Rio Algom Mining LLC

April 13, 2009

Certified Mail (7008 0150 0002 0421 7438)

Mr. Jerry Schoeppner
Groundwater Quality Bureau
New Mexico Environment Department
P.O. Box 26110
Santa Fe, NM 87502

Re: **Discharge Permit DP - 169**
2008 Annual Report

Dear Mr. Schoeppner

Please find attached Rio Algom Mining LLC's 2008 annual groundwater monitoring report for the Ambrosia Lake facility for the above referenced discharge permit. This annual report 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.

Regards,

Donald Sweeney

Donald Sweeney
Radiation Safety Officer
Environmental Department Supervisor

Attachment: As stated

xc: R. Jones (Tronox)
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
2008 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 and not only include hazardous constituents, but ACLs have also been established for non-hazardous constituents as well. 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 this residual seepage migrating into the down dip alluvium and be observed within monitoring wells adjacent to the former interceptor trench. Based on the well data for these close in wells, this continues to appear to have been 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 2.2 feet with a maximum drop of approximately 3 feet observed for wells located away from the intercept trench. 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 2008 monitoring results for the alluvium are contained in Appendix A. Additionally, a computer diskette containing the 2008 data for the alluvial wells is included.

Presented within Appendix B are time versus concentration plots for the parameters chloride, sulfate, and total dissolved solids (TDS) for the alluvial monitoring wells.

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 as 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 year was 6.5 mg/L.

Contained in Appendix C is the current water level map for the alluvial unit. The water level map indicates the depth to water measurements of the alluvial monitoring wells and the groundwater saturation limits. Appendix D contains the current TDS map for the alluvium as required by the Discharge Plan.

APPENDIX A

ANALYTICAL RESULTS - 2008

ALLUVIAL WELLS

RIO ALGOM MINING LLC

DISCHARGE PLAN DP-169 --- ANALYTICAL RESULTS - 1ST HALF 2008

	Well	Date	Depth to Water (ft)	Total Depth (ft)	Spec. Cond.	Temp. (C)	pH	Chloride (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TDS (mg/L)
#	30-03	7-May-08		18.01							
#	30-46	5-May-08		38.27							
	30-47	5-May-08	36.47	78.30	4660	14.1	7.43	940	0.04	1500	3620
	30-48	10-Jun-08	49.91	78.80	5200	13.4	6.61	750	-0.02	1990	4250
	30-49	10-Jun-08	53.56	67.81	5550	13.7	7.08	880	0.28	2140	4590
#	30-53	5-May-08		49.94							
#	30-68	7-May-08		63.19							
	31-05	20-May-08	39.38	72.07	5960	14.7	7.93	550	1.98	3010	5570
	31-61	15-Jan-08	11.70	27.90	11500	11.8	6.86	1360	22.7	4400	9860
	31-61	15-Apr-08	11.59	27.90	11770	12.1	6.44	1670	23	4400	10400
	31-65	15-Jan-08	14.47	46.07	5170	11.6	7.18	430	-0.02	2000	3940
	31-65	15-Apr-08	14.44	46.07	7470	12.4	6.95	760	0.07	2700	6240
	31-70	10-Jun-08	25.48	31.96	9150	15.2	6.53	630	2.09	2380	4650
	31-71	10-Jun-08	32.30	63.10	5470	13.6	7.06	650	14.5	3600	8400
	32-01	10-Jun-08	16.08	52.33	3500	11.5	8.58	275	3	1320	2630
	32-02	20-May-08	40.91	75.95	5320	15.1	7.42	640	0.14	2450	4510
	32-41	20-May-08	28.86	57.56	5500	15.3	9.23	1220	0.09	1190	3560
#	32-42	7-May-08		28.43							
	32-43N	10-Jun-08	21.91	77.10	8080	11.2	7.13	1140	6.37	3330	7990
	32-51	5-May-08	28.31	75.18	5270	13.7	7.66	320	21.9	2700	4880
	32-52	5-May-08	28.77	66.31	3550	13.8	8.78	230	0.26	1600	2710
#	32-56	7-May-08		57.25							
	32-57	16-Jun-08	40.48	53.37	5910	14.1	7.7	710	8.13	2360	4660
	32-58	16-Jun-08	12.59	34.38	5570	12.7	6.84	770	5.12	2170	4510
	32-59	14-Jan-08	14.30	28.51	5420	12.1	7.62	550	-0.02	2000	4130
	32-59	15-Apr-08	14.77	28.77	5440	12.4	7.85	560	0.03	1800	4110
	32-60	16-Jun-08	12.21	27.46	9560	12.4	6.54	1430	1.23	4080	8520
	32-69	20-May-08	31.93	66.35	4420	13.8	7.35	480	0.13	1860	3740
	32-72	16-Jun-08	15.44	40.00	6560	13.2	6.84	940	12.3	2510	5450
	5-01	16-Jun-08	23.74	44.40	4540	13.7	9.15	300	0.11	2390	3940
	5-02	14-Apr-08	20.70	38.37	1678	13.4	7.83	340	0.04	230	890
	5-03	14-Jan-08	20.07	41.48	5170	11.9	8.25	420	0.05	2200	3210
	5-03	15-Apr-08	20.58	41.50	4980	12.9	8.46	440	0.19	1900	3770
	5-04	14-Jan-08	15.56	64.20	7720	14.2	8.98	60	-0.02	210	430
	5-04	15-Apr-08	16.88	64.26	9020	12.8	8.55	72	-0.02	240	520
	5-08	14-Jan-08	41.13	87.40	4780	12.4	8.3	560	0.03	1900	3120
	5-08	14-Apr-08	41.31	87.48	4470	14.9	9.26	530	0.02	1800	3400
	5-73	14-Jan-08	12.10	37.49	5460	11.3	7.69	740	0.3	1900	4020
	5-73	14-Apr-08	12.50	31.45	5500	12.4	7.83	760	0.09	1600	4010
	AW-1	20-May-08	44.91	81.16	4580	13.3	7.62	500	1.13	1940	3890
	AW-2	16-Jun-08	30.89	85.75	4940	14	7.59	290	4.05	2400	4530
#	MW-24	14-Jan-08		50.15							
#	MW-24	14-Apr-08		50.15							
	S-12	16-Jun-08	11.46	27.17	9230	13.1	6.86	1360	0.63	3700	8540
	S-9	16-Jun-08	8.51	23.14	1173	13.4	8.81	2530	0.13	3850	10300

Notes: # - Dry Well

* - Well contained insufficient water for sample collection

RIO ALGOM MINING LLC

DISCHARGE PLAN DP-169 --- ANALYTICAL RESULTS - 2ND HALF 2008

Well	Date	Depth to Water (ft)	Total Depth (ft)	Spec. Cond.	Temp. (C)	pH	Chloride (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TDS (mg/L)
# 30-03	11-Sep-08		18.01							
# 30-03	16-Oct-08		17.91							
# 30-46	11-Sep-08		38.26							
# 30-46	16-Oct-08		38.14							
30-47	11-Aug-08	37.11	78.12	4870	15.4	6.44				
30-47	21-Oct-08	38.45	77.97	4810	12.3	6.33	930	-0.02	1350	3780
30-48	02-Sep-08	47.01	73.38	5190	14.3	6.55	800	-0.02	2080	4260
30-48	21-Oct-08	48.08	73.27	4810	12.9	6.32	820	0.003	1750	4100
30-49	11-Aug-08	53.98	67.73	5690	13.6	7.02	740	0.04	2220	4720
30-49	21-Oct-08	54.44	67.64	5270	14.2	7.20	810	0.27	1850	4730
# 30-53	12-Sep-08		49.92							
# 30-53	16-Oct-08		49.78							
# 30-68	12-Sep-08		63.19							
# 30-68	16-Oct-08		63.07							
31-05	02-Sep-08	39.09	72.09	6390	14.0	7.75	580	3.92	3030	5490
31-05	21-Oct-08	37.51	64.11	5680	13.5	7.19	560	4.79	3900	5520
31-61	15-Jul-08	11.56	27.72	12220	12.8	6.27	1810	24.2	4200	11000
31-61	13-Oct-08	11.35	27.71	10980	13.8	6.43	1700	23.4	4200	10000
31-65	15-Jul-08	14.55	46.05	8950	12.9	6.71	980	0.07	3100	7790
31-65	13-Oct-08	14.45	45.95	9360	13.5	6.84	1200	0.24	3500	7500
31-70	12-Aug-08	25.72	31.34	8490	12.7	6.43	620	12.8	4900	8190
31-70	21-Oct-08	25.25	31.74	7520	13.2	6.53	550	13	3800	7670
31-71	12-Aug-08	33.87	62.98	5300	13.2	7.10	620	0.6	2380	4750
32-01	12-Aug-08	13.90	52.09	3180	13.4	7.60	150	0.13	1660	2840
32-02	11-Aug-08	41.43	75.81	5110	13.5	7.07	570	0.02	2210	4210
32-41	12-Aug-08	31.67	60.51	5610	13.2	8.62	1290	-0.2	1250	3810
# 32-42	12-Aug-08		28.34							
# 32-42	16-Oct-08		21.64							
32-43N	11-Aug-08	19.76	76.24	8640	13.6	6.71	1200	6.48	3500	8020
32-51	12-Aug-08	28.60	75.16	5440	14.2	7.32	330	19	2900	5150
32-51	03-Nov-08	28.66	74.88	5030	14.5	7.30	360	15.3	2900	3960
32-52	12-Aug-08	28.92	66.21	3710	13.9	8.55	260	0.3	1330	2600
# 32-56	12-Sep-08		57.29							
# 32-56	16-Oct-08		57.17							
32-57	02-Sep-08	41.00	53.35	6060	14.0	7.24	610	7.86	2830	4920
32-57	03-Nov-08	41.13	53.12	5970	12.3	7.20				
32-58	12-Aug-08	11.31	34.33	5550	13.7	6.97	740	5.88	2070	4660
32-58	03-Nov-08	11.47	34.16	5290	13.9	6.94	830	6.79	1940	4520
32-59	14-Jul-08	15.35	27.97	5090	12.9	7.12		0.04	1740	4150
32-59	13-Oct-08	13.71	27.90	4990	12.8	7.19	590	0.07	1850	4130
32-60	02-Sep-08	12.08	27.44	1001	14.3	6.51	1410	0.47	4190	8120
32-60	03-Nov-08	11.73	27.35	9070	14.4	6.59	1500	0.53	3700	9060
32-69	12-Aug-08	44.31	78.19	4650	12.6	7.13	540	0.1	1920	3810
32-72	02-Sep-08	15.15	40.30	6520	15.0	6.92	880	8.01	2560	5330
5-01	02-Sep-08	24.10	44.42	4710	14.1	9.12	320	0.05	1760	4080
5-01	04-Nov-08	23.54	44.35	4340	13.5	8.97	320	0.39	2000	4150
5-02	02-Sep-08	21.59	38.24	2360	14.3	7.92	570	0.23	150	1380
5-02	04-Nov-08	21.25	38.17	2900	13.6	7.81	630	0.24	36	5350
5-03	14-Jul-08	21.21	41.45	4560	13.6	8.50	430	0.18	1770	3590
5-03	13-Oct-08	19.19	41.44	4360	12.6	7.69	490	0.08	1780	3590
5-04	14-Jul-08	17.69	64.20	2450	14.0	7.63	230	0.04	850	1810
5-04	14-Oct-08	17.66	64.13	3290	13.1	7.90	410	0.29	1360	2730
5-08	14-Jul-08	41.93	87.40	4180	13.9	9.77	510	0.31	1600	3350
5-08	14-Oct-08	39.37	87.33	4280	12.7	7.64	540	0.05	1640	3490
5-73	14-Jul-08	13.36	31.42	5210	12.8	7.11	790	0.09	1710	4220
5-73	14-Oct-08	12.83	31.38	4960	12.7	7.14	710	1.86	1790	4290

RIO ALGOM MINING LLC

DISCHARGE PLAN DP-169 --- ANALYTICAL RESULTS - 2ND HALF 2008

Well	Date	Depth to Water (ft)	Total Depth (ft)	Spec. Cond.	Temp. (C)	pH	Chloride (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TDS (mg/L)
AW-1	08-Sep-08	45.69	81.15	4950	12.9	7.10	560	0.73	2110	4250
AW-1	03-Nov-08	46.00	80.97	4960	12.8	7.06	600	0.49	2100	4510
AW-2	02-Sep-08	31.01	85.83	5240	13.3	7.43	320	3.38	2690	4350
AW-2	03-Nov-08	30.61	85.63	4730	14.3	7.38	310	2.78	2400	4560
# MW-24	14-Jul-08		50.11							
# MW-24	14-Oct-08		50.11							
S-12	02-Sep-08	11.35	27.92	8990	14.5	6.89	1290	0.47	4020	8500
S-12	03-Nov-08	10.99	27.06	8550	14.8	7.04	1430	0.22	4200	8700
S-9	12-Aug-08	8.51	23.06	1120	15.0	8.76	2400	0.15	4100	10800

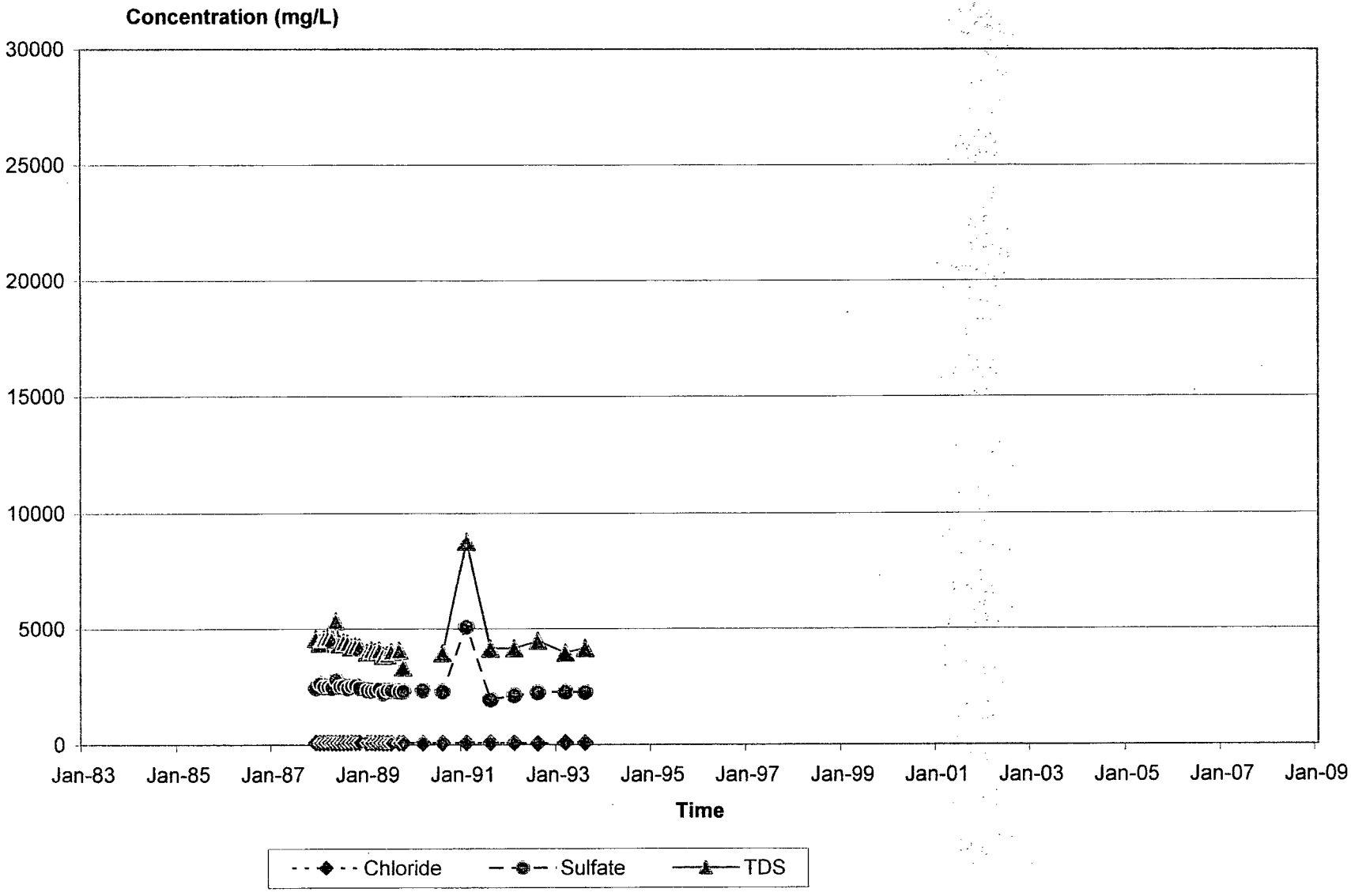
Notes: # - Dry Well

* - Well contained insufficient water for sample collection

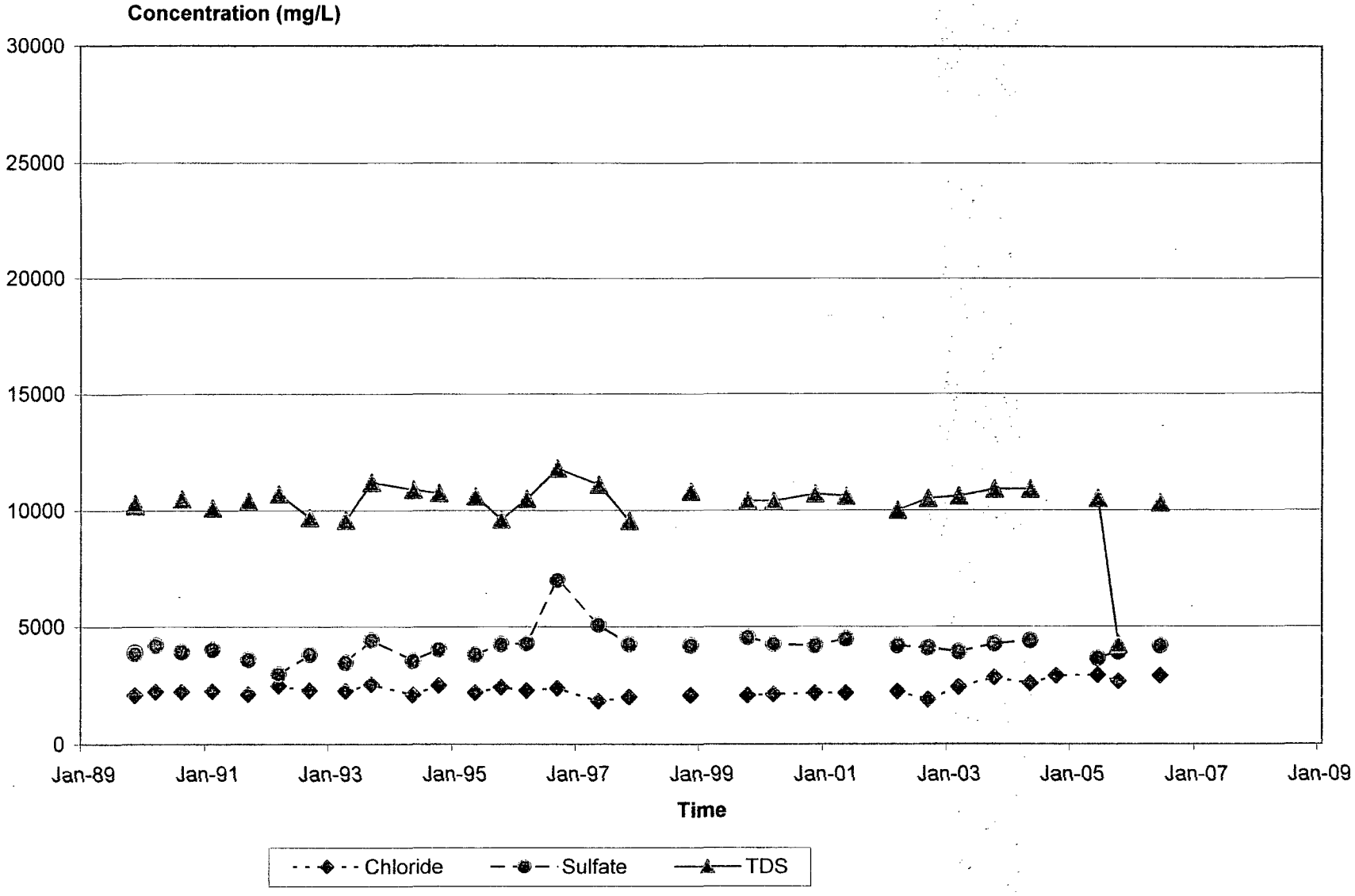
APPENDIX B

TIME vs CONCENTRATION PLOTS
ALLUVIAL WELLS

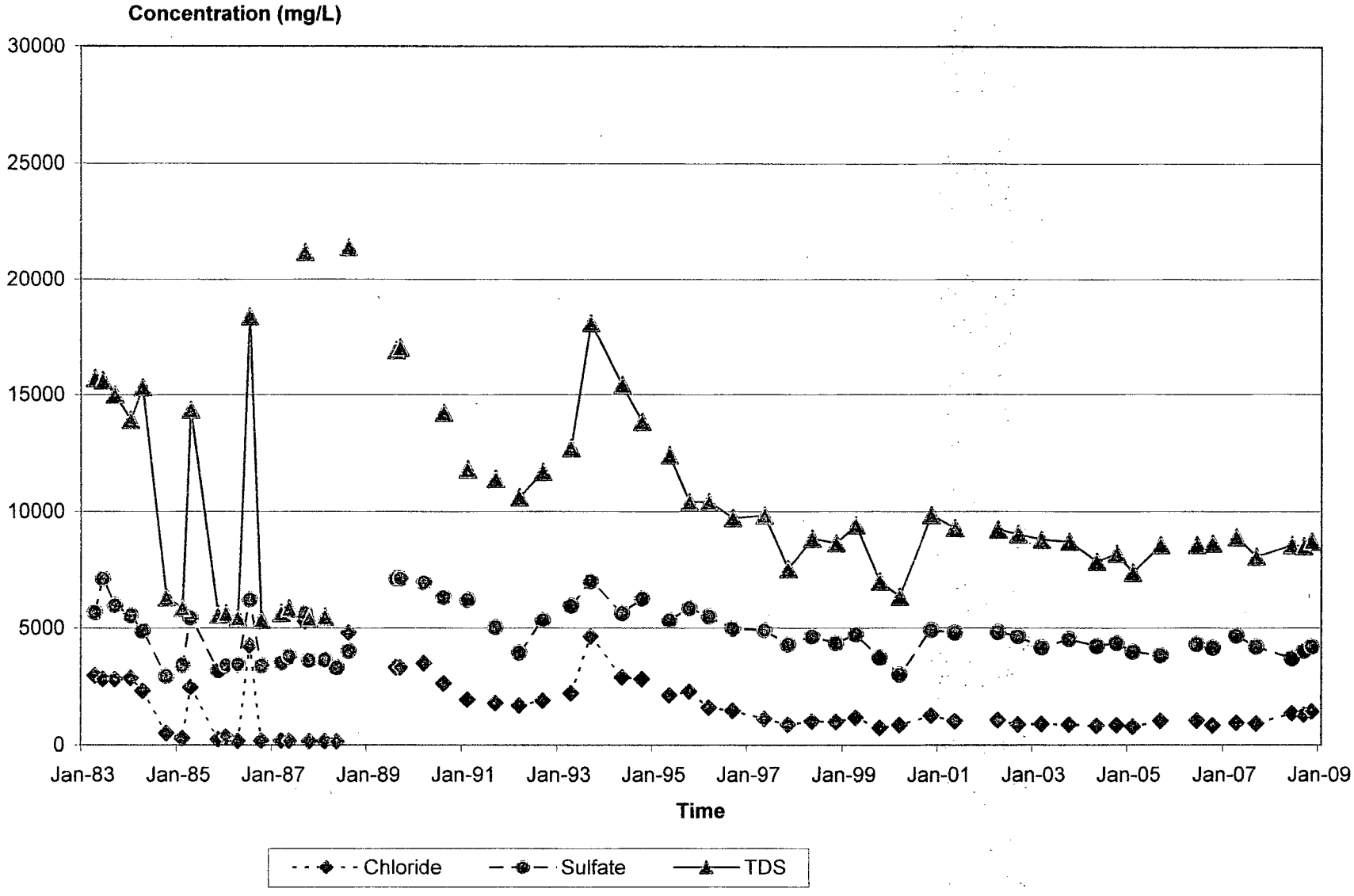
Monitor Well MW-24



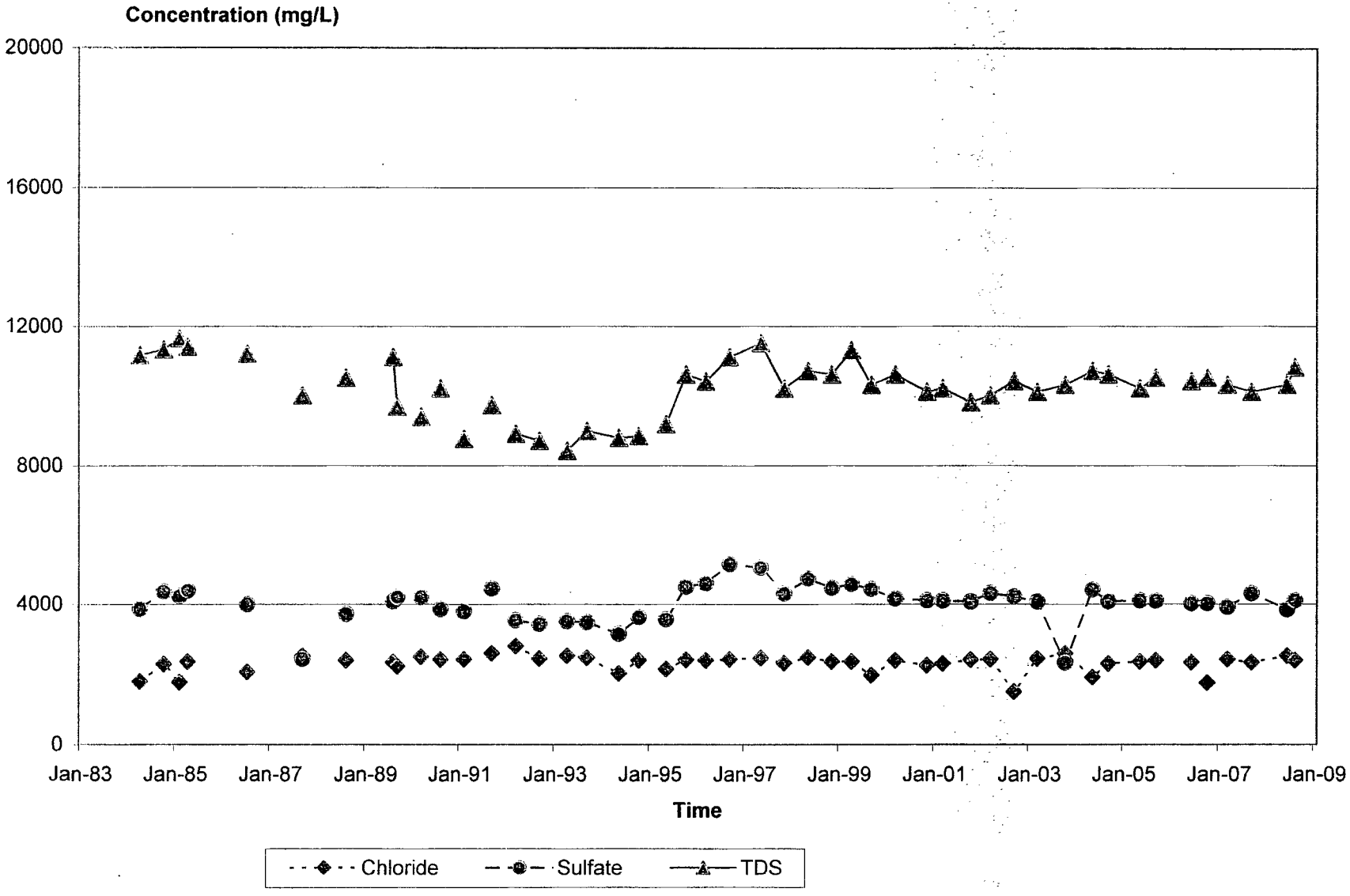
Monitor Well E-5

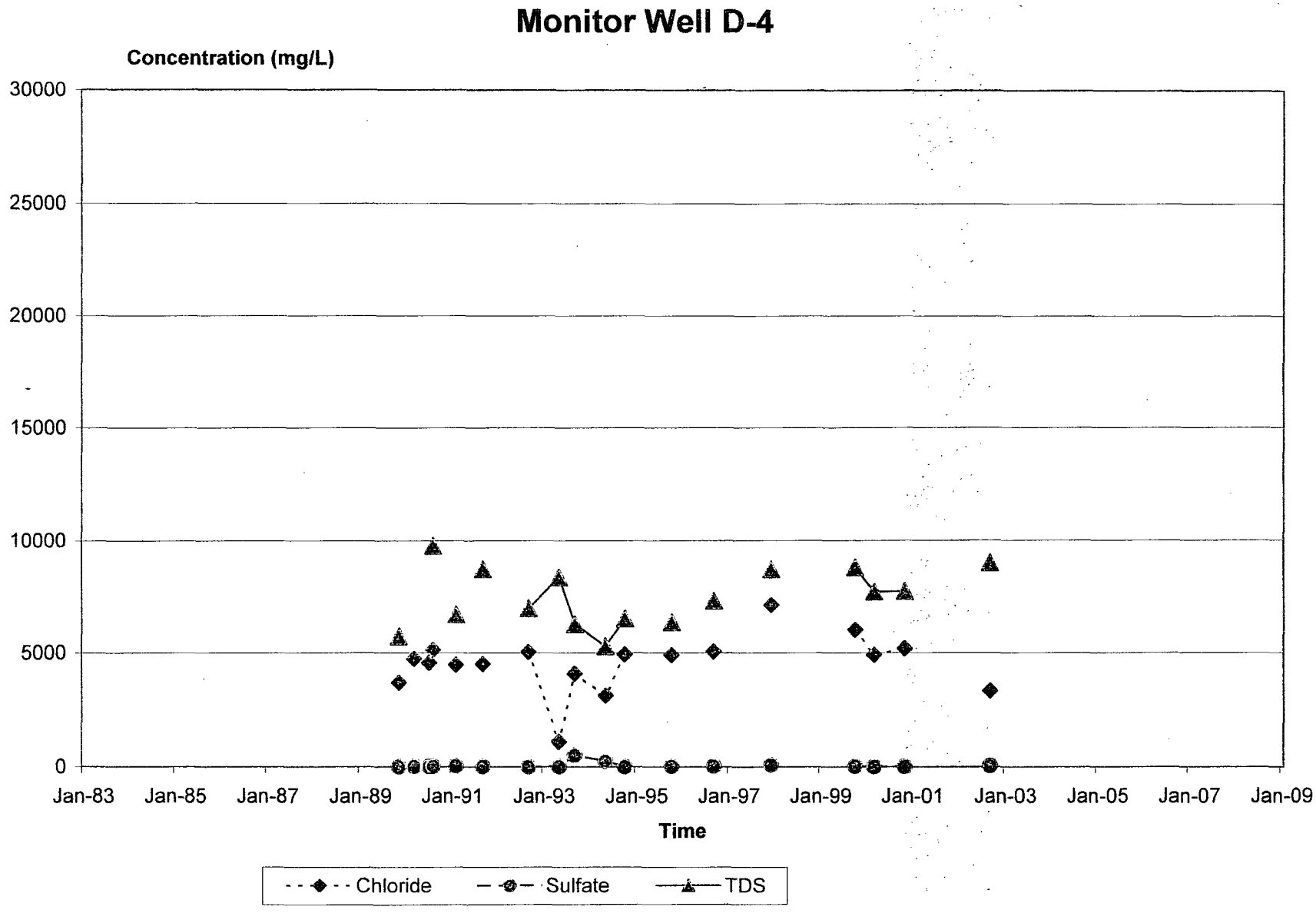


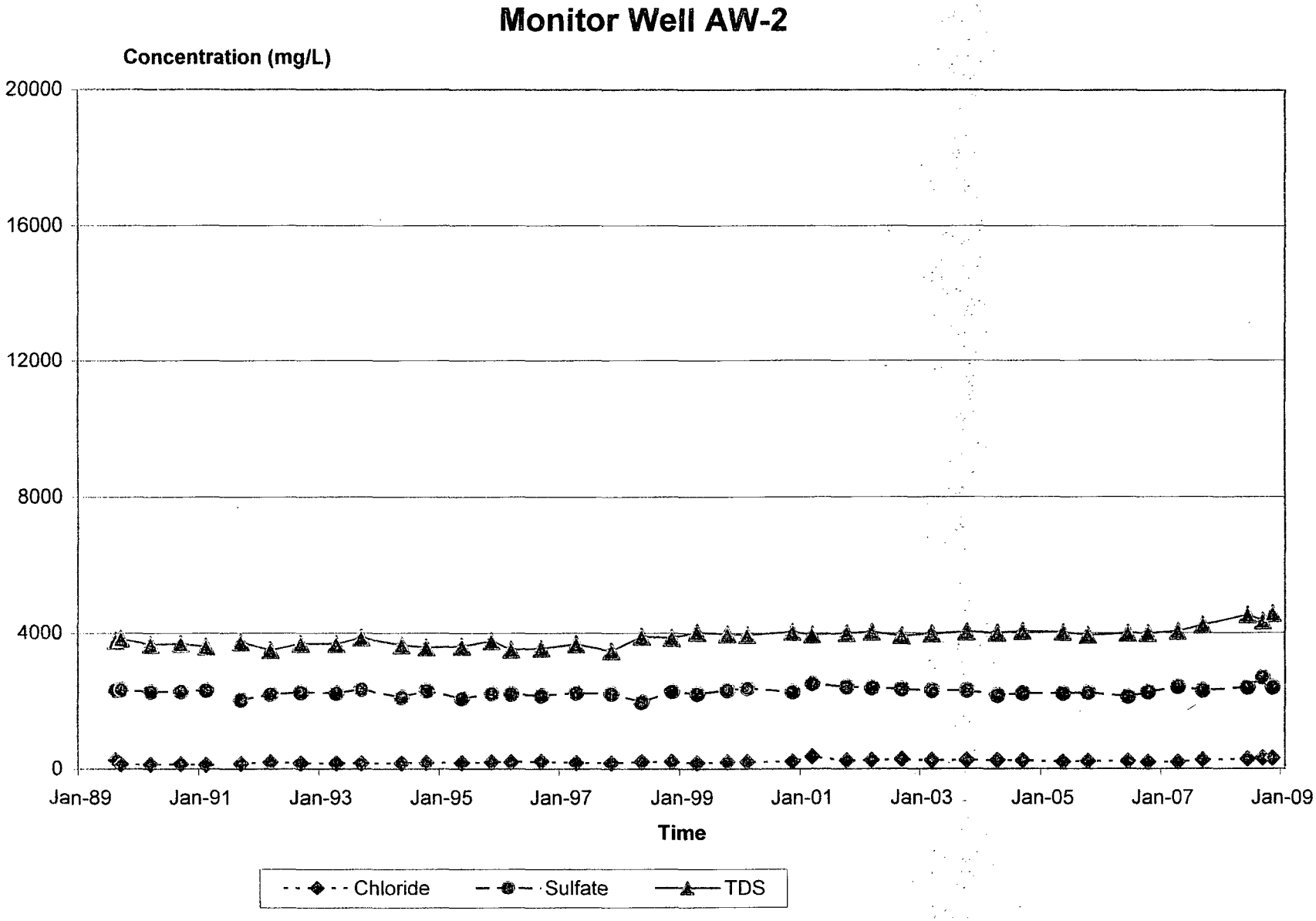
Monitor Well S-12

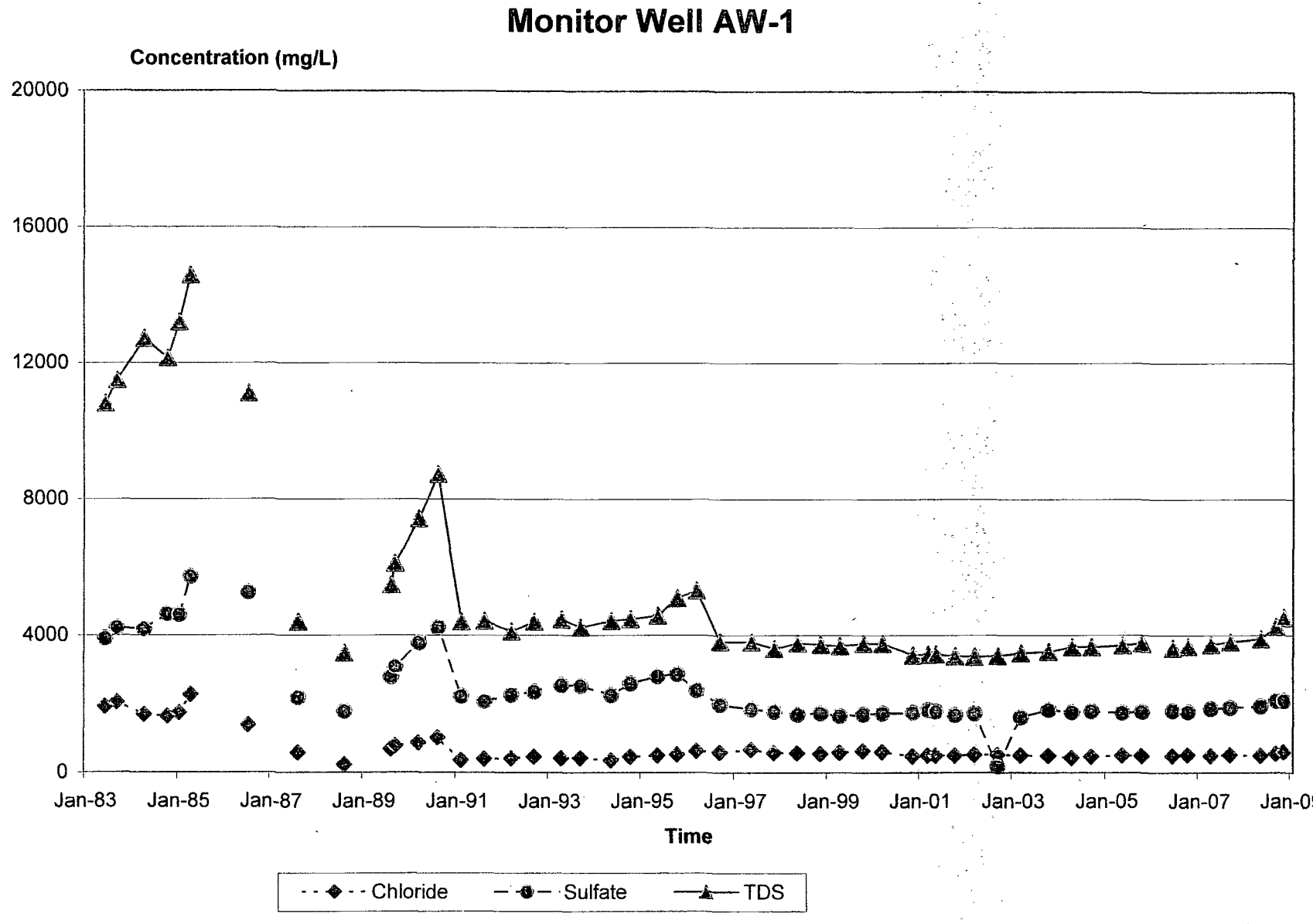


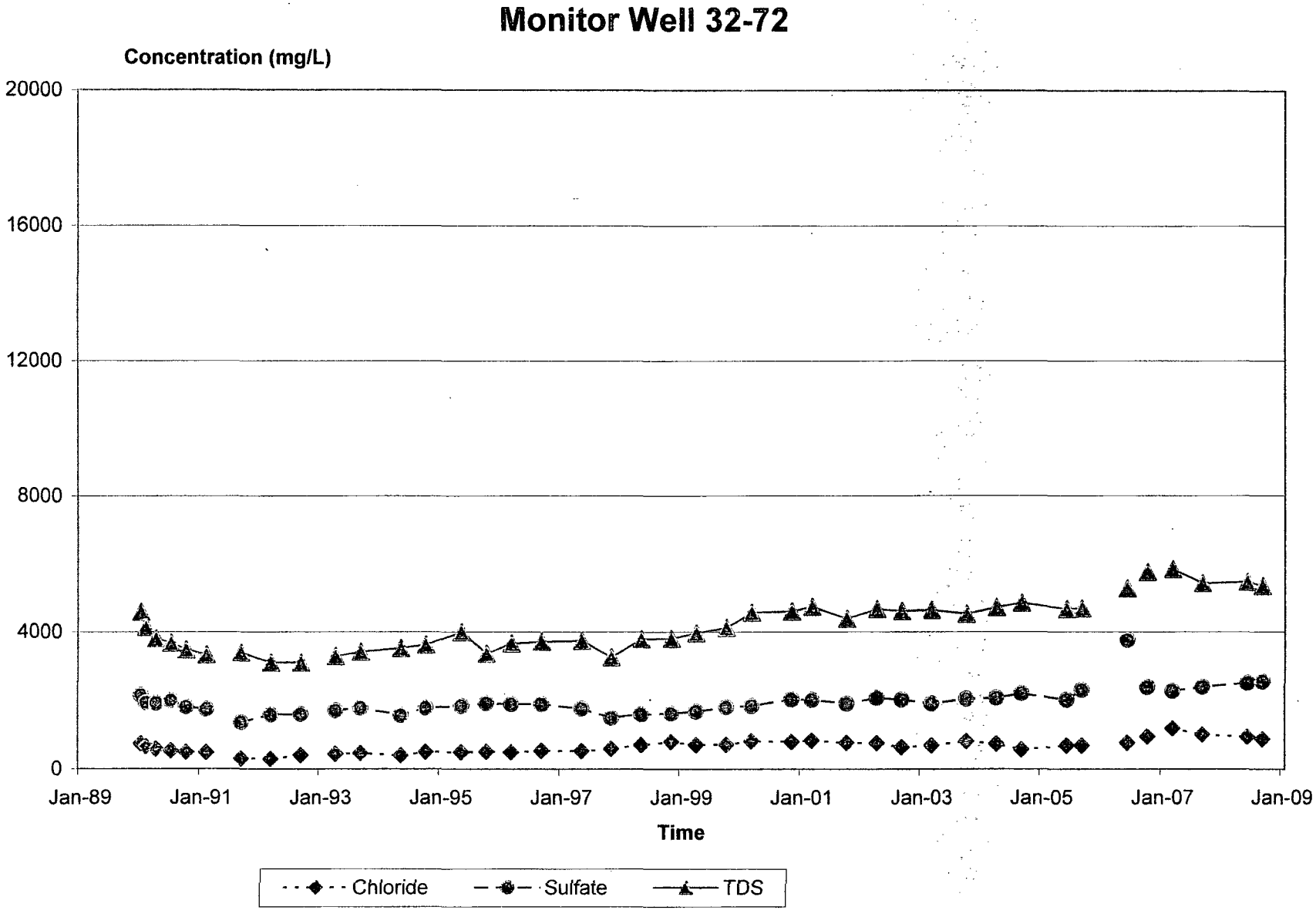
Monitor Well S-9




Monitor Well D-4
Concentration (mg/L)
30000
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 AW-2
Concentration (mg/L)
20000
16000
12000
8000
4000
0
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-1
Concentration (mg/L)
20000
16000
12000
8000
4000
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 32-72
Concentration (mg/L)
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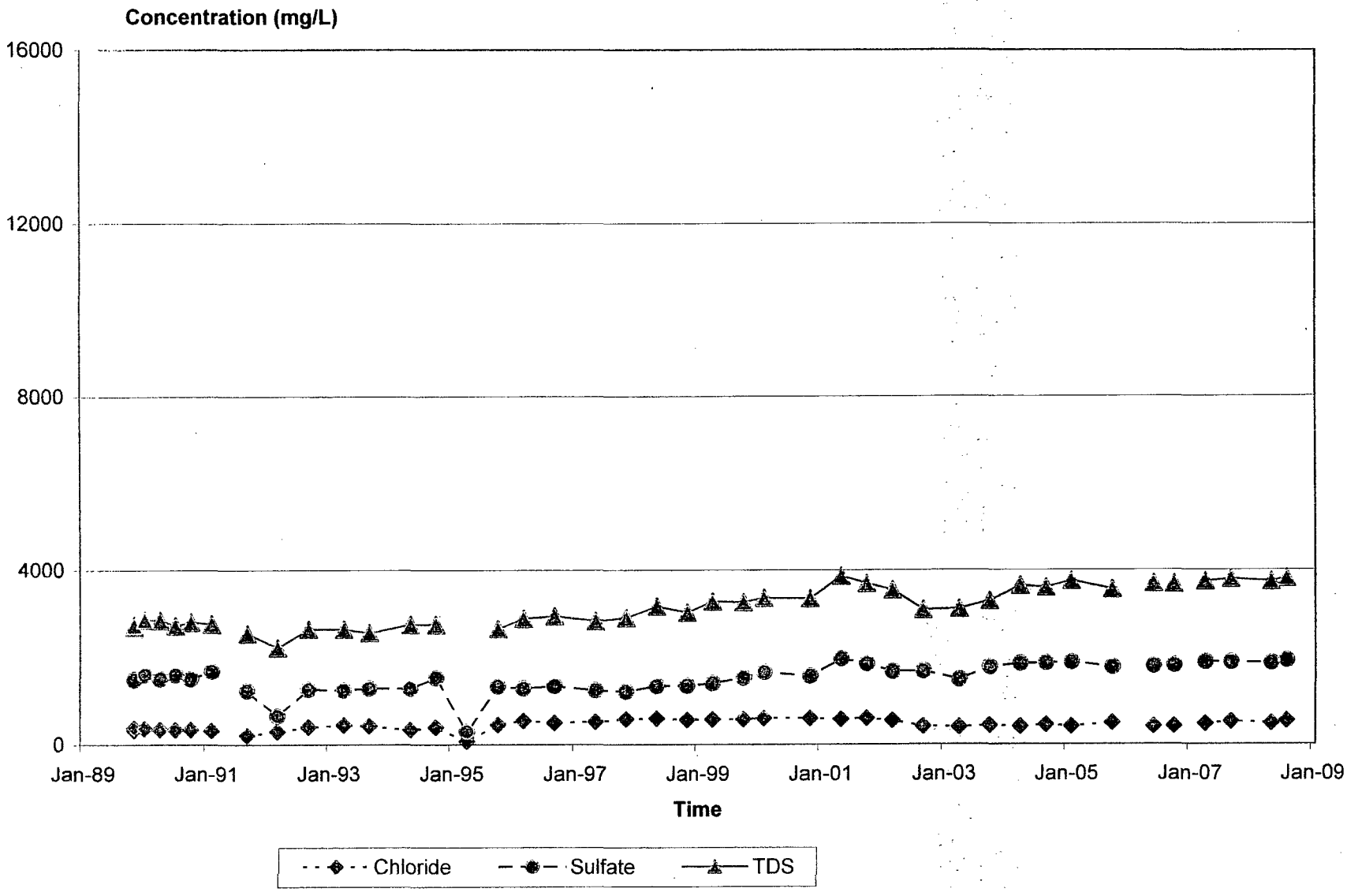
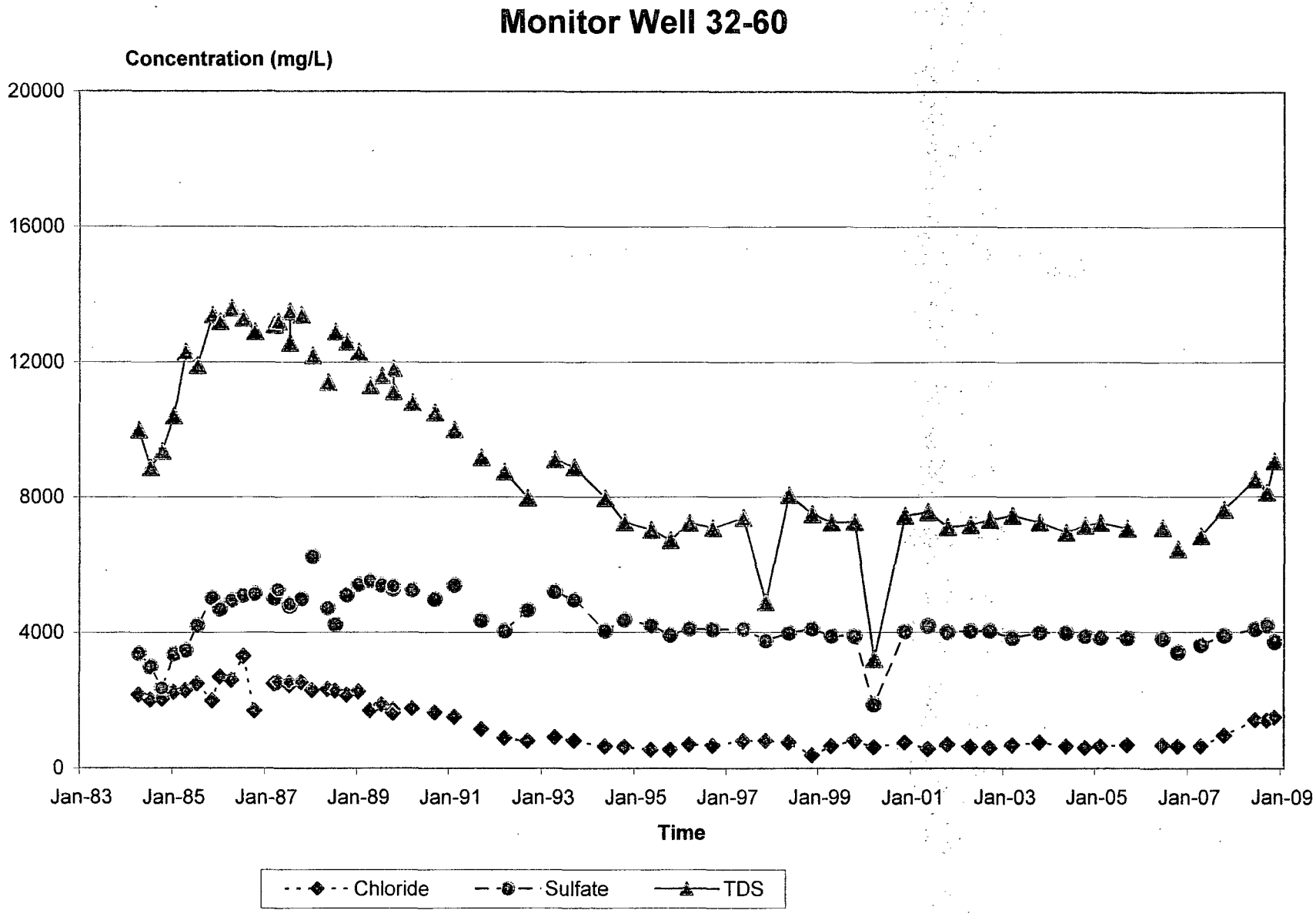
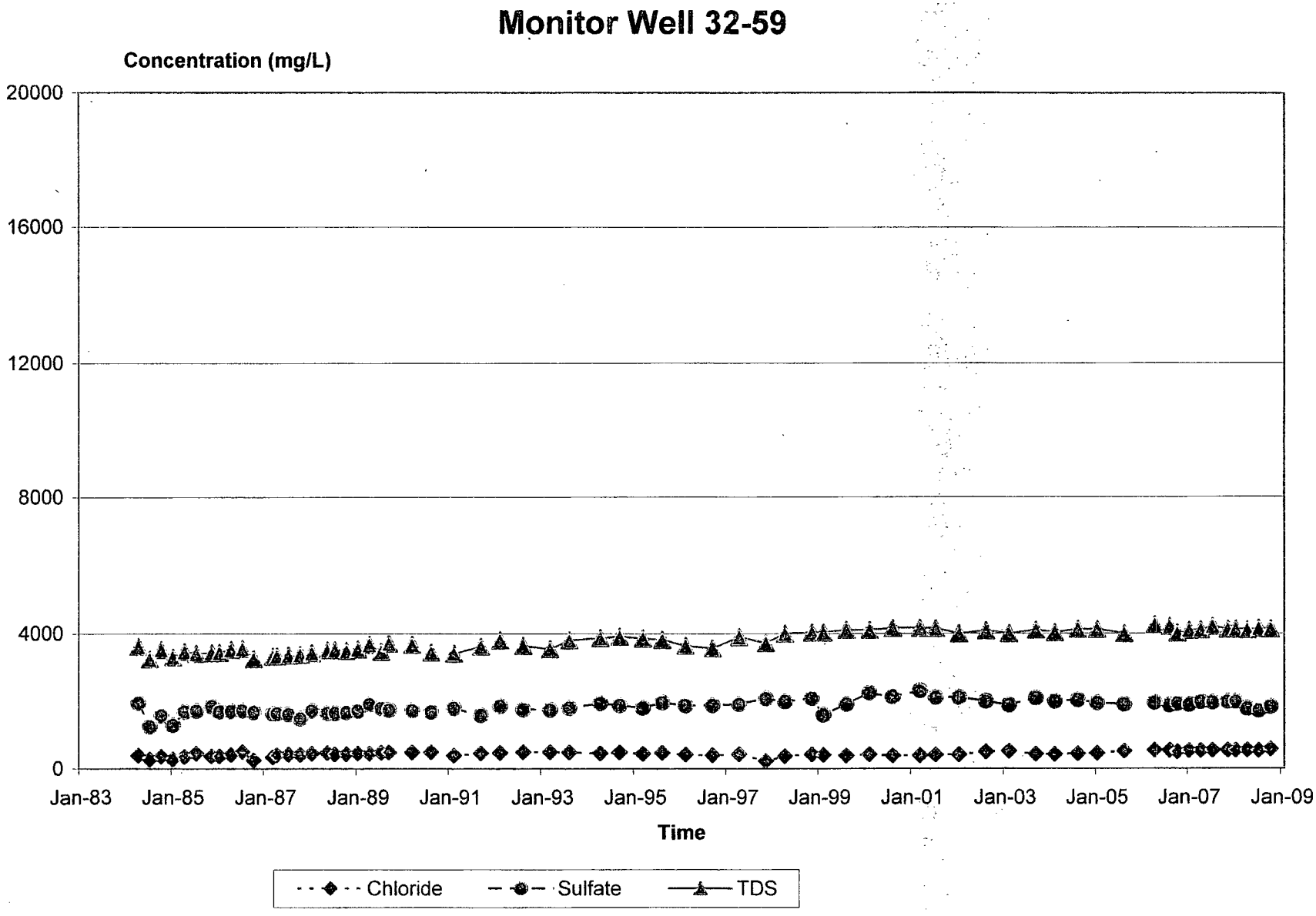
16000
12000
8000
4000
0
Jan-89
Jan-91
Jan-93
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Time
Chloride
Sulfate
TDS

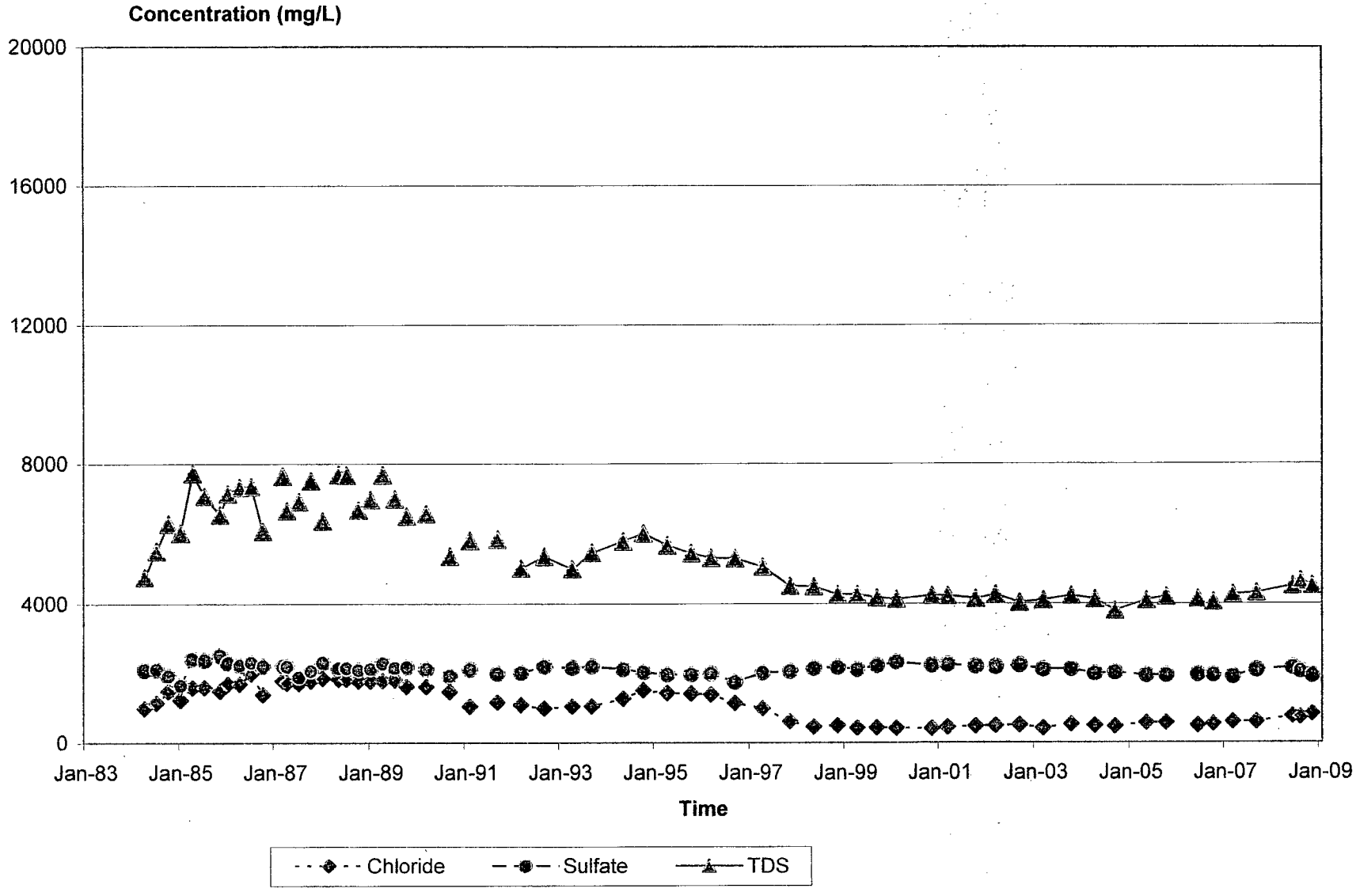
Monitor Well 32-69



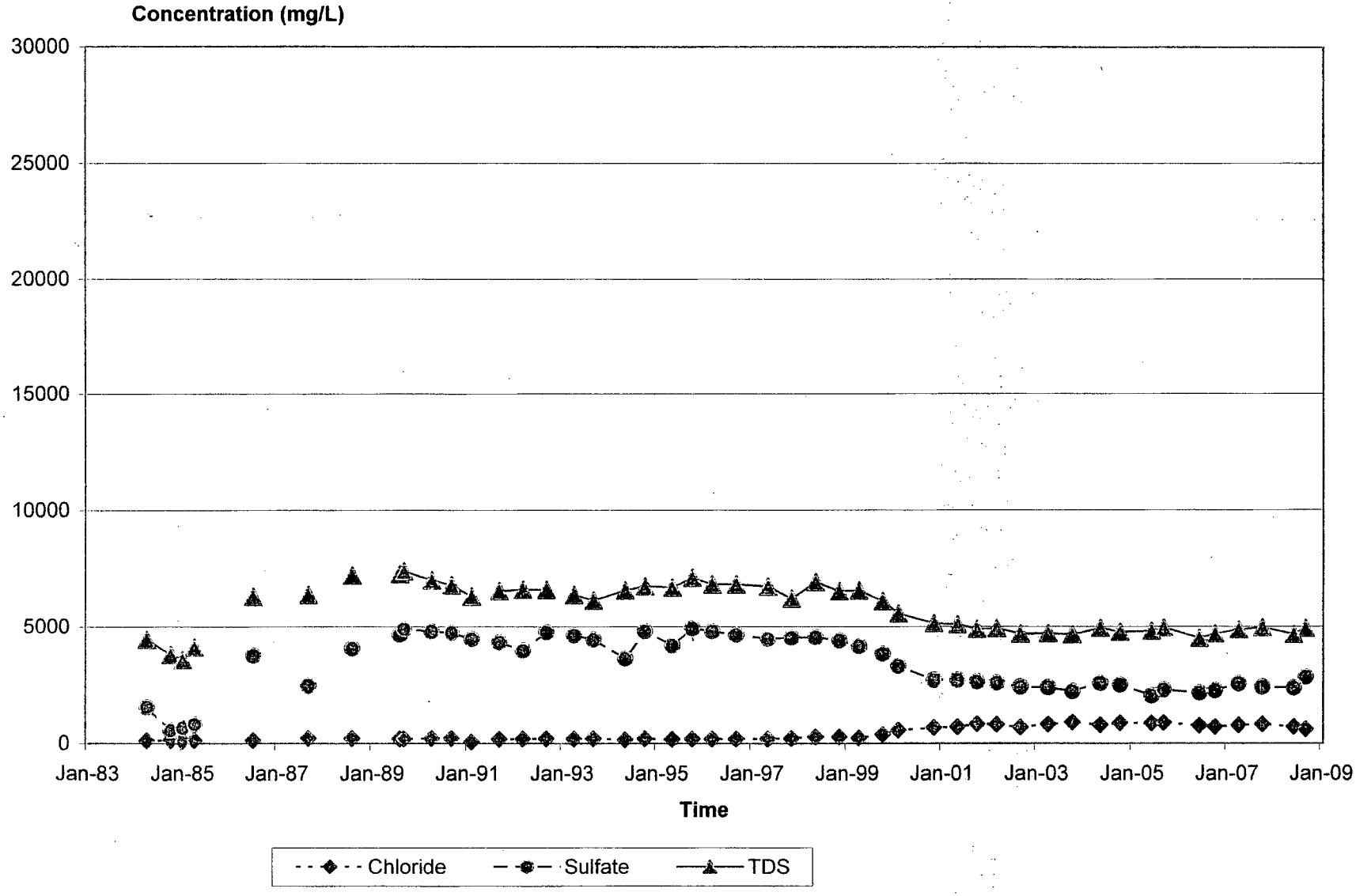

Monitor Well 32-60
Concentration (mg/L)
20000
16000
12000
8000
4000
0
Jan-83
Jan-85
Jan-87
Jan-89
Jan-91
Jan-93
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Time
Chloride
Sulfate
TDS

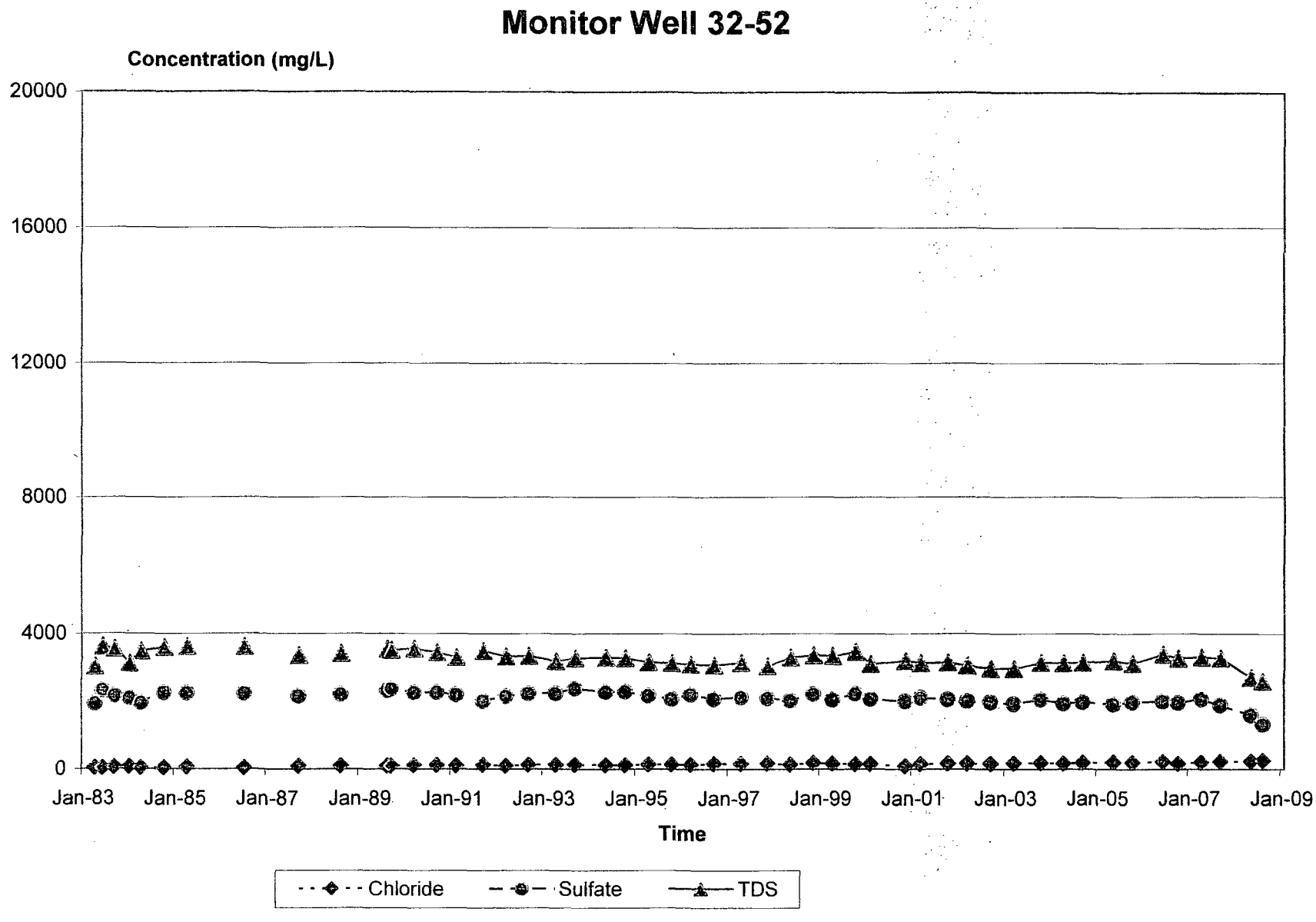

Monitor Well 32-59
Concentration (mg/L)
20000
16000
12000
8000
4000
0
Jan-83
Jan-85
Jan-87
Jan-89
Jan-91
Jan-93
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Time
Chloride
Sulfate
TDS

Monitor Well 32-58

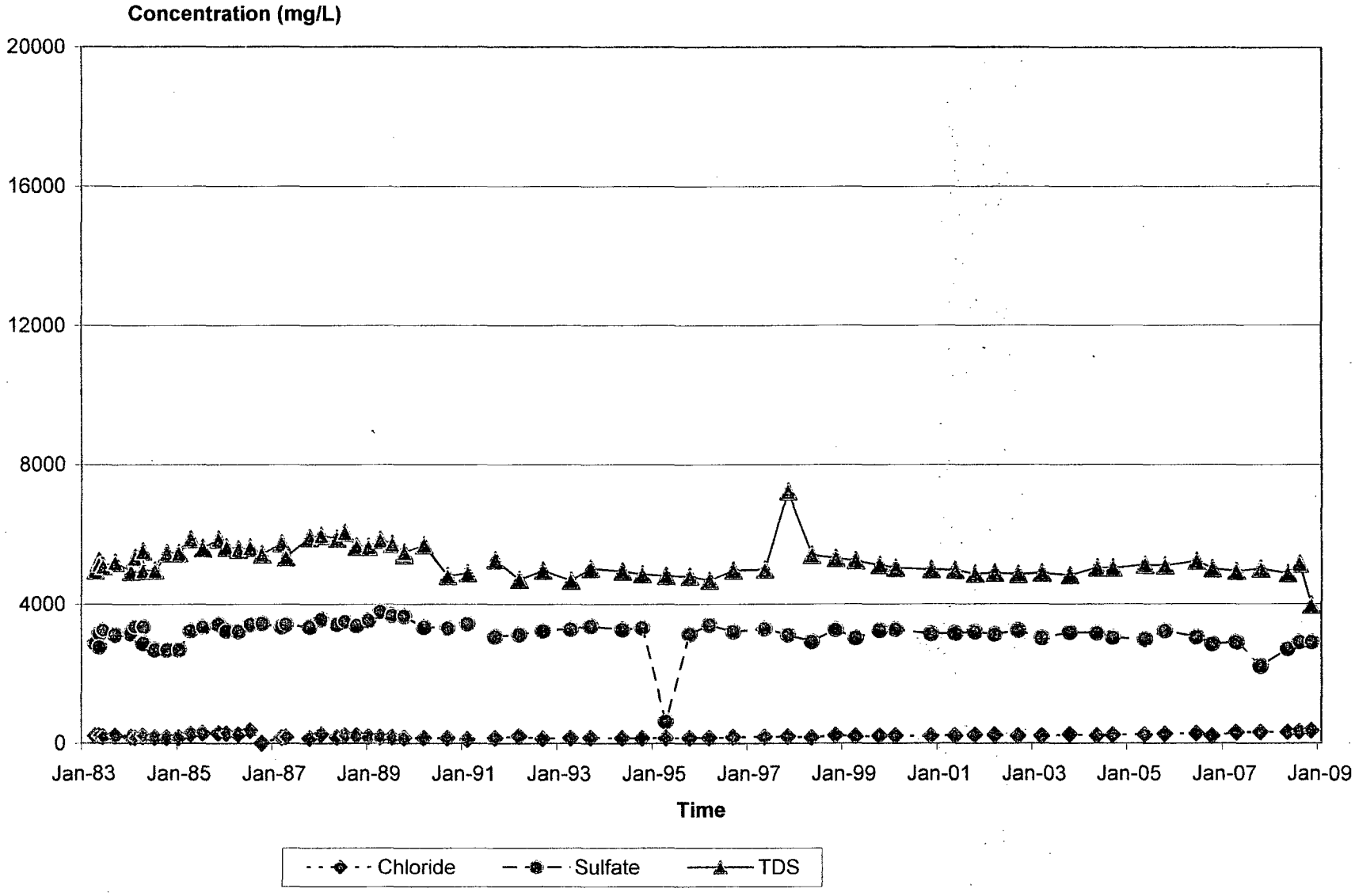


Monitor Well 32-57

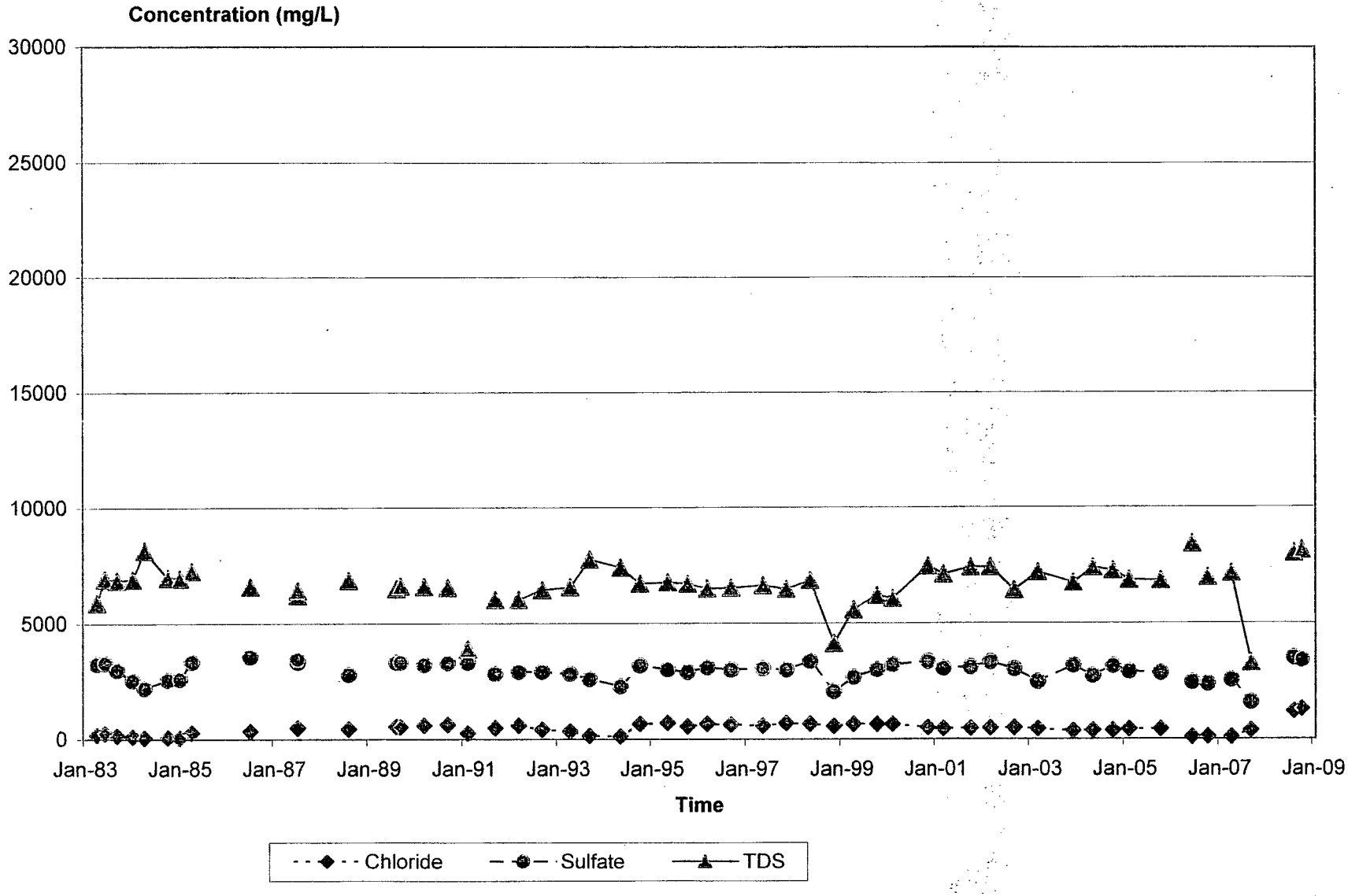



Monitor Well 32-52
Concentration (mg/L)
20000
16000
12000
8000
4000
0
Jan-83
Jan-85
Jan-87
Jan-89
Jan-91
Jan-93
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Time
Chloride
Sulfate
TDS

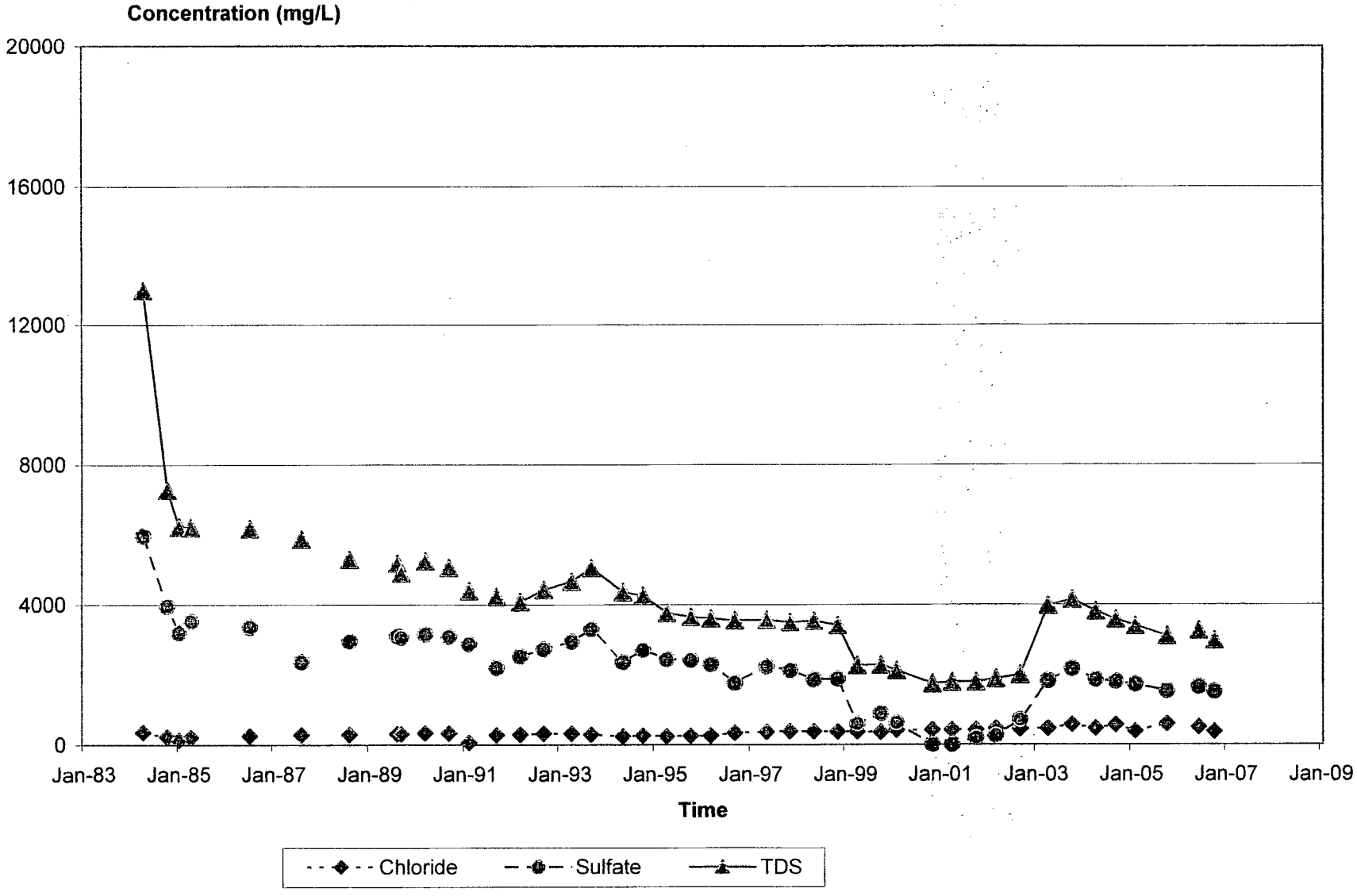
Monitor Well 32-51



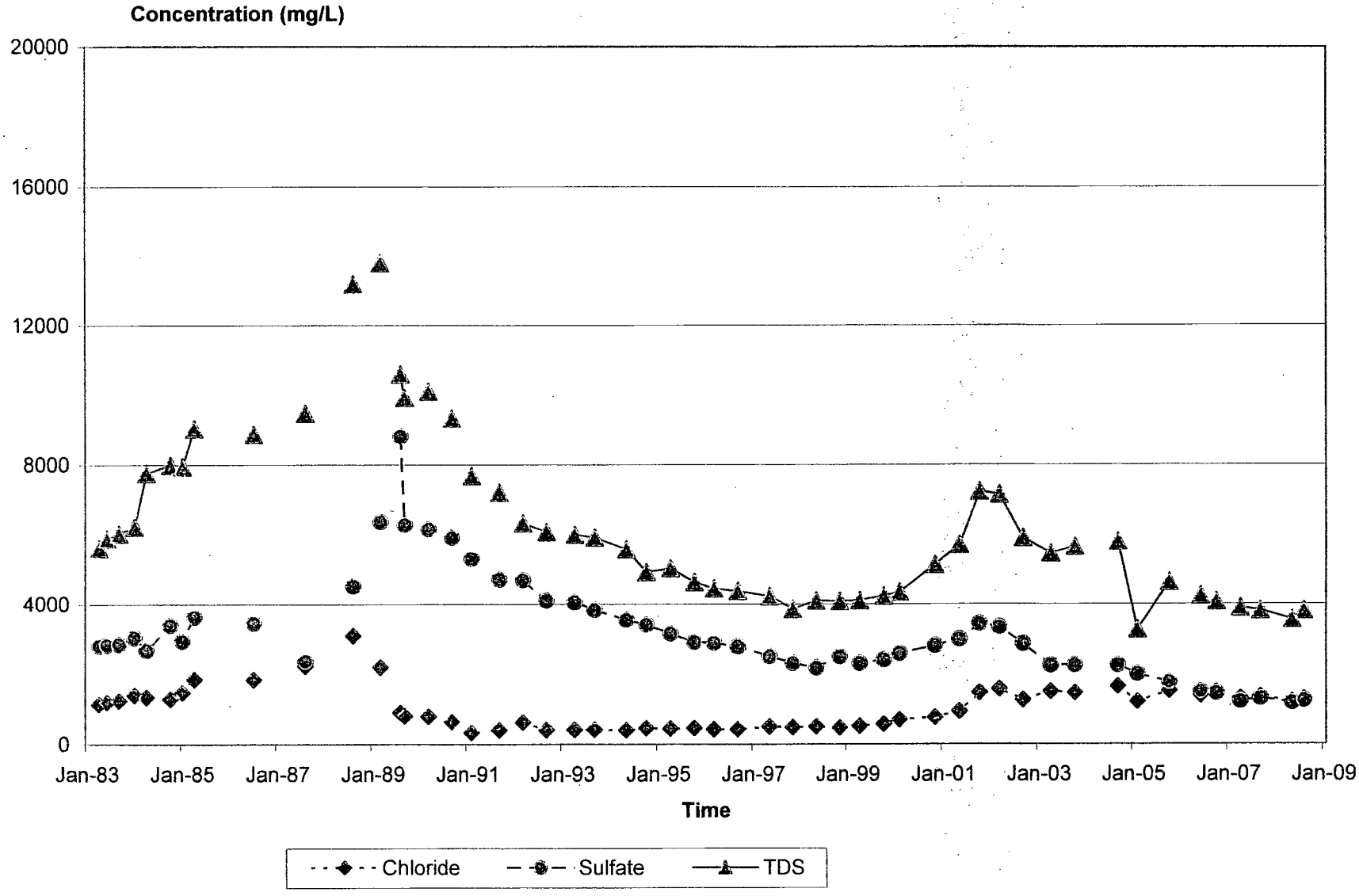
Monitor Well 32-43



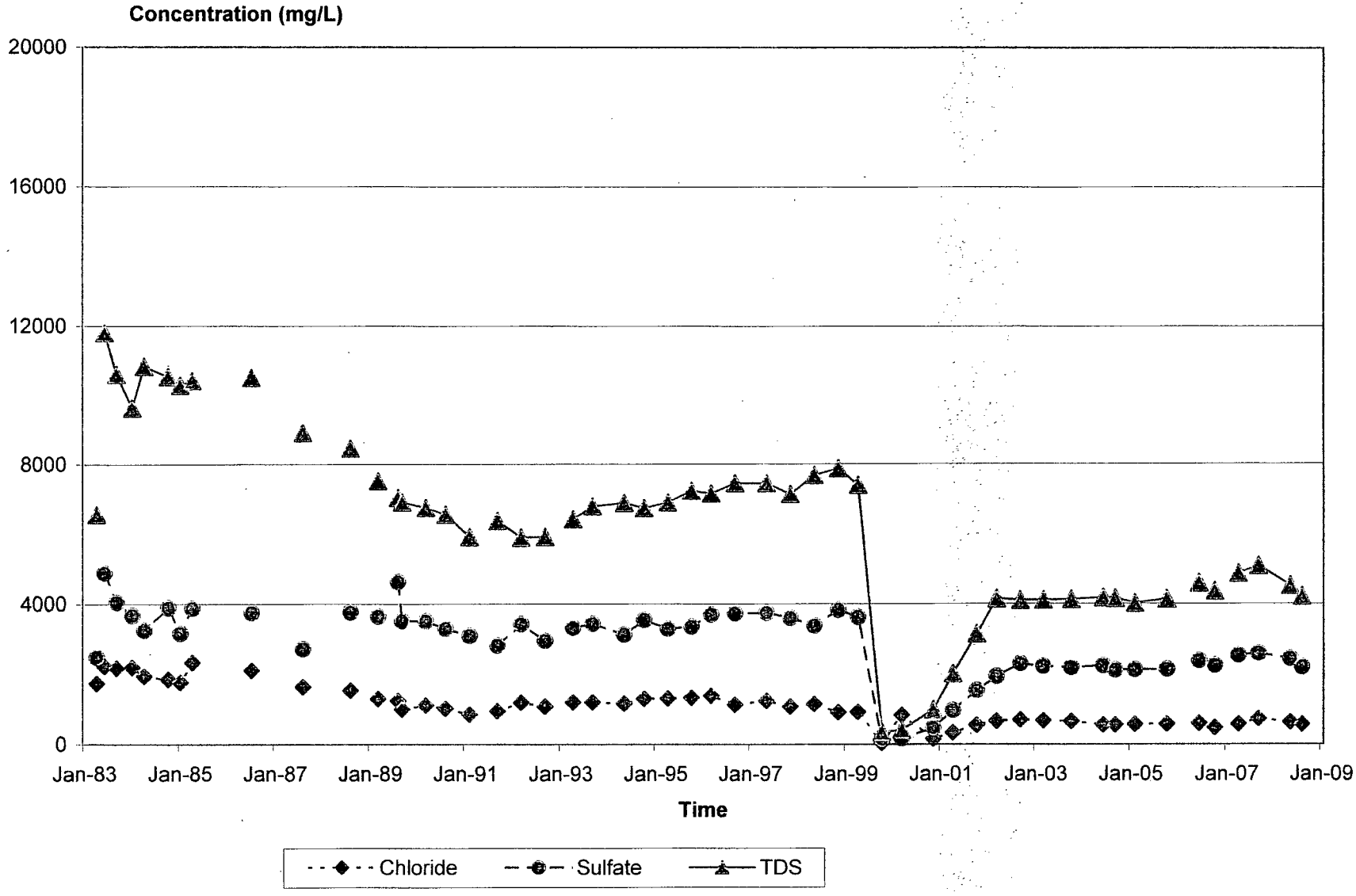
Monitor Well 32-42

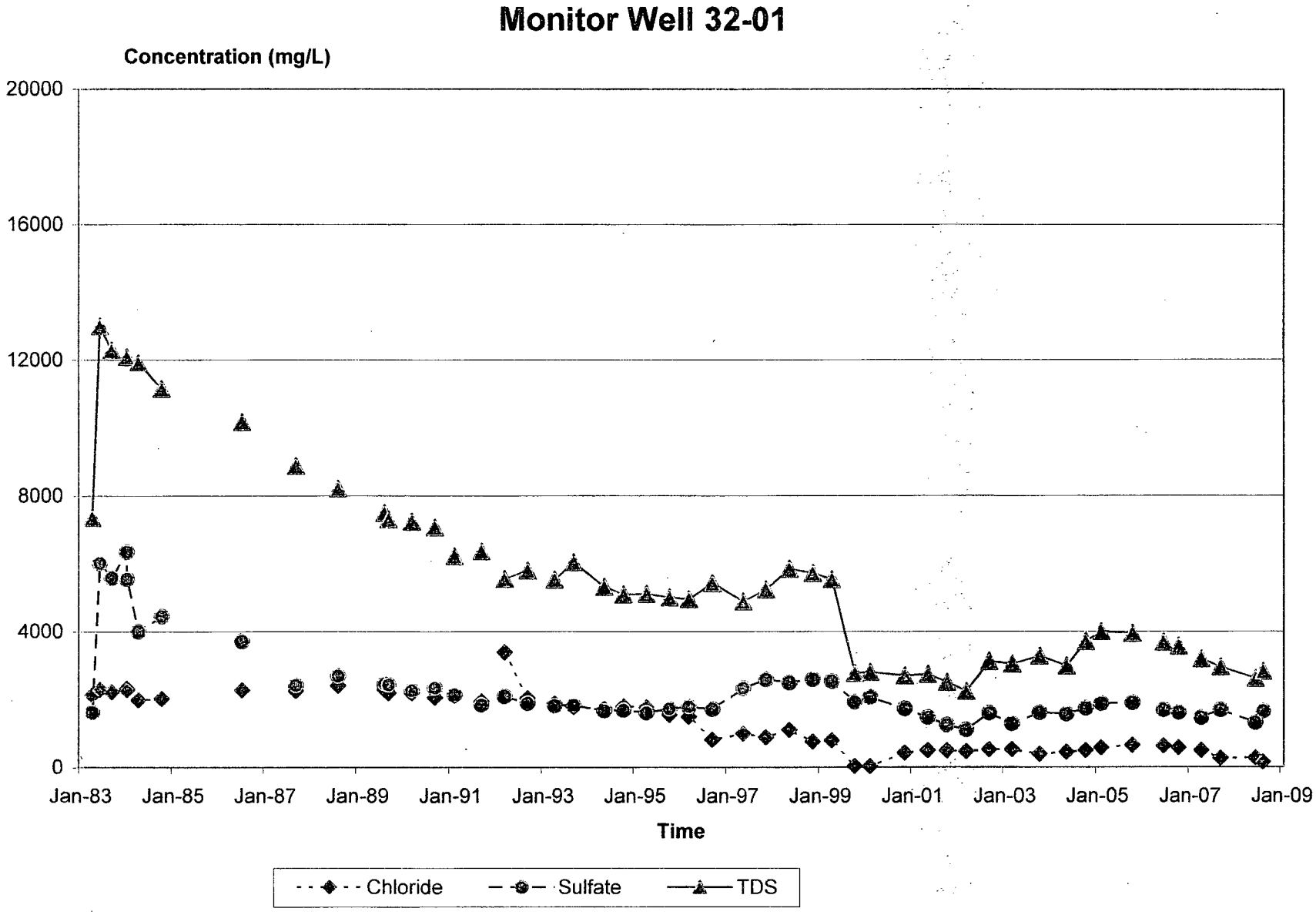


Monitor Well 32-41

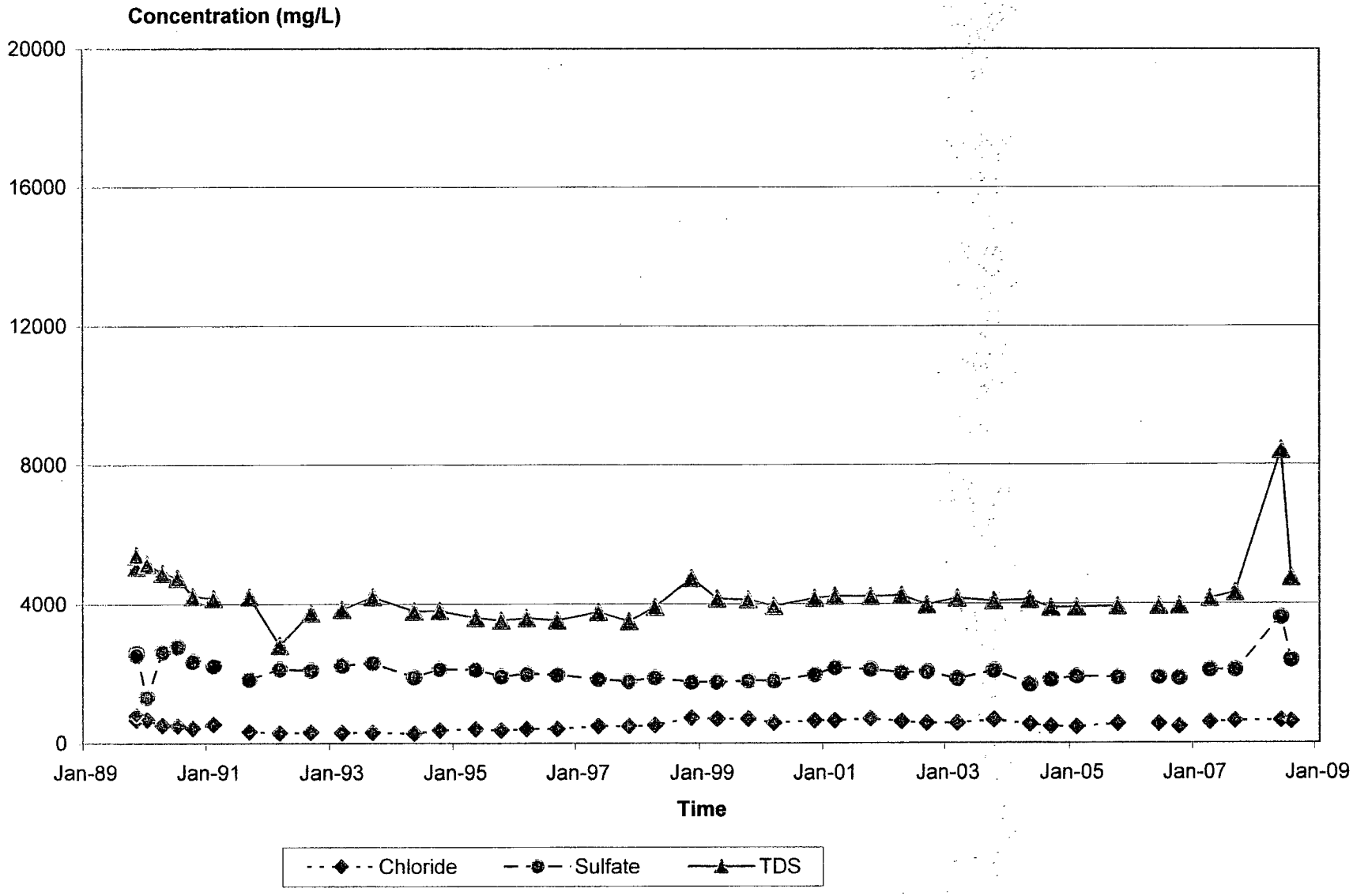


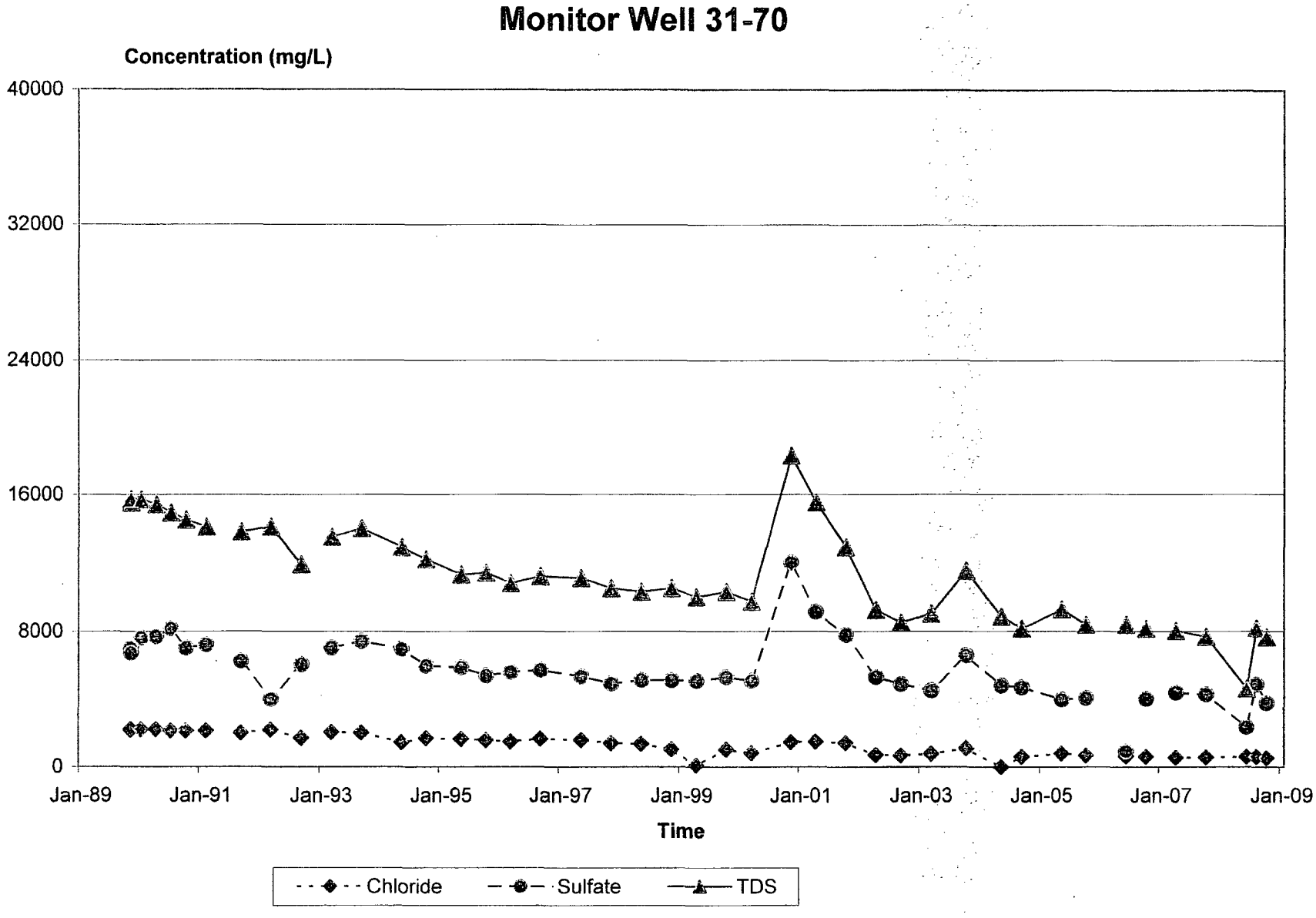
Monitor Well 32-02

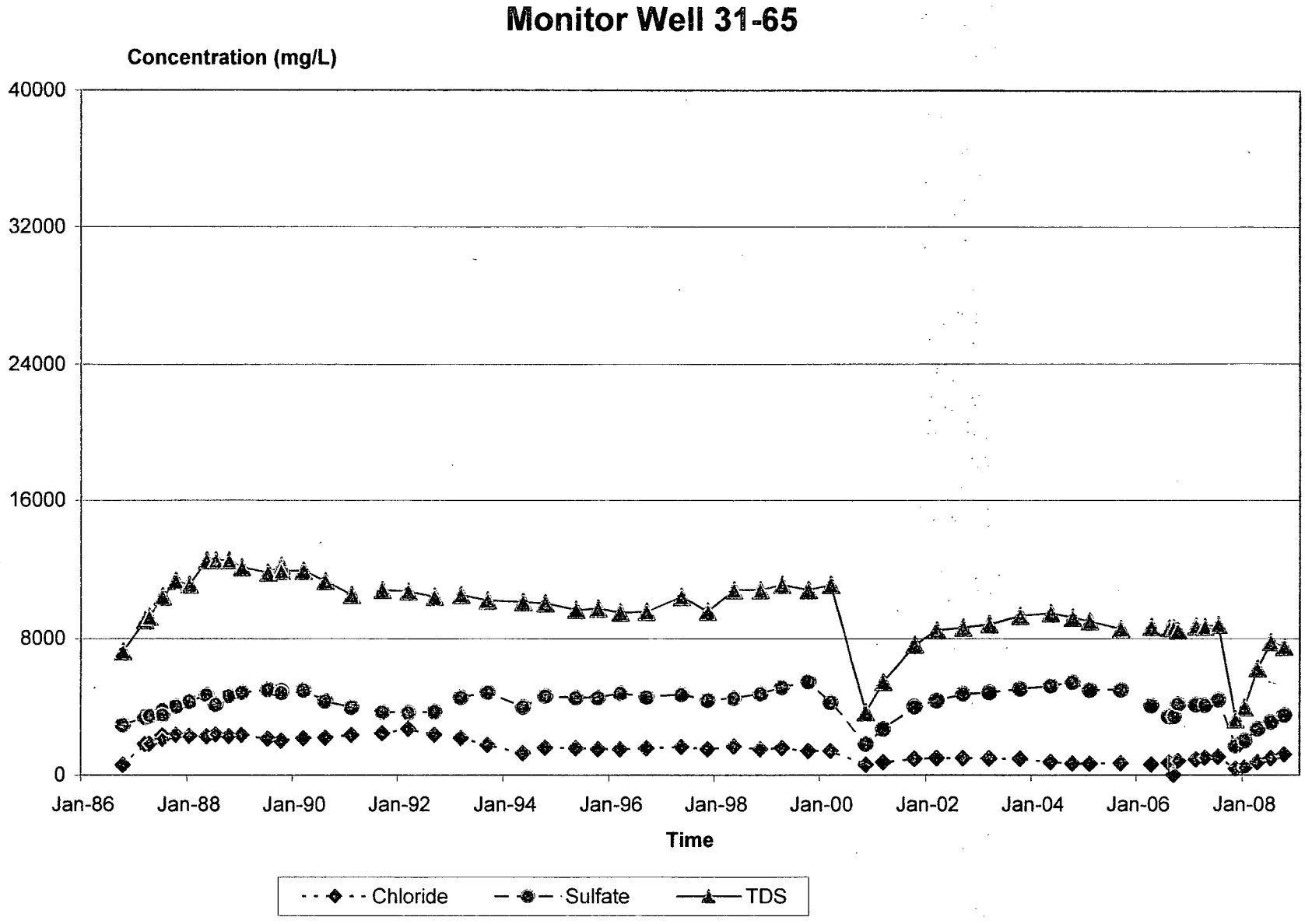


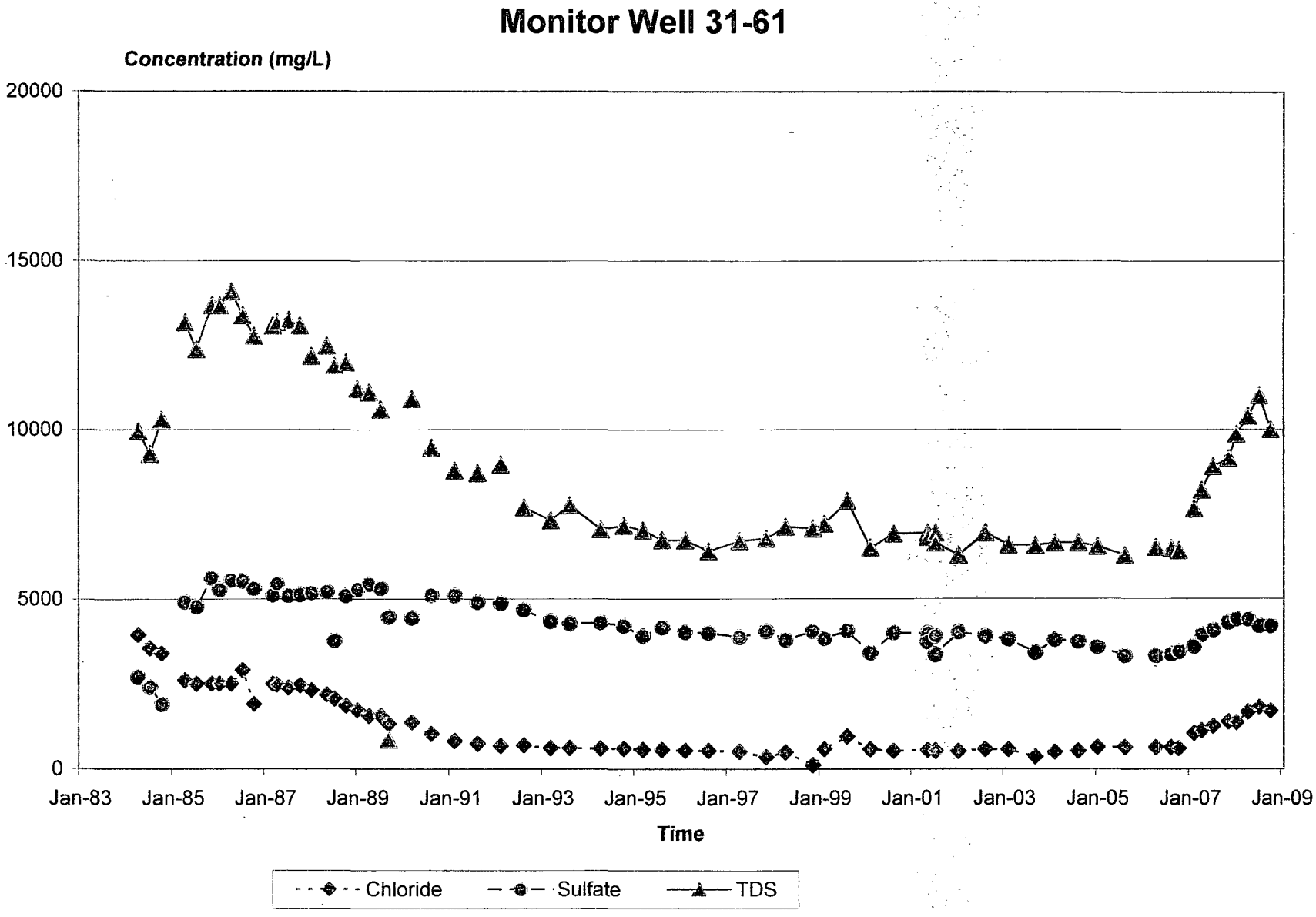

Monitor Well 32-01
Concentration (mg/L)
20000
16000
12000
8000
4000
0
Jan-83
Jan-85
Jan-87
Jan-89
Jan-91
Jan-93
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Time
Chloride
Sulfate
TDS

Monitor Well 31-71

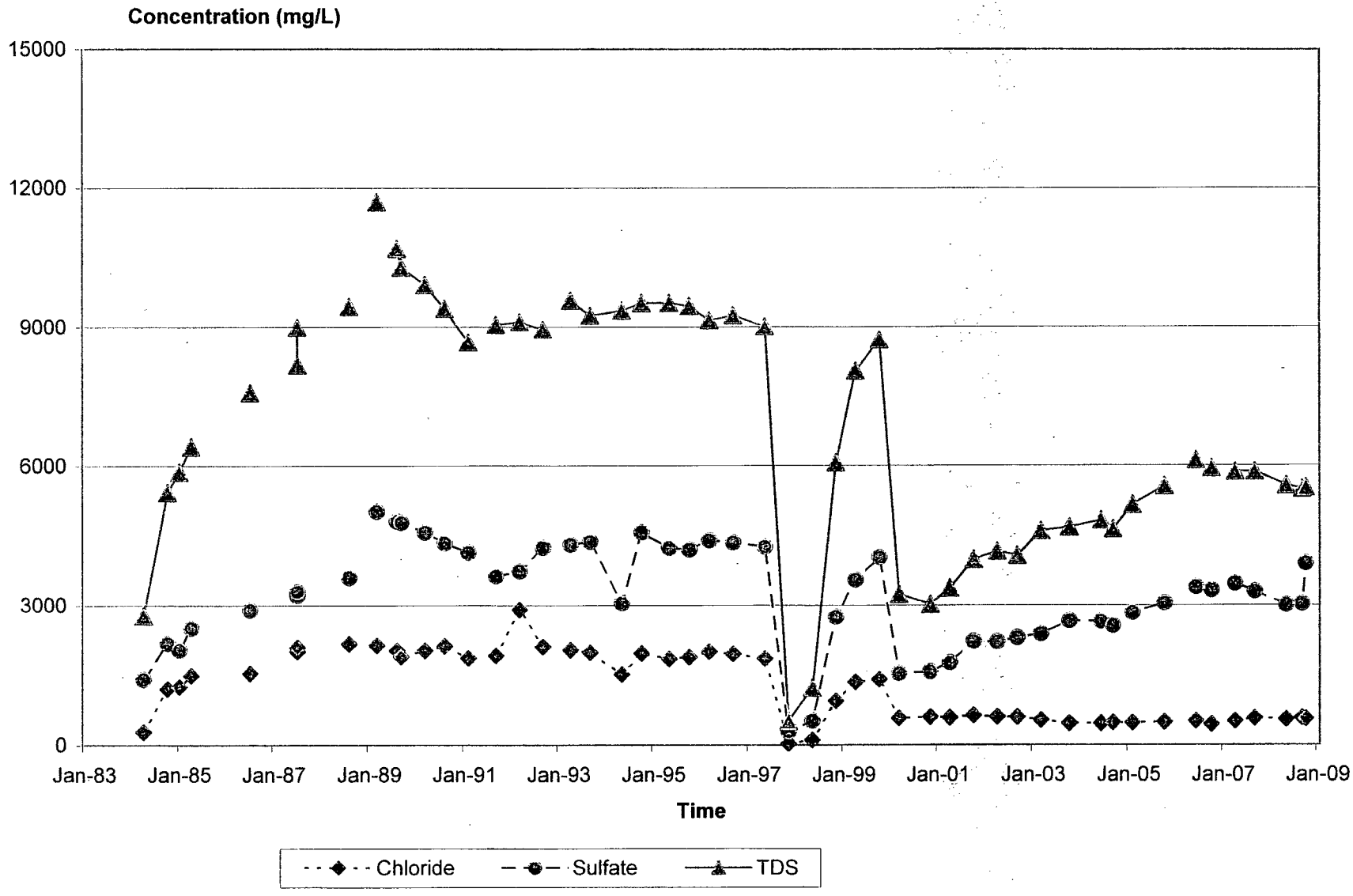



Monitor Well 31-70
Concentration (mg/L)
40000
32000
24000
16000
8000
0
Jan-89
Jan-91
Jan-93
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Time
Chloride
Sulfate
TDS

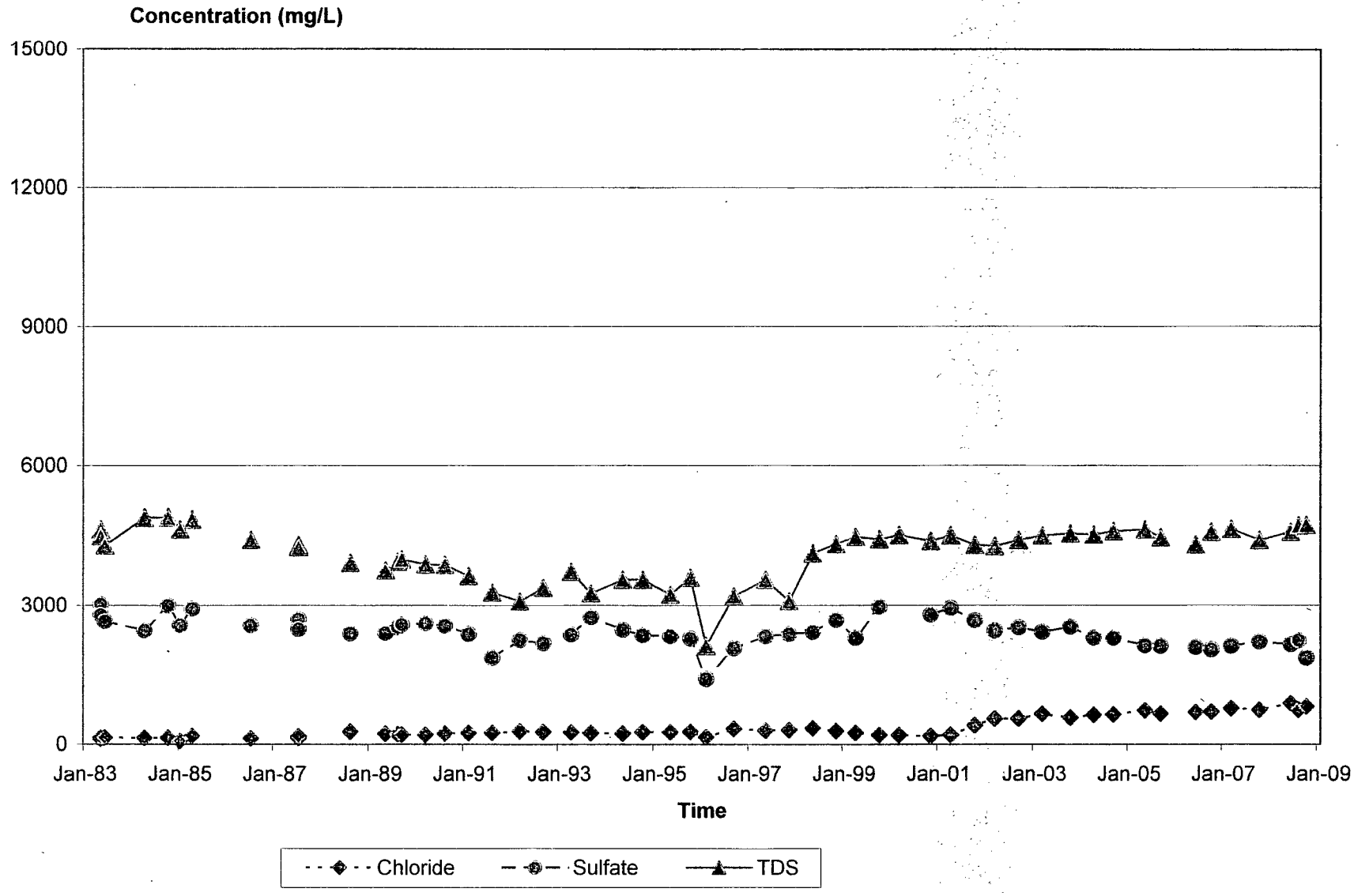

Monitor Well 31-65
Concentration (mg/L)
40000
32000
24000
16000
8000
0
Jan-86
Jan-88
Jan-90
Jan-92
Jan-94
Jan-96
Jan-98
Jan-00
Jan-02
Jan-04
Jan-06
Jan-08
Time
Chloride
Sulfate
TDS


Monitor Well 31-61
Concentration (mg/L)
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

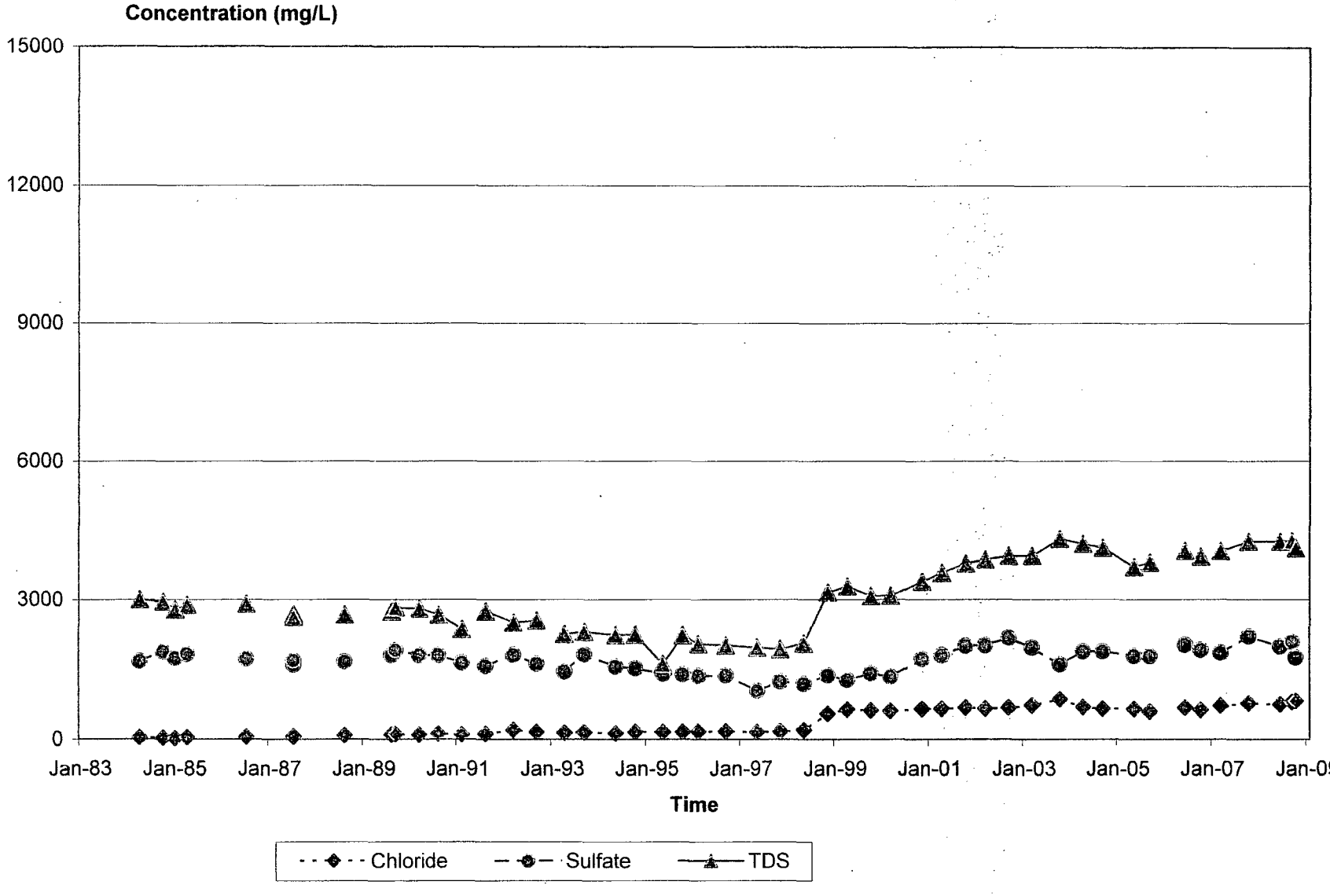
Monitor Well 31-05

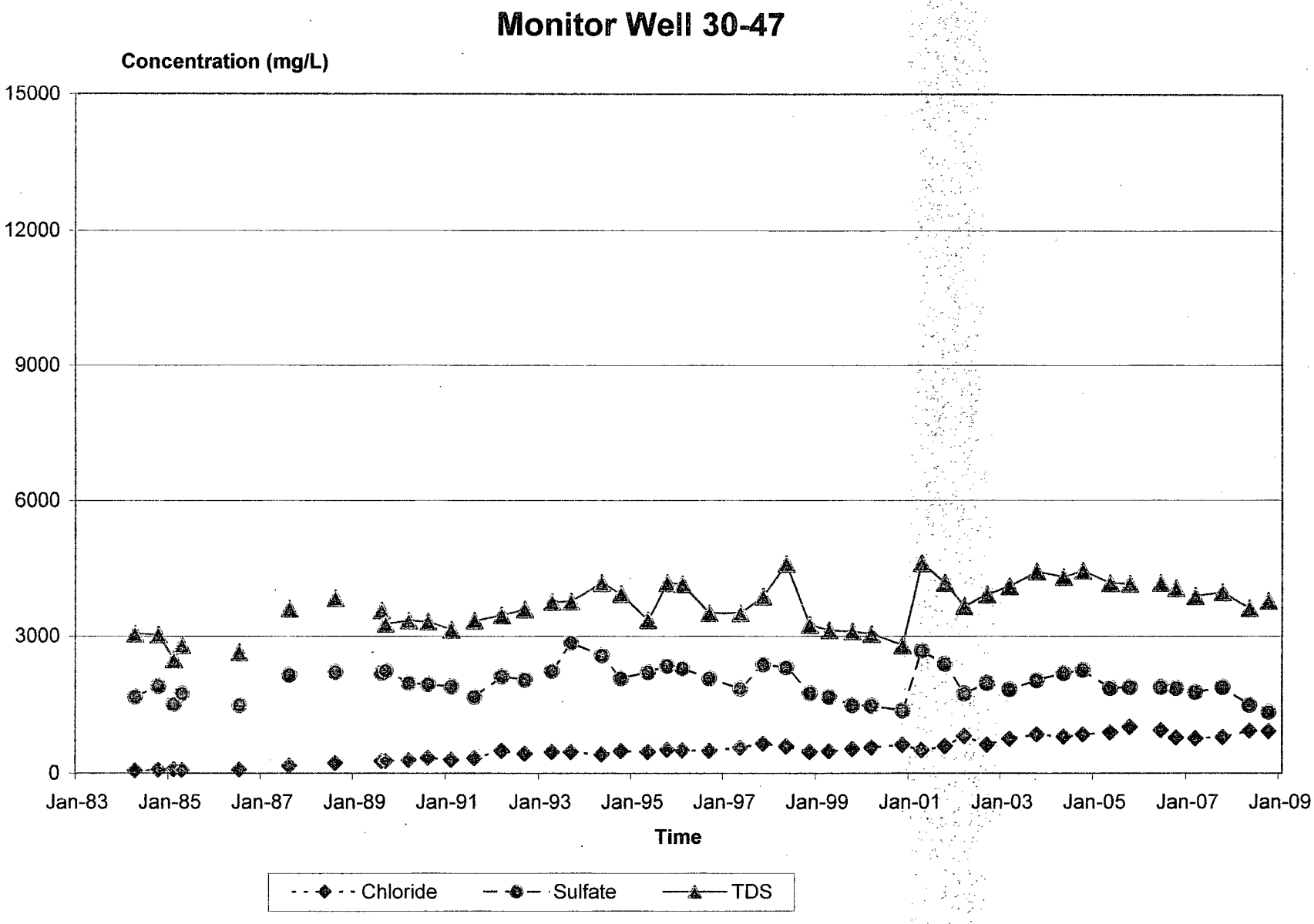


Monitor Well 30-49

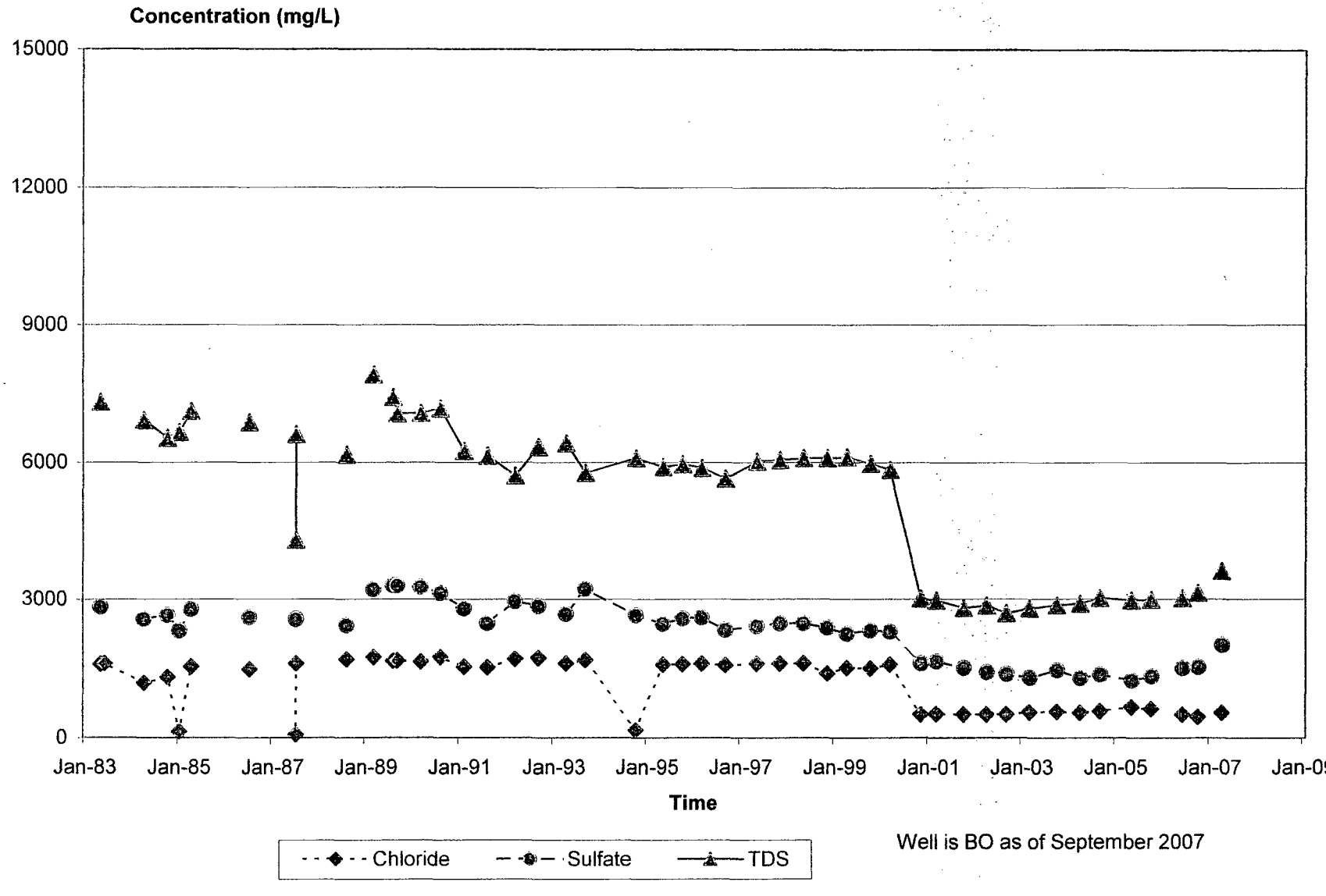


Monitor Well 30-48



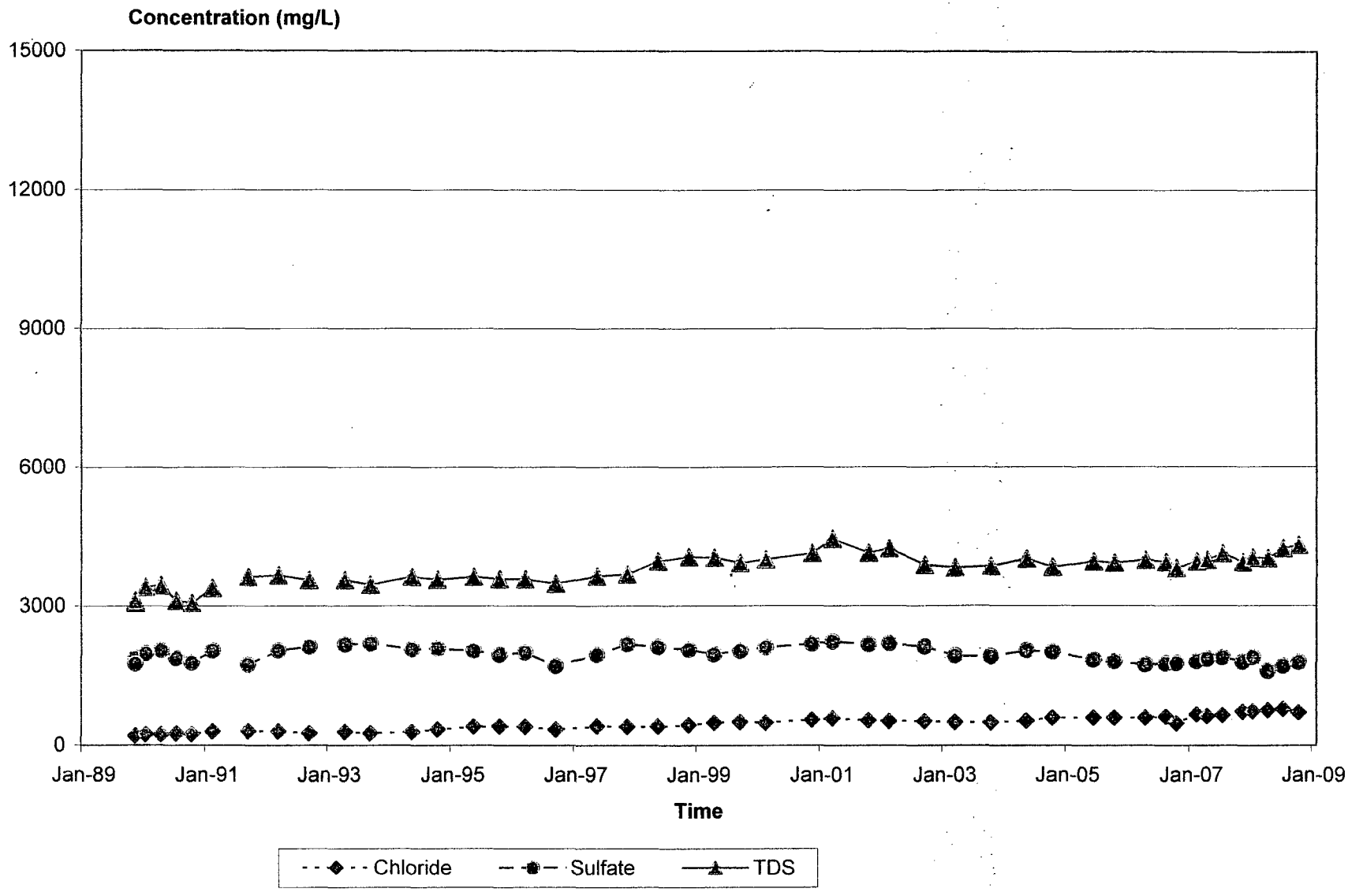

Monitor Well 30-47
Concentration (mg/L)
15000
12000
9000
6000
3000
0
Jan-83
Jan-85
Jan-87
Jan-89
Jan-91
Jan-93
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Jan-09
Time
Chloride
Sulfate
TDS

Monitor Well 30-04

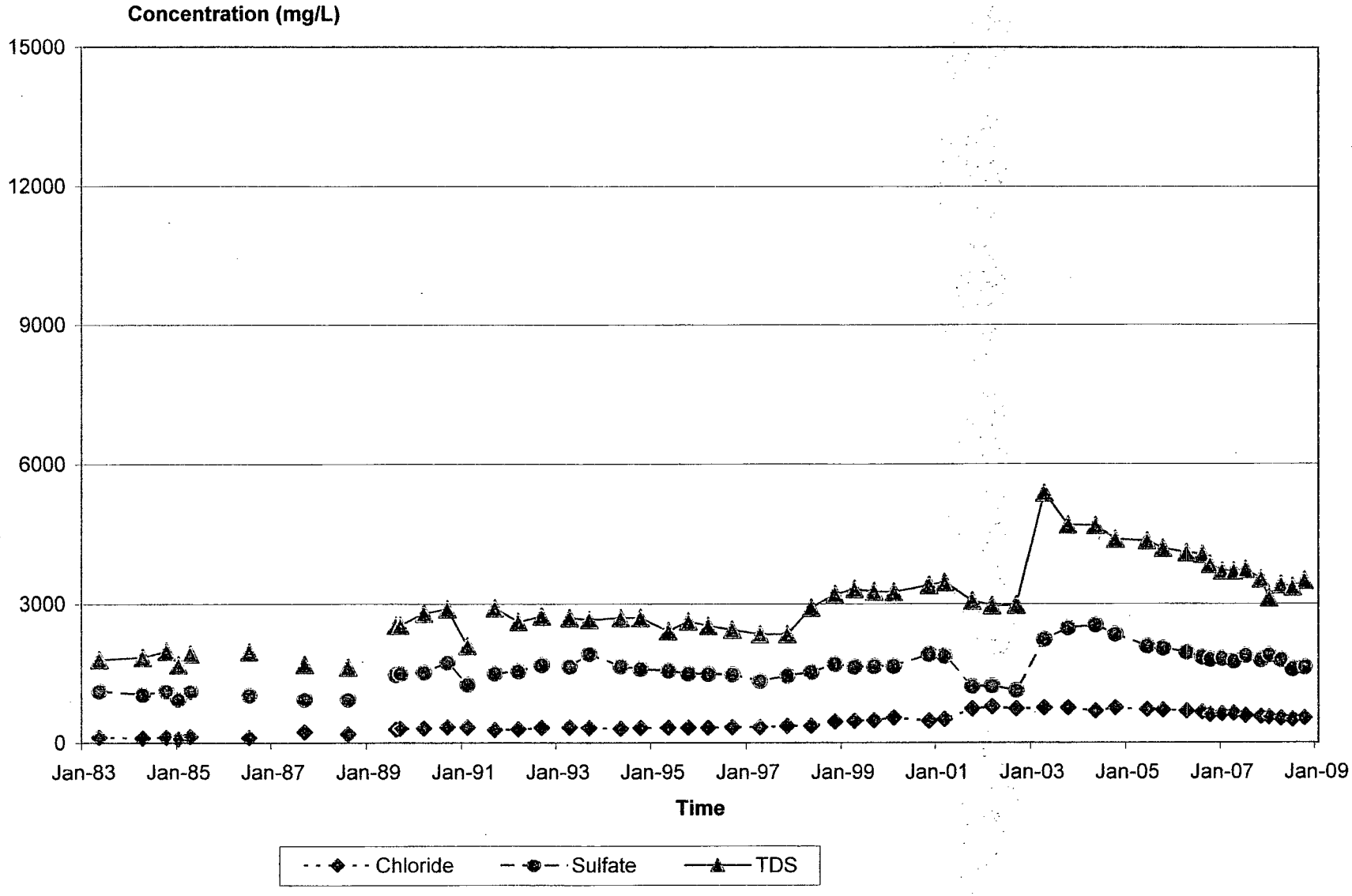


Well is BO as of September 2007

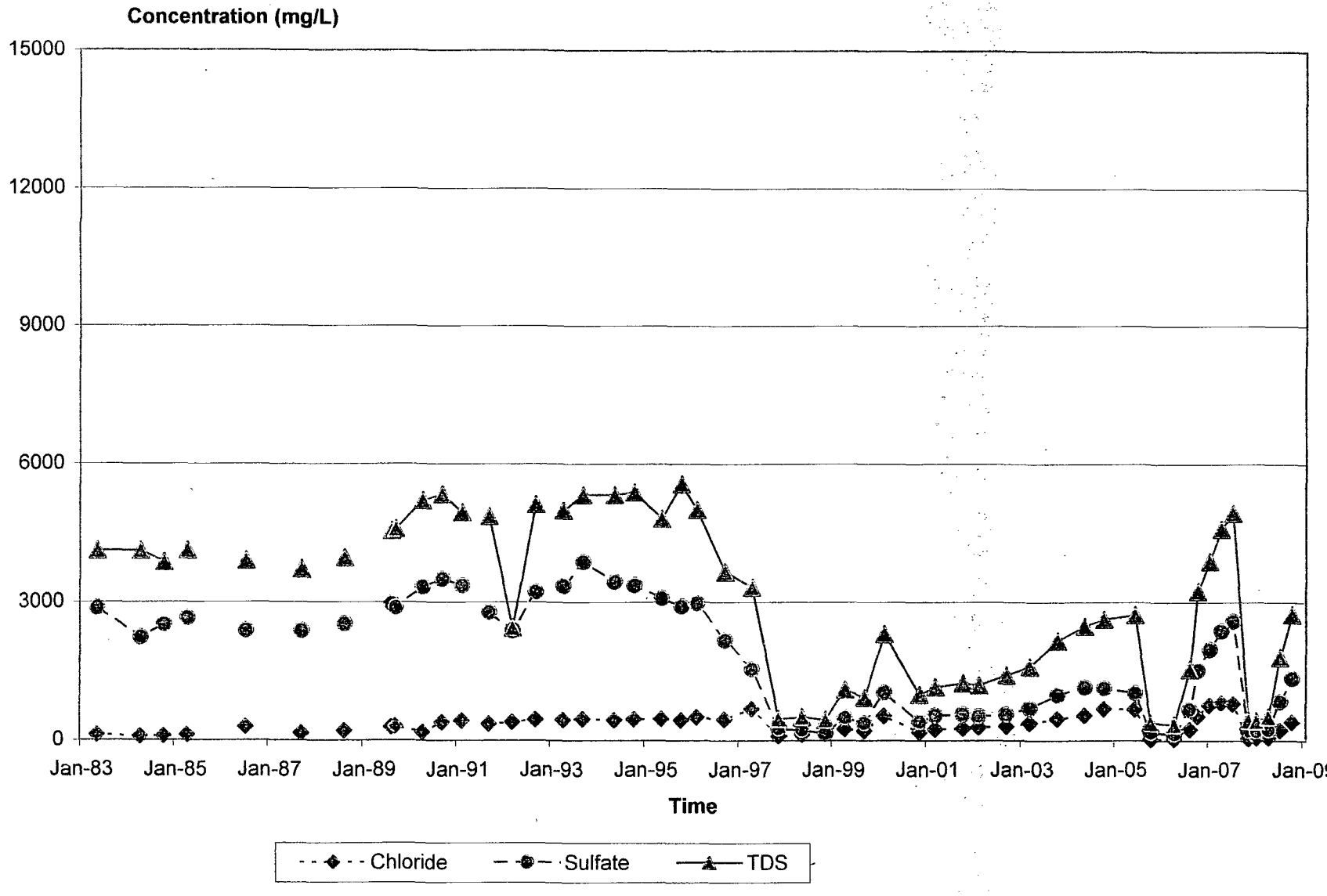
Monitor Well 5-73



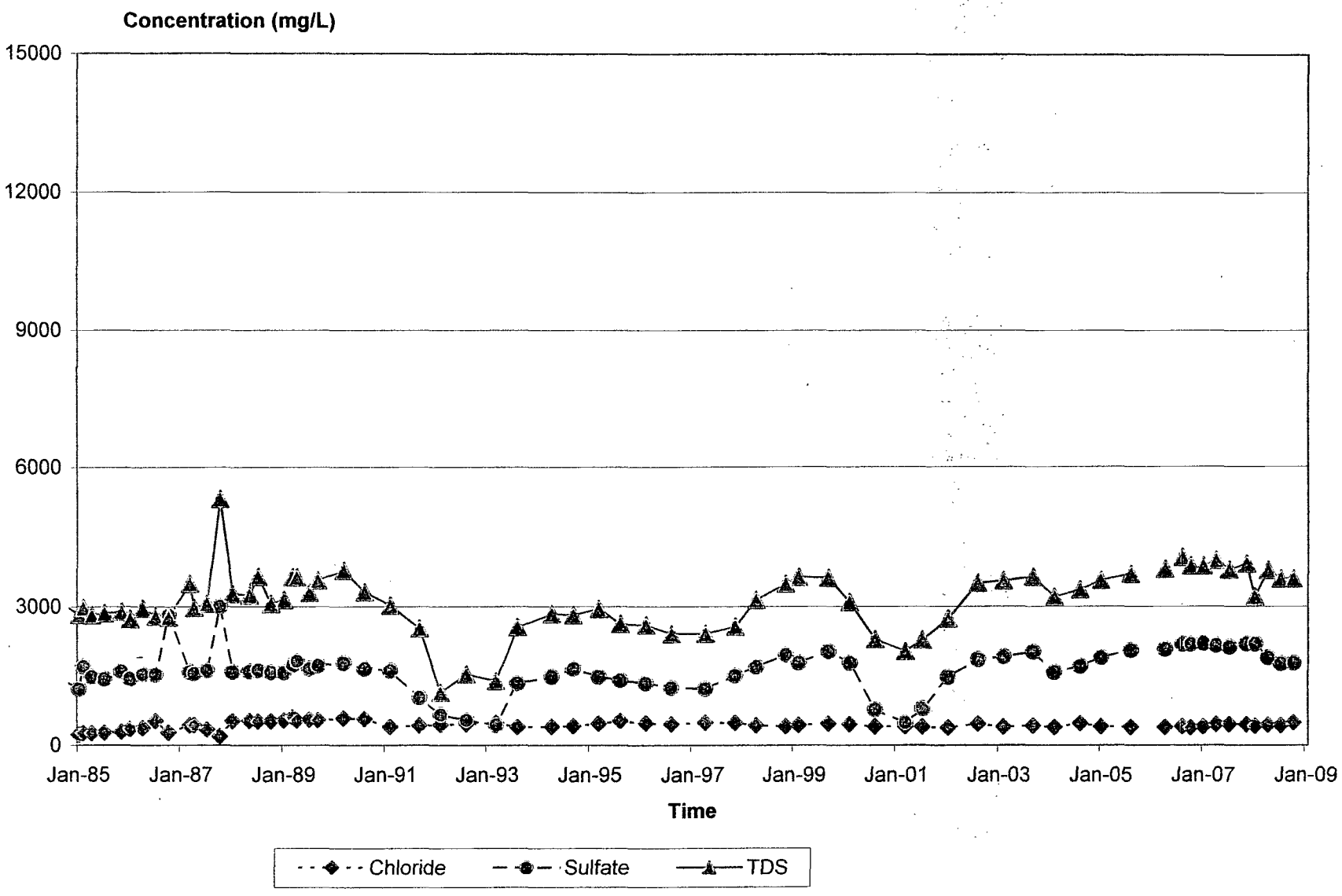
Monitor Well 5-08



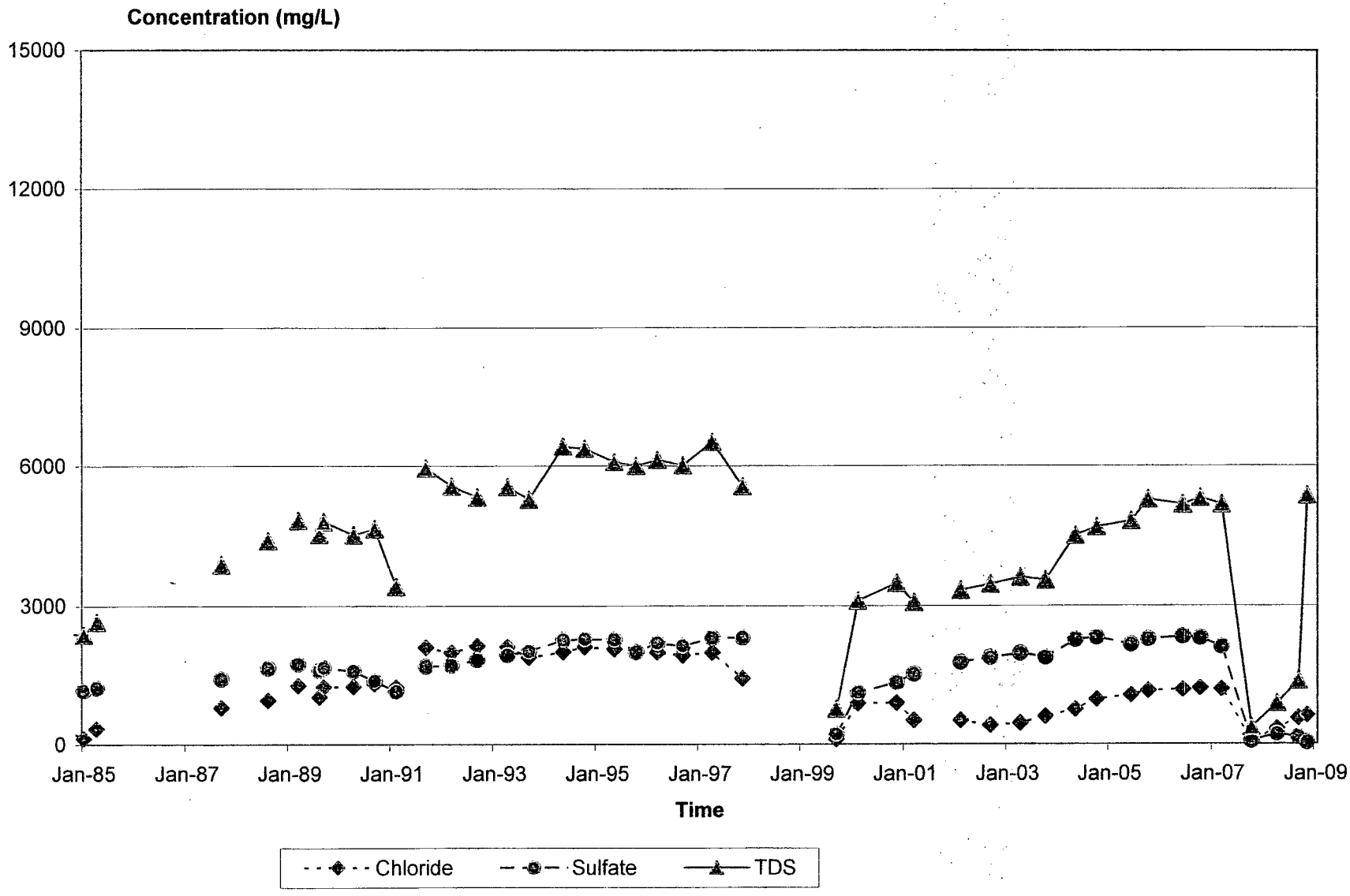
Monitor Well 5-04



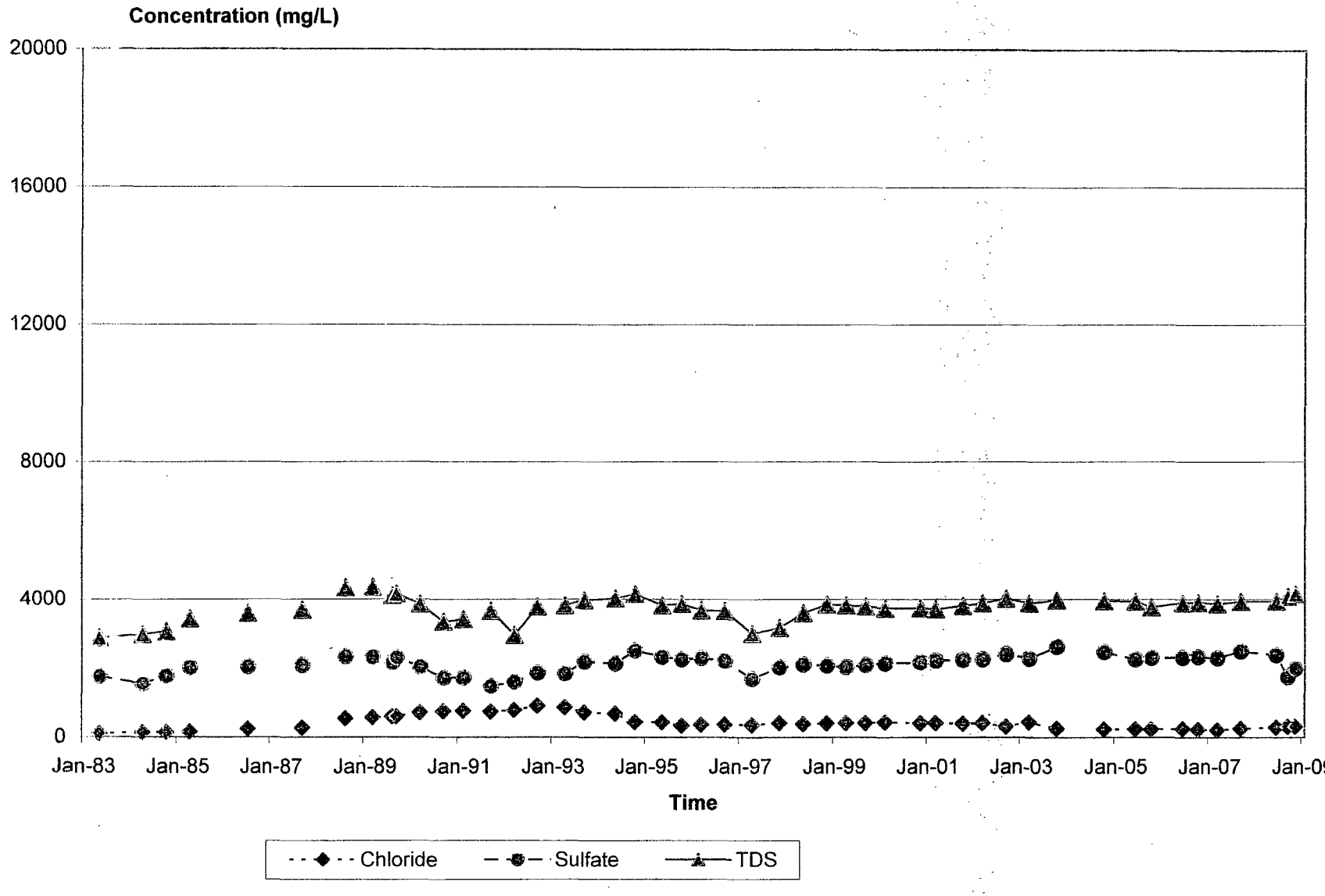
Monitor Well 5-03



Monitor Well 5-02

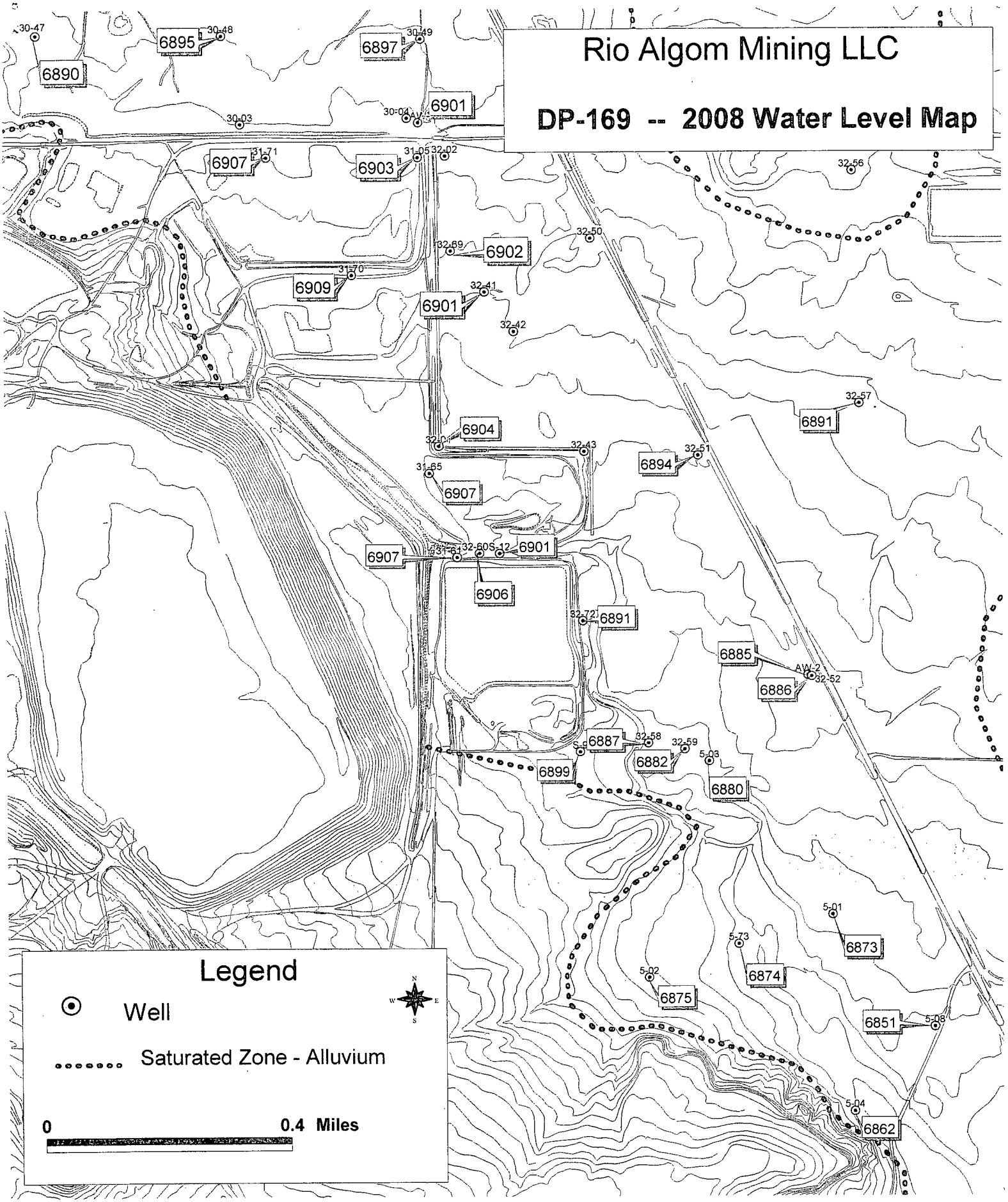


Monitor Well 5-01



APPENDIX C

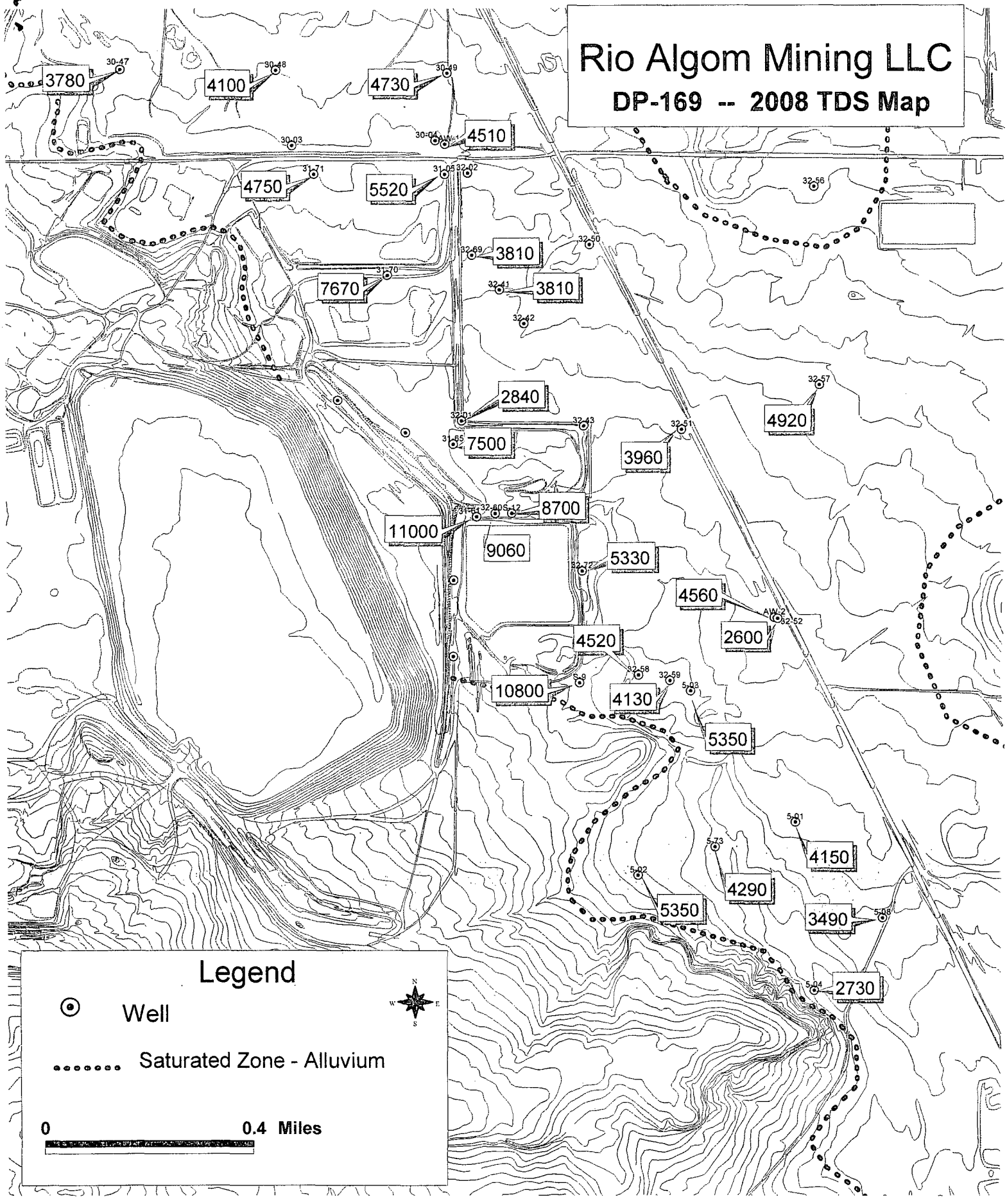
WATER LEVEL ELEVATION MAP
ALLUVIUM


Rio Algom Mining LLC
DP-169 -- 2008 Water Level Map
Legend
Well
Saturated Zone - Alluvium
0
0.4 Miles
6890
6895
6897
6901
6907
6903
6902
6909
6904
6894
6891
6906
6885
6886
6887
6899
6882
6880
6873
6874
6875
6851
6862
30-47
30-48
30-49
30-03
30-04
31-71
31-05
32-02
32-56
32-69
32-50
31-70
32-41
32-42
32-57
32-43
32-51
31-65
31-61
32-60S
32-72
AW-2
32-52
32-58
32-59
5-03
5-01
5-73
5-02
5-08
5-04

APPENDIX D

TDS MAP

ALLUVIUM


Rio Algom Mining LLC
DP-169 -- 2008 TDS Map
3780
4100
4730
4510
4750
5520
3810
7670
3810
2840
7500
4920
3960
8700
11000
9060
5330
4560
2600
4520
10800
4130
5350
4150
4290
5350
3490
2730
Legend
Well
Saturated Zone - Alluvium
0
0.4 Miles