QUIVIRA MINING COMPANY
AMBROSIA LAKE FACILITY

DISCHARGE PLAN - 169
ANNUAL REPORT - 1996

APRIL 1, 1997

QUIVIRA MINING COMPANY
AMBROSIA LAKE FACILITY
DISCHARGE PLAN - 169
1996 ANNUAL REPORT

Review of Discharge Plan - 169

Progress towards remediation of the alluvium continued throughout 1996. The interceptor trench continues to function as designed and approved by the NMED in the 1983 Assurance of Discontinuance (AOD) and Discharge Plan - 169. The approved remedial action plan was designed to prevent further tailings solution seepage from entering the alluvium from the tailings impoundments. With a total length of approximately 6,200 feet and a maximum depth of 36 feet, the interceptor trench has effectively isolated the tailings impoundment and its solutions from the down dip alluvial material. During 1996, the interceptor trench collected and pumped a total of 63.5 million gallons of solutions to lined evaporation cells.

The interceptor trench has also been effective as a "collection and pump back system". The trench has created a reversed hydrologic gradient within the alluvium due to the dewatering action along the trench, thereby causing solutions east of the trench to flow back towards it where they are collected and pumped to lined evaporation ponds for disposal.

The collection and pump back system developed by the construction of the interceptor trench is assisted by the recharge of fresh water along the eastern mill perimeter. During 1996, a total volume of approximately 295 million gallons of fresh water infiltrated into the alluvium along the fresh water creek and was utilized as ground water sweep in conjunction with the interceptor trench. The ground water sweep and reversed gradient caused by the interceptor trench has resulted in solutions underlying the unlined evaporation ponds #4, #5, #6 and nearby areas to be flushed and swept to the interceptor trench for collection and removal from the

alluvial system.

This reversed hydraulic gradient can be seen on the water level contour map contained in Appendix D. The water levels and groundwater flow patterns show that groundwater within the alluvium is controlled by the interceptor trench over a large area.

Presented in Table 1 are the monthly concentrations for chloride, sulfate, and total dissolved solids (TDS) within the fresh water utilized for alluvial recharge.

TABLE 1

1996 ALLUVIAL RECHARGE WATER CONCENTRATION (mg/l)

Month	Chloride	Sulfate	TDS
January	520	1200	2680
February	500	1250	2880
March	480	1300	2830
April	530	1200	2910
May	620	1400	2890
June	605	1300	2870
July	584	1140	2760
August	524	1220	2780
September	556	1140	2760
October	542	1290	2770
November	491	1200	2750
December	603	1210	2670

During 1996, Quivira initiated an alluvial ground water investigation in the area southeast of tailings impoundment #1 in order to more clearly define the ground water regime in this region. As a result of this on-going study, three (3) additional intercept trenches were constructed in this area to complement the main intercept trench in removing ground water in the vicinity of the impoundment. Pumping from these new trenches during 1996 has resulted in the interception, collection and disposal of an additional 5 million gallons of ground water in the vicinity of impoundment #1.

The 1996 monitoring results for the alluvium are contained in Appendix A. These results contain the required information as specified within the November 15, 1995 approved Discharge Plan - 169.

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

Appendix C contains the monitoring well analytical results required under the Nuclear Regulatory Commission (NRC) approved Corrective Action Plan (CAP) for the Ambrosia Lake facility.

Initially, there was an increase in the concentrations of indicator parameters in the alluvium wells west of the discharge creek. However, the concentrations have subsequently continued to decrease with time as the fresh water, which is recharged into the alluvium, has flushed and transported the impacted solutions towards the interceptor trench for collection and removal. The initial higher levels were attributable to concentrated solutions from the unlined evaporation ponds #4, #5, and #6, being flushed and swept past the monitor wells on their way to collection in the interceptor trench.

Although the effect has not been to the same degree as wells located to the west of the fresh water creek; wells located to the east also have had a noticeable improvement in the indicator concentrations and remain within compliance of the established ground water standards

for the alluvium.

As previously noted, contained in Appendix D is 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. The alluvial groundwater saturation limits were estimated where the water level elevation equalled the base elevation of the alluvial. Appendix E contains the current TDS contour map for the alluvium as required by the Discharge Plan. Comparing the 1996 TDS contour map to contour maps contained within previous submittals provides an indication that alluvial water quality continues to improve as remediation efforts proceed.

As a result of the continued improvement of water quality within the alluvium, Quivira will continue to operate the approved ground water reclamation program currently implemented at the facility.

APPENDIX A

ANALYTICAL RESULTS - 1996
ALLUVIAL WELLS

QUIVIRA MINING COMPANY
AMBROSIA LAKE FACILITY

ALLUVIAL WELLS

Well ID	Date	Depth To Water (ft)	Total Depth (ft)	Measuring Point Elevation	Water Level Elev.(ft)	Spec. Cond.	Temp. (c)	pH	SO4 (mg/L)	Cl (mg/L)	Mo (mg/L)	Ni (mg/L)	Se (mg/l)	NO3 (mg/l)
30-04	06-Mar-96	31.5	87.6	6946.6	6915.2	6800	11.1	9.0	2600	1600	-0.01	-0.04	-0.005	-0.1
30-04	09-Sep-96	33.2	87.5	6946.6	6913.5	5500	10.8	9.4	2330	1570				-0.1

Well ID	Alpha (pCi/L)	Pb210 (pCi/L)	Ra226 (pCi/L)	Ra228 (pCi/L)	Th230 (pCi/L)	U-Nat (mg/l)
30-04	15.0	5.7	3.0	1.6	15.0	0.0110
30-04						

QUIVIRA MINING COMPANY
AMBROSIA LAKE FACILITY

ALLUVIAL WELLS

Well ID	Date	Depth To Water (ft)	Total Depth (ft)	Measuring Point Elevation	Water Level Elev.(ft)	Spec. Cond.	Temp. (c)	pH	SO4 (mg/L)	Cl (mg/L)	Mo (mg/L)	Ni (mg/L)	Se (mg/l)	NO3 (mg/l)
31-63	12-Mar-96	19.9	30.2	6921.0	6901.1	11500	12.2	6.2	8200	2600	-0.02	-0.04	-0.050	6.9
31-63	12-Sep-96	19.9	30.1	6921.0	6901.1	9800	14.3	5.6	7130	2630				0.8

Well ID	Alpha (pCi/L)	Pb210 (pCi/L)	Ra226 (pCi/L)	Ra228 (pCi/L)	Th230 (pCi/L)	U-Nat (mg/l)
31-63	276.0	5.2	1.9	2.8	4.5	0.3400
31-63						

QUIVIRA MINING COMPANY
AMBROSIA LAKE FACILITY

ALLUVIAL WELLS

Well ID	Date	Depth To Water (ft)	Total Depth (ft)	Measuring Point Elevation	Water Level Elev.(ft)	Spec. Cond.	Temp. (c)	pH	SO4 (mg/L)	Cl (mg/L)	Mo (mg/L)	Ni (mg/L)	Se (mg/l)	NO_3 (mg/l)
31-65	11-Mar-96	16.6	46.2	6921.5	6905.0	8200	11.8	6.9	4800	1500	-0.02	-0.04	-0.025	12.2
31-65	12-Sep-96	16.8	46.2	6921.5	6904.7	7700	11.3	7.1	4580	1570				11.0

Well ID	Alpha (pCi/L)	Pb210 (pCi/L)	Ra226 (pCi/L)	Ra228 (pCi/L)	Th230 (pCi/L)	U-Nat (mg/l)
31-65	93.0	2.8	0.9	4.0	1.7	0.1300
31-65						

QUIVIRA MINING COMPANY
AMBROSIA LAKE FACILITY

ALLUVIAL WELLS

Well ID	Date	Depth To Water (ft)	Total Depth (ft)	Measuring Point Elevation	Water Level Elev.(ft)	Spec. Cond.	Temp. (c)	pH	SO4 (mg/L)	Cl (mg/L)	Mo (mg/L)	Ni (mg/L)	Se (mg/l)	NO3 (mg/l)
31-70	11-Mar-96	16.0	35.8	6934.3	6918.3	8900	11.8	6.8	5600	1500	-0.02	-0.04	-0.025	0.5
31-70	12-Sep-96	16.6	34.8	6934.3	6917.7	9000	11.8	6.8	5740	1680				2.1

Well ID	Alpha (pCi/L)	Pb210 (pCi/L)	Ra226 (pCi/L)	Ra228 (pCi/L)	Th230 (pCi/L)	U-Nat (mg/l)
31-70	327.0	5.3	2.0	5.3	3.1	1.2000
31-70						

QUIVIRA MINING COMPANY
AMBROSIA LAKE FACILITY

ALLUVIAL WELLS

Well ID	Date	Depth To Water (ft)	Total Depth (ft)	Measuring Point Elevation	Water Level Elev.(ft)	Spec. Cond.	Temp. (c)	pH	SO4 (mg/L)	Cl (mg/L)	Mo (mg/L)	Ni (mg/L)	Se (mg/l)	NO3 (mg/l)
31-71	11-Mar-96	16.4	65.3	6941.6	6925.2	3100	12.0	7.3	2000	410	-0.01	-0.02	0.041	0.3
31-71	12-Sep-96	13.8	65.3	6941.6	6927.8	3120	12.5	7.4	1980	415				3.4

Well ID	Alpha (pCi/L)	Pb210 (pCi/L)	Ra226 (pCi/L)	Ra228 (pCi/L)	Th230 (pCi/L)	U-Nat (mg/l)
31-71	71.0	2.4	1.0	2.0	4.1	0.1100
31-71						

QUIVIRA MINING COMPANY
AMBROSIA LAKE FACILITY

ALLUVIAL WELLS

Well ID	Date	Depth To Water (ft)	Total Depth (ft)	Measuring Point Elevation	Water Level Elev.(ft)	Spec. Cond.	Temp. (c)	pH	SO4 (mg/L)	Cl (mg/L)	Mo (mg/L)	Ni (mg/L)	Se (mg/l)	NO3 (mg/l)
32-01	07-Mar-96	16.3	52.8	6920.5	6904.2	5200	11.8	9.3	1800	1500	-0.01	-0.04	-0.005	0.1
32-01	10-Sep-96	16.6	52.8	6920.5	6903.9	3775	11.7	9.8	1730	818				0.2

Well ID	Alpha (pCi/L)	Pb210 (pCi/L)	Ra226 (pCi/L)	Ra228 (pCi/L)	Th230 (pCi/L)	U-Nat (mg/l)
32-01	92.0	11.0	2.3	0.8	13.0	0.0092
32-01						

QUIVIRA MINING COMPANY
AMBROSIA LAKE FACILITY

ALLUVIAL WELLS

Well ID	Date	Depth To Water (ft)	Total Depth (ft)	Measuring Point Elevation	Water Level Elev.(ft)	Spec. Cond.	Temp. (c)	pH	SO4 (mg/L)	Cl (mg/L)	Mo (mg/L)	Ni (mg/L)	Se (mg/l)	NO3 (mg/l)
32-02	07-Mar-96	27.7	77.5	6942.8	6915.2	6300	12.3	9.0	3700	1400	0.02	-0.08	-0.005	-0.1
32-02	10-Sep-96	28.9	77.8	6942.8	6913.9	6800	13.5	9.2	3730	1140				0.1

Well ID	Alpha (pCi/L)	Pb210 (pCi/L)	Ra226 (pCi/L)	Ra228 (pCi/L)	Th230 (pCi/L)	U-Nat (mg/l)
32-02	14.0	6.0	2.5	1.4	12.0	-0.0003
32-02						

QUIVIRA MINING COMPANY
AMBROSIA LAKE FACILITY

ALLUVIAL WELLS

Well ID	Date	Depth To Water (ft)	Total Depth (ft)	Measuring Point Elevation	Water Level Elev.(ft)	Spec. Cond.	Temp. (c)	pH	SO4 (mg/L)	Cl (mg/L)	Mo (mg/L)	Ni (mg/L)	Se (mg/l)	NO3 (mg/l)
32-41	07-Mar-96	18.9	59.1	6933.2	6914.3	3675	12.1	7.5	2900	430	-0.01	-0.04	-0.005	0.3
32-41	10-Sep-96	20.3	58.8	6933.2	6912.9	3575	11.9	7.4	2790	431				0.3

Well ID	Alpha (pCi/L)	Pb210 (pCi/L)	Ra226 (pCi/L)	Ra228 (pCi/L)	Th230 (pCi/L)	U-Nat (mg/l)
32-41	19.0	5.8	2.4	0.9	33.0	0.0087
32-41						

QUIVIRA MINING COMPANY
AMBROSIA LAKE FACILITY

ALLUVIAL WELLS

Well ID	Date	Depth To Water (ft)	Total Depth (ft)	Measuring Point Elevation	Water Level Elev.(ft)	Spec. Cond.	Temp. (c)	pH	SO4 (mg/L)	Cl (mg/L)	Mo (mg/L)	Ni (mg/L)	Se (mg/l)	NO3 (mg/l)
32-42	07-Mar-96	21.3	29.4	6933.9	6912.6	2975	13.0	7.9	2300	270	-0.01	-0.04	-0.005	0.3
32-42	10-Sep-96	22.3	29.4	6933.9	6911.6	3000	12.1	7.8	1780	349				0.1

Well ID	Alpha (pCi/L)	Pb210 (pCi/L)	Ra226 (pCi/L)	Ra228 (pCi/L)	Th230 (pCi/L)	U-Nat (mg/l)
32-42	84.0	5.8	1.7	1.3	6.1	0.0260
32-42						

QUIVIRA MINING COMPANY
AMBROSIA LAKE FACILITY

ALLUVIAL WELLS

Well ID	Date	Depth To Water (ft)	Total Depth (ft)	Measuring Point Elevation	Water Level Elev.(ft)	Spec. Cond.	Temp. (c)	pH	SO4 (mg/L)	Cl (mg/L)	Mo (mg/L)	Ni (mg/L)	Se (mg/l)	NO3 (mg/l)
32-43	07-Mar-96	15.8	56.1	6919.9	6904.1	5050	8.9	8.0	3100	660	-0.01	-0.04	0.058	230.0
32-43	10-Sep-96	16.5	55.8	6919.9	6903.5	5800	13.7	7.9	3000	631				210.0

Well ID	Alpha (pCi/L)	Pb210 (pCi/L)	Ra226 (pCi/L)	Ra228 (pCi/L)	Th230 (pCi/L)	U-Nat (mg/l)
32-43	25.0	5.0	1.2	1.0	1.4	0.0240
32-43						

QUIVIRA MINING COMPANY
AMBROSIA LAKE FACILITY

ALLUVIAL WELLS

Well ID	Date	Depth To Water (ft)	Total Depth (ft)	Measuring Point Elevation	Water Level Elev.(ft)	Spec. Cond.	Temp. (c)	pH	SO4 (mg/L)	Cl (mg/L)	Mo (mg/L)	Ni (mg/L)	Se (mg/l)	NO3 (mg/l)
32-50	07-Mar-96	34.0	92.5	6940.5	6906.5	3425	12.3	7.5	2500	310	-0.01	-0.04	-0.025	0.2
32-50	10-Sep-96	34.0	93.4	6940.5	6906.5	3400	12.7	7.6	2440	303				0.3

Well ID	Alpha (pCi/L)	Pb210 (pCi/L)	Ra226 (pCi/L)	Ra228 (pCi/L)	Th230 (pCi/L)	U-Nat (mg/l)
32-50	13.0	3.5	1.6	1.4	4.9	0.0024
32-50						

QUIVIRA MINING COMPANY
AMBROSIA LAKE FACILITY

ALLUVIAL WELLS

Well ID	Date	Depth To Water (ft)	Total Depth (ft)	Measuring Point Elevation	Water Level Elev.(ft)	Spec. Cond.	Temp. (c)	pH	SO4 (mg/L)	Cl (mg/L)	Mo (mg/L)	Ni (mg/L)	Se (mg/l)	NO3 (mg/l)
32-51	07-Mar-96	22.9	75.9	6923.0	6900.1	2875	21.1	8.0	3400	160	-0.01	-0.04	0.068	21.0
32-51	10-Sep-96	24.0	76.8	6923.0	6899.0	3850	12.2	8.0	3200	179				9.7

Well ID	Alpha (pCi/L)	Pb210 (pCi/L)	Ra226 (pCi/L)	Ra228 (pCi/L)	Th230 (pCi/L)	U-Nat (mg/l)
32-51	26.0	3.4	0.7	1.8	1.9	0.0094
32-51						

QUIVIRA MINING COMPANY
AMBROSIA LAKE FACILITY

ALLUVIAL WELLS

Well ID	Date	Depth To Water (ft)	Total Depth (ft)	Measuring Point Elevation	Water Level Elev.(ft)	Spec. Cond.	Temp. (c)	pH	SO4 (mg/L)	Cl (mg/L)	Mo (mg/L)	Ni (mg/L)	Se (mg/l)	NO3 (mg/l)
32-52	07-Mar-96	24.2	67.1	6915.0	6890.8	2650	13.2	8.1	2200	140	-0.01	-0.04	-0.005	-0.1
32-52	10-Sep-96	24.1	66.9	6915.0	6890.9	2650	12.5	8.5	2080	167				-0.1

Well ID	Alpha (pCi/L)	Pb210 (pCi/L)	Ra226 (pCi/L)	Ra228 (pCi/L)	Th230 (pCi/L)	U-Nat (mg/l)
32-52	14.0	3.9	0.9	0.7	1.8	-0.0003
32-52						

QUIVIRA MINING COMPANY
AMBROSIA LAKE FACILITY

ALLUVIAL WELLS

Well ID	Date	Depth To Water (ft)	Total Depth (ft)	Measuring Point Elevation	Water Level Elev.(ft)	Spec. Cond.	Temp. (c)	pH	SO4 (mg/L)	Cl (mg/L)	Mo (mg/L)	Ni (mg/L)	Se (mg/l)	NO3 (mg/l)
32-57	06-Mar-96	36.3	54.7	6932.5	6896.2	6000	10.3	7.2	4800	197	0.02	-0.08	0.032	0.4
32-57	10-Sep-96	36.2	54.7	6932.5	6896.3	6000	12.7	7.6	4650	200				0.3

Well ID	Alpha (pCi/L)	Pb210 (pCi/L)	Ra226 (pCi/L)	Ra228 (pCi/L)	Th230 (pCi/L)	U-Nat (mg/l)
32-57	104.0	6.9	9.7	1.3	2.1	0.1000
32-57						

QUIVIRA MINING COMPANY
AMBROSIA LAKE FACILITY

ALLUVIAL WELLS

Well ID	Date	Depth To Water (ft)	Total Depth (ft)	Measuring Point Elevation	Water Level Elev.(ft)	Spec. Cond.	Temp. (c)	pH	SO4 (mg/L)	Cl (mg/L)	Mo (mg/L)	Ni (mg/L)	Se (mg/l)	NO3 (mg/l)
32-58	06-Mar-96	7.1	34.3	6898.5	6891.4	5500	6.3	6.8	2000	1400	-0.01	-0.04	-0.005	1.1
32-58	10-Sep-96	7.2	34.4	6898.5	6891.3	5025	14.7	6.9	1760	1150				1.0

Well ID	Alpha (pCi/L)	Pb210 (pCi/L)	Ra226 (pCi/L)	Ra228 (pCi/L)	Th230 (pCi/L)	U-Nat (mg/l)
32-58	566.0	4.4	0.7	0.9	4.4	1.6000
32-58						

QUIVIRA MINING COMPANY
AMBROSIA LAKE FACILITY

ALLUVIAL WELLS

Well ID	Date	Depth To Water (ft)	Total Depth (ft)	Measuring Point Elevation	Water Level Elev.(ft)	Spec. Cond.	Temp. (c)	pH	SO4 (mg/L)	Cl (mg/L)	Mo (mg/L)	Ni (mg/L)	Se (mg/l)	NO3 (mg/l)
32-60	11-Mar-96	17.0	24.9	6918.2	6901.2	5200	12.3	6.9	4100	710	-0.01	-0.04	-0.025	12.6
32-30	12-Sep-96	17.5	24.8	6918.2	6900.7	5200	14.2	7.2	4080	673				11.9

Well ID	Alpha (pCi/L)	Pb210 (pCi/L)	Ra226 (pCi/L)	Ra228 (pCi/L)	Th230 (pCi/L)	U-Nat (mg/l)
32-60	102.0	4.2	0.5	1.9	1.6	0.1800
32-60						

QUIVIRA MINING COMPANY
AMBROSIA LAKE FACILITY

ALLUVIAL WELLS

Well ID	Date	Depth To Water (ft)	Total Depth (ft)	Measuring Point Elevation	Water Level Elev.(ft)	Spec. Cond.	Temp. (c)	pH	SO4 (mg/L)	Cl (mg/L)	Mo (mg/L)	Ni (mg/L)	Se (mg/l)	NO3 (mg/l)
32-69	07-Mar-96	19.4	67.3	6934.8	6915.4	2775	11.5	7.6	1300	550	0.33	-0.04	0.154	0.2
32-69	10-Sep-96	22.4	67.2	6934.8	6912.4	2900	13.0	7.8	1350	507				0.3

Well ID	Alpha (pCi/L)	Pb210 (pCi/L)	Ra226 (pCi/L)	Ra228 (pCi/L)	Th230 (pCi/L)	U-Nat (mg/l)
32-69	374.0	11.0	1.3	1.3	1.3	0.8600
32-69						

QUIVIRA MINING COMPANY
AMBROSIA LAKE FACILITY

ALLUVIAL WELLS

Well ID	Date	Depth To Water (ft)	Total Depth (ft)	Measuring Point Elevation	Water Level Elev.(ft)	Spec. Cond.	Temp. (c)	pH	SO4 (mg/L)	Cl (mg/L)	Mo (mg/L)	Ni (mg/L)	Se (mg/l)	NO3 (mg/l)
32-72	11-Mar-96	8.8	40.1	6907.2	6898.4	3250	10.2	7.7	1900	490	-0.01	-0.04	0.048	-0.1
32-72	12-Sep-96	7.8	40.1	6907.2	6899.4	3700	15.5	7.2	1900	533				0.1

Well ID	Alpha (pCi/L)	Pb210 (pCi/L)	Ra226 (pCi/L)	Ra228 (pCi/L)	Th230 (pCi/L)	U-Nat (mg/l)
32-72	390.0	3.4	0.6	2.0	2.6	0.9800
32-72						

QUIVIRA MINING COMPANY
AMBROSIA LAKE FACILITY

ALLUVIAL WELLS

Well ID	Date	Depth To Water (ft)	Total Depth (ft)	Measuring Point Elevation	Water Level Elev.(ft)	Spec. Cond.	Temp. (c)	pH	SO4 (mg/L)	Cl (mg/L)	Mo (mg/L)	Ni (mg/L)	Se (mg/l)	NO3 (mg/l)
D-4	12-Mar-96	21.6	22.9	6924.9	6903.3									
D-4	12-Sep-96	21.5	23.0	6924.9	6903.4	10300	11.8	6.4	39	5050				6.0

Well ID	Alpha (pCi/L)	Pb210 (pCi/L)	Ra226 (pCi/L)	Ra228 (pCi/L)	Th230 (pCi/L)	U-Nat (mg/l)
D-4						
D-4						

Insufficient water for sample collection during 1st half 1996.

QUIVIRA MINING COMPANY
AMBROSIA LAKE FACILITY

ALLUVIAL WELLS

Well ID	Date	Depth To Water (ft)	Total Depth (ft)	Measuring Point Elevation	Water Level Elev.(ft)	Spec. Cond.	Temp. (c)	pH	SO4 (mg/L)	Cl (mg/L)	Mo (mg/L)	Ni (mg/L)	Se (mg/l)	NO3 (mg/l)
C-3	11-Mar-96		12.3	6922.9										
C-3	11-Sep-96		12.3	6922.9										

Well ID	Alpha (pCi/L)	Pb210 (pCi/L)	Ra226 (pCi/L)	Ra228 (pCi/L)	Th230 (pCi/L)	U-Nat (mg/l)
C-3						
C-3						

Dry well.

QUIVIRA MINING COMPANY
AMBROSIA LAKE FACILITY

ALLUVIAL WELLS

Well ID	Date	Depth To Water (ft)	Total Depth (ft)	Measuring Point Elevation	Water Level Elev.(ft)	Spec. Cond.	Temp. (c)	pH	SO4 (mg/L)	Cl (mg/L)	Mo (mg/L)	Ni (mg/L)	Se (mg/l)	NO3 (mg/l)
30-46	15-Mar-96		38.5	6949.3										
30-46	11-Sep-96		38.6	6949.3										

Well ID	Alpha (pCi/L)	Pb210 (pCi/L)	Ra226 (pCi/L)	Ra228 (pCi/L)	Th230 (pCi/L)	U-Nat (mg/l)
30-46						
30-46						

Dry well.

QUIVIRA MINING COMPANY
AMBROSIA LAKE FACILITY

ALLUVIAL WELLS

Well ID	Date	Depth To Water (ft)	Total Depth (ft)	Measuring Point Elevation	Water Level Elev.(ft)	Spec. Cond.	Temp. (c)	pH	SO4 (mg/L)	Cl (mg/L)	Mo (mg/L)	Ni (mg/L)	Se (mg/l)	NO3 (mg/l)
30-53	15-Mar-96		50.6	6951.3										
30-53	11-Sep-96		50.5	6951.3										

Well ID	Alpha (pCi/L)	Pb210 (pCi/L)	Ra226 (pCi/L)	Ra228 (pCi/L)	Th230 (pCi/L)	U-Nat (mg/l)
30-53						
30-53						

Dry well.

QUIVIRA MINING COMPANY
AMBROSIA LAKE FACILITY

ALLUVIAL WELLS

Well ID	Date	Depth To Water (ft)	Total Depth (ft)	Measuring Point Elevation	Water Level Elev.(ft)	Spec. Cond.	Temp. (c)	pH	SO4 (mg/L)	Cl (mg/L)	Mo (mg/L)	Ni (mg/L)	Se (mg/l)	NO3 (mg/l)
32-56	06-Mar-96		57.9	6932.6										
32-56	11-Sep-96		57.8	6932.6										

Well ID	Alpha (pCi/L)	Pb210 (pCi/L)	Ra226 (pCi/L)	Ra228 (pCi/L)	Th230 (pCi/L)	U-Nat (mg/l)
32-56						
32-56						

Dry well.

QUIVIRA MINING COMPANY
AMBROSIA LAKE FACILITY

ALLUVIAL WELLS

Well ID	Date	Depth To Water (ft)	Total Depth (ft)	Measuring Point Elevation	Water Level Elev.(ft)	Spec. Cond.	Temp. (c)	pH	SO4 (mg/L)	Cl (mg/L)	Mo (mg/L)	Ni (mg/L)	Se (mg/l)	NO3 (mg/l)
30-68	15-Mar-96		63.4	6956.7										
30-68	11-Sep-96		62.7	6956.7										

Well ID	Alpha (pCi/L)	Pb210 (pCi/L)	Ra226 (pCi/L)	Ra228 (pCi/L)	Th230 (pCi/L)	U-Nat (mg/l)
30-68						
30-68						

Dry well.

QUIVIRA MINING COMPANY
AMBROSIA LAKE FACILITY

ALLUVIAL WELLS

Well ID	Date	Depth To Water (ft)	Total Depth (ft)	Measuring Point Elevation	Water Level Elev.(ft)	Spec. Cond.	Temp. (c)	pH	SO4 (mg/L)	Cl (mg/L)	Mo (mg/L)	Ni (mg/L)	Se (mg/l)	NO3 (mg/l)
30-03	19-Jan-96		19.9	6942.7										
30-03	09-Feb-96		19.9	6942.7										
30-03	06-Mar-96		19.8	6942.7										
30-03	11-Apr-96		19.9	6942.7										
30-03	08-May-96		19.9	6942.7										
30-03	05-Jun-96		19.9	6942.7										
30-03	03-Jul-96	19.8	19.9	6942.7										
30-03	07-Aug-96	19.6	19.9	6942.7										
30-03	09-Sep-96	19.4	19.9	6942.7										
30-03	22-Oct-96	19.0	19.9	6942.7										
30-03	12-Nov-96	19.0	19.9	6942.7										
30-03	12-Dec-96	19.0	19.9	6942.7										

Well ID	Alpha (pCi/L)	Pb210 (pCi/L)	Ra226 (pCi/L)	Ra228 (pCi/L)	Th230 (pCi/L)	U-Nat (mg/l)
30-03						
30-03						
30-03						
30-03						
30-03						
30-03						
30-03						
30-03						
30-03						
30-03						
30-03						
30-03						

Dry well in 1st half of 1996.
Insufficient water in well for sample collection in 2nd half of 1996.

QUIVIRA MINING COMPANY
AMBROSIA LAKE FACILITY

ALLUVIAL WELLS

Well ID	Date	Depth To Water (ft)	Total Depth (ft)	Measuring Point Elevation	Water Level Elev (ft)	Spec. Cond.	Temp. (c)	pH	SO4 (mg/L)	Cl (mg/L)	Mo (mg/L)	Ni (mg/L)	Se (mg/l)	NO3 (mg/l)
E-5	12-Mar-96	9.0	16.2	6921.2	6912.2	9200	10.2	6.7	4300	2300	-0.02	-0.04	-0.050	0.5
E-5	12-Sep-96	13.0	16.3	6921.2	6908.2	10800	14.5	7.0	7020	2400				1.0

Well ID	Alpha (pCi/L)	Pb210 (pCi/L)	Ra226 (pCi/L)	Ra228 (pCi/L)	Th230 (pCi/L)	U-Nat (mg/l)
E-5	72.0	1.7	3.1	3.1	4.4	0.0970
E-5						

QUIVIRA MINING COMPANY
AMBROSIA LAKE FACILITY

ALLUVIAL WELLS

Well ID	Date	Depth To Water (ft)	Total Depth (ft)	Measuring Point Elevation	Water Level Elev.(ft)	Spec. Cond.	Temp. (c)	pH	SO4 (mg/L)	Cl (mg/L)	Mo (mg/L)	Ni (mg/L)	Se (mg/l)	NO3 (mg/l)
S-9	11-Mar-96	7.3	19.5	6907.1	6899.8	8400	10.2	7.3	4600	2400	0.15	-0.04	-0.025	0.2
S-9	12-Sep-96	9.5	23.8	6907.1	6897.6	9800	14.5	7.4	5150	2430				0.3

Well ID	Alpha (pCi/L)	Pb210 (pCi/L)	Ra226 (pCi/L)	Ra228 (pCi/L)	Th230 (pCi/L)	U-Nat (mg/l)
S-9	129.0	39.0	136.0	1.9	2.2	0.0790
S-9						

QUIVIRA MINING COMPANY
AMBROSIA LAKE FACILITY

ALLUVIAL WELLS

Well ID	Date	Depth To Water (ft)	Total Depth (ft)	Measuring Point Elevation	Water Level Elev.(ft)	Spec. Cond.	Temp. (c)	pH	SO4 (mg/L)	Cl (mg/L)	Mo (mg/L)	Nt (mg/L)	Se (mg/l)	NO3 (mg/l)
S-12	11-Mar-96	14.0	26.8	6912.2	6898.2	8800	12.0	6.8	5500	1600	-0.02	-0.04	-0.050	0.1
S-12	12-Sep-96	14.6	26.8	6912.2	6897.6	8000	12.0	6.7	4980	1470				-0.1

Well ID	Alpha (pCi/L)	Pb210 (pCi/L)	Ra226 (pCi/L)	Ra228 (pCi/L)	Th230 (pCi/L)	U-Nat (mg/l)
S-12	151.0	1.9	2.1	0.7	2.9	0.2200
S-12						

QUIVIRA MINING COMPANY
AMBROSIA LAKE FACILITY

ALLUVIAL WELLS

Well ID	Date	Depth To Water (ft)	Total Depth (ft)	Measuring Point Elevation	Water Level Elev.(ft)	Spec. Cond.	Temp. (c)	pH	SO4 (mg/L)	Cl (mg/L)	Mo (mg/L)	Ni (mg/L)	Se (mg/l)	NO3 (mg/l)
5-01	08-Mar-96	16.6	45.2	6897.0	6880.4	3125	12.3	8.5	2300	370	-0.01	-0.04	-0.005	0.1
5-01	10-Sep-96	16.8	45.3	6897.0	6880.2	3175	13.3	8.4	1230	374				-0.1

Well ID	Alpha (pCi/L)	Pb210 (pCi/L)	Ra226 (pCi/L)	Ra228 (pCi/L)	Th230 (pCi/L)	U-Nat (mg/l)
5-01	0.0	2.0	0.7	2.1	2.4	0.0096
5-01						

QUIVIRA MINING COMPANY
AMBROSIA LAKE FACILITY

ALLUVIAL WELLS

Well ID	Date	Depth To Water (ft)	Total Depth (ft)	Measuring Point Elevation	Water Level Elev.(ft)	Spec. Cond.	Temp. (c)	pH	SO4 (mg/L)	Cl (mg/L)	Mo (mg/L)	Ni (mg/L)	Se (mg/l)	NO3 (mg/l)
5-02	08-Mar-96	14.8	35.1	6896.0	6881.2	6200	12.3	7.1	2200	2000	-0.01	-0.04	0.008	1.8
5-02	10-Sep-96	14.9	35.0	6896.0	6881.1	6200	13.3	7.6	2140	1940				0.9

Well ID	Alpha (pCi/L)	Pb210 (pCi/L)	Ra226 (pCi/L)	Ra228 (pCi/L)	Th230 (pCi/L)	U-Nat (mg/l)
5-02	39.0	2.1	1.3	2.1	6.1	0.0140
5-02						

QUIVIRA MINING COMPANY
AMBROSIA LAKE FACILITY

ALLUVIAL WELLS

Well ID	Date	Depth To Water (ft)	Total Depth (ft)	Measuring Point Elevation	Water Level Elev.(ft)	Spec. Cond.	Temp. (c)	pH	SO4 (mg/L)	Cl (mg/L)	Mo (mg/L)	Ni (mg/L)	Se (mg/l)	NO3 (mg/l)
5-04	13-Feb-96	1.7	65.4	6880.3	6878.6	3100	5.5	7.6	2980	510	0.01	-0.04	-0.005	-0.1
5-04	10-Sep-96	3.3	65.4	6880.3	6877.0	3625	17.7	7.4	2180	461				-0.1

Well ID	Alpha (pCi/L)	Pb210 (pCi/L)	Ra226 (pCi/L)	Ra228 (pCi/L)	Th230 (pCi/L)	U-Nat (mg/l)
5-04	8.0	1.5	2.4	1.1	1.3	0.0014
5-04						

QUIVIRA MINING COMPANY
AMBROSIA LAKE FACILITY

ALLUVIAL WELLS

Well ID	Date	Depth To Water (ft)	Total Depth (ft)	Measuring Point Elevation	Water Level Elev.(ft)	Spec. Cond.	Temp. (c)	pH	SO4 (mg/L)	Cl (mg/L)	Mo (mg/L)	Ni (mg/L)	Se (mg/l)	NO3 (mg/l)
5-08	08-Mar-96	21.8	85.5	6890.1	6868.3	2525	12.8	8.6	1500	330	0.01	-0.04	-0.005	0.1
5-08	10-Sep-96	21.9	85.3	6890.1	6868.2	2400	13.0	9.4	1490	340				-0.1

Well ID	Alpha (pCi/L)	Pb210 (pCi/L)	Ra226 (pCi/L)	Ra228 (pCi/L)	Th230 (pCi/L)	U-Nat (mg/l)
5-08	55.0	4.5	19.0	0.4	1.9	0.0120
5-08						

QUIVIRA MINING COMPANY
AMBROSIA LAKE FACILITY

ALLUVIAL WELLS

Well ID	Date	Depth To Water (ft)	Total Depth (ft)	Measuring Point Elevation	Water Level Elev.(ft)	Spec. Cond.	Temp. (c)	pH	SO4 (mg/L)	Cl (mg/L)	Mo (mg/L)	Ni (mg/L)	Se (mg/l)	NO3 (mg/l)
5-73	08-Mar-96	5.7	31.5	6887.0	6881.3	2950	9.9	7.4	2000	400	-0.01	-0.04	-0.005	-0.1
5-73	10-Sep-96	6.0	31.6	6887.0	6881.1	3375	11.7	7.6	1710	342				-0.1

Well ID	Alpha (pCi/L)	Pb210 (pCi/L)	Ra226 (pCi/L)	Ra228 (pCi/L)	Th230 (pCi/L)	U-Nat (mg/l)
5-73	122.0	2.2	0.4	1.7	0.7	0.2500
5-73						

QUIVIRA MINING COMPANY
AMBROSIA LAKE FACILITY

ALLUVIAL WELLS

Well ID	Date	Depth To Water (ft)	Total Depth (ft)	Measuring Point Elevation	Water Level Elev.(ft)	Spec. Cond.	Temp. (c)	pH	SO4 (mg/L)	Cl (mg/L)	Mo (mg/L)	Ni (mg/L)	Se (mg/l)	NO3 (mg/l)
AW-1	06-Mar-96	31.7	81.2	6947.0	6915.3	4125	9.8	6.9	2400	630	-0.01	-0.04	0.096	7.0
AW-1	10-Sep-96	33.3	81.2	6947.0	6913.7	3900	12.8	7.9	1990	597				5.3

Well ID	Alpha (pCi/L)	Pb210 (pCi/L)	Ra226 (pCi/L)	Ra228 (pCi/L)	Th230 (pCi/L)	U-Nat (mg/l)
AW-1	69.0	4.6	1.3	2.6	2.6	0.1500
AW-1						

QUIVIRA MINING COMPANY
AMBROSIA LAKE FACILITY

ALLUVIAL WELLS

Well ID	Date	Depth To Water (ft)	Total Depth (ft)	Measuring Point Elevation	Water Level Elev.(ft)	Spec. Cond.	Temp. (c)	pH	SO4 (mg/L)	Cl (mg/L)	Mo (mg/L)	Ni (mg/L)	Se (mg/l)	NO3 (mg/l)
AW-2	07-Mar-96	26.0	85.9	6915.2	6889.2	2975	12.2	7.5	2200	200	-0.01	-0.01	-0.005	1.3
AW-2	10-Sep-96	25.8	85.6	6915.2	6889.4	3000	12.8	7.7	2160	225				0.9

Well ID	Alpha (pCi/L)	Pb210 (pCi/L)	Ra226 (pCi/L)	Ra228 (pCi/L)	Th230 (pCi/L)	U-Nat (mg/l)
AW-2	35.0	3.1	0.7	2.4	1.2	0.0640
AW-2						

QUIVIRA MINING COMPANY
AMBROSIA LAKE FACILITY

ALLUVIAL WELLS

Well ID	Date	Depth To Water (ft)	Total Depth (ft)	Measuring Point Elevation	Water Level Elev.(ft)	Spec. Cond.	Temp. (c)	pH	SO4 (mg/L)	Cl (mg/L)	Mo (mg/L)	Ni (mg/L)	Se (mg/l)	NO3 (mg/l)
31-05	11-Mar-96	28.1	79.1	6941.6	6913.5	8500	12.3	9.0	4400	2000	0.32	-0.04	-0.025	-0.1
31-05	11-Sep-96	30.4	79.2	6941.6	6911.2	8100	11.8	9.6	4350	1950				-0.1

Well ID	Alpha (pCi/L)	Pb210 (pCi/L)	Ra226 (pCi/L)	Ra228 (pCi/L)	Th230 (pCi/L)	U-Nat (mg/l)
31-05	430.0	36.0	307.0	5.9	17.0	0.0820
31-05						

QUIVIRA MINING COMPANY
AMBROSIA LAKE FACILITY

ALLUVIAL WELLS

Well ID	Date	Depth To Water (ft)	Total Depth (ft)	Measuring Point Elevation	Water Level Elev.(ft)	Spec. Cond.	Temp. (c)	pH	SO4 (mg/l)	Cl (mg/L)	Mo (mg/L)	Ni (mg/L)	Se (mg/l)	NO3 (mg/l)
30-47	29-Feb-96	27.4	79.7	6944.1	6916.7	2550	11.0	6.7	2300	510	-0.02	-0.08	-0.005	5.5
30-47	09-Sep-96	25.0	79.8	6944.1	6919.1	2900	12.0	7.2	2080	499				0.6

Well ID	Alpha (pCi/L)	Pb210 (pCi/L)	Ra226 (pCi/L)	Ra228 (pCi/L)	Th230 (pCi/L)	U-Nat (mg/l)
30-47	5.0	1.6	4.3	8.3	1.3	0.0110
30-47						

QUIVIRA MINING COMPANY
AMBROSIA LAKE FACILITY

ALLUVIAL WELLS

Well ID	Date	Depth To Water (ft)	Total Depth (ft)	Measuring Point Elevation	Water Level Elev.(ft)	Spec. Cond.	Temp. (c)	pH	SO4 (mg/L)	Cl (mg/L)	Mo (mg/L)	Ni (mg/L)	Se (mg/l)	NO3 (mg/l)
30-49	29-Feb-96	43.7	69.1	6951.4	6907.7	2800	13.8	6.7	1400	160	-0.01	-0.04	0.067	0.7
30-49	09-Sep-96	44.0	69.2	6951.4	6907.4	3025	12.5	7.4	2060	336				0.3

Well ID	Alpha (pCi/L)	Pb210 (pCi/L)	Ra226 (pCi/L)	Ra228 (pCi/L)	Th230 (pCi/L)	U-Nat (mg/l)
30-49	18.0	4.8	2.1	2.3	1.4	0.0120
30-49						

QUIVIRA MINING COMPANY
AMBROSIA LAKE FACILITY

ALLUVIAL WELLS

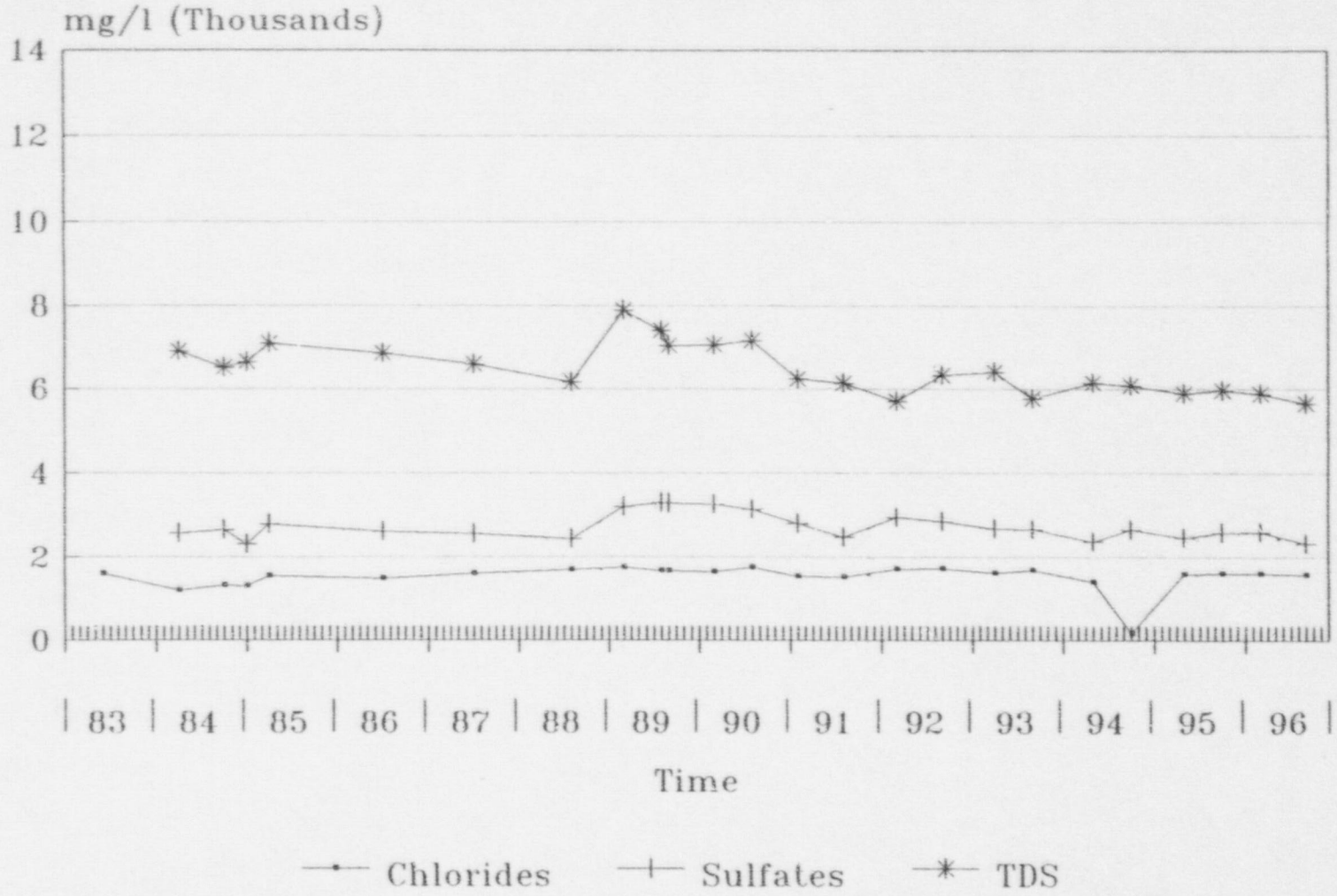
Well ID	Date	Depth To Water (ft)	Total Depth (ft)	Measuring Point Elevation	Water Level Elev.(ft)	Spec. Cond.	Temp. (c)	pH	SO4 (mg/L)	Cl (mg/L)	Mo (mg/L)	Ni (mg/L)	Se (mg/l)	NO3 (mg/l)
30-48	29-Feb-96	29.7	80.0	6947.0	6917.3	1925	10.8	8.0	1360	170	-0.01	-0.04	-0.005	-0.1
30-48	09-Sep-96	28.6	80.0	6947.0	6918.4	2000	12.2	9.5	1370	176				-0.1

Well ID	Alpha (pCi/L)	Pb210 (pCi/L)	Ra226 (pCi/L)	Ra228 (pCi/L)	Th230 (pCi/L)	U-Nat (mg/l)
30-48	25.0	6.8	4.3	2.3	3.8	0.0068
30-48						

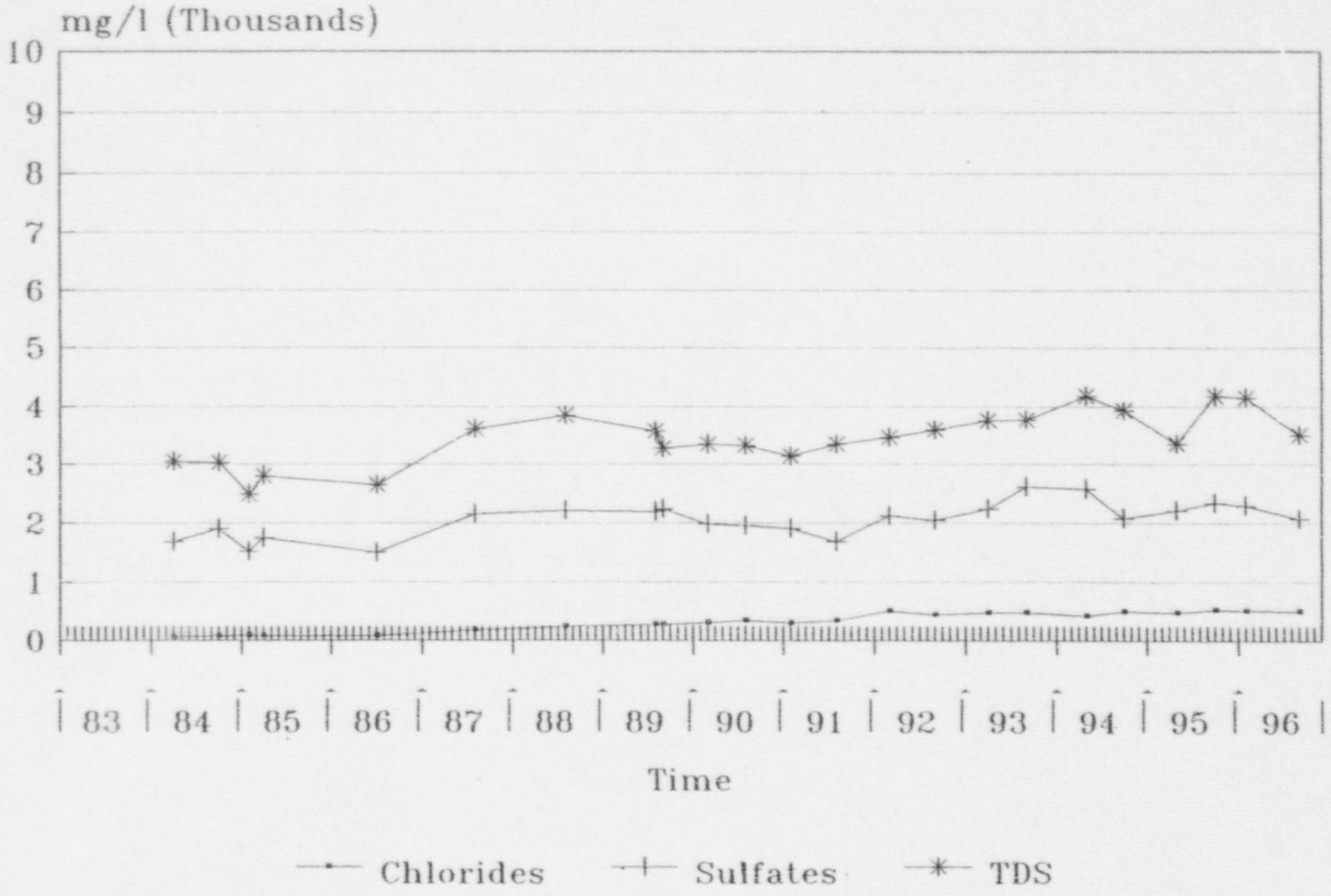
APPENDIX B

TIME vs CONCENTRATION PLOTS
ALLUVIAL WELLS

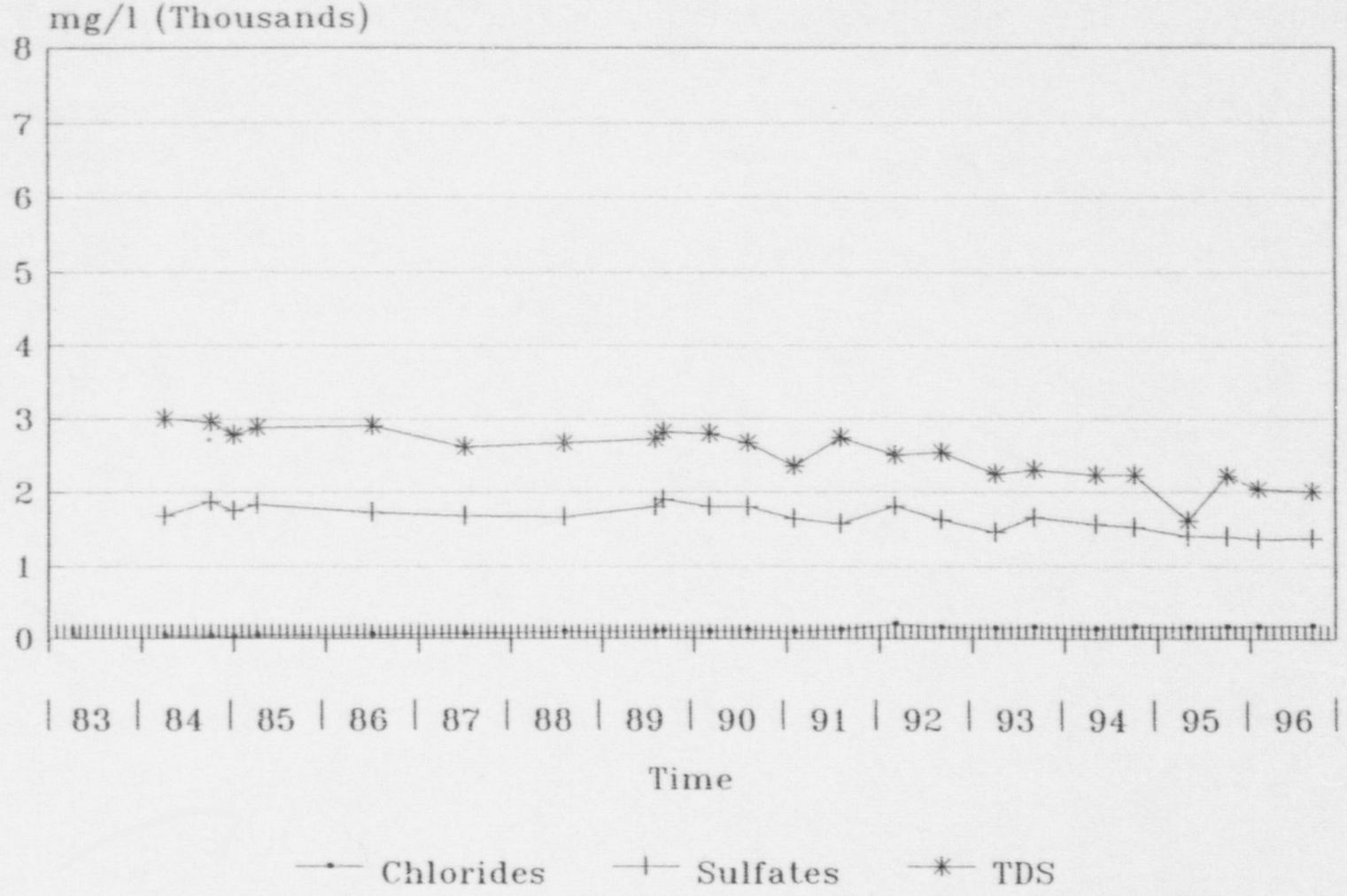
MONITOR WELL 30-04



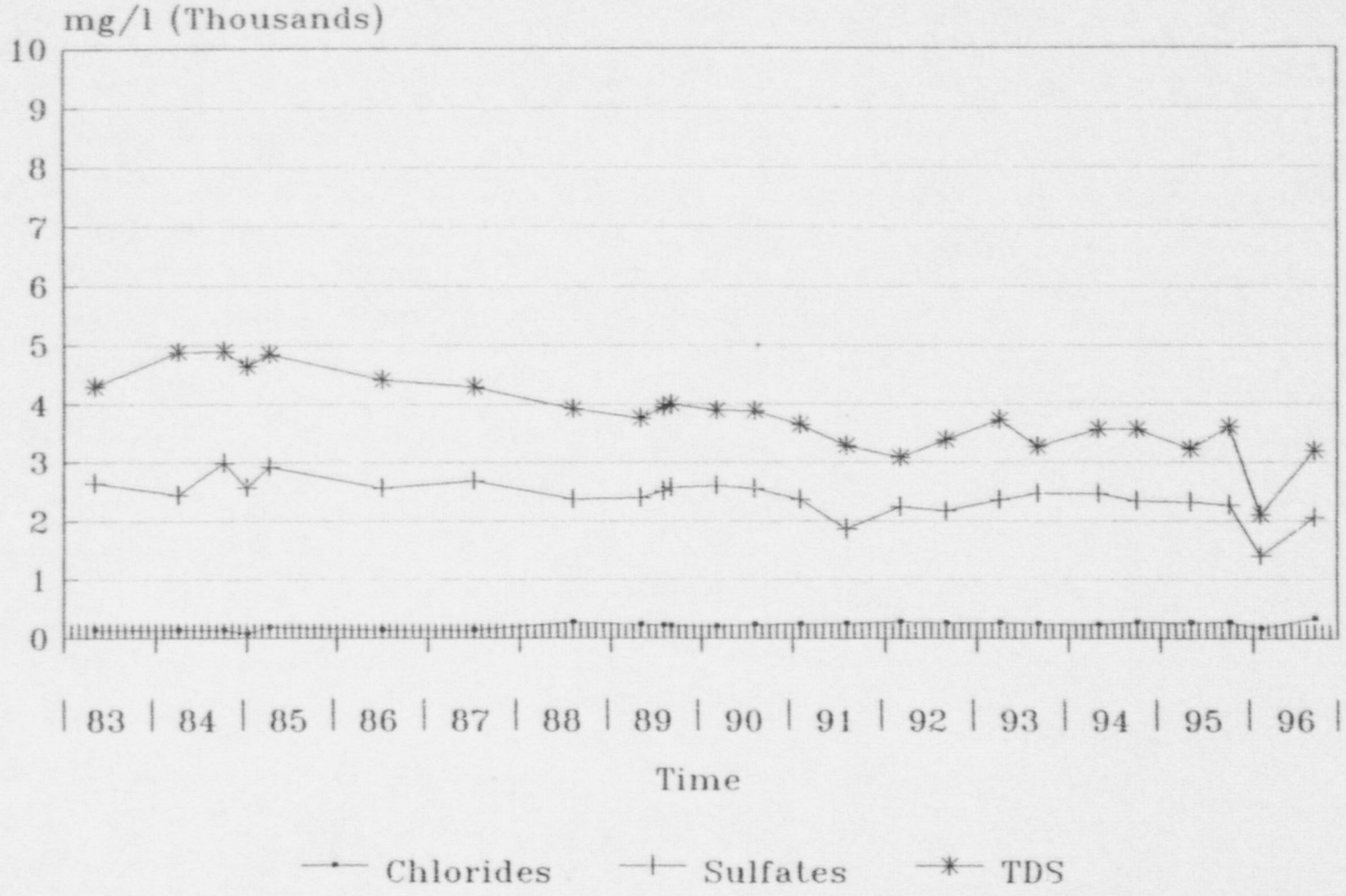
MONITOR WELL 30-47



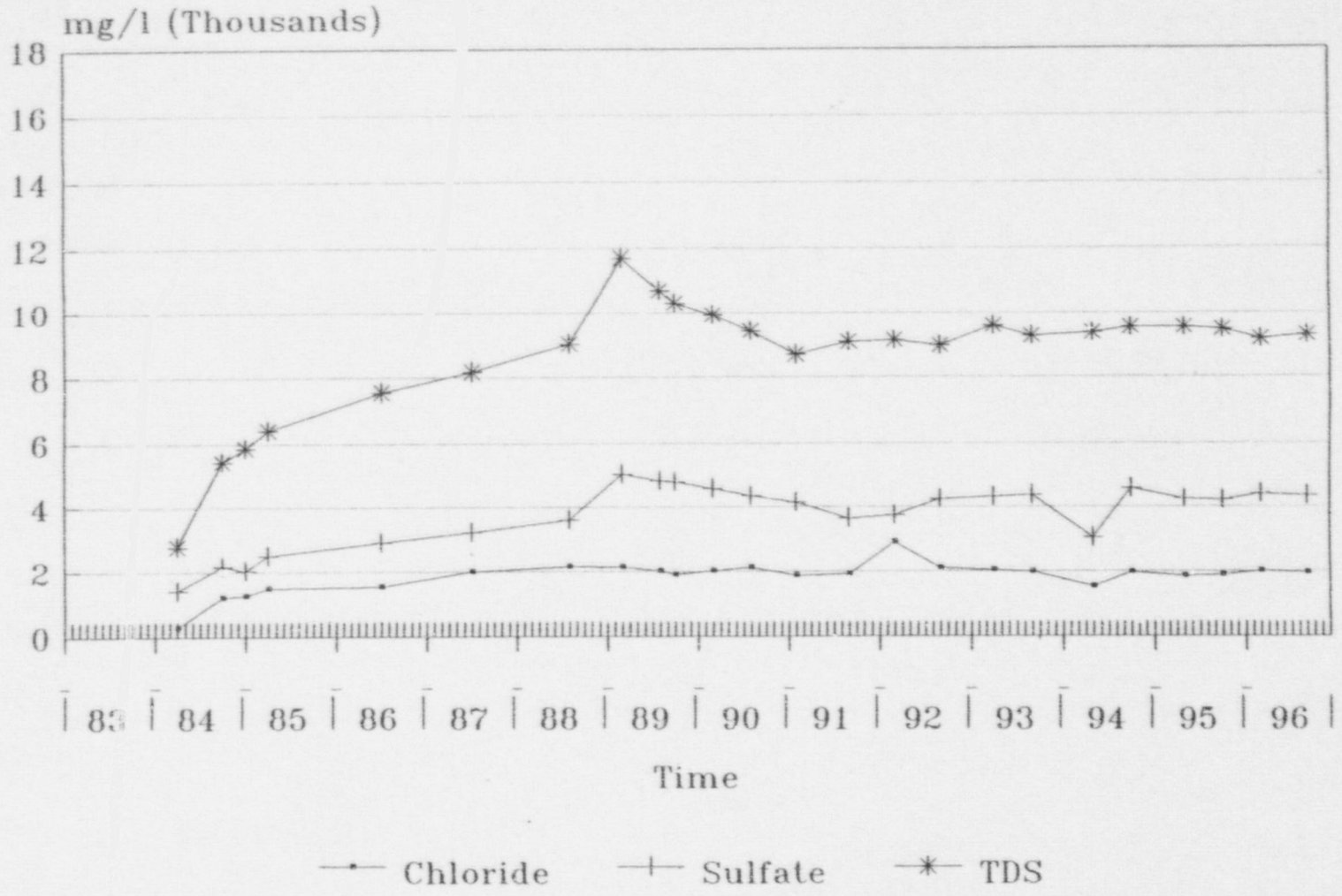
MONITOR WELL 30-48



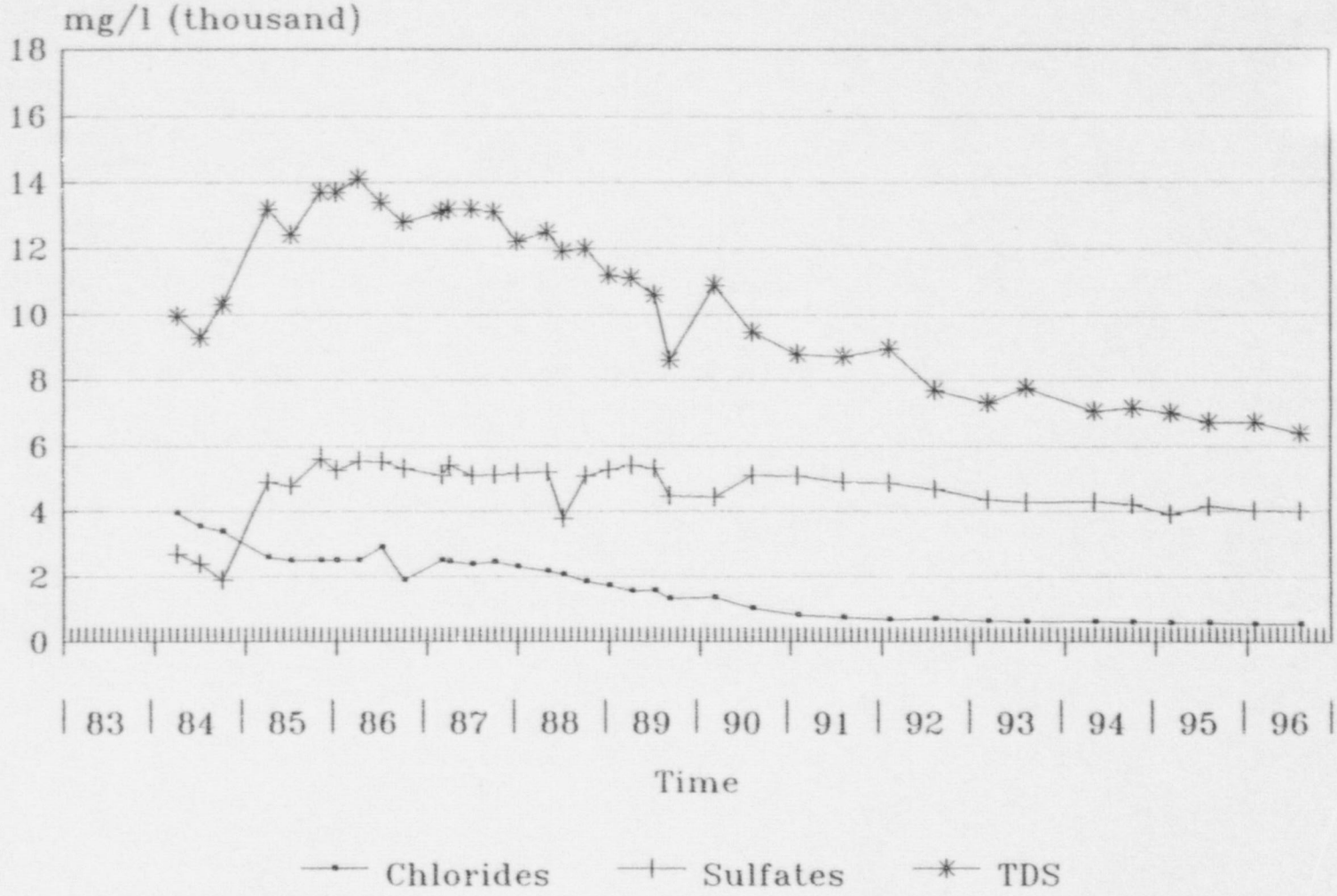
MONITOR WELL 30-49



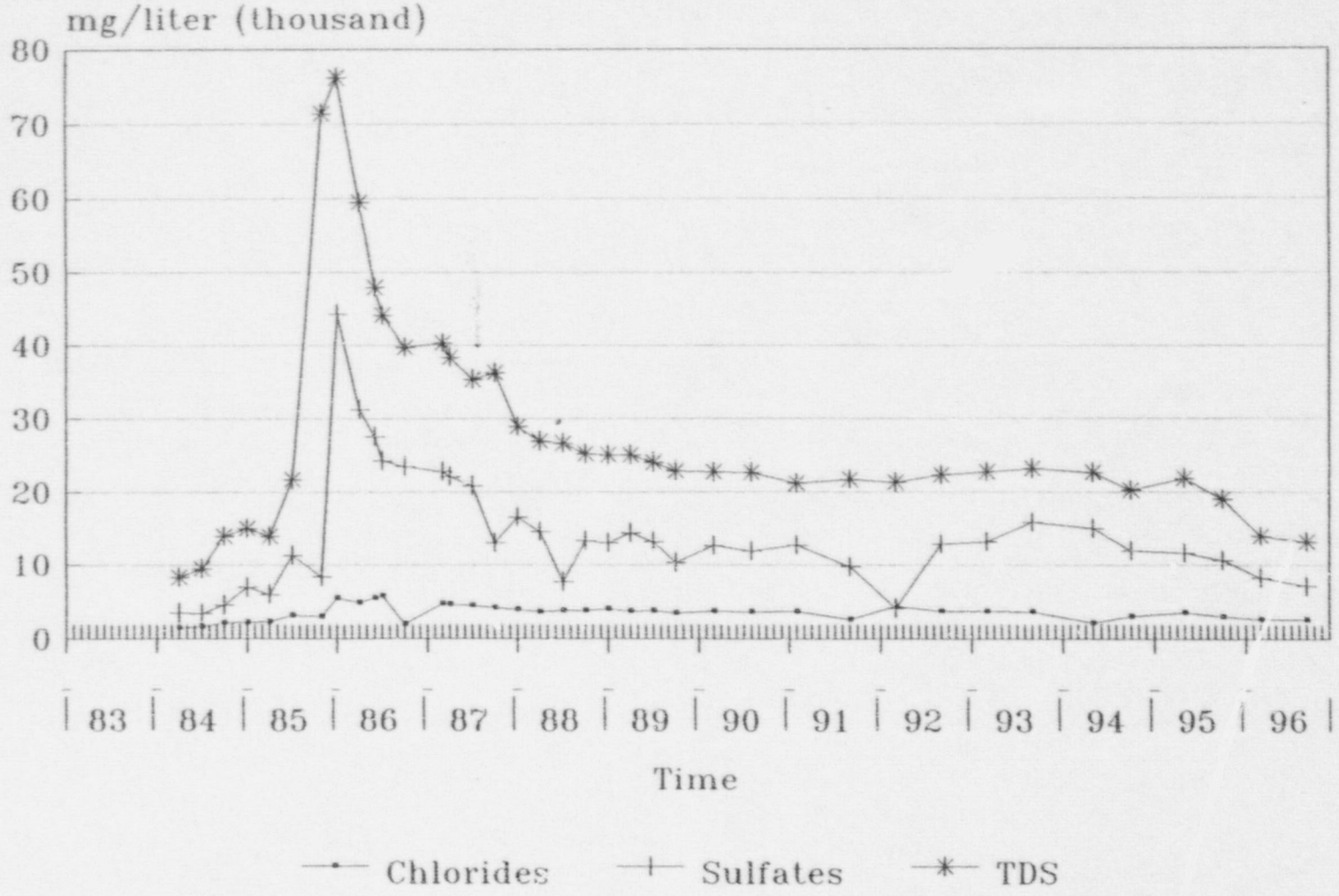
MONITOR WELL 31-05



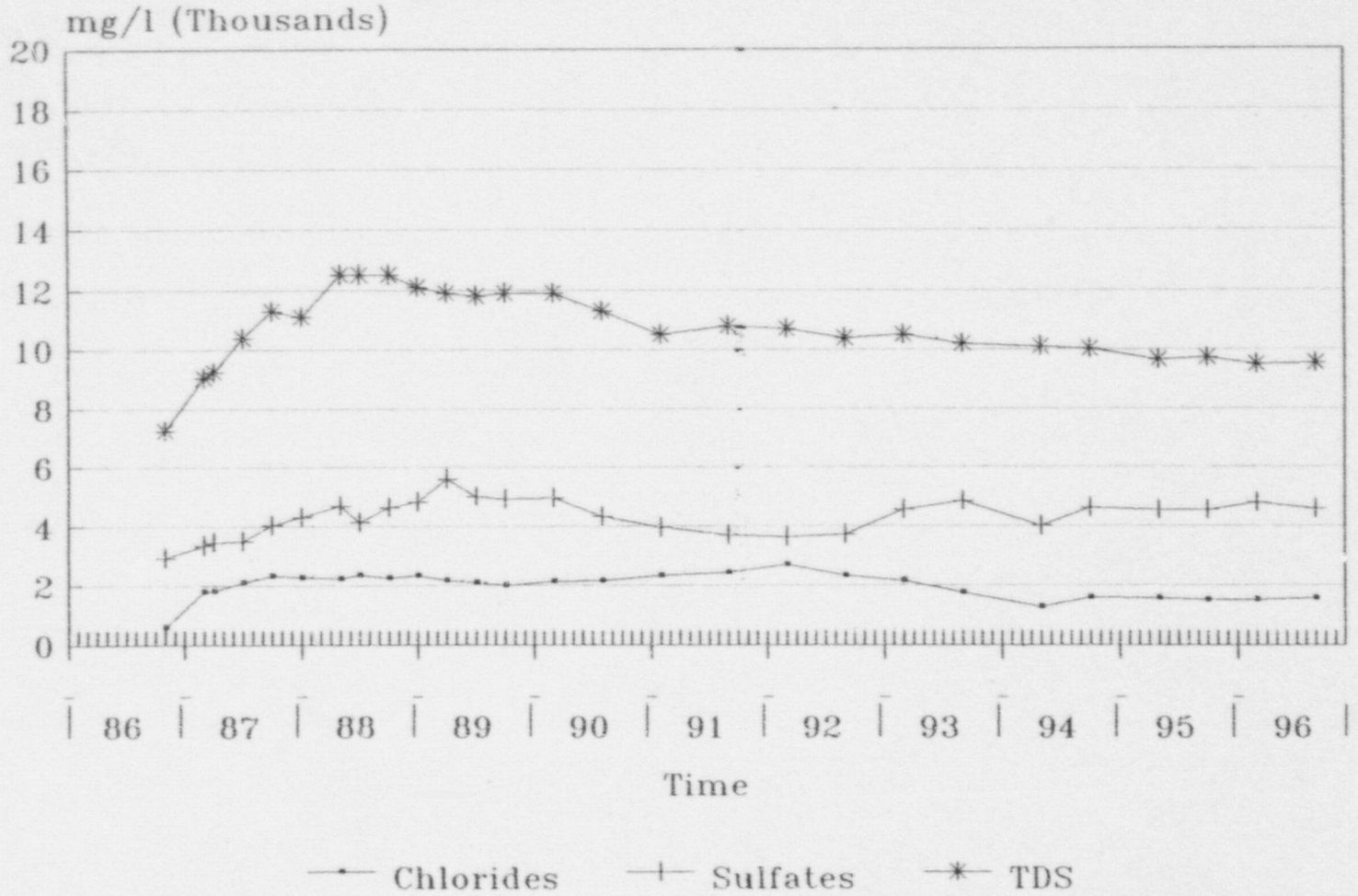
MONITOR WELL 31-61



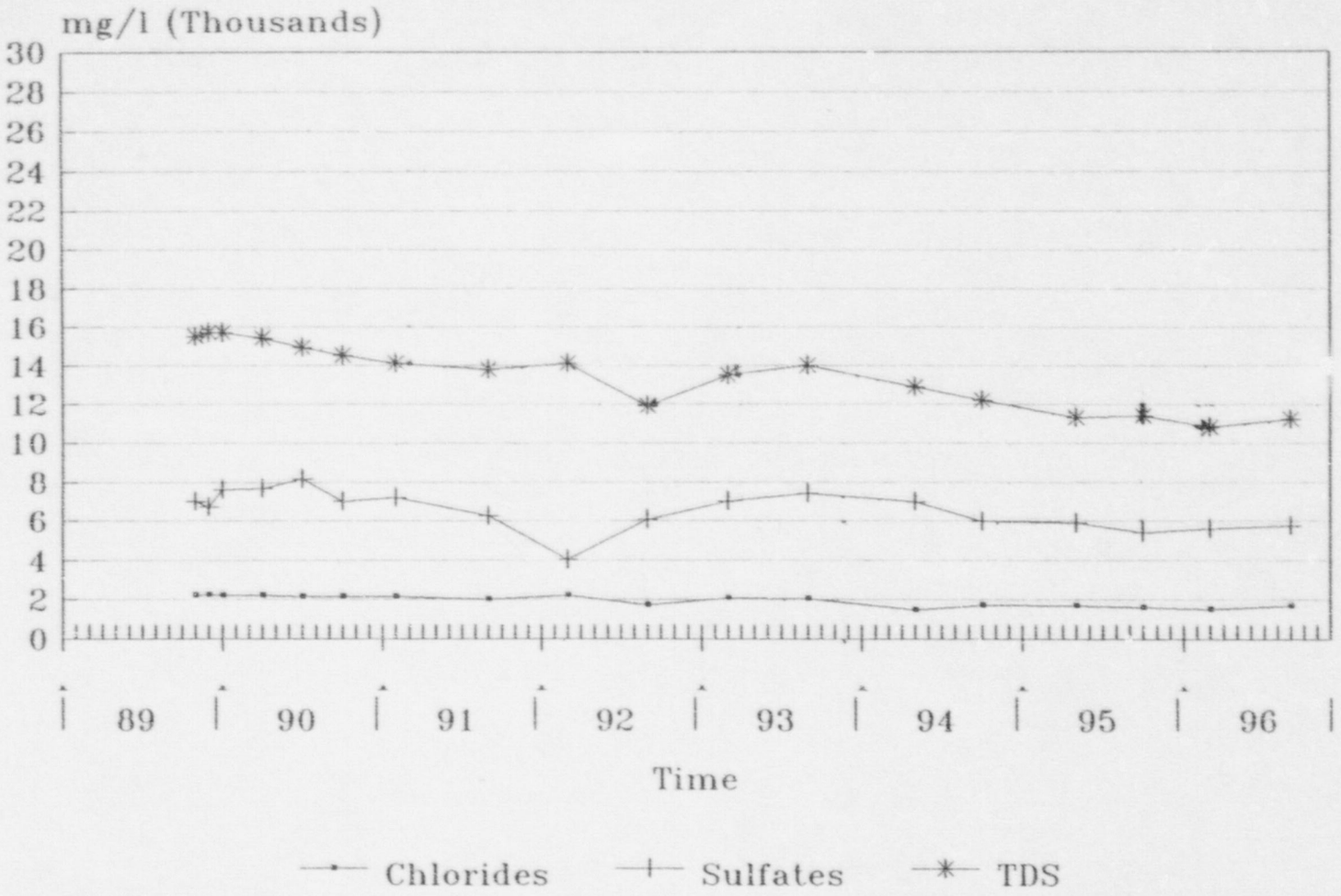
MONITOR WELL 31-63



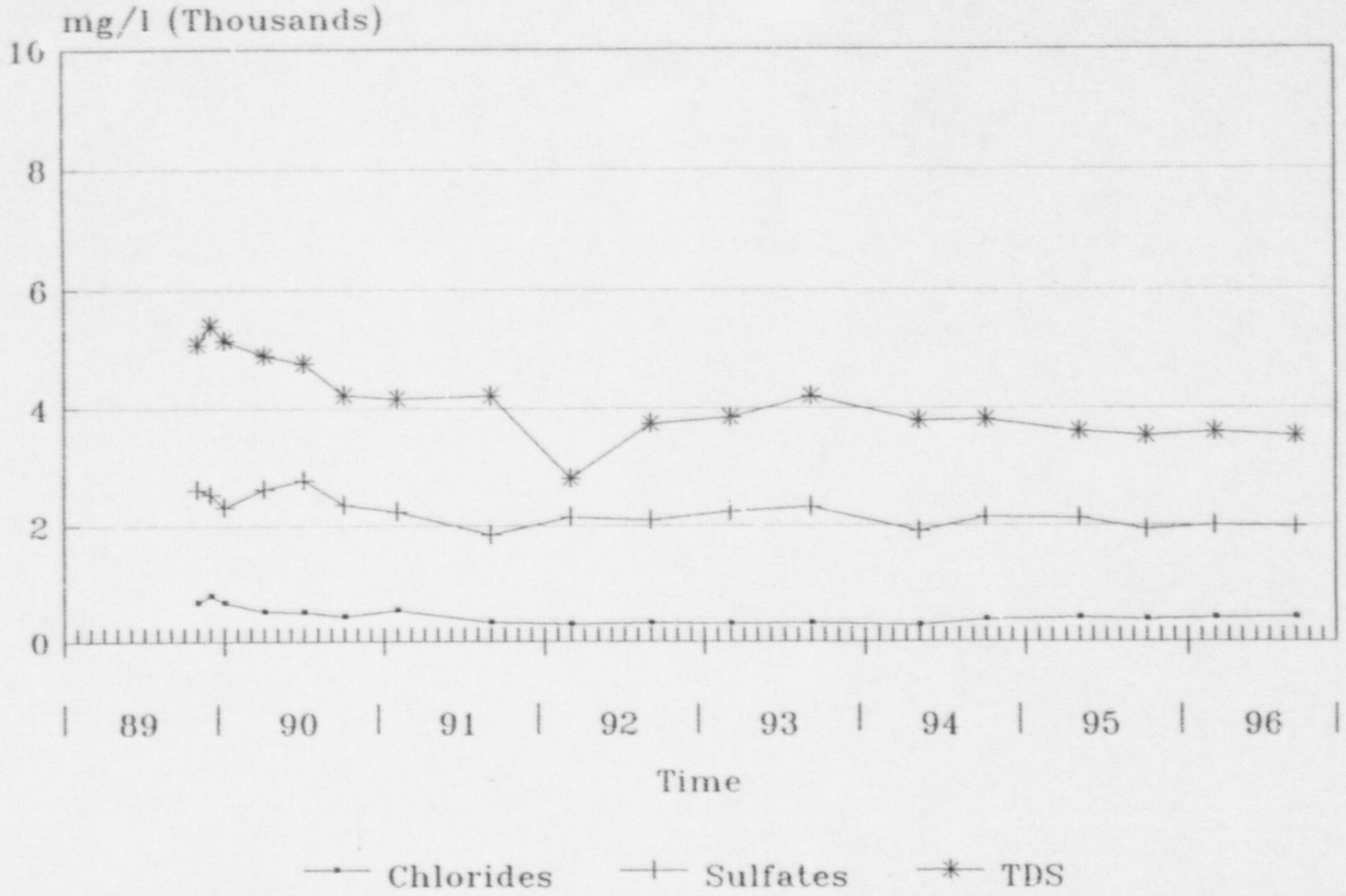
MONITOR WELL 31-65



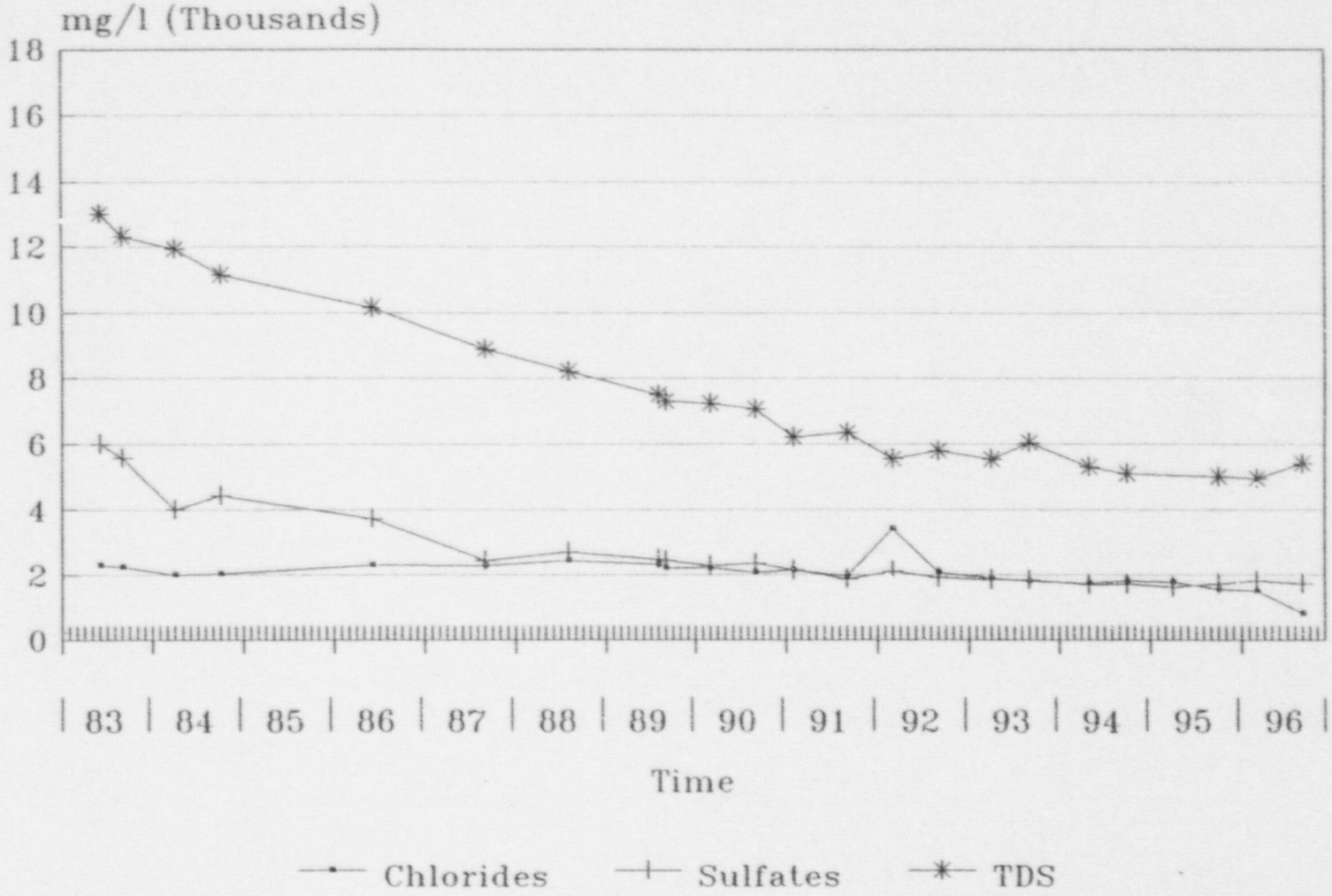
MONITOR WELL 31--70



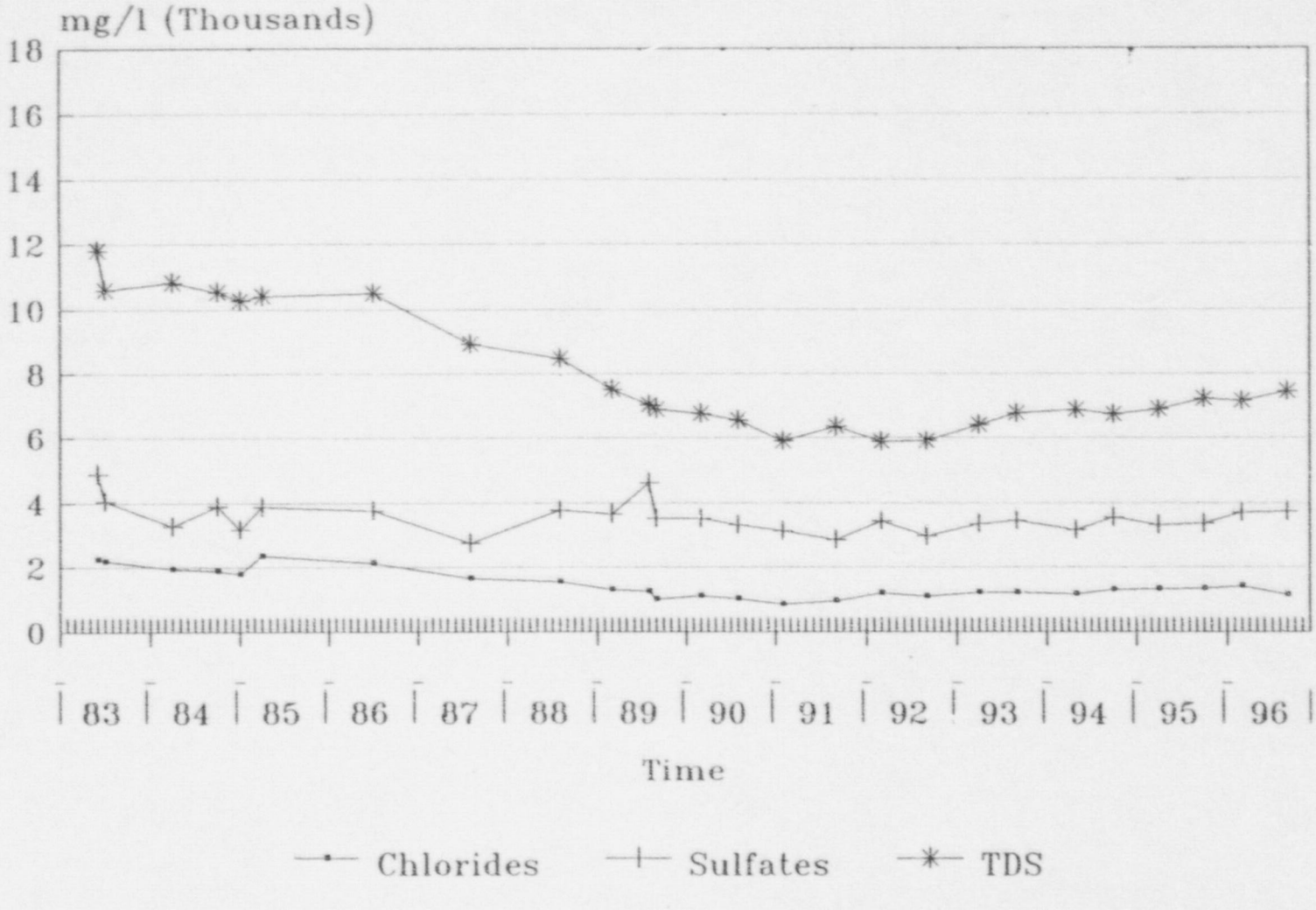
MONITOR WELL 31-71



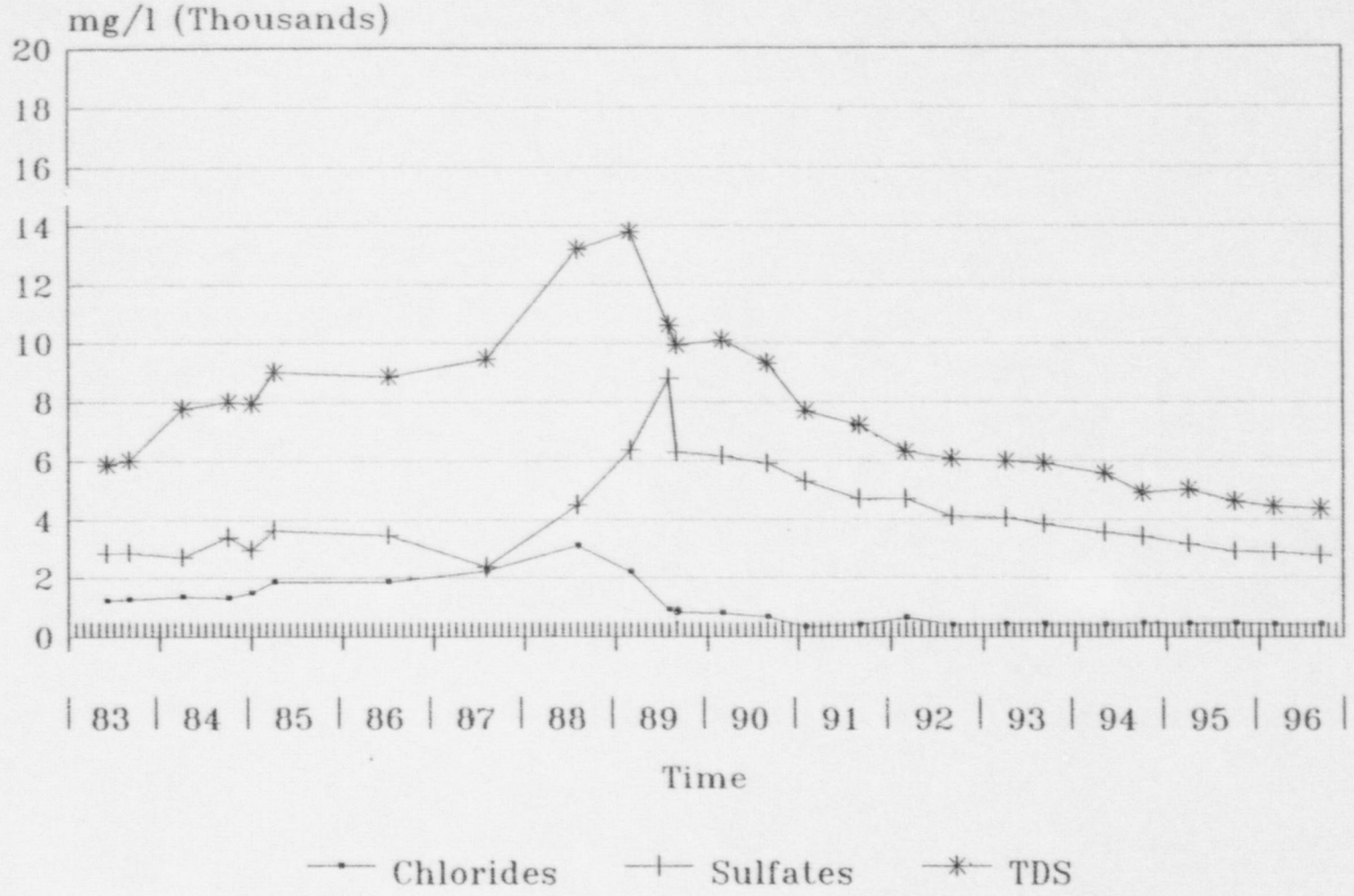
MONITOR WELL 32-01



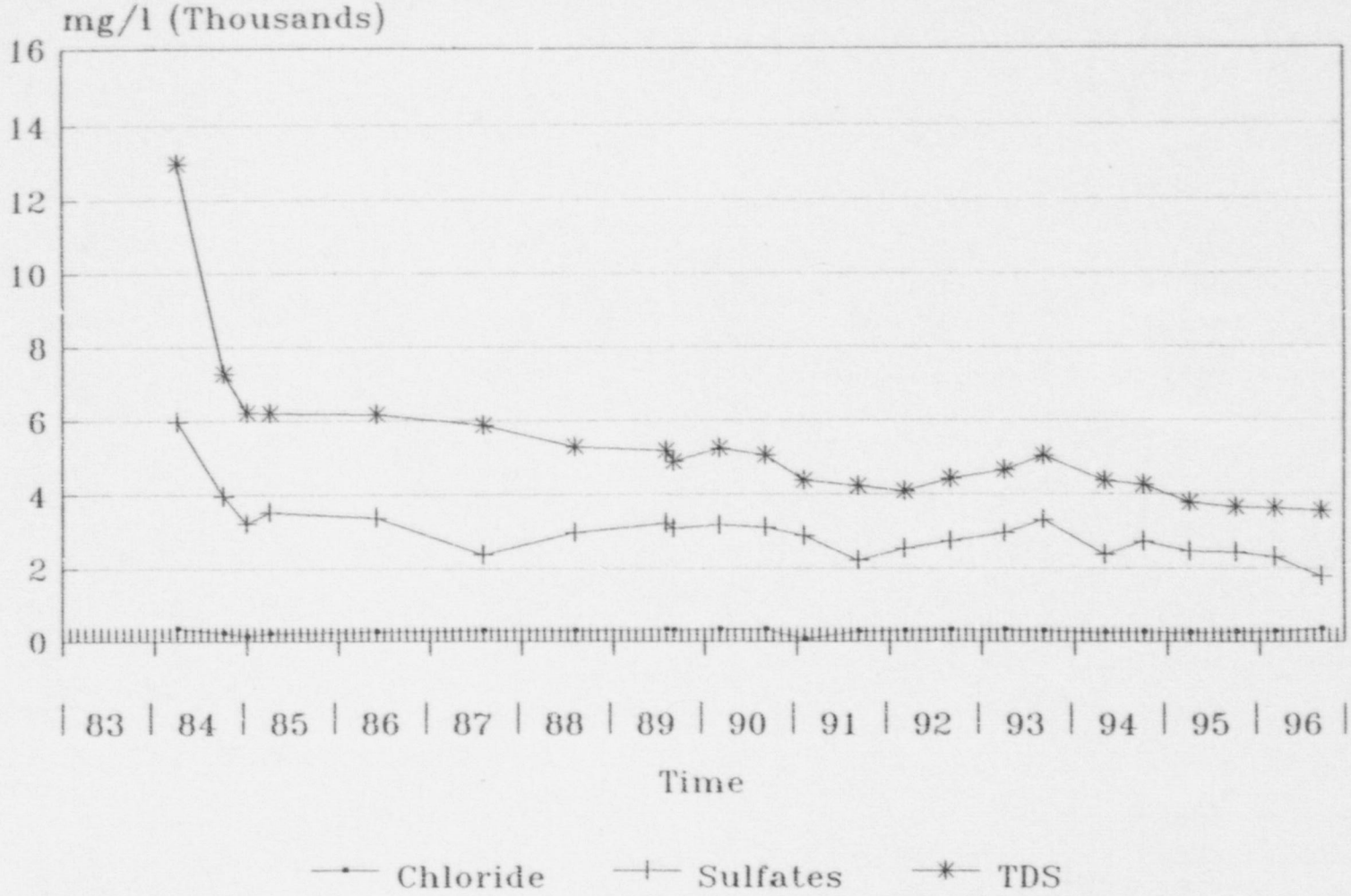
MONITOR WELL 32-02



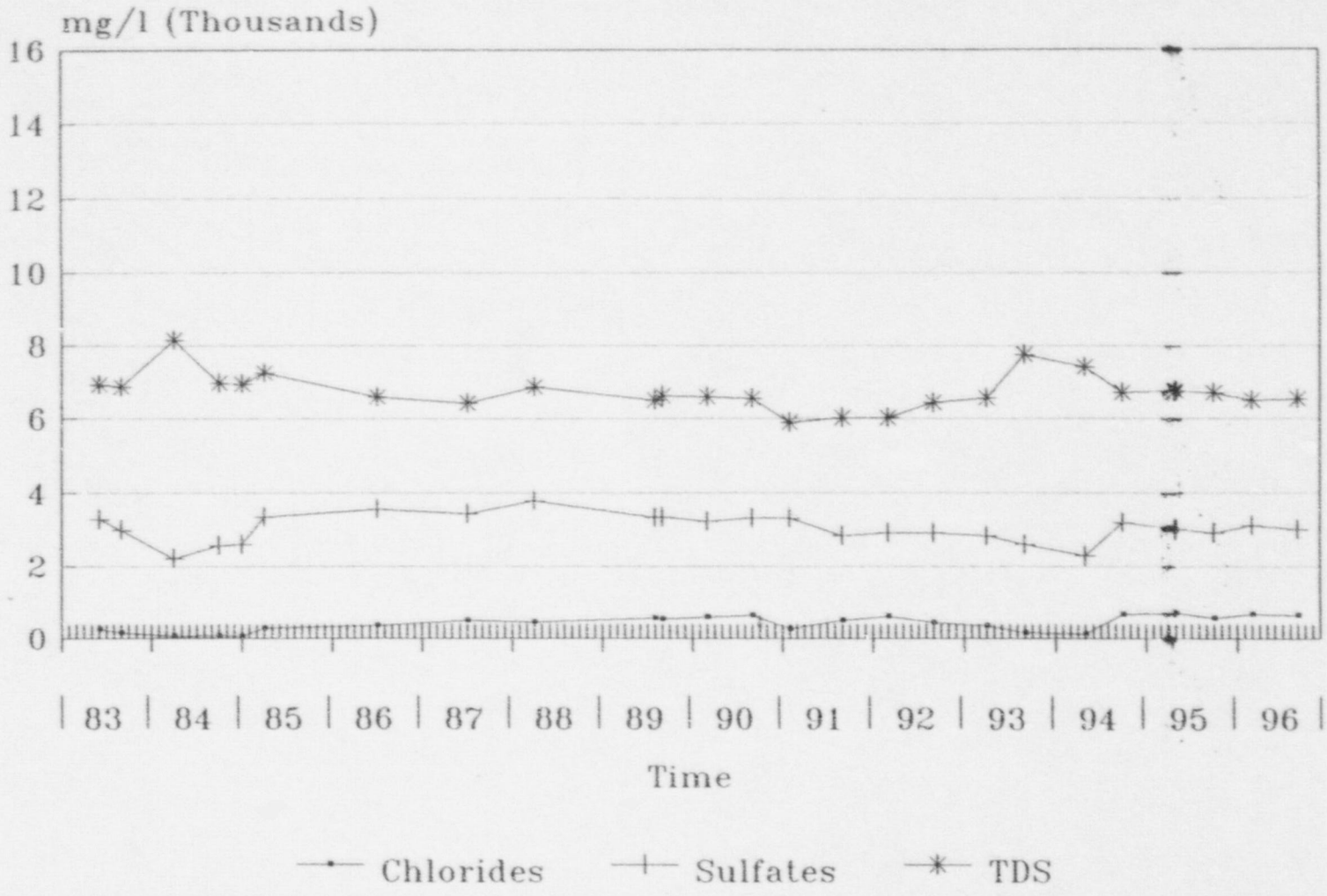
MONITOR WELL 32-41



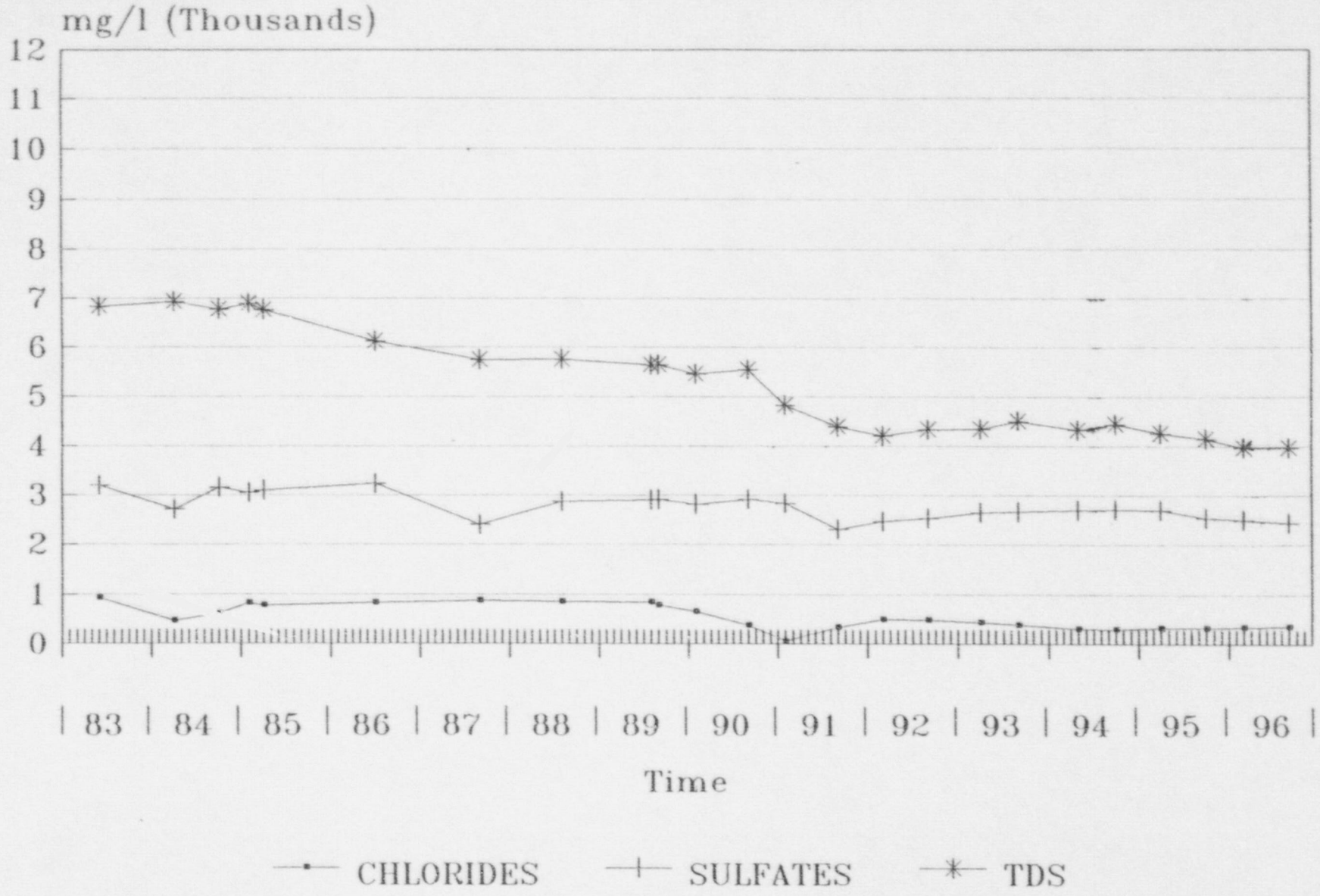
MONITOR WELL 32-42



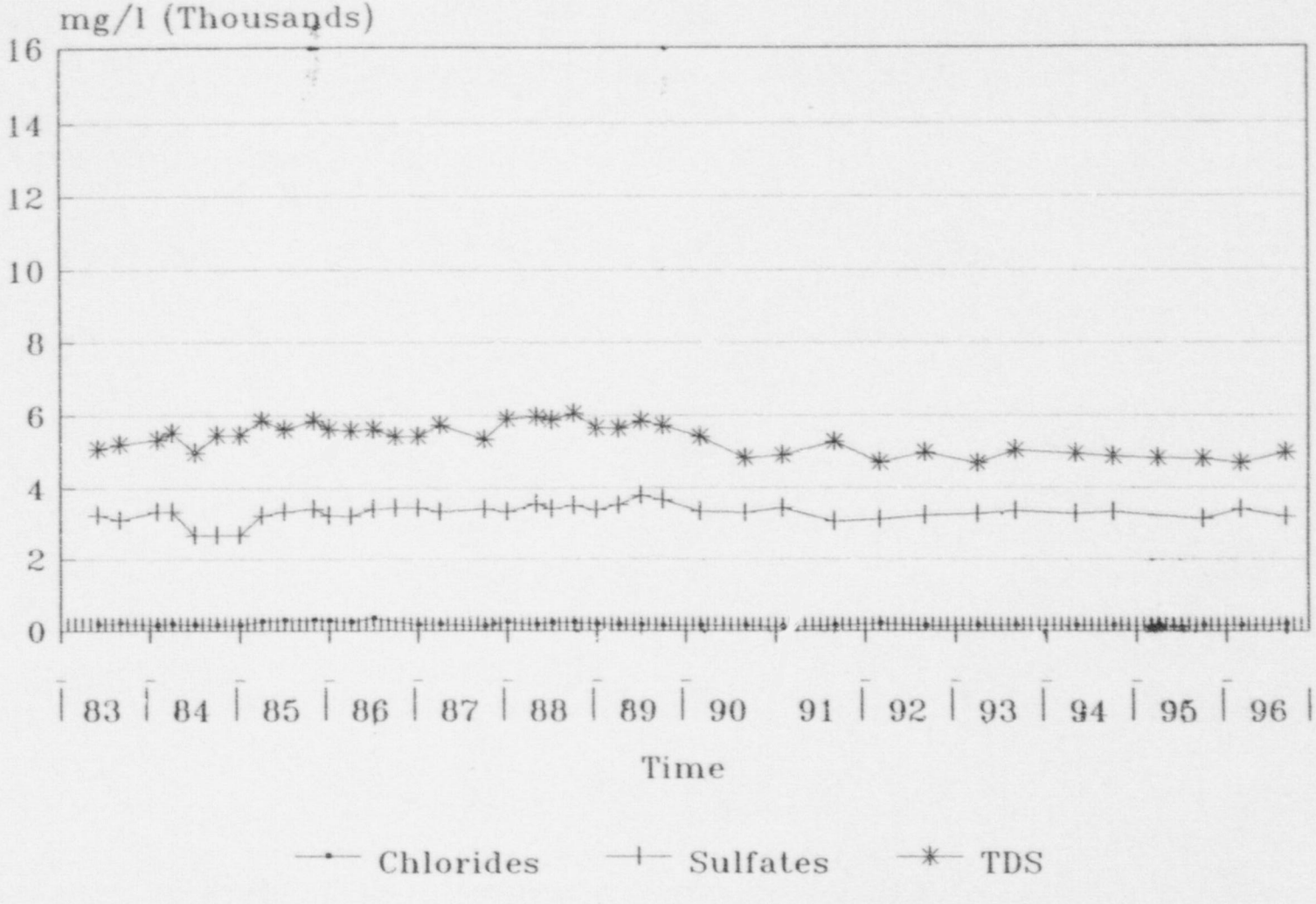
MONITOR WELL 32-43



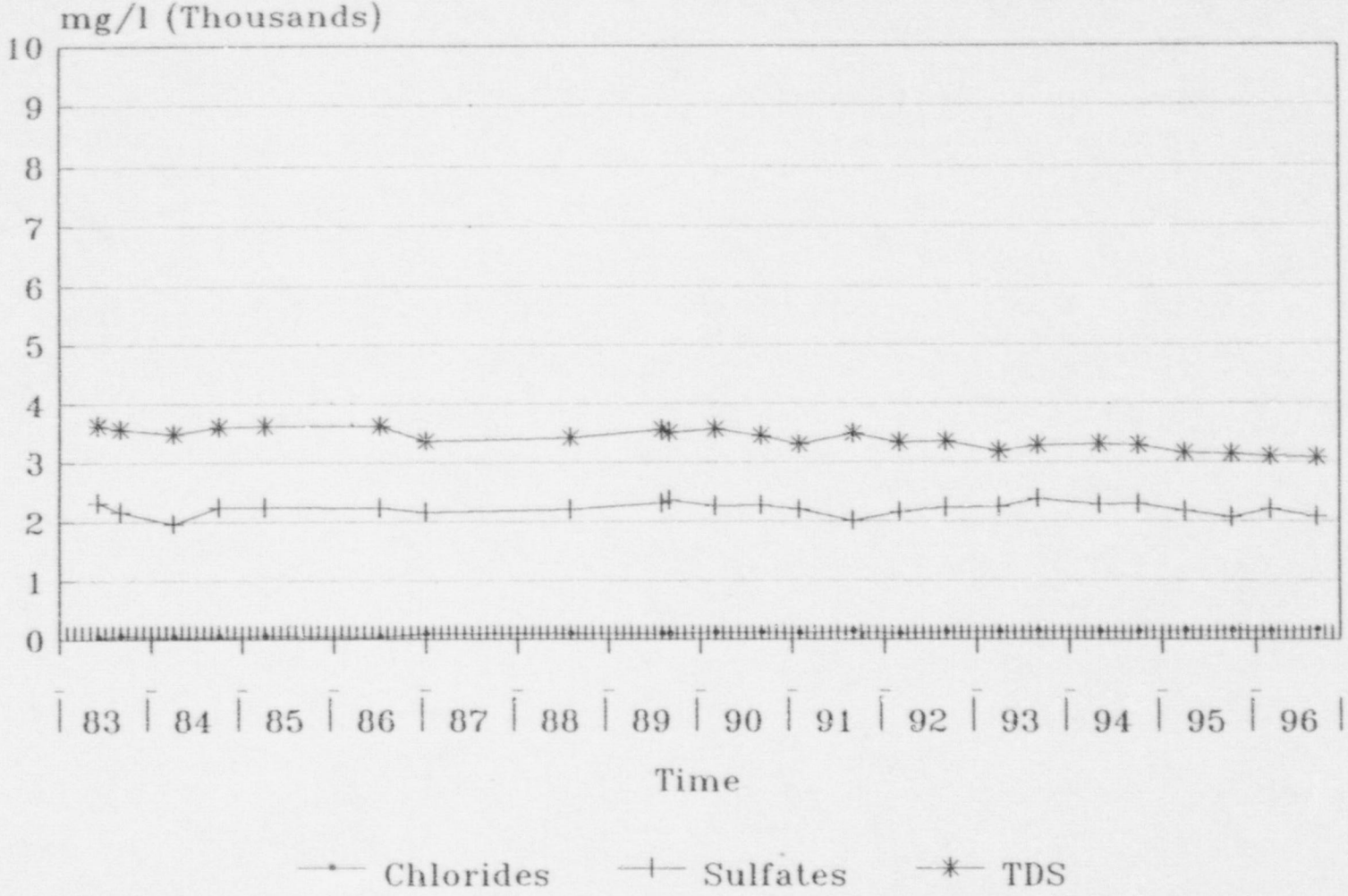
MONITOR WELL 32-50



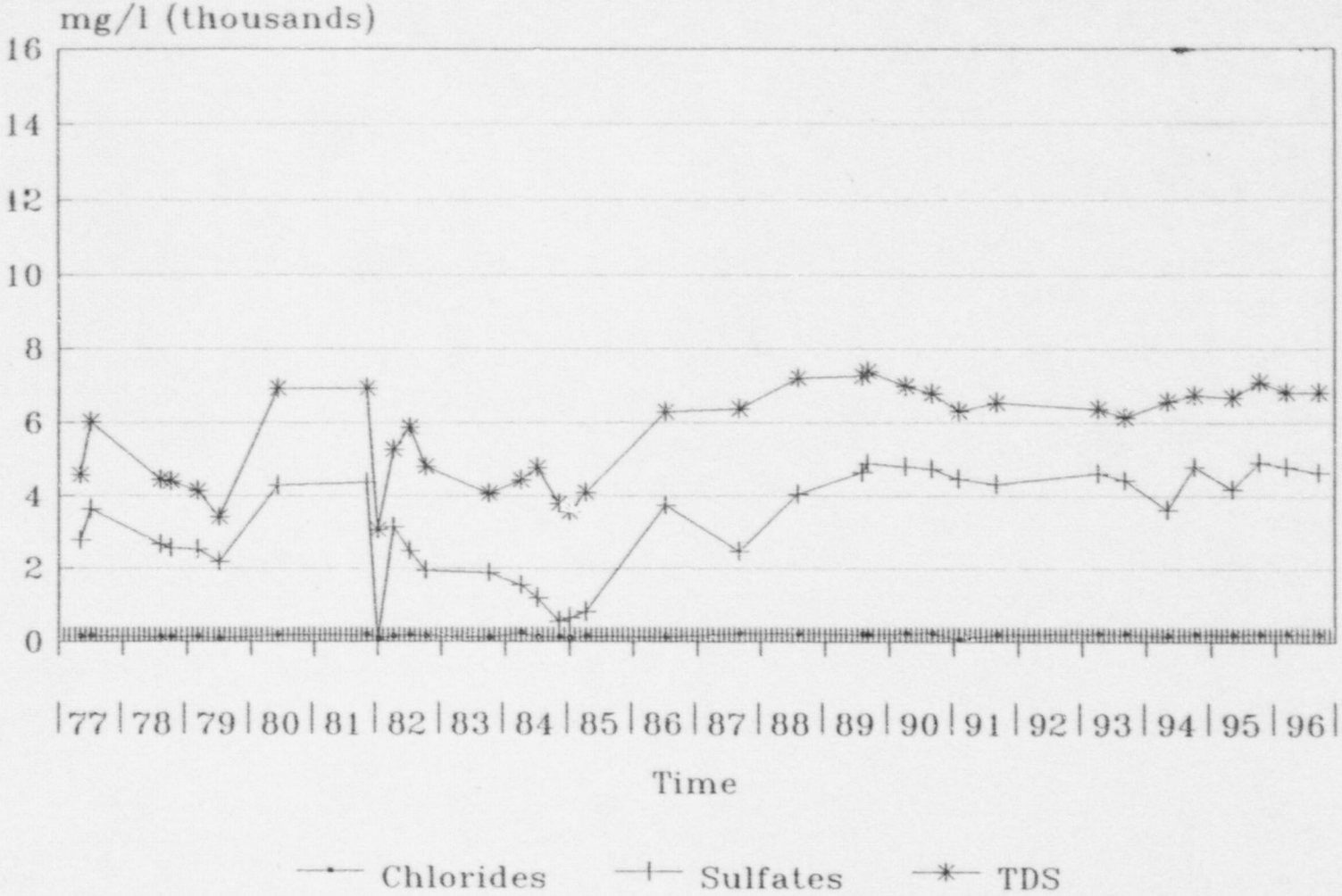
MONITOR WELL 32-51



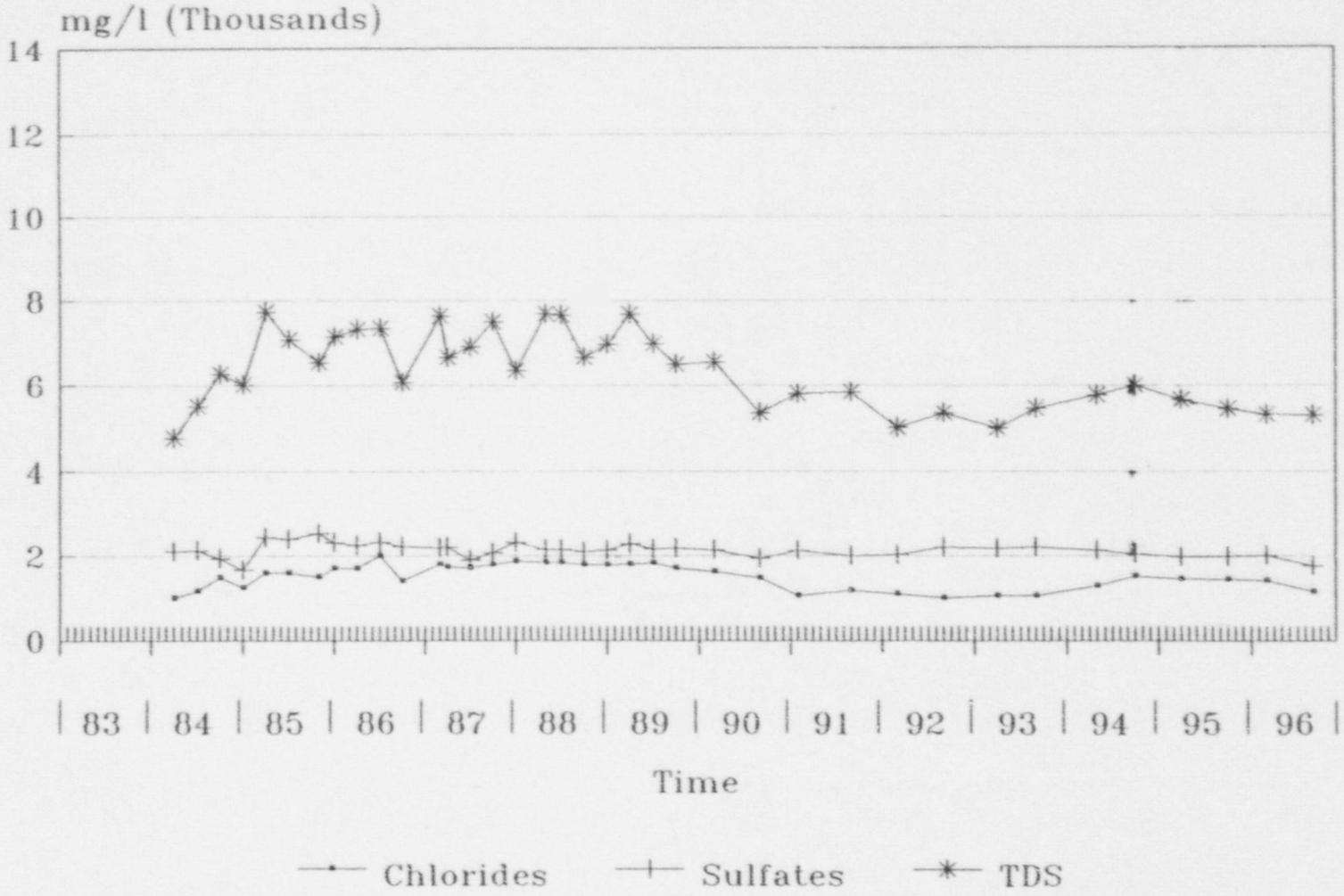
MONITOR WELL 32-52



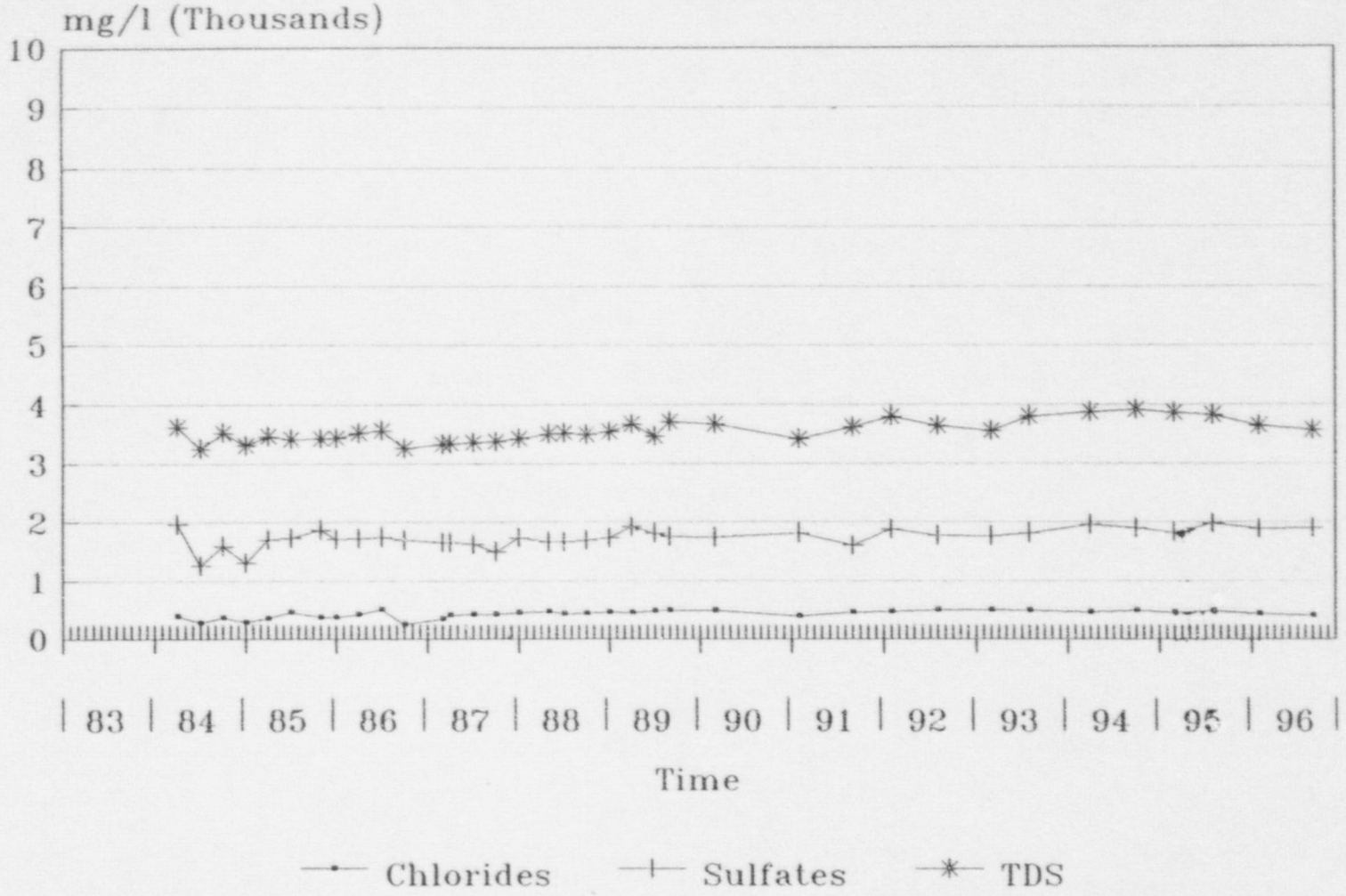
MONITOR WELL 32-57



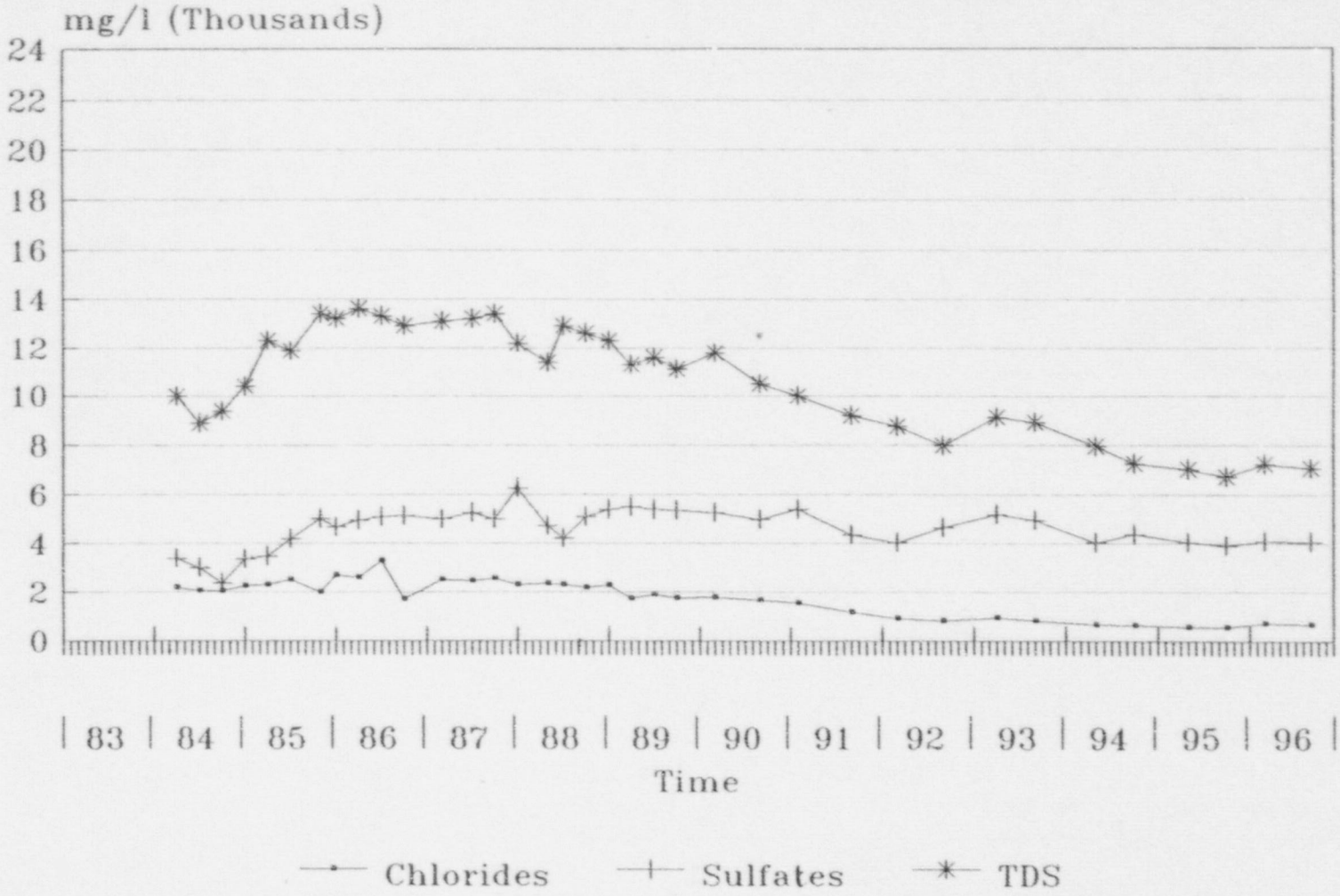
MONITOR WELL 32-58



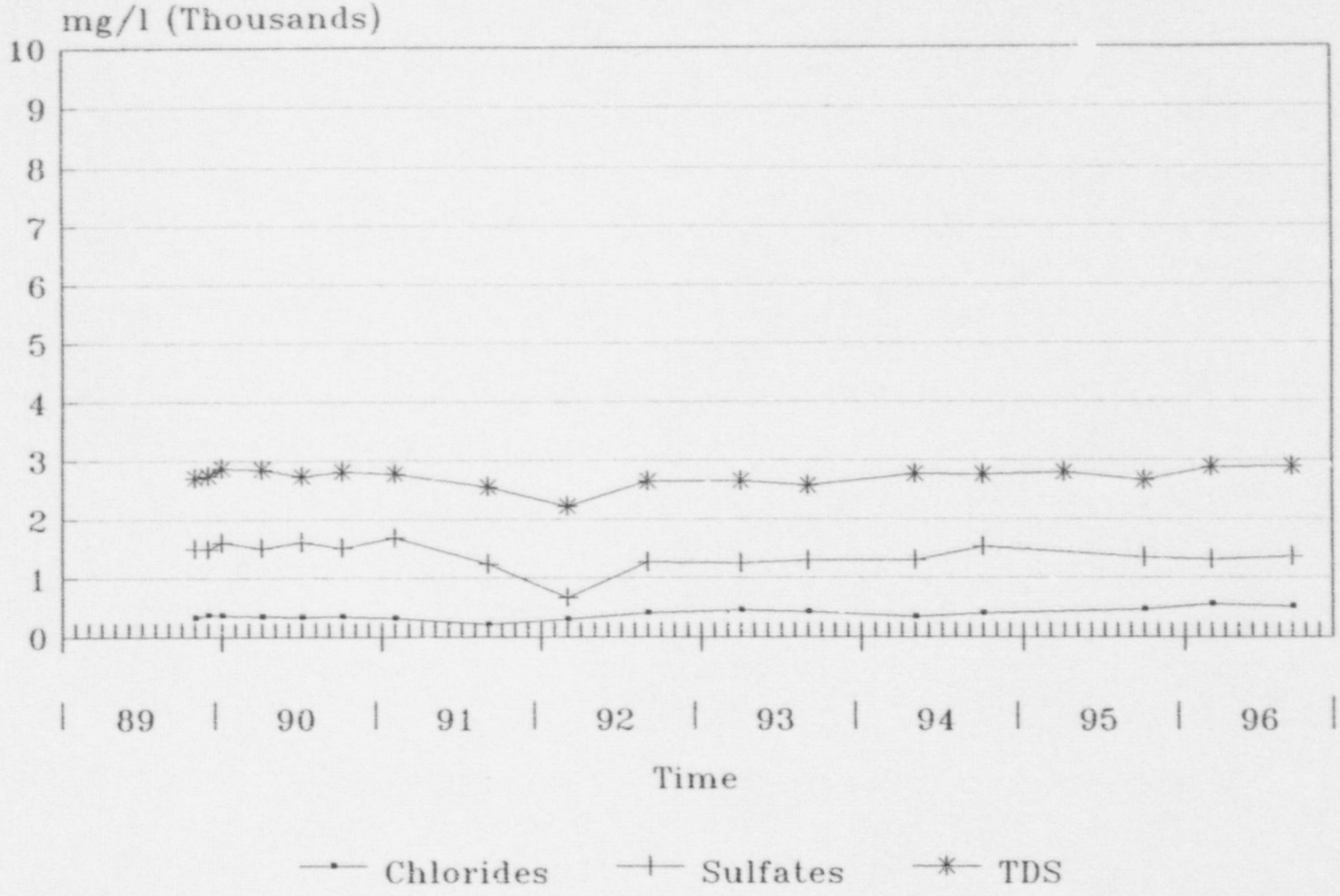
MONITOR WELL 32-59



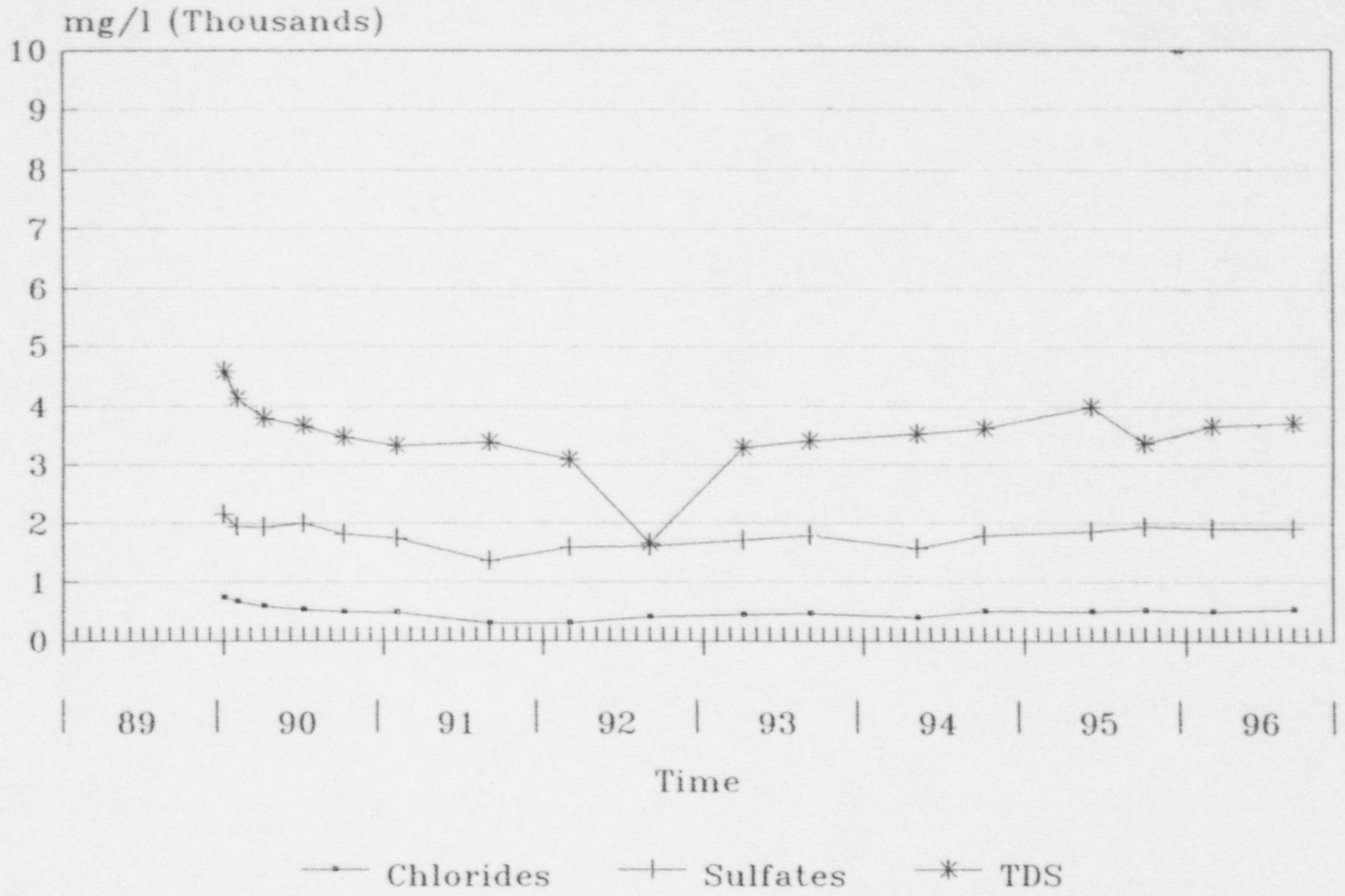
MONITOR WELL 32-60



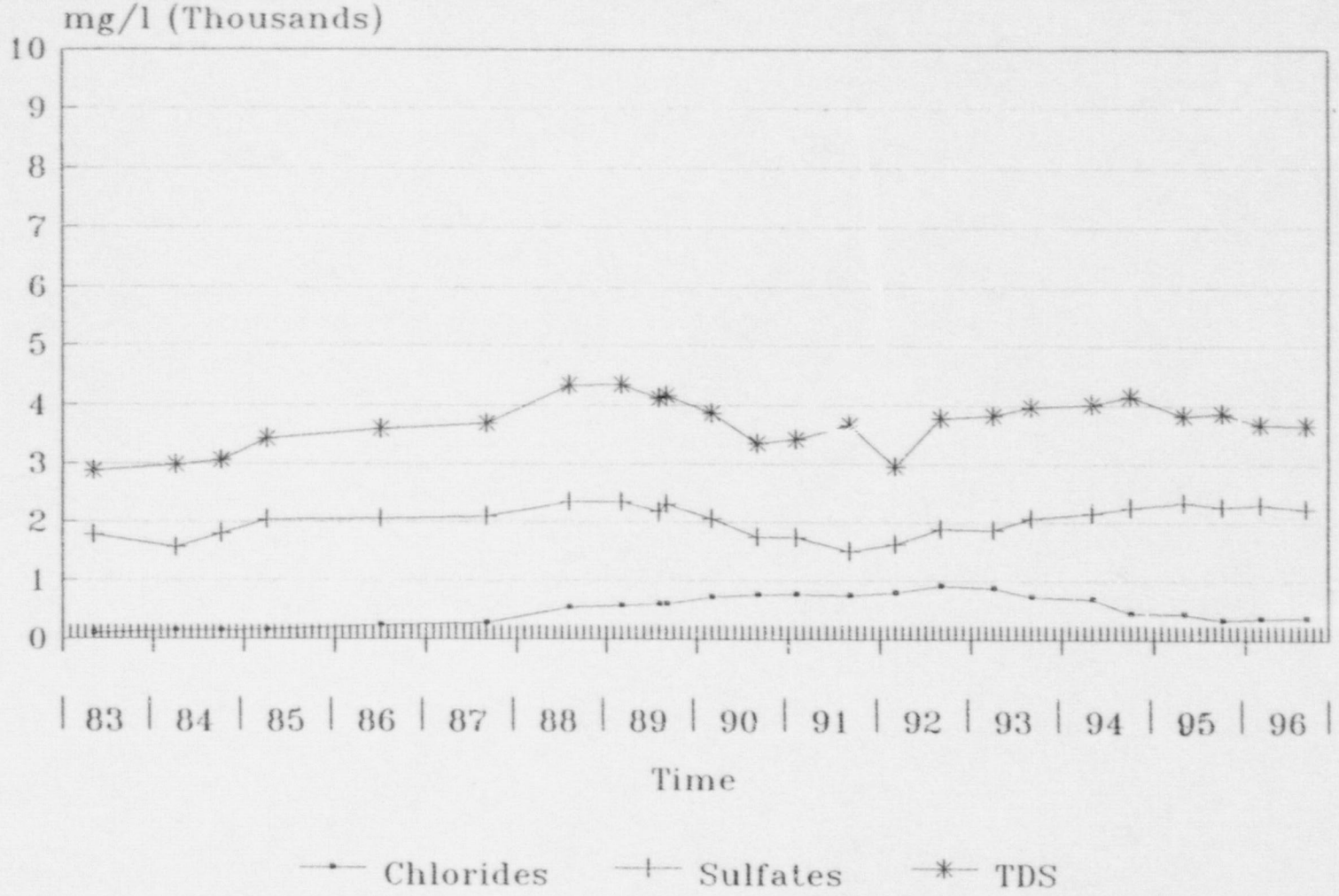
MONITOR WELL 32-69



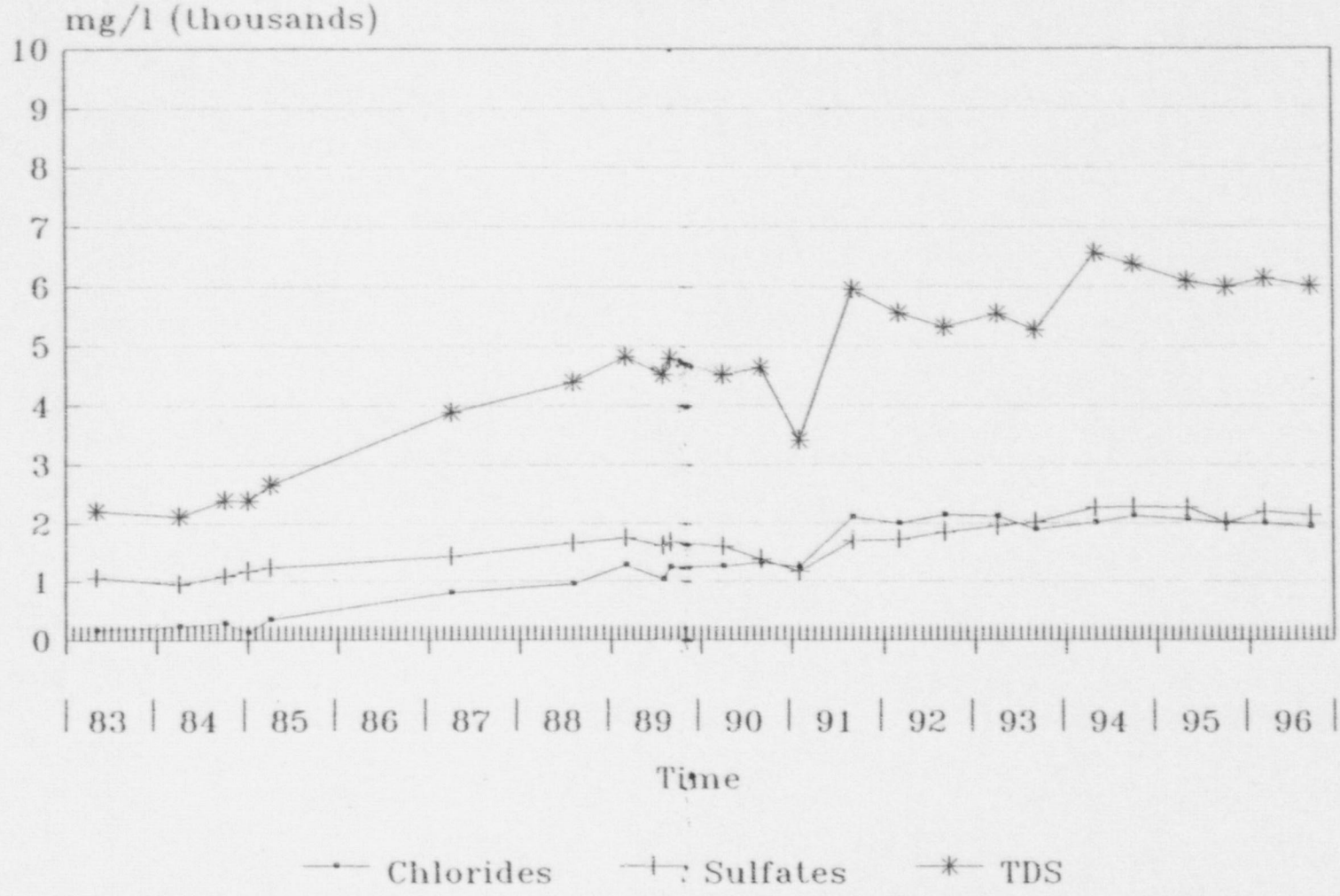
MONITOR WELL 32-72



MONITOR WELL 5-01



MONITOR WELL 5-02



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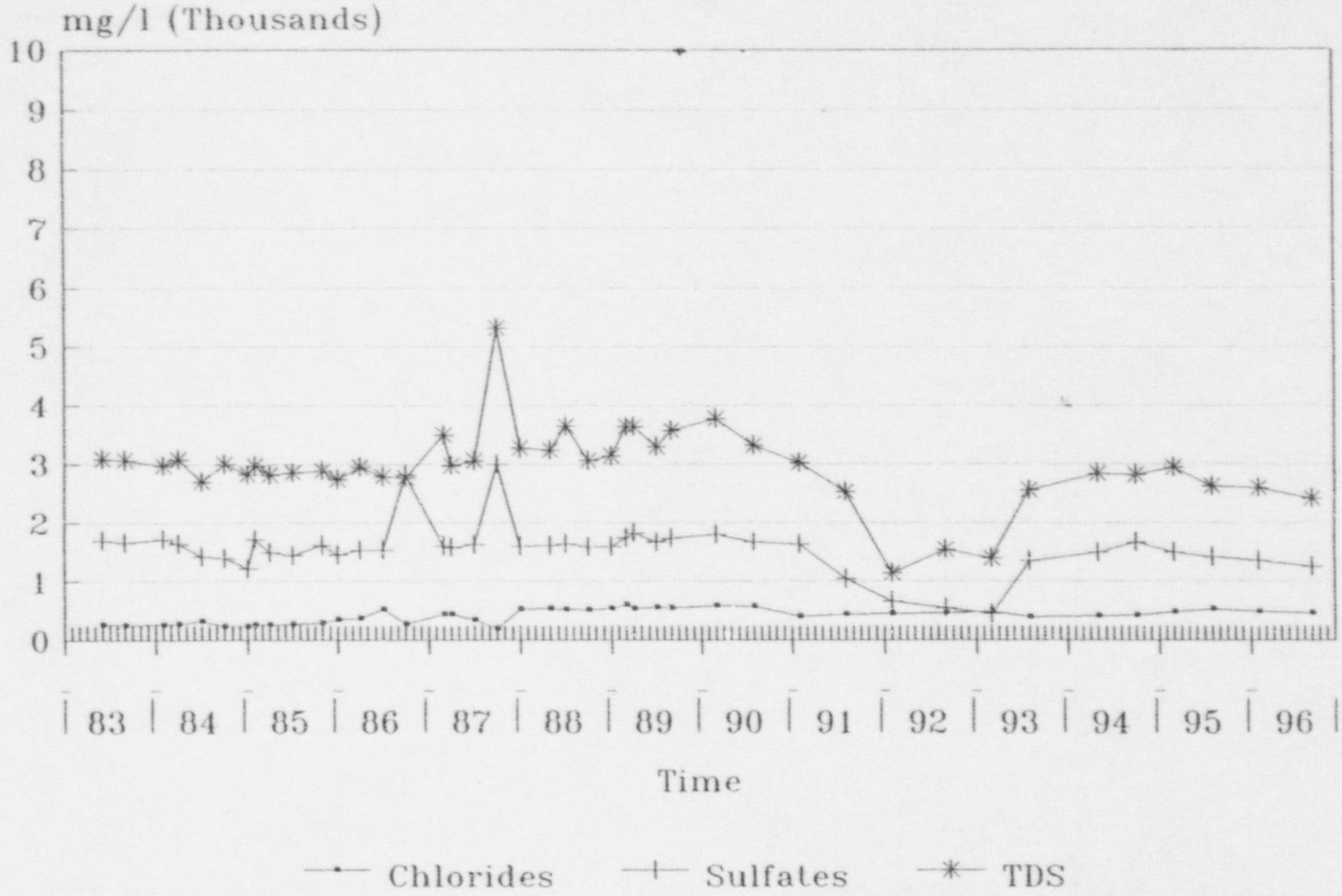
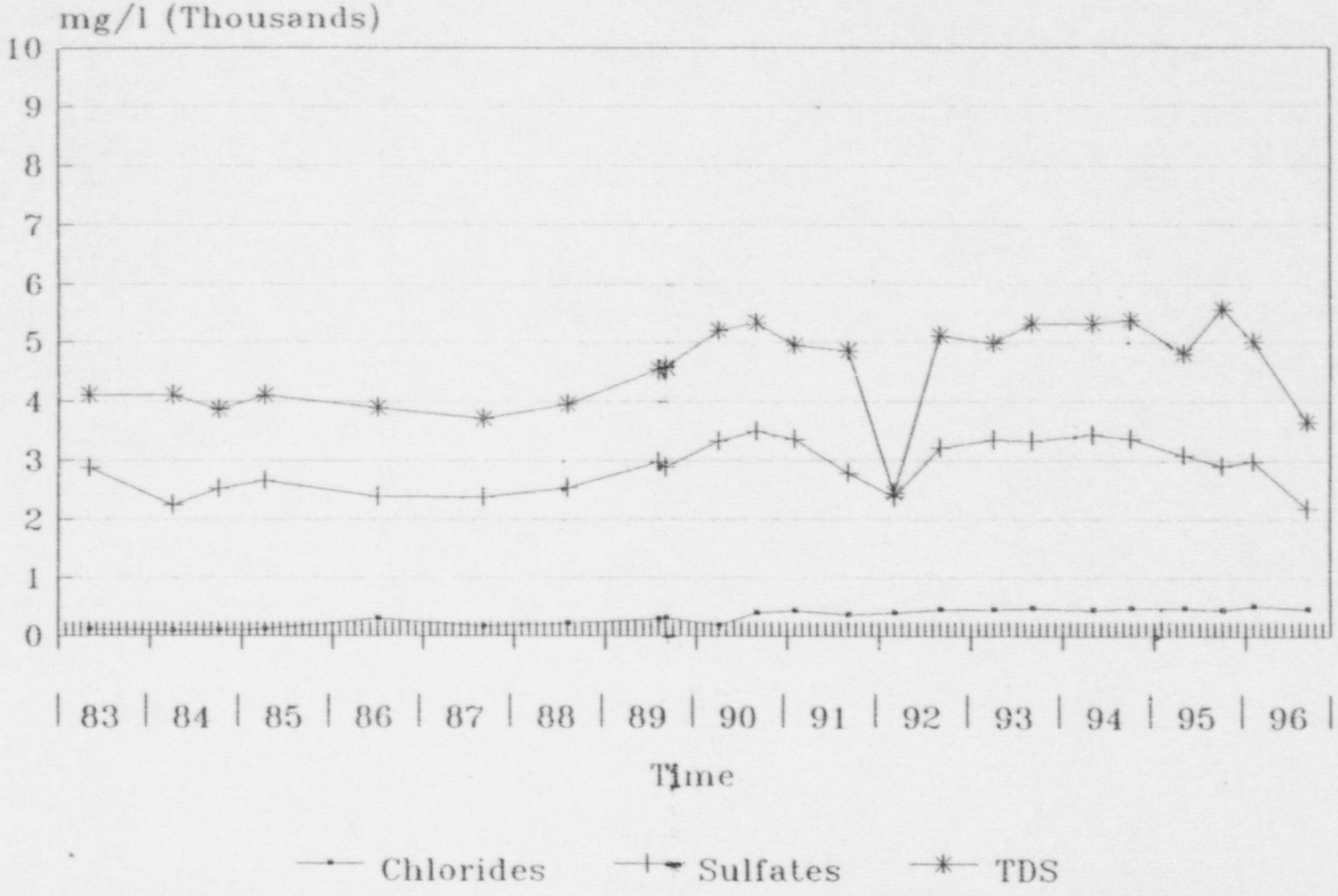


MONITOR WELL 5-04



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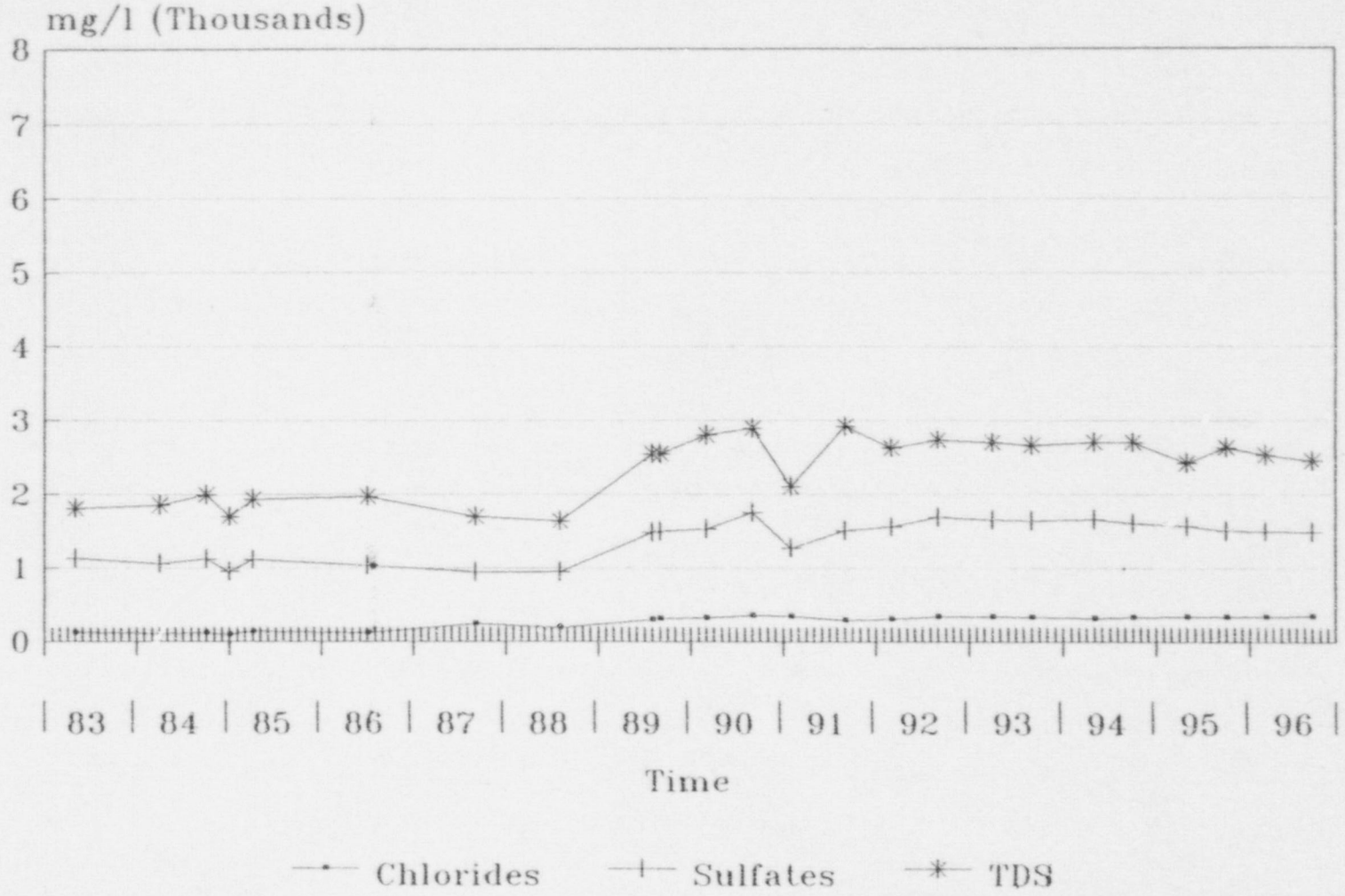
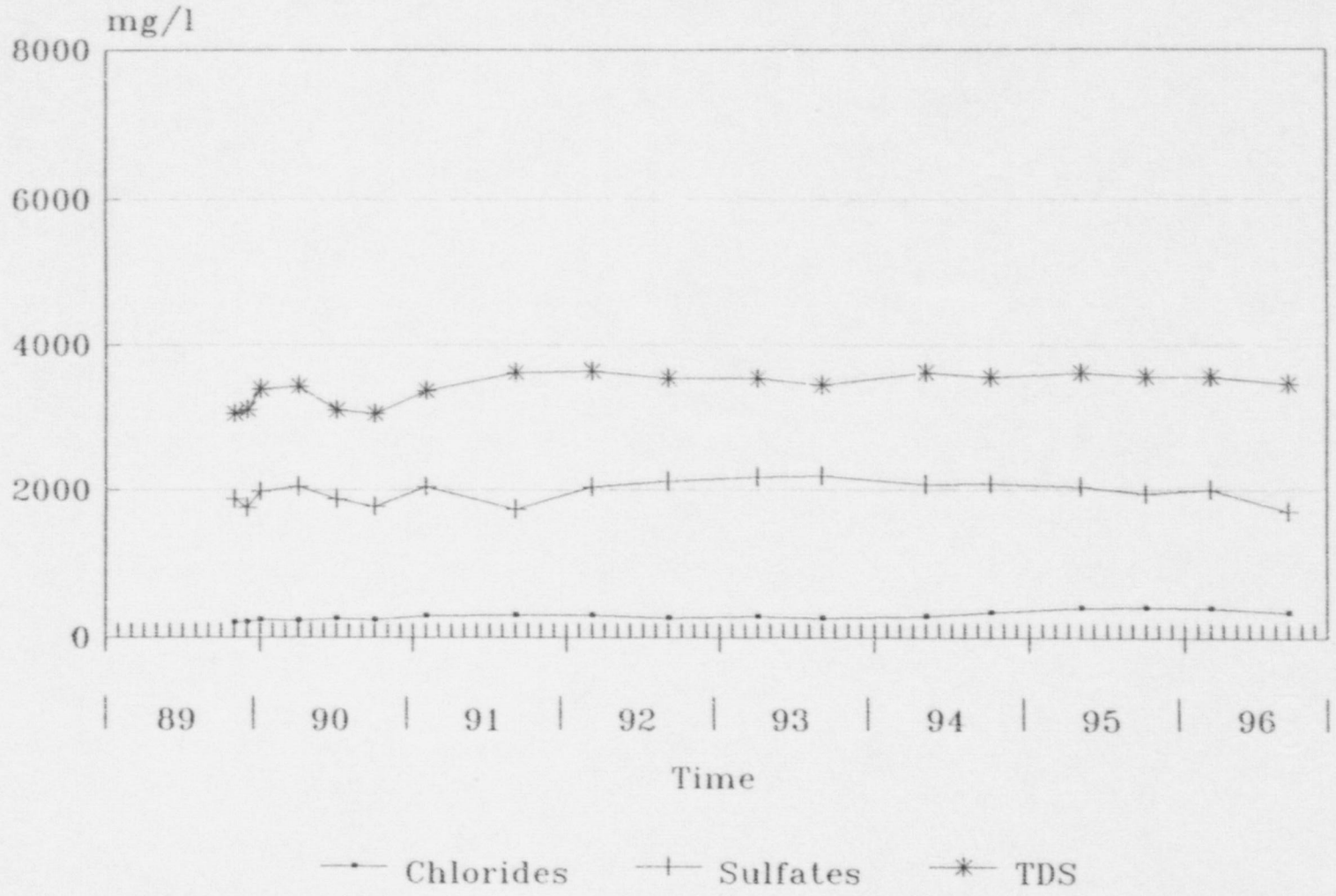
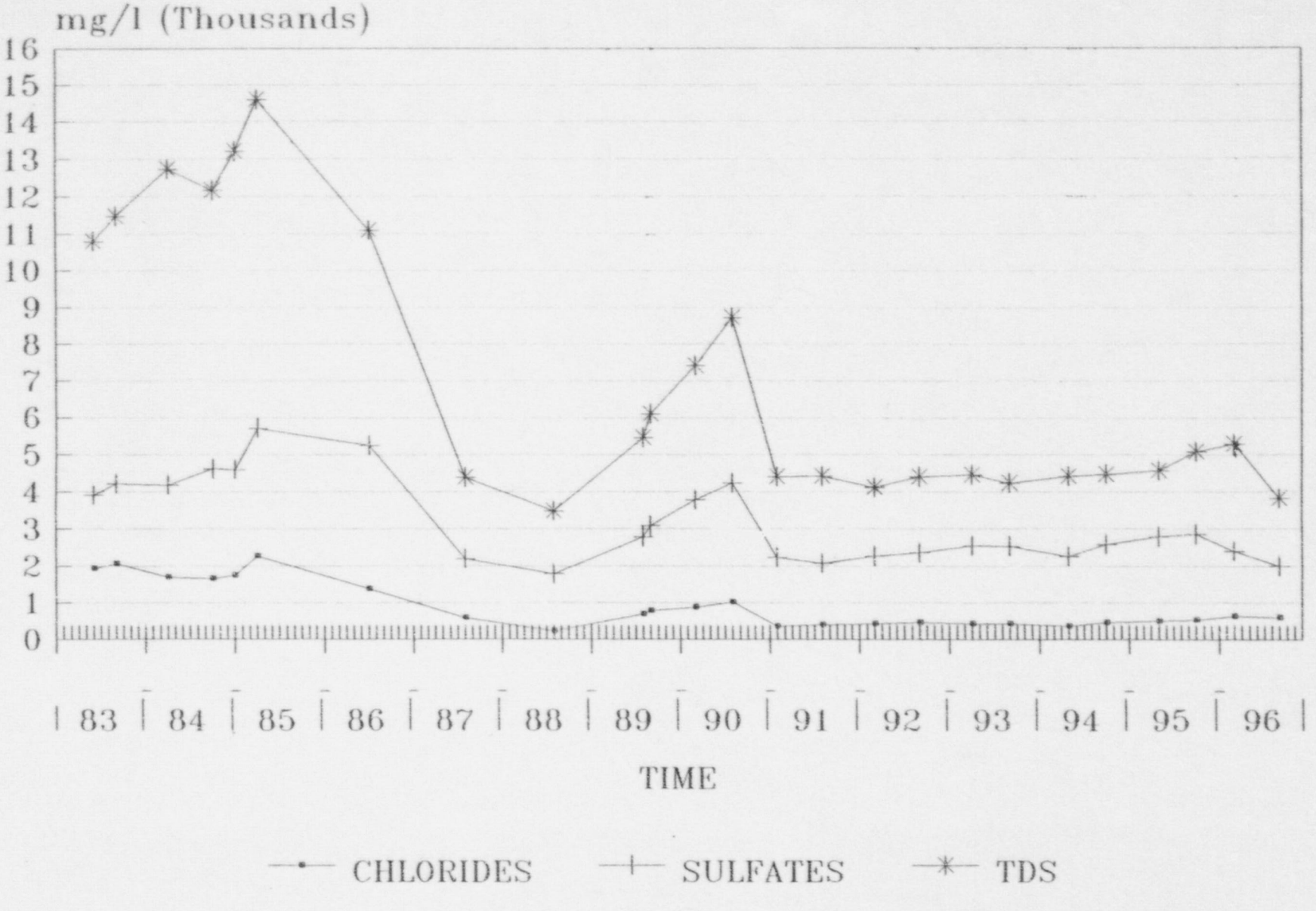


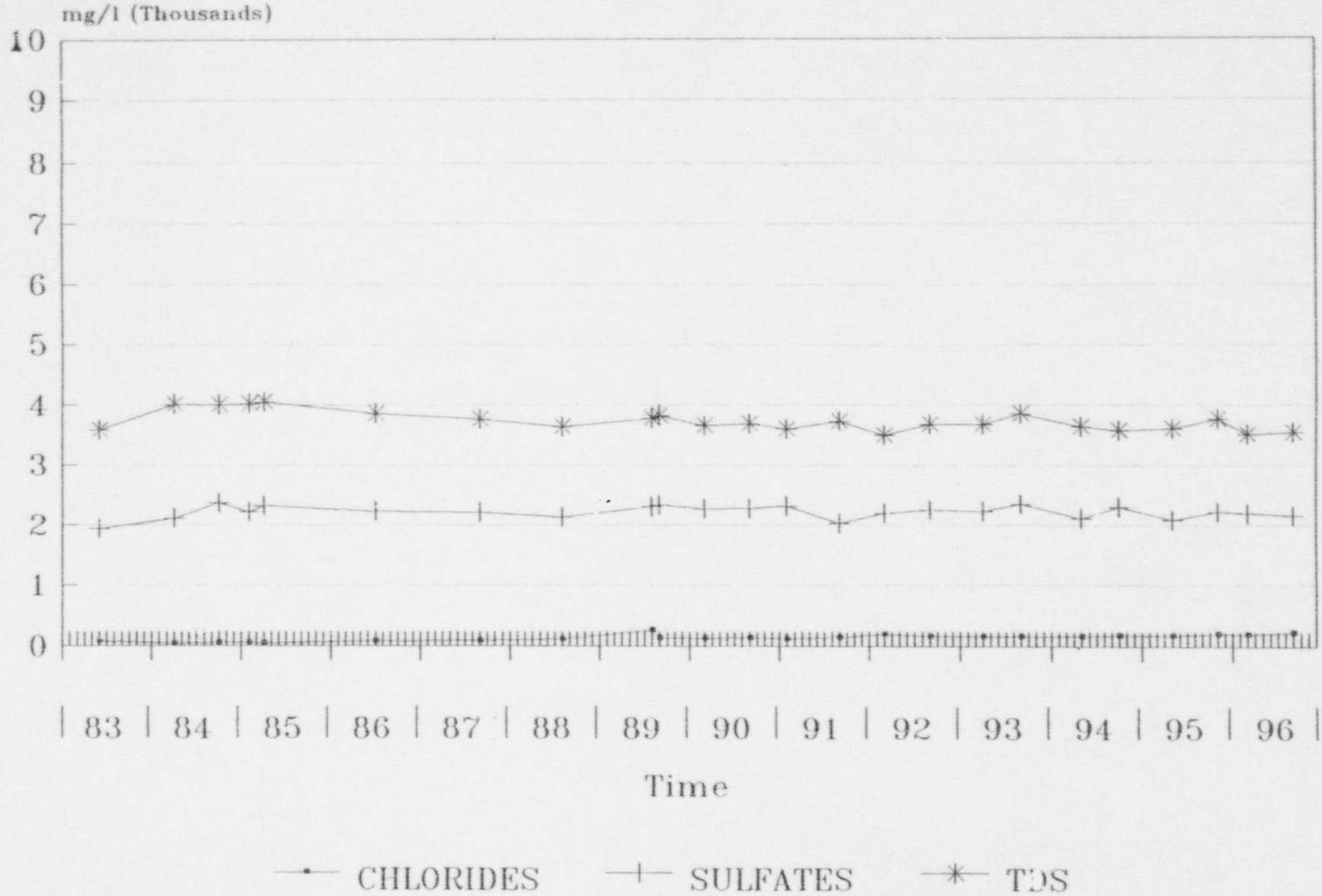
MONITOR WELL 5-73



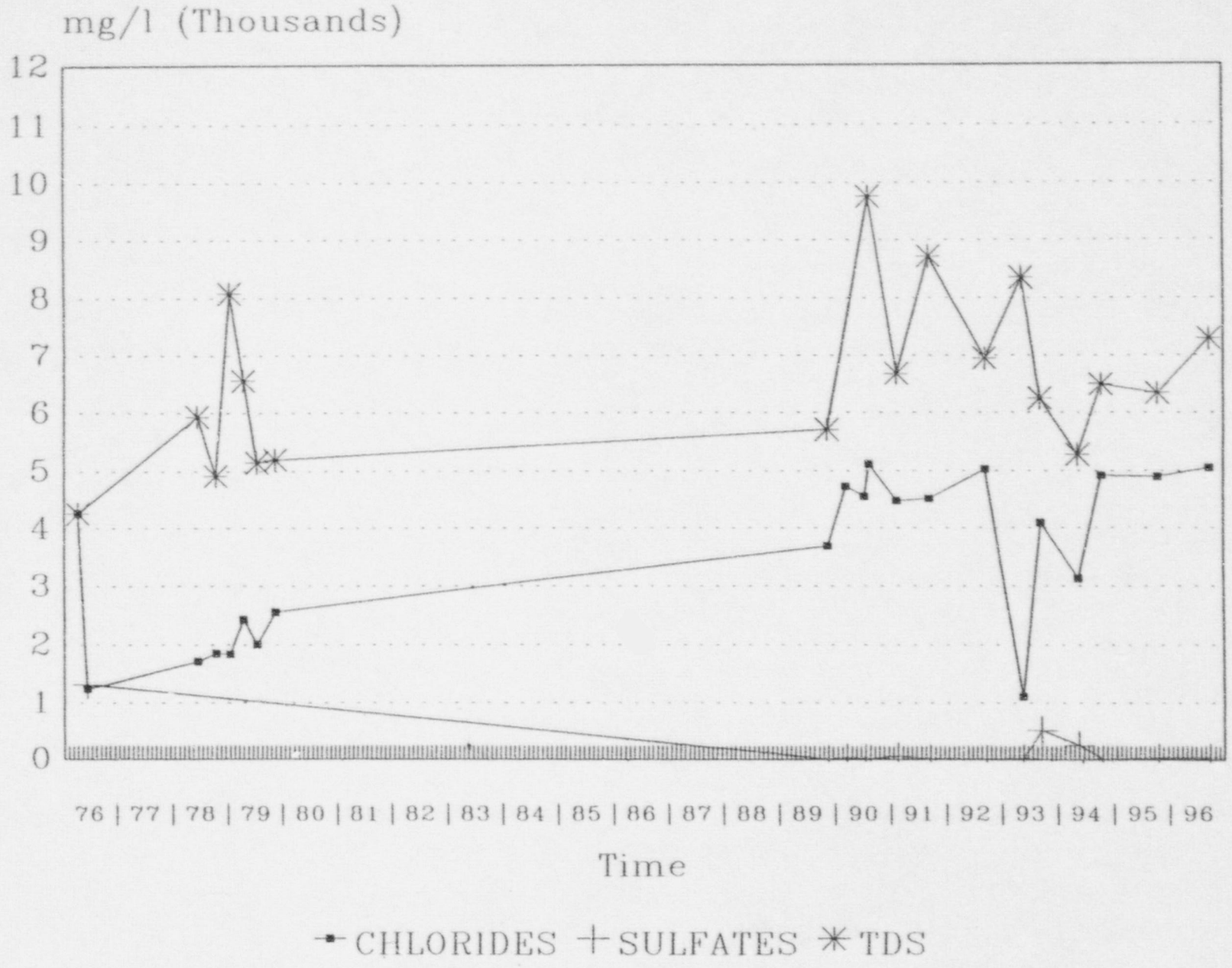
MONITOR WELL AW-1



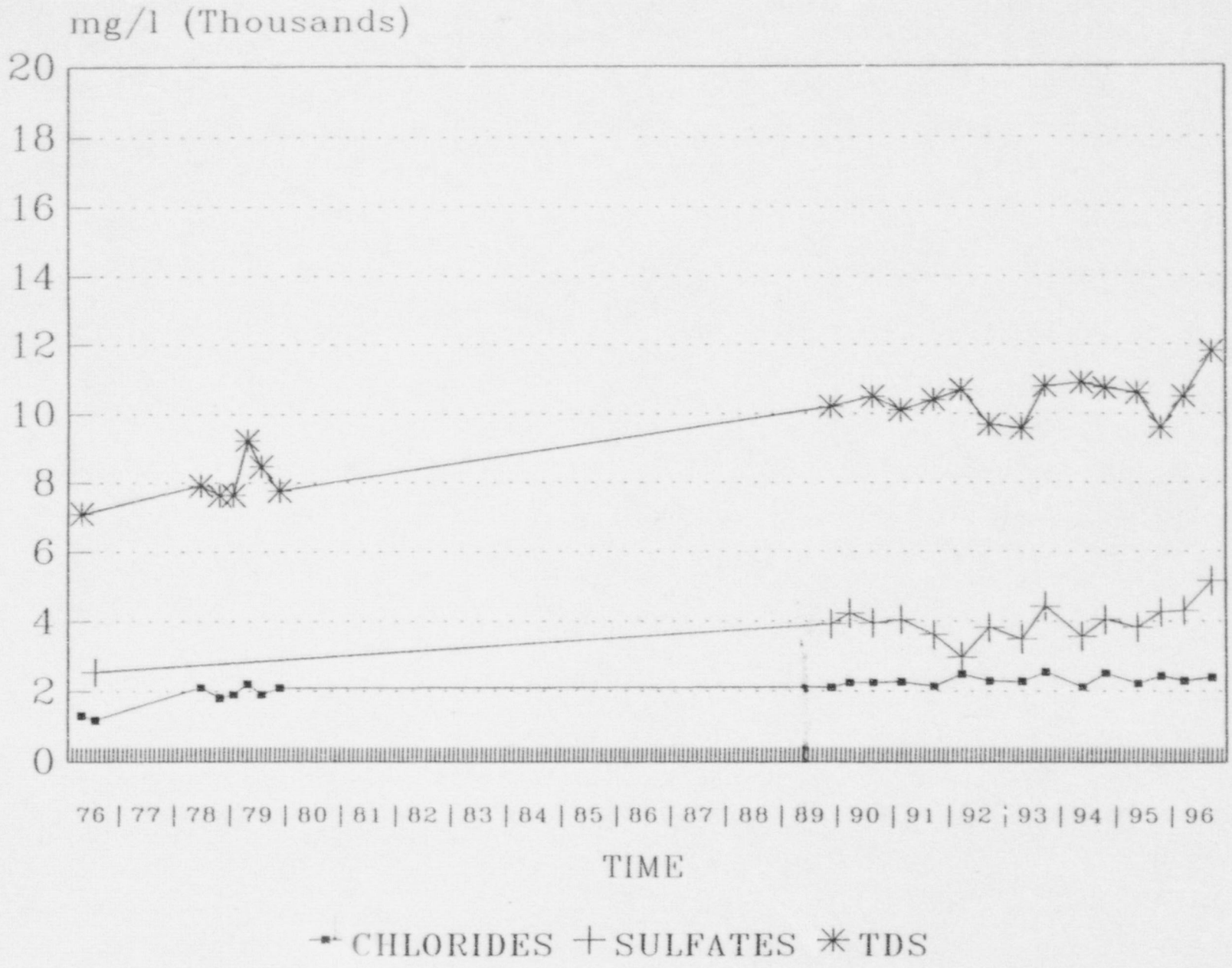
MONITOR WELL AW-2



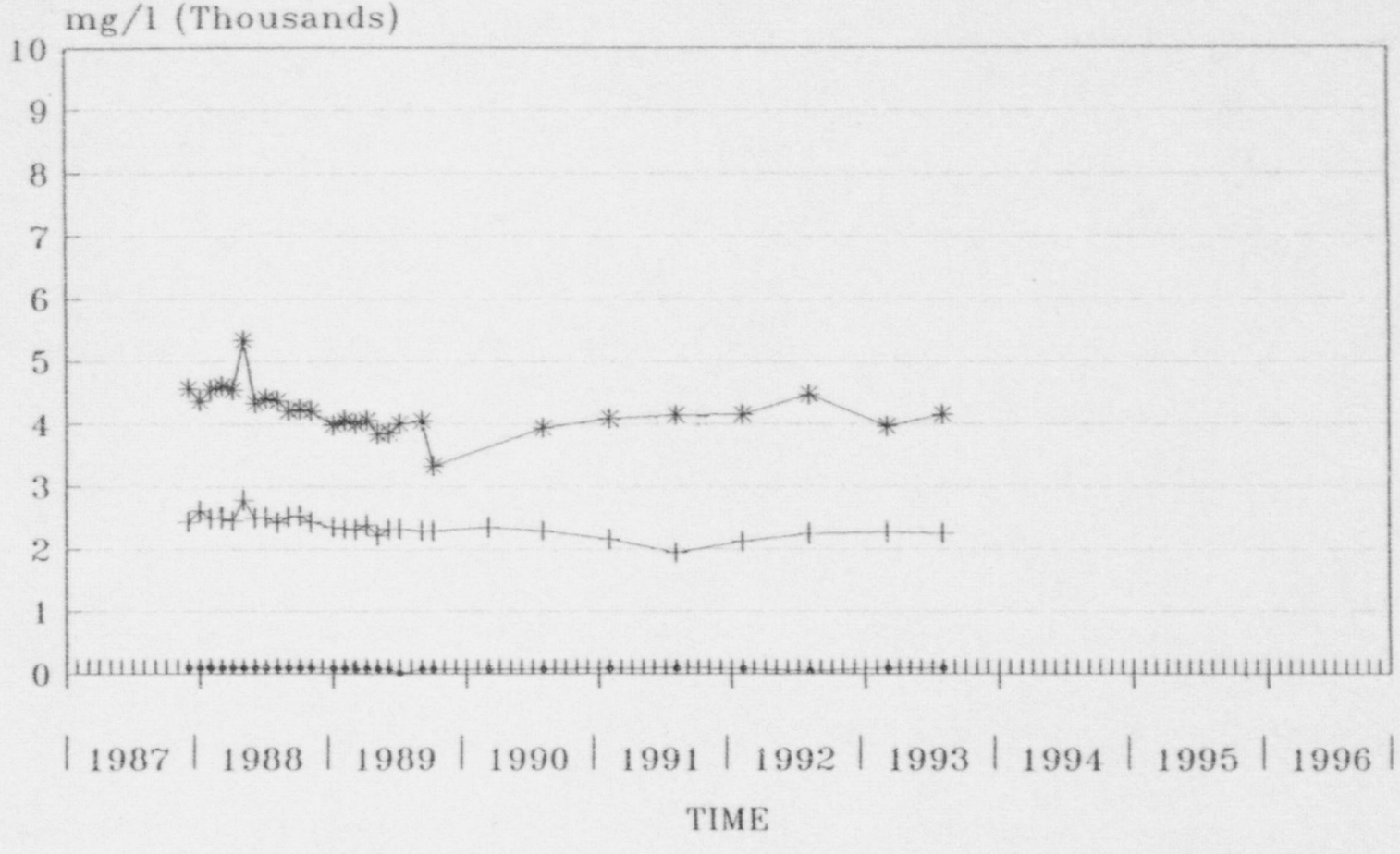
MONITOR WELL D-4



MONITOR WELL E-5

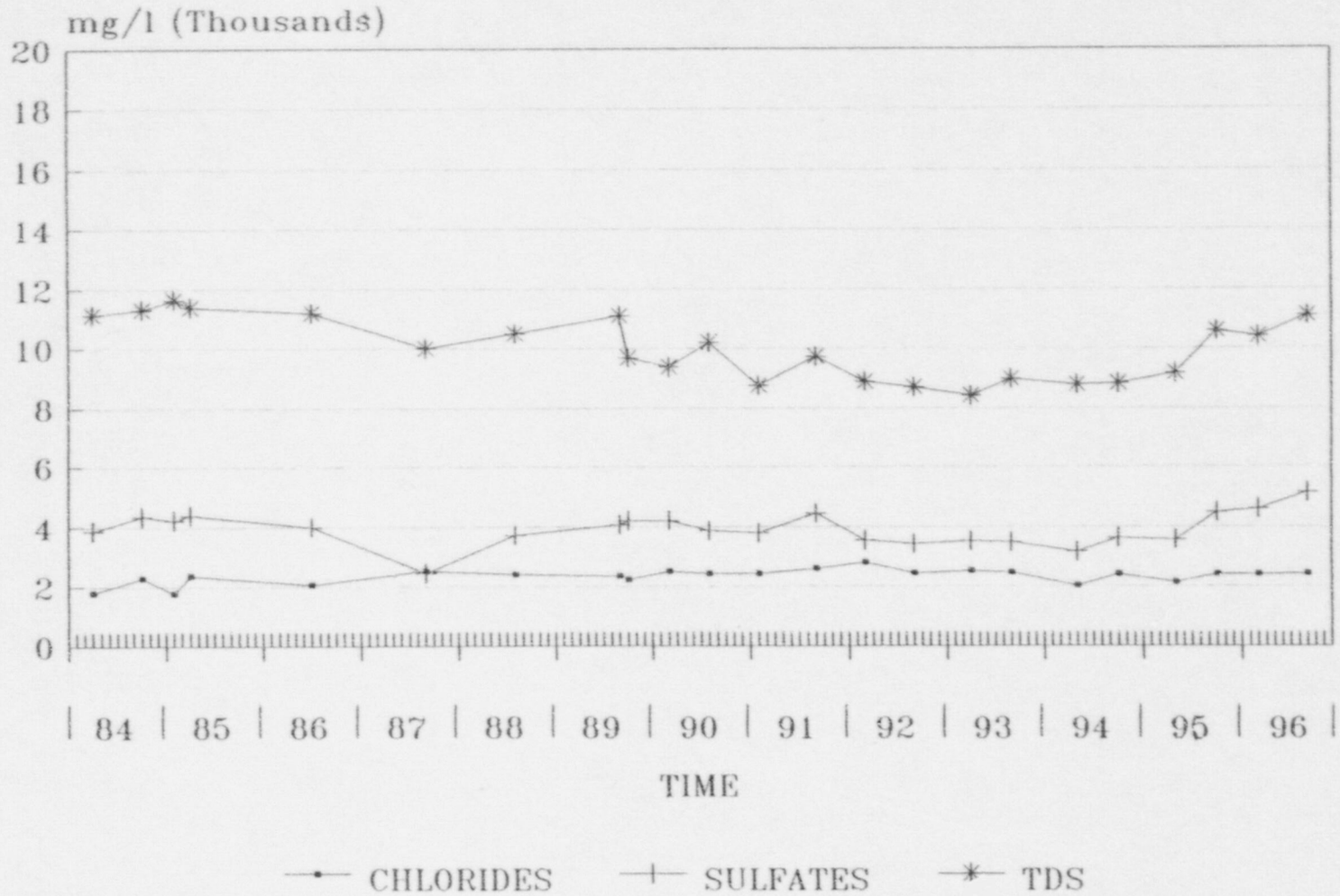


MONITOR WELL MW-24

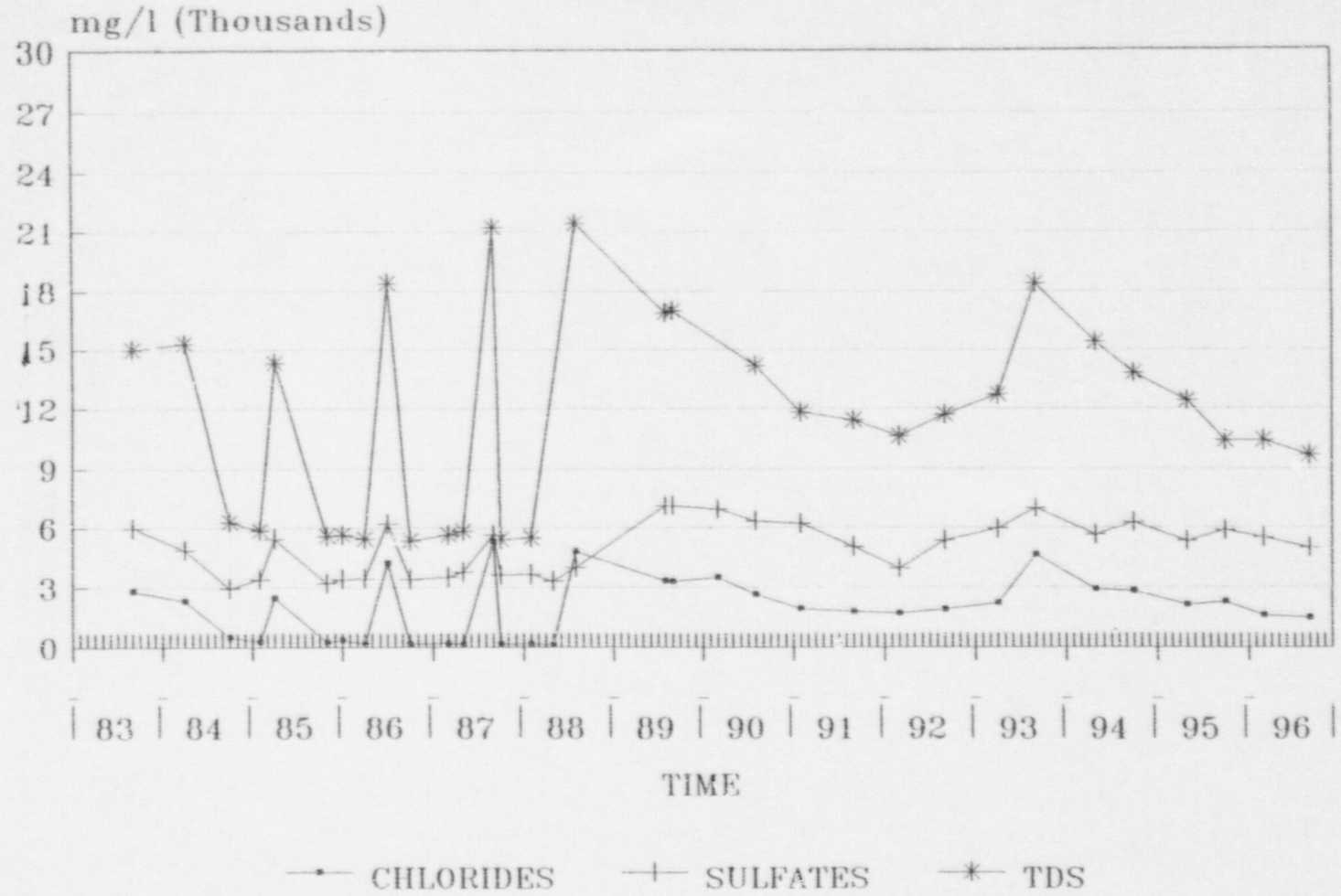


MW-24 contained insufficient water for sample collection since 1994.

MONITOR WELL S-9



MONITOR WELL S-12



APPENDIX C

ANALYTICAL RESULTS - 1996
NRC CORRECTIVE ACTION PLAN

QUIVIRA MINING COMPA
AMBROSIA LAKE FACILI

DAKOTA WELLS

Well ID	Date	Depth To Water (ft)	Total Depth (ft)	Measuring Point Elevation	Water Level Elev.(ft)	Spec. Cond.	Temp. (c)	pH	SO4 (mg/L)	Cl (mg/L)	Be (mg/L)	Cd (mg/L)	Mo (mg/L)	Ni (mg/L)	Pb (mg/L)	Se (mg/L)
17-01KD	27-Feb-96	682.4	810.5	7126.3	6443.9	1600	21.0	10.0	670	53	<0.00	<0.005	0.02	<0.04	<0.01	<0.005
30-02KD	27-Feb-96	306.3	314.7	6950.4	6644.1	2980	14.0	7.5	1	940	0.00	<0.005	<0.01	<0.04	<0.01	<0.005
30-48KD	28-Feb-96	337.4	341.8	6946.6	6609.2	4210	13.3	7.0	2300	480	<0.00	<0.005	<0.01	<0.04	<0.01	<0.005
32-45KD	23-Feb-95	252.3	275.5	6918.6	6666.3	1475	14.8	7.2	660	200	<0.00	<0.005	0.05	<0.04	<0.01	<0.005
36-06	22-Feb-96	175.6	183.1	7021.4	6845.8	4325	14.9	5.6	2900	840	0.00	<0.005	<0.01	0.06	<0.01	<0.005

Well ID	Sb (mg/l)	CN (mg/l)	NO3 (mg/l)	As (mg/l)	Alpha (pCi/l)	Pb210 (pCi/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	Th230 (pCi/l)	U-Nat (mg/l)
17-01KD	<0.050	0.02	<0.1	<0.003	14.0	8.9	1.6	2.5	0.9	0.0078
30-02KD	<0.050	0.02	<0.1	<0.002	3.0	1.2	1.4	5.1	0.4	0.0076
30-48KD	<0.050	<0.01	<0.1	<0.003	32.0	4.4	4.5	11.0	0.4	0.0420
32-45KD	<0.050	<0.01	<0.1	<0.003	13.0	2.5	1.5	1.3	0.2	0.0120
36-06	<0.050	<0.01	<0.1	<0.003	158.0	6.0	7.9	6.7	96.0	0.1700

QUIVIRA MINING COMPANY
AMBROSIA LAKE FACILITY

DAKOTA WELLS

Well ID	Date	Depth To Water (ft)	Total Depth (ft)	Measuring Point Elevation	Water Level Elev.(ft)	Spec. Cond.	Temp. (c)	pH	SO4 (mg/L)	Cl (mg/L)	Be (mg/L)	Cd (mg/L)	Mo (mg/L)	Ni (mg/L)	Pb (mg/l)	Se (mg/l)
17-01KD	27-Aug-96	683.4	810.0	7126.3	6442.9	1625	21.8	10.7	631	55	-0.004	-0.005	-0.01	-0.02	-0.005	-0.005
30-02KD	23-Aug-96	306.3	314.6	6950.4	6644.1	2890	16.3	8.2	5	1010	-0.002	-0.005	-0.01	-0.04	-0.002	-0.005
30-48KD	27-Aug-96	337.1	341.8	6946.6	6609.5	4500	16.9	7.1	2400	484	-0.004	-0.005	-0.01	-0.01	-0.005	-0.005
32-45KD	22-Aug-96	252.0	278.3	6918.6	6666.6	1600	17.8	7.5	684	193	-0.002	-0.005	0.05	-0.04	0.003	-0.005
36-06	22-Aug-96	176.0	183.6	7021.4	6845.5	4675	15.8	5.8	2830	856	-0.002	-0.005	-0.01	-0.04	-0.002	-0.005

Well ID	Sb (mg/l)	CN (mg/l)	NO3 (mg/l)	As (mg/l)	Alpha (pCi/L)	Pb210 (pCi/L)	Ra226 (pCi/L)	Ra228 (pCi/L)	Th230 (pCi/L)	U-Nat (mg/l)
17-01KD	-0.050	0.01	-0.1	-0.005	7.5	2.3	0.4	0.8	0.3	0.0049
30-02KD	-0.050	-0.01	0.1	-0.003	10.0	1.4	1.0	0.0	0.2	0.0023
30-48KD	-0.050	-0.01	-0.1	-0.005	22.0	3.4	2.1	4.8	0.3	0.0270
32-45KD	-0.050	-0.01	0.2	-0.003	74.0	19.0	3.3	0.6	11.0	0.0130
36-06	-0.050	-0.01	0.3	-0.003	180.0	2.3	9.1	5.8	31.0	0.1800

QUIVIRA MINING COMPANY
AMBROSIA LAKE FACILITY

TRES HERMANOS A

Well ID	Date	Depth To Water (ft)	Total Depth (ft)	Measuring Point Elevation	Water Level Elev.(ft)	Spec. Cond.	Temp. (c)	pH	SO4 (mg/l)	Cl (mg/l)	Mo (mg/l)	Ni (mg/l)	NO3 (mg/l)	CN (mg/l)	Se (mg/l)
31-01	22-Feb-96	203.7	251.3	6980.5	6776.9	1525	14.1	6.9	1020	33	-0.01	0.02	-0.1	0.01	0.005
33-01TRA	22-Feb-96	133.8	181.4	6918.0	6784.3	2300	13.3	7.0	1000	54	-0.01	-0.02	-0.1	0.01	0.005

Well ID	Alpha (pCi/L)	Pb210 (pCi/L)	Ra226 (pCi/L)	Ra228 (pCi/L)	Th230 (pCi/L)	U-Nat (mg/l)
31-01	14.0	2.3	2.2	2.8	0.8	0.0057
33-01TRA	45.9	15.0	1.3	3.7	2.4	0.0030

QUIVIRA MINING COMPANY
AMBROSIA LAKE FACILITY

TRES HERMANOS A

Well ID	Date	Depth To Water (ft)	Total Depth (ft)	Measuring Point Elevation	Water Level Elev.(ft)	Spec. Cond.	Temp. (c)	pH	SO4 (mg/L)	Cl (mg/L)	Pb (mg/L)	Ni (mg/L)	NO3 (mg/L)	CN (mg/L)	Se (mg/l)
31-01	22-Aug-96	203.7	251.2	6980.5	6776.8	1550	15.9	7.4	989	41	-0.01	-0.04	-0.1	-0.01	-0.005
33-01TRA	22-Aug-96	126.8	181.5	6918.0	6791.2	2425	14.0	7.9	1650	38	-0.01	-0.04	-0.1	-0.01	-0.005

Well ID	Alpha (pCi/L)	Pb210 (pCi/L)	Ra226 (pCi/L)	Ra228 (pCi/L)	Th230 (pCi/L)	U-Nat (mg/l)
31-01	19.0	2.4	2.2	7.1	2.2	0.0062
33-01TRA	49.0	22.0	6.6	1.4	5.2	0.0069

QUIVIRA MINING COMPANY

AMBROSIA LAKE FACILITY

TRES HERMANOS B

Well ID	Date	Depth to Water (ft)	Total Depth (ft)	Measuring Point Elevation	Water Level Elev.(ft)	Spec. Cond.	Temp. (c)	pH	SO4 (mg/l)	Cl (mg/l)	Mo (mg/l)	Ni (mg/l)	Se (mg/l)	CN (mg/l)	NO3 (mg/l)
19VH21RB	14-May-96					3800	17.0	7.6	2700	36	0.01	-0.03	-0.005	-0.01	5.9
31-66	20-Feb-96	111.6	121.5	7004.0	6892.4	17300	14.7	6.8	4600	7300	-0.05	-0.20	-0.100	-0.01	0.4
31-67	20-Feb-96	18.2	96.4	6928.4	6910.2	4280	13.1	7.1	2800	610	-0.01	-0.04	-0.050	-0.01	0.1
36-01	20-Feb-96	57.3	59.0	6965.8	6908.5										
36-02	20-Feb-96	41.9	58.3	6997.5	6955.7	8500	13.1	7.3	4570	2580	-0.02	-0.08	-0.005	-0.01	0.4
MW19-77	14-May-96	267.2	288.3	7011.1	6743.9	3575	16.8	7.6	2200	17	0.02	-0.03	-0.005	0.01	0.3

Well ID	Alpha (pCi/l)	Pb210 (pCi/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	Th230 (pCi/l)	U Nat (mg/l)
19VH21RB	41.0	19.0	2.6	5.4	0.1	0.0170
31-66	147.0	12.0	3.2	9.1	3.6	0.1300
31-67	17.0	5.2	1.5	6.7	1.3	0.0088
36-01						
36-02	98.0	5.2	2.6	1.8	3.5	0.0088
MW19-77	38.0	4.6	2.1	3.9	0.4	0.0140

Monitor well 36-01 contained insufficient water for sample collection during 1st half of 1996.

QUIVIRA MINING COMPANY
AMBROSIA LAKE FACILITY

TRES HERMANOS B

Well ID	Date	Depth To Water (ft)	Total Depth (ft)	Measuring Point Elevation	Water Level Elev.(ft)	Spec. Cond.	Temp. (c)	pH	SO4 (mg/L)	Cl (mg/L)	Mo (mg/L)	Ni (mg/L)	Se (mg/l)	CN (mg/l)	NO3 (mg/l)
19VH2TRB	15-Oct-96					3500	17.2	7.7	2490	45	-0.01	-0.02	-0.005	-0.01	5.1
31-66	20-Aug-96	111.9	123.4	7004.0	6892.1	21000	16.7	6.5	4880	7650	-0.10	-0.40	-0.025	-0.01	0.3
31-67	20-Aug-96	19.5	96.3	6928.4	6908.9	4400	13.8	6.8	2940	623	-0.01	-0.04	-0.005	-0.01	0.1
36-01	20-Aug-96	55.6	59.0	6965.8	6910.2	5000	16.0	6.3	1830	1460	-0.01	-0.04	-0.005	-0.01	0.5
36-02	20-Aug-96	40.2	58.4	6997.5	6957.3	9500	14.8	7.2	4610	2680	-0.02	-0.08	-0.025	-0.01	0.1
MW19-77	15-Oct-96	268.7	288.4	7011.1	6742.4	3420	16.1	7.5	2180	19	0.01	-0.02	-0.005	-0.01	0.5

Well ID	Alpha (pCi/L)	Pb210 (pCi/L)	Ra226 (pCi/L)	Ra228 (pCi/L)	Th230 (pCi/L)	U-Nat (mg/l)
19VH2TRB	297.0	81.0	21.0	38.0	3.4	0.0200
31-66	117.0	4.3	4.5	9.5	5.6	0.1100
31-67	57.0	5.8	6.9	6.4	7.7	0.0052
36-01	17.0	7.9	1.3	0.0	8.9	0.0027
36-02	0.0	2.8	1.5	1.8	0.3	0.0048
MW19-77	27.0	2.1	1.6	2.8	0.5	0.0190

QUIVIRA MINING COMPANY
AMBROSIA LAKE FACILITY

ALLUVIAL WELLS

Well ID	Date	Depth to Water (ft)	Total Depth (ft)	Measuring Point Elevation	Water Level Elev.(ft)	Spec. Cond.	Temp. (c)	pH	SO4 (mg/l)	Cl (mg/l)	Mo (mg/l)	Ni (mg/l)	Se (mg/l)	NO3 (mg/l)
31-61	16-Feb-96	18.6	27.2	6918.7	6900.1	5300	13.9	6.9	4010	540	<0.01	<0.04	<0.005	0.7
32-59	16-Feb-96	7.6	39.5	6896.2	6888.6	3225	12.3	7.0	1880	430	<0.01	<0.04	<0.005	<0.1
5-03	16-Feb-96	8.6	45.7	6901.0	6892.4	2500	12.0	7.9	1350	480	0.01	<0.04	<0.005	0.1
MW-24	28-Feb-96	49.4	50.3	6868.0	6818.6									

Well ID	Alpha (pCi/L)	Pb210 (pCi/L)	Ra226 (pCi/L)	Ra228 (pCi/L)	Th230 (pCi/L)	U-Nat (mg/l)
31-61	101.0	4.4	0.7	2.5	1.4	0.1900
32-59	272.0	2.9	0.9	0.8	1.3	0.4300
5-03	11.0	1.7	1.0	0.7	2.6	0.0110
MW-24						

Monitor well MW-24 contained insufficient water for sample collection during 1st half of 1996.

QUIVIRA MINING COMPANY
AMBROSIA LAKE FACILITY

ALLUVIAL WELLS

Well ID	Date	Depth To Water (ft)	Total Depth (ft)	Measuring Point Elevation	Water Level Elev.(ft)	Spec. Cond.	Temp. (c)	pH	SO4 (mg/L)	Cl (mg/L)	Mo (mg/L)	Ni (mg/L)	Se (mg/l)	NO3 (mg/l)
31-61	20-Aug-96	18.8	27.1	6918.7	6899.9	5500	13.0	6.9	4000	535	-0.01	-0.04	-0.005	1.0
32-59	11-Sep-96	8.1	39.4	6896.2	6888.1	3400	14.0	7.1	1890	403	-0.01	-0.04	-0.005	3.2
5-03	20-Aug-96	9.3	45.7	6901.0	6891.7	2500	13.8	8.?	1250	457	-0.01	-0.04	-0.005	0 ?
MW-24	11-Sep-96	49.4	50.3	6868.0	6818.6									

Well ID	Alpha (pCi/L)	Pb210 (pCi/L)	Ra226 (pCi/L)	Ra228 (pCi/L)	Th230 (pCi/L)	U-Nat (mg/l)
31-61	130.0	1.2	0.7	1.4	1.4	0.1300
32-59	189.0	1.7	0.9	0.0	2.8	0.3400
5-03	22.0	2.3	3.0	0.2	2.1	0.0049
MW-24						

MW-24 contained insufficient water for sample collection.

APPENDIX D

WATER LEVEL ELEVATION MAP
ALLUVIUM

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APPENDIX E

TDS CONTOUR MAP
ALLUVIUM

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