30-49
5060
AW-1
30-04
5290
32-02
31-71
4780
230
32-56
7140
31-70
3990
32-69
32-50
3310
32-41
32-42
5230
32-57
1920
MD-WL-32A43N
32-01
31-63
10400
31-65
32-43
5030
32-51
10300
9470
32-60
13000
31-61
5320
32-72
2490
32-52
4760
AW-2
10200
32-58
32-59
4140
3560
3950
4190
730
3510
4530
MW-24