

Smithville Lake 2000 Water Quality Report

1. General.

a. **Project location.** The dam is located at river mile 12.9 on the Little Platte River, a tributary of the Platte River. The drainage area above the dam is 213 square miles. The project is located approximately one mile northeast of Smithville, Missouri.

b. **Authorized project purposes.** Flood control, recreation, water supply, fish and wildlife, and water quality control.

c. Pertinent data.

	Surface Elevation (ft. above m.s.l.)	Current Capacity (1,000 A.F.)	Surface Area (acres)	Shoreline (miles)
Pools				
Flood Control	876.2	101.7	10,000	
Multipurpose	864.2	139.8	7,190	175
Inactive		47.4*		
Total		241.5		

Total Drainage Area: 213 sq. miles

Average Annual Inflow: 133,248 acre-feet

* Contained in multipurpose pool.

2. Activities and studies of the year.

The Water Quality Unit (PM-PR-W) continued to participate in the multi-agency Little Platte watershed management program during 2000. Having established seasonal and annual variations in the lake's water quality over the period of record dating from 1982, PM-PR-W's objective in the cooperative effort is to define long-term trends, including anticipated improvements in lake water quality following implementation of nonpoint pollution reduction strategies throughout the watershed. PM-PR-W conducted six monthly water quality surveys of Smithville Lake during April-September 2000. *In situ* profiling of water temperature, dissolved oxygen, conductivity, pH, and oxidation reduction potential (orp) or redox at 1-meter intervals, water collections from surface and bottom strata, and field measurements of secchi and photic zone depths were performed at three lake stations. In addition, ambient measurements and surface water collections were obtained from the outlet and the major tributary. Utilizing its mobile and base laboratories, PM-PR-W performed total suspended solids, turbidity, chlorophyll, and immunoassay herbicide analyses. Also in support of the cooperative study, the Chemical

and Materials Quality Assurance Laboratory (CMQAL) performed nitrogen and phosphorus group, sulfate, total dissolved and volatile solids, total and dissolved iron, total and dissolved manganese, total and dissolved organic carbon, and gas chromatographic pesticide analyses.

3. Existing conditions.

a. **Inflow.** Excessive turbidity, nutrients, and herbicides associated with storm runoff typically are major contributors to the water quality of the Little Platte River at station SM-16 near Plattsburg, Missouri. As a result of low rainfall within the watershed during the April-September 2000 sampling season, nonpoint runoff was not as dominant a factor affecting water quality in the headwaters of the lake. Under the low flow conditions, dissolved oxygen (DO) concentrations ranged from 2.1 mg/L to 9.6 mg/L, failing to meet the state criterion of a minimum of 5 mg/L to protect warm-water fish species in four of six monthly surveys (Appendix, Table 1). Typically, high algal densities i.e., bloom conditions, result in supersaturated conditions in the eutrophic environment during many periods. Turbidity ranged from stained to turbid with mean, minimum, and maximum concentrations of 43 NTU, 22 NTU, and 75 NTU, respectively (Table 2). The 2000 suspended solids concentrations paralleled those of turbidity with mean, minimum, and maximum concentrations of 35 mg/L, 23 mg/L, and 48 mg/L, respectively.

The calculated total nitrogen (TN) concentrations comprised of NH₃, NO₂, NO₃, and TKN continued to be highly eutrophic with a mean, minimum, and maximum of 3.22 mg/L, 0.82 mg/L, and 6.92 mg/L, respectively. The 2000 total phosphorus (TP) concentrations also reflected highly enriched conditions with mean, minimum, and maximum of 0.34 mg/L, 0.20 mg/L, and 0.49 mg/L, respectively. Mean annual TP concentrations for the entire period of record have been substantially higher than the EPA generalized stream eutrophy criterion of 0.10 mg/L. Only 9% of the monthly TP concentrations during 1997-2000 were below the eutrophy criterion (Figure 1).

Four common herbicides (atrazine, cyanazine, alachlor, and metolachlor) were detected in elevated concentrations during the first half of the 2000 sampling season, which represented the immediate post-runoff period. Atrazine continued to be present in the highest concentrations with 2000 mean, minimum, and maximum of 11.61 ug/L, 0.25 ug/L, and 34.40 ug/L, respectively. Atrazine concentrations in April-June exceeded the EPA criterion for the protection of aquatic life (1 ug/L) and the maximum contaminant level (MCL) for drinking water supplies (3 ug/L). The former has been exceeded almost continuously, and the latter has been exceeded during most late spring and early summer periods over the period of record; data for the last four years are presented in Figure 2. The cyanazine 2000 mean, minimum, and maximum concentrations were 0.15 ug/L, <0.04 ug/L, and 0.37 ug/L, respectively, which did not exceed the EPA maximum contaminant level goal (MCLG) of 1 ug/L. Alachlor mean, minimum, and maximum concentrations were 0.85 ug/L, <0.05 ug/L, and 4.26 ug/L, respectively. The April maximum was more than double the MCL for drinking water supplies (2 ug/L). Metolachlor, which does not have an established MCL, had 2000 mean, minimum, and maximum concentrations of 4.62 ug/L, 0.26 ug/L, and 20.00 ug/L, respectively.

b. **Lake.** Smithville Lake exhibited fairly typical seasonal thermal stratification in 2000; however, increased oxygen stratification was noted especially in the early spring. The increased oxygen stratification suggests the water body was unable to assimilate the amount of oxidizable matter present under the low inflow conditions, which is characteristic of hypereutrophic environments.

In the initial, April survey, the lake exhibited uniformly mixed conditions throughout the lake. Thermal stratification at the three lake stations was minimal with temperature differentials between surface and bottom waters of no more than 1.1 °C. Dissolved oxygen concentrations within each water column were, however, somewhat depressed in the lower depths. Typically during the winter and early spring periods, the three lake stations are well oxygenated (at or near saturation) in the bottom half of their water columns. The minimum concentration in the bottom depths of the upper portion of the Little Platte arm (SM-14) during the April 2000 survey was 5.2 mg/L, which is approximately half saturation.

The upper strata were significantly warmer (5.7 to 8.5 °C) in May than in the previous month. Stratification was well established throughout the lake with temperature differentials between surface and bottom waters ranging from 3.4 to 5.4 °C. The DO concentrations in the bottom strata had decreased substantially to near zero at all stations. By the June survey period, a 5.5°C differential existed between surface and bottom waters in the 14.5-meter water column near the dam (SM-3). A thermocline was present between 10 and 11 meters, and the bottom 5 meters were essentially anaerobic (contained less than 0.1 mg/L DO). The Camp Branch (SM-8) and Little Platte arms with depths of 6.5 and 8 meters exhibited 1.2 and 0.7°C differentials, respectively, with no distinct thermocline or oxycline. Dissolved oxygen concentrations in the bottom strata exceeded 5 mg/L in both up lake stations. The intense stratification continued in July with a 5.1 °C differential between surface and bottom waters in the 14-meter down lake area. The thermocline depth was 2 meters shallower than in June. Approximately fifty percent of the water column was anaerobic, and hydrogen sulfide was detected in the bottom strata. In July both arms continued to exhibit substantially lower temperature differentials, since their bottom waters had continued to warm while the deeper waters of the down lake area had not. The oxycline was between 5 and 6 meters in the Camp Branch arm and between 2 and 3 meters in the upper Little Platte arm. The DO levels in the bottom strata ranged from essentially anaerobic (SM-8) to 1.2 mg/L (SM-14). August stratification was equally severe in the down lake area with a 6 °C differential within the 15-meter water column. One third of the water column exhibited anaerobic conditions. Within the arms, thermal stratification remained less intense with only a 1.7 to 2.6 °C differential between surface and bottom waters. However, DO concentrations within the hypolimnion were reversed with the Camp Branch arm exhibiting aerobic conditions and the Little Platte arm exhibiting anaerobic conditions. In September, the down lake area was essentially isothermal indicating stratification had broken down. With increased surface cooling and wind mixing, DO concentrations in the bottom waters had improved substantially (>5 mg/L). In the Camp Branch arm, destratification was almost complete, i.e., essentially isothermal and well oxygenated (>7.0 mg/L) throughout the water column. The upper Little Platte arm was also isothermal and displayed DO concentrations ranging from 7.3 to 6.6 mg/L. Historically, destratification first begins in the upper arms in late

August or early September and progresses throughout the remainder of the lake concluding in October.

Mirroring 1997-1999 levels, turbidity in the surface waters of the down lake area during the 2000 monthly surveys was low with mean, minimum, and maximum of 6.5 NTU, 2.5 NTU, and 9.5 NTU, respectively. Means for each of the last four years have fallen below the 11 NTU mean for the period 1982-1996. Total suspended solids in 2000 were equally low with mean, minimum, and maximum concentrations of 6.6 mg/L, 1.9 mg/L, and 10 mg/L, respectively. Water clarity based on secchi depth and photic zone depth was relatively good with no indication of light limitation, which would decrease algal productivity. The 2000 mean, minimum, and maximum secchi depths were 1.32 m, 0.91 m, and 2.74 m, respectively. The mean, minimum, and maximum photic zone depths (1% light depths) for the down lake area were 2.83 m, 1.98 m, and 4.88 m, respectively. For comparison, the mean photic zone depths for 1997-1999 were 3.15 m, 2.90 m, and 2.57 m, respectively (Table 3).

Turbidity levels in the surface waters of the Camp Branch arm in 2000 were slightly higher than in the down lake area as a result of higher algal densities. The mean, minimum, and maximum for the arm were 9.0 NTU, 7.0 NTU, and 12 NTU, respectively. The arm had mean surface turbidity levels of 15 NTU, 10 NTU, 7.3 NTU, and 12 NTU for 1982-1996, 1997, 1998, and 1999, respectively. Suspended solids' mean, minimum, and maximum concentrations were 9.6 mg/L, 6.6 mg/L, and 13 mg/L, respectively, in 2000. Water clarity based on secchi depth and photic zone depth also indicated better than average conditions existed during 2000. The mean, minimum, and maximum secchi depths were 0.83 m, 0.61 m, and 1.07 m, respectively, and, in comparison, the photic zone depths for the arm were 2.02 m, 1.55 m, and 2.83 m, respectively. These levels suggest that algal photosynthesis would not be impaired.

As in 1999, the 2000 turbidity levels in the surface waters of the upper Little Platte arm were substantially lower than the mean for the period 1982-1996 (56 NTU). The mean, minimum, and maximum turbidities were 14 NTU, 8.0 NTU, and 18 NTU, respectively. Associated suspended solids exhibited mean, minimum, and maximum concentrations of 14 mg/L, 8.6 mg/L, and 21 mg/L, respectively. Water clarity was reasonably good in the spring and summer for algal photosynthesis. The mean, minimum, and maximum secchi depths were 0.73 m, 0.70 m, 0.91 m, respectively. Similarly, the photic zone depths were 1.52 m, 1.16 m, and 1.83 m, respectively.

The calculated total nitrogen (TN) concentrations in the lake have ranged from moderately enriched in the down lake area and Camp Branch arm to highly enriched or eutrophic in the upper Little Platte arm over the entire period of record. Long-term mean concentrations in the surface waters have ranged from 1 to 1.9 mg/L. The 2000 mean, minimum, and maximum TN concentrations were down lake area, 0.55 mg/L, 0.36 mg/L, and 0.77 mg/L; Camp Branch arm, 0.61 mg/L, 0.34 mg/L, and 1.00 mg/L; and Little Platte arm, 0.74 mg/L, 0.33 mg/L, and 0.93 mg/L, respectively. The lower concentrations reflect the lack of heavy runoff during the 2000 sampling season.

Following a long-term trend, seventy-eight percent of the 2000 total phosphorus (TP)

concentrations equaled or exceeded the EPA generalized eutrophy criterion for lakes of 0.05 mg/L. Long-term mean concentrations have ranged from 0.07 mg/L (in the Camp Branch arm) to 0.16 mg/L (in the upper Little Platte arm). The 2000 mean, minimum, and maximum TP concentrations were down lake, 0.05 mg/L, 0.02 mg/L, and 0.11 mg/L; Camp Branch, 0.10 mg/L, 0.04 mg/L, and 0.19 mg/L; and Little Platte, 0.10 mg/L, 0.07 mg/L, and 0.21 mg/L, respectively. The 2000 data continue to show very enriched conditions in the upper Little Platte throughout the spring and summer. Since non-point runoff was reduced during the survey period, point source contributions may have played a greater role in the continued high total phosphorus concentrations during the low flow periods.

Algal productivity reflected the high water clarity and highly enriched conditions in the lake in 2000. Mean chlorophyll concentrations in each arm of the lake exceeded the EPA generalized eutrophy criterion of 10 ug/L. And, as a result of the better water clarity in the upper arms, the 2000 mean concentrations were substantially higher than the long-term means for these areas. The mean, minimum, and maximum chlorophyll concentrations in 2000 were down lake, 6.8 ug/L, 0.9 ug/L, and 10.1 ug/L; Camp Branch, 12.5 ug/L, 1.0 ug/L, and 21.5 ug/L; and Little Platte, 11.6 ug/L, 2.5 ug/L, and 20.2 ug/L, respectively. While the 2000 lake mean chlorophyll concentration for the growing season of 10.3 ug/L continues to be within a eutrophic range, the hypereutrophic levels in the upper arms are an indicator of excessive nutrient loading.

Most regulatory efforts in lake eutrophication management have been based on modeling studies, which attempted to correlate the relationship between algal productivity and nutrient concentrations. With the highly enriched conditions characteristic of most Midwest reservoirs, including Smithville Lake, water clarity has always been the dominant limiting factor. To demonstrate the relationships, chlorophyll concentrations were plotted against TN, TP, TSS, turbidity, secchi and photic zone depths for each lake station for the last four years (Figures 3-20). Chlorophyll concentrations fluctuate independently of either nutrient and are inversely related to turbidity and suspended solids. The generally direct relationship between eutrophic algal productivity and increased secchi and photic zone depths also shows the importance of water clarity given the continuous presence of high nutrient levels.

Four common herbicides (atrazine, alachlor, cyanazine, and metolachlor) were routinely detected in the surface and bottom waters of the lake during 2000. For comparative purposes, mean concentrations were computed for surface samples, since depth differences have not been found to be significant over the period of record (an exception was noted in June 1998 when bottom concentrations of atrazine in the Little Platte arm were four times greater than surface concentrations). The 2000 mean atrazine concentrations in the surface waters were as follows: down lake area, 1.27 ug/L; Camp Branch arm, 1.29 ug/L; and Little Platte arm, 1.38 ug/L. The down lake and Camp Branch mean concentrations have decreased each year of the watershed study from the 1997 means of 3.11 and 3.24 ug/L, respectively (Figures 21- 22). The low concentrations in the Little Platte arm in 2000 are again a reflection of the hydrologic conditions during the monitoring period (Figure 23). However, the Little Platte arm has rarely had mean annual atrazine concentrations below the MCL of 3 ug/L, because of the extremely high concentrations associated with spring storm runoff.

Mean alachlor concentrations in the surface waters of the down lake, Camp Branch, and Little Platte stations were well below the 2 ug/L MCL at 0.20 ug/L, 0.16 ug/L, and 0.13 ug/L, respectively. Mean cyanazine concentrations in the surface waters of the three areas were also below the MCLG of 1.00 ug/L at 0.11 ug/L, 0.10 ug/L; and 0.10 ug/L, respectively. Mean metolachlor concentrations in the surface waters were down lake, 0.34 ug/L; Camp Branch, 0.33 ug/L; and Little Platte, 0.43 ug/L. To date no MCL has been established for metolachlor.

Surface metal concentrations continued to be very low during 2000; however, dissolved manganese concentrations in the bottom waters during the months of intense stratification were substantially higher than the 50 ug/L MCL for drinking water supplies. Mean bottom concentrations were down lake, 1,494 ug/L, Camp Branch, 104 ug/L, and Little Platte, 340 ug/L. As noted in previous reports, the bottom sediments contribute large quantities of reduced manganese to the water column under anaerobic conditions.

c. **Outflow.** The outlet (SM-2) was well oxygenated during each of the 2000 surveys and fully met the state stream criterion of a minimum of 5 mg/L to protect warm-water fish species. Water temperature, conductivity, pH, and orp or redox were within acceptable seasonal ranges. Turbidity and suspended solids were low with mean concentrations of 6.9 NTU and 6.4 mg/L, respectively. The nutrient levels remained enriched with mean TN and TP concentrations of 0.62 mg/L and 0.08 mg/L, respectively. Reflecting down lake conditions, atrazine concentrations in the outflow never exceeded the 3 ug/L MCL during 2000 survey periods. The 2000 mean concentration was 1.18 ug/L. There has been a decrease in atrazine concentrations in each of the last four years from the 1997 mean of 3.38 ug/L (Figure 24). Metolachlor, alachlor, and cyanazine were detected, but their concentrations were very low. Dissolved manganese concentrations exceeded the 50 ug/L MCL for drinking water supplies during July and August. The 2000 mean concentration was 499 ug/L.

4. **Future conditions.**

The water quality of Smithville Lake is moderately good and should remain so in the immediate future. Taste and odor problems in the drinking water supply can be expected to occur until nutrient levels from point and nonpoint sources are reduced. The large hog confinement operation in the Little Platte Watershed has the potential to significantly impact nutrient loading and bacterial densities to the major arm of the reservoir, which is already hypereutrophic in the upper reaches. The fish kill of large bass (black bass virus) in 1994, which was attributable to high bacteria and fungus levels, could be repeated unless environmental conditions are improved. Atrazine and manganese will continue to adversely affect the drinking water supply. If land use practices within the watershed do not change, the loading of silt, nutrients, pesticides, and bacteria will adversely affect recreational, water supply, and sport fishery project purposes.

5. **Recommendations.**

Because of the concerns for nutrient and pesticide loading, the PM-PR-W recommends that monthly sampling during April-September continue in 2001. This work should include *in-situ*

monitoring, bacterial analyses, field chemistry, and laboratory analyses for approximately 30 parameters. The District should continue to work for multi-agency cooperation on watershed pollution control and abatement.

6. **Appendix.**

Tables 1-3

Figures 1-24

Table 1. Smithville Lake 2000 Ambient Data

Station	Date mm/dd/yy	Time hhmm	Depth m	Temp °C	D.O. mg/L	Spec. Cond. u ohms	pH	Orp. mV
SM-2	04/25/00	1350	0.1	13.7	10.2	277	8.4	360
	05/23/00	1345	0.1	20.4	9.0	280	8.5	334
	06/20/00	0830	0.1	22.3	7.2	273	8.0	449
	07/25/00	0900	0.1	22.1	7.5	298	7.4	131
	08/23/00	0930	0.1	26.3	7.6	261	8.0	393
	09/20/00	0800	0.1	22.8	7.4	261	7.8	380
SM-3	04/25/00	0930	0.1	13.6	10.2	278	8.4	320
		0931	1	13.6	9.7	278	8.3	324
		0932	2	13.6	9.9	278	8.4	323
		0933	3	13.6	9.6	278	8.4	324
		0934	4	13.6	9.2	278	8.3	326
		0935	5	13.6	9.4	278	8.3	327
		0936	6	13.5	9.3	279	8.3	328
		0937	7	13.5	9.2	279	8.3	329
		0938	8	13.4	9.0	279	8.3	330
		0939	9	13.2	8.7	279	8.2	332
		0940	10	12.9	8.5	280	8.1	334
		0941	11	12.8	8.3	280	8.0	336
		0942	12	12.7	8.2	280	8.0	337
		0943	13	12.6	7.8	281	8.0	338
		0944	14	12.5	7.8	281	7.9	340
0945	14.5	12.5	7.8	281	7.9	341		
SM-3	05/23/00	0830	0.1	19.3	9.5	278	8.4	288
		0831	1	19.3	9.7	279	8.4	291
		0832	2	19.3	9.5	278	8.4	292
		0833	3	19.2	9.5	279	8.3	295
		0834	4	19.2	9.2	280	8.3	297
		0835	5	18.8	8.8	281	8.2	301
		0836	6	18.7	8.1	282	8.0	304
		0837	7	18.4	7.4	282	7.9	309
		0838	8	18.2	6.7	283	7.7	312
		0839	9	18.1	6.2	283	7.6	315
		0840	10	17.6	5.1	284	7.5	319
		0841	11	17.2	4.3	285	7.4	322
		0842	12	16.3	2.6	287	7.3	326
		0843	13	16.0	1.5	288	7.2	329
		0844	14	14.9	0.2	291	7.2	332
0845	14.5	13.9	0.1	303	7.2	322		
SM-3	06/20/00	0830	0.1	22.8	6.9	282	8.1	426
		0831	1	22.8	6.9	283	8.0	432
		0832	2	22.8	6.8	283	8.0	434
		0833	3	22.8	6.7	283	8.0	437
		0834	4	22.8	6.7	283	8.0	439
		0835	5	22.7	6.5	283	8.0	442

Station	Date mm/dd/yy	Time hhmm	Depth m	Temp °C	D.O. mg/L	Spec. Cond. u ohms	pH	Orp. mV		
SM-3	06/20/00	0836	6	22.6	6.2	284	7.9	446		
		0837	7	22.6	6.2	284	7.9	447		
		0838	8	22.6	6.2	284	7.9	449		
		0839	9	22.6	6.1	284	7.9	451		
		0840	10	22.5	6.1	283	7.9	453		
		0841	11	21.0	0.9	291	7.4	468		
		0842	12	19.5	0.1	301	7.4	175		
		0843	13	18.5	0.1	308	7.4	125		
		0844	14	18.0	0.1	312	7.4	105		
		0845	14.5	17.8	0.1	321	7.4	85		
		SM-3	07/25/00	1230	0.1	26.8	7.0	254	8.5	378
				1231	1	26.8	7.0	254	8.4	381
				1232	2	26.8	7.0	254	8.4	383
1233	3			26.8	6.8	254	8.4	386		
1234	4			26.8	6.8	255	8.4	388		
1235	5			26.8	6.4	255	8.3	390		
1236	6			26.8	5.9	256	8.2	393		
1237	7			26.6	5.6	256	8.1	397		
1238	8			26.3	2.5	262	7.6	409		
1239	9			24.5	0.1	286	7.3	100		
1240	10			23.2	0.1	292	7.3	65		
1241	11			22.6	0.1	294	7.2	45		
1242	12			22.4	0.1	296	7.2	30		
1243	13			22.1	0.1	299	7.2	20		
1244	14			21.7	0.1	302	7.2	15		
SM-3	08/22/00	0900	0.1	26.7	8.0	252	8.5	487		
		0901	1	26.7	8.0	254	8.5	489		
		0902	2	26.3	6.2	257	8.1	501		
		0903	3	26.2	5.4	257	7.9	511		
		0904	4	26.1	5.2	257	7.9	515		
		0905	5	26.0	5.0	258	7.8	520		
		0906	6	25.9	4.5	258	7.7	526		
		0907	7	25.8	4.0	258	7.6	531		
		0908	8	25.8	4.0	258	7.7	533		
		0909	9	25.7	3.1	260	7.6	539		
		0910	10	25.3	0.8	263	7.4	546		
		0911	11	23.8	0.1	292	7.3	150		
		0912	12	22.8	0.1	305	7.2	85		
		0913	13	22.5	0.1	308	7.2	50		
		0914	14	21.8	0.1	316	7.1	30		
0915	15	20.7	0.1	335	7.0	15				
SM-3	09/19/00	0930	0.1	23.4	5.2	261	7.5	395		
		0931	1	23.4	5.2	261	7.5	393		
		0932	2	23.4	5.2	261	7.5	391		

Station	Date mm/dd/yy	Time hhmm	Depth m	Temp °C	D.O. mg/L	Spec. Cond. u ohms	pH	Orp. mV
SM-3	09/19/00	0933	3	23.4	5.1	262	7.5	391
		0934	4	23.4	5.1	261	7.5	390
		0935	5	23.4	5.2	261	7.5	390
		0936	6	23.4	5.0	261	7.5	390
		0937	7	23.4	5.0	261	7.5	389
		0938	8	23.3	5.0	262	7.5	389
		0939	9	23.3	5.0	261	7.5	388
		0940	10	23.3	5.0	262	7.5	387
		0941	11	23.3	5.0	262	7.5	387
		0942	12	23.3	5.1	261	7.5	386
		0943	13	23.2	5.0	261	7.5	386
		0944	14	23.2	5.1	261	7.5	385
		0945	15	23.2	5.0	261	7.5	381
SM-8	04/25/00	1045	0.1	14.2	9.3	290	8.3	324
		1046	1	14.2	9.3	290	8.2	326
		1047	2	14.0	9.3	291	8.2	327
		1048	3	14.0	9.2	291	8.2	329
		1049	4	13.9	9.2	292	8.1	331
		1050	5	13.4	8.2	288	7.9	337
		1051	6	13.1	7.7	288	7.7	341
SM-8	05/23/00	1000	0.1	22.4	9.6	281	8.6	306
		1001	1	22.2	9.6	283	8.5	310
		1002	2	21.5	9.2	283	8.5	312
		1003	3	20.6	7.4	288	8.0	322
		1004	4	19.5	3.8	295	7.4	335
		1005	5	19.2	1.4	299	7.2	341
		1006	6	19.0	0.2	303	7.2	340
SM-8	06/20/00	1330	0.1	24.1	7.6	277	8.4	364
		1331	1	23.4	6.5	278	8.1	371
		1332	2	23.3	5.9	279	8.0	374
		1333	3	23.2	5.6	279	8.0	377
		1334	4	23.2	5.8	278	8.0	377
		1335	5	23.1	5.7	276	8.0	378
		1336	6	22.9	5.9	274	8.0	380
		1337	6.5	22.9	5.9	274	8.0	367
SM-8	07/25/00	1400	0.1	27.2	6.9	249	8.3	342
		1401	1	27.0	6.8	250	8.2	347
		1402	2	26.7	6.4	252	8.1	351
		1403	3	26.6	6.1	252	8.0	353
		1404	4	26.6	5.8	252	8.0	355
		1405	5	26.5	5.2	251	7.9	357
		1406	6	26.3	2.9	255	7.5	362
		1407	7	26.0	0.1	267	7.2	226

Station	Date mm/dd/yy	Time hhmm	Depth m	Temp °C	D.O. mg/L	Spec. Cond. u ohms	pH	Orp. mV
SM-8	08/22/00	1000	0.1	26.4	7.3	253	8.3	351
		1001	1	26.2	6.9	255	8.2	357
		1002	2	26.0	5.5	256	7.9	359
		1003	3	25.8	4.5	257	7.7	357
		1004	4	25.7	4.2	257	7.6	353
		1005	5	25.2	3.7	252	7.5	351
		1006	6	24.3	2.5	235	7.3	351
		1007	7	23.8	1.3	225	7.2	348
SM-8	09/19/00	1000	0.1	23.3	7.1	261	7.9	352
		1001	1	23.3	7.0	261	7.9	354
		1002	2	23.3	7.0	261	8.0	355
		1003	3	23.1	7.0	260	8.0	355
		1004	4	23.0	7.1	260	8.0	355
		1005	5	23.0	7.1	260	8.0	354
		1006	6	23.0	7.1	260	7.9	353
		1007	7	23.0	7.0	261	7.9	351
SM-14	04/25/00	1145	0.1	14.9	9.5	310	8.4	326
		1146	1	14.8	9.0	309	8.3	330
		1147	2	14.7	8.5	309	8.2	332
		1148	3	14.6	8.0	313	8.1	335
		1149	4	14.3	7.3	309	8.0	338
		1150	5	14.1	6.7	309	7.9	342
		1151	6	13.8	5.7	307	7.7	345
		1152	7	13.8	5.3	307	7.6	347
		1153	7.5	13.8	5.2	307	7.6	347
SM-14	05/23/00	1200	0.1	23.4	10.1	288	8.6	318
		1201	1	22.6	10.6	293	8.6	320
		1202	2	22.0	8.9	299	8.4	325
		1203	3	20.7	6.3	314	7.7	339
		1204	4	19.8	2.9	328	7.4	347
		1205	5	19.3	1.5	335	7.3	352
		1206	6	19.2	1.2	332	7.3	354
		1207	7	19.1	0.9	331	7.3	354
		1208	7.5	19.1	0.8	331	7.3	354
SM-14	06/20/00	1430	0.1	23.9	7.5	288	8.3	418
		1431	1	23.8	7.0	291	8.2	422
		1432	2	23.6	6.7	293	8.1	425
		1433	3	23.5	6.4	295	8.1	427
		1434	4	23.3	6.1	295	8.0	429
		1435	5	23.2	5.9	294	7.9	431
		1436	6	23.2	5.8	294	7.9	432
		1437	7	23.2	5.7	294	7.9	433
		1438	8	23.2	5.6	294	7.9	435

Station	Date mm/dd/yy	Time hhmm	Depth m	Temp °C	D.O. mg/L	Spec. Cond. u ohms	pH	Orp. mV
SM-14	07/25/00	1530	0.1	27.2	7.7	223	8.5	357
		1531	1	27.1	7.1	224	8.4	359
		1532	2	26.9	6.4	225	8.3	363
		1533	3	26.6	4.0	231	7.6	378
		1534	4	26.4	2.4	235	7.4	382
		1535	5	26.4	1.5	239	7.3	381
		1536	6	26.4	1.2	240	7.2	377
		1537	6.5	26.3	1.2	240	7.2	372
SM-14	08/22/00	1200	0.1	26.7	8.4	238	8.4	377
		1201	1	26.6	8.0	239	8.4	382
		1202	2	26.2	6.8	240	8.1	388
		1203	3	26.2	6.7	240	8.0	390
		1204	4	25.8	4.4	242	7.6	397
		1205	5	25.6	3.0	242	7.4	399
		1206	6	25.5	2.3	243	7.3	400
		1207	7	25.3	0.9	252	7.2	390
		1208	8	25.0	0.1	269	7.1	215
		1209	8.5	25.0	0.1	270	7.1	165
SM-14	09/19/00	1115	0.1	22.9	7.3	254	7.9	331
		1116	1	22.9	7.2	254	7.9	331
		1117	2	22.9	7.1	254	7.9	331
		1118	3	22.8	6.8	254	7.8	333
		1119	4	22.8	6.8	254	7.8	334
		1120	5	22.8	6.8	254	7.8	335
		1121	6	22.8	6.7	255	7.8	335
		1122	7	22.8	6.7	255	7.8	336
		1123	8	22.8	6.6	255	7.8	336
SM-16	04/25/00	1445	0.1	15.3	4.4	469	7.5	360
	05/23/00	1500	0.1	23.9	9.6	402	8.6	317
	06/20/00	0945	0.1	22.1	2.1	263	7.2	442
	07/25/00	1000	0.1	25.4	5.6	270	7.4	333
	08/23/00	0830	0.1	25.6	2.4	186	7.0	482
	09/20/00	0900	0.1	21.8	3.1	268	7.1	399

Table 2. Smithville Lake Water Quality Data 1999-2000

STATION	DEPTH	DATE	TIME	SO4	TOC	DOC	TDS	VS	T-FE	D-FE	T-MN	D-MN	COD
DET LIMIT				10	0.2	0.2	5	5	40		1		3
REP LIMIT				20	1	1	10	10	120		4		
UNITS	m	mmddyy	hhmm	mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	mg/L
SM-2	0.1	04/12/99	1500							U		5	
	0.1	05/18/99	1215							U		62	
	0.1	06/22/99	1215							41		344	
	0.1	07/20/99	1100	15	5.58	5.72	174			U		1450	19
	0.1	08/26/99	1430	15	9.2	5.1	144	82	530	U	604	530	18
	0.1	09/16/99	1315		12	6.2	5.8	145		U		1140	20
Average				14.00	6.99	5.54	154.33	82.00	530.00	41.00	604.00	588.50	19.00
SM-2	0.1	04/25/00	1350	12	6	6	156	94	143	U	46	U	
	0.1	05/23/00	1345		6	5	144	38	114	U	43	11	
	0.1	06/20/00	0830		5	4			217	U	126	23	
	0.1	07/25/00	0900		5.4	4			568	41	1908	1809	
	0.1	08/23/00	0930		6.5	5.13			252	U	248	153	
	0.1	09/20/00	0800			5.7	5.5		265	U	226	U	
Average				12.00	5.77	4.94	150.00	66.00	259.83	41.00	432.83	499.00	
SM-3	0.1	04/12/99	1030							U		1	
	0.1	05/18/99	0900							U		3	
	0.1	06/22/99	0830							U		1	
	0.1	07/20/99	0830	15	5.84	5.59	168			U		16.5	16
	0.1	08/26/99	1000	15	8	4.5	146	86	773	U	39.2	U	14
	0.1	09/16/99	0900		10	5.3	5.1	212		U		U	12
Average				13.33	6.38	5.06	175.33	86.00	773.00		39.20	5.38	14.00
SM-3	0.1	04/25/00	0930	13	5	5	160	94	169	U	56	U	
	0.1	05/23/00	0830		5	5	147	40	49	U	16	U	
	0.1	06/20/00	1200		5	5			184	U	96	U	
	0.1	07/25/00	1230		5.8	5			168	U	53	U	
	0.1	08/22/00	0900		6	5.9			130	U	56	U	
	0.1	09/19/00	0930			6			168		149		
Average				13.00	5.47	5.18	153.50	67.00	144.67		71.00		
SM-3	14.0	04/12/99	1044							U		1	
	16.0	05/18/99	0916							U		155	
	15.0	06/22/99	0845							U		672	

STATION	DEPTH	DATE	TIME	SO4	TOC	DOC	TDS	VS	T-FE	D-FE	T-MN	D-MN	COD
DET LIMIT				10	0.2	0.2	5	5	40		1		3
REP LIMIT				20	1	1	10	10	120		4		
UNITS	m	mmddyy	hhmm	mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	mg/L
SM-3	15	07/20/99	0845	15	5.85	5.5	182			U		2010	17
	15	08/26/99	1015	10	8.5	4.4	157	59	1110	69	4450	4460	19
	14	09/16/99	0914	11	5.3	5.4	185			U		116	9
Average				13.20	4.17	3.30	107.80	24.67	423.33	69.00	1485.00	1235.67	12.00
SM-3	14.5	04/25/00	0945	21	5	5	156	69	443	U	118	42	
	14.5	05/23/00	0845		5	5	157	55	385	U	360	244	
	14.5	06/20/00	1215		5	5			391	U	2257	2155	
	14	07/25/00	1244		5.6	5			428	65	1628	1563	
	15	08/22/00	0915		5.5	6			636	55	3629	3468	
	15	09/19/00	0945		5				222		170		
Average				21.00	5.18	5.20	156.50	62.00	417.50	60.00	1360.33	1494.40	
SM-8	0.1	04/12/99	1145							U		3	
	0.1	05/18/99	0945							U		8	
	0.1	06/22/99	0930							U		4	
	0.1	07/20/99	0900	15	5.79	5.15	114			U		11	22
	0.1	08/26/99	1100	15	8	4.7	146	90	210	U	79	U	18
	0.1	09/16/99	1000	U	5.8	5.4	205			U		U	14
Average				15.00	6.53	5.08	155.00	90.00	210.00		79.00	6.50	
SM-8	0.1	04/25/00	1045	18	6	6	166	66	203	U	65	U	
	0.1	05/23/00	1000		6	5	149	43	209	U	170	U	
	0.1	06/20/00	1330		5	5			372	U	140	U	
	0.1	07/25/00	1400		6.6	5			252	U	75	U	
	0.1	08/22/00	1000		6	5.7			179	U	69	U	
	0.1	09/19/00	1000		6				391		97		
Average				18.00	5.93	5.34	157.50	54.50	267.67		102.67		
SM-8	7.0	04/12/99	1152							U		7	
	8.0	05/18/99	0953							U		139	
	7.0	06/22/99	0937							U		383	
	7	07/20/99	0907	14	6.89	5.35	168			U		1150	25

STATION	DEPTH	DATE	TIME	SO4	TOC	DOC	TDS	VS	T-FE	D-FE	T-MN	D-MN	COD
DET LIMIT				10	0.2	0.2	5	5	40		1		3
REP LIMIT				20	1	1	10	10	120		4		
UNITS	m	mmddyy	hhmm	mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	mg/L
SM-3	15	07/20/99	0845	15	5.85	5.5	182			U		2010	17
	15	08/26/99	1015	10	8.5	4.4	157	59	1110	69	4450	4460	19
	14	09/16/99	0914	11	5.3	5.4	185			U		116	9
Average				13.20	4.17	3.30	107.80	24.67	423.33	69.00	1485.00	1235.67	12.00
SM-3	14.5	04/25/00	0945	21	5	5	156	69	443	U	118	42	
	14.5	05/23/00	0845		5	5	157	55	385	U	360	244	
	14.5	06/20/00	1215		5	5			391	U	2257	2155	
	14	07/25/00	1244		5.6	5			428	65	1628	1563	
	15	08/22/00	0915		5.5	6			636	55	3629	3468	
	15	09/19/00	0945		5				222		170		
Average				21.00	5.18	5.20	156.50	62.00	417.50	60.00	1360.33	1494.40	
SM-8	0.1	04/12/99	1145							U		3	
	0.1	05/18/99	0945							U		8	
	0.1	06/22/99	0930							U		4	
	0.1	07/20/99	0900	15	5.79	5.15	114			U		11	22
	0.1	08/26/99	1100	15	8	4.7	146	90	210	U	79	U	18
	0.1	09/16/99	1000	U	5.8	5.4	205			U		U	14
Average				15.00	6.53	5.08	155.00	90.00	210.00		79.00	6.50	
SM-8	0.1	04/25/00	1045	18	6	6	166	66	203	U	65	U	
	0.1	05/23/00	1000		6	5	149	43	209	U	170	U	
	0.1	06/20/00	1330		5	5			372	U	140	U	
	0.1	07/25/00	1400		6.6	5			252	U	75	U	
	0.1	08/22/00	1000		6	5.7			179	U	69	U	
	0.1	09/19/00	1000		6				391		97		
Average				18.00	5.93	5.34	157.50	54.50	267.67		102.67		
SM-8	7.0	04/12/99	1152							U		7	
	8.0	05/18/99	0953							U		139	
	7.0	06/22/99	0937							U		383	
	7	07/20/99	0907	14	6.89	5.35	168			U		1150	25

STATION	DEPTH	DATE	TIME	SO4	TOC	DOC	TDS	VS	T-FE	D-FE	T-MN	D-MN	COD
DET LIMIT				10	0.2	0.2	5	5	40		1		3
REP LIMIT				20	1	1	10	10	120		4		
UNITS	m	mmddy	hhmm	mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	mg/L
	6.5	08/26/99	1107	13	7.5	4.4	138	70	737	U	302	43.6	22
	6.5	09/16/99	1007	U	5.5	5.5	161			U		U	12
Average				14.25	4.22	3.29	96.40	28.33	299.00		102.33	344.52	15.50
SM-8	6	04/25/00	1051	16	6	6	171	53	352	U	92	24	
	7.5	05/23/00	1008		6	5	168	64	950	U	549	325	
	6.5	06/20/00	1337		5	5			799	U	156	U	
	7	07/25/00	1407		6.3	5			605	U	246	61	
	7	08/22/00	1007		5.1	6.1			1681	U	229	7	
	7	09/19/00	1007		5				545		100		
Average				16.00	5.57	5.42	169.50	58.50	822.00		228.67	104.25	
SM-14	0.1	04/12/99	1330							U		2	
	0.1	05/18/99	1045							160		20	
	0.1	06/22/99	1030							U		518	
	0.1	07/20/99	1000	16	5.91	5.44	162			U		5	22
	0.1	08/26/99	1300	15	8	4.6	137	146	280	U	100	U	22
	0.1	09/16/99	1200	12	6.2	6.2	170			U		U	13
Average				14.33	6.70	5.41	156.33	146.00	280.00	160.00	100.00	136.25	19.00
SM-14	0.1	04/25/00	1145	18	6	6	181	87	233	U	136	U	
	0.1	05/23/00	1200		6	6	167	58	419	U	172	U	
	0.1	06/20/00	1430		6	5			500	U	147	8	
	0.1	07/25/00	1530		6.9	5			319	U	129	U	
	0.1	08/22/00	1200		6.3	6.2			221	U	93	U	
	0.1	09/19/00	1115		6				594		132		
Average				18.00	6.20	5.64	174.00	72.50	381.00		134.83	8.00	
SM-14	8.0	04/12/99	1338							U		8	
	9.0	05/18/99	1054							U		473	
	9.0	06/22/99	1039							U		529	
	8	07/20/99	1008	14	6.87	6.17	184			U		207	20
	8	08/26/99	1308	15	7.8	5.3	138	106	739	U	256	15	21
	8	09/16/99	1208	11	6.1	5.4	185			U		U	16
Average				13.33	6.92	5.62	169.00	106.00	739.00		256.00	246.40	19.00

STATION	DEPTH	DATE	TIME	SO4	TOC	DOC	TDS	VS	T-FE	D-FE	T-MN	D-MN	COD
DET LIMIT				10	0.2	0.2	5	5	40		1		3
REP LIMIT				20	1	1	10	10	120		4		
UNITS	m	mmddyy	hhmm	mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	mg/L
SM-14	7.5	04/25/00	1153	18	6	6	174	78	624	U	248	163	
	6	05/23/00	1206		6	6	184	56	1684	U	506	259	
	8	06/20/00	1438		6	6			854	U	188	U	
	6.5	07/25/00	1537		6.7	6			457	U	440	321	
	8.5	08/22/00	1209		6.4	7.1			1475	U	719	617	
	8	09/19/00	1123		6				1089		187		
Average				18.00	6.18	6.22	179.00	67.00	1030.50		381.33	340.00	
SM-16	0.1	04/23/98	1330							U		297	
	0.1	05/21/98	1330							66		21	
	0.1	06/16/98	1345							U		181	
	0.1	07/20/99	1200	29	7.85	5.21	318			U		26	30
	0.1	08/26/99	1600	30	9.2	5.5	266	117	606	U	352	10	27
	0.1	09/16/99	1430	27	7.8	6.6	307			U		114	23
Average				28.67	8.28	5.77	297.00	117.00	606.00	66.00	352.00	108.17	26.67
SM-16	0.1	04/25/00	1445	28	11	11	285	99	1837	U	255	54	
	0.1	05/23/00	1345		10	10	262	102	643	U	483	89	
	0.1	06/20/00	0945		11	11			2106	44	508	362	
	0.1	07/25/00	1000		8.4	8			769	U	349	82	
	0.1	08/23/00	0830		9.6	8.7			3661	U	237	96	
	0.1	09/20/00	0900		7.9	7.7			1228	U	418	184	
Average				28.00	9.65	9.40	273.50	100.50	1707.33	44.00	375.00	144.50	

Table 3. Smithville Lake Water Quality Data 1997-2000

STAT	DEPTH m	DATE mm/dd/yy	TIME hhmm	ATZ ug/L	ALA ug/L	METO ug/L	CYAN ug/L	ACET ug/L	NH3 mg/L	NO3/NO2 mg/L	TKN mg/L	TN mg/L	T - P mg/L	T - OP mg/L	TURB NTU	TSS mg/L	CHL ug/L	SECC m	1% m
SM-2	0.1	05/21/97	1330	3.58	0.24	1.05	0.69		0.21	0.70	0.90	1.81	0.11	0.04	15.0	16.0			
	0.1	06/17/97	1400	2.90	0.09	.05K	0.55		0.03	0.65	0.80	1.48	0.40	0.05	12.0	10.0			
	0.1	07/15/97	1535	3.86	0.14	0.80	0.63		<0.02	0.16	0.70	0.86	0.16	0.04	7.8	10.0			
	0.1	08/13/97	1356	3.18	0.07	0.63	0.55		0.11	0.03	1.10	1.24	0.45	0.03	6.0	8.0			
Mean			3.38	0.14	0.83	0.61		0.12	0.39	0.88	1.35	0.28	0.04	10.20	11.00				
SM-2	0.1	04/23/98	1230	2.92	0.07	0.26	0.51		0.04	0.31	0.40	0.75	0.04	0.03	8.0	7.0			
	0.1	05/21/98	1230	2.26	0.07	0.28	0.47		0.11	0.22	1.00	1.33	0.09	0.01	6.0	7.0			
	0.1	06/16/98	1245	2.10	0.07	0.30	0.41		0.12	0.34	0.80	1.26	0.05	0.04	3.7	3.0			
	0.1	07/22/98	1230	2.33	0.06	0.66	0.43		0.05	0.03	0.40	0.48	0.09	0.03	5.5	6.0			
	0.1	08/19/98	1220	2.12	0.06	0.60	0.39		0.07	0.03	0.50	0.60	0.13	0.02	7.2	6.0			
	0.1	09/09/98	1330	2.45	0.11	0.61	0.39		0.08	0.09	0.80	0.97	0.03	0.03	7.0	6.0			
Mean			2.36	0.07	0.45	0.43		0.08	0.17	0.65	0.90	0.07	0.03	6.23	5.83				
SM-2	0.1	04/12/99	1500	0.90	<0.05	0.12	0.10		0.05	0.49	0.34	0.88	0.06	0.02	16.0	18.0			
	0.1	05/18/99	1215	1.76	0.06	0.40	0.14		0.20	0.69	0.61	1.50	0.36	0.04	23.0	20.0			
	0.1	06/22/99	1215	0.83	0.07	1.09	0.06		0.32	1.07	0.52	1.91	0.07	U	26.0	24.0			
	0.1	07/20/99	1100	1.23	0.06	1.43	0.08		0.40	0.50	0.82	1.72	0.10	0.04	30.0	30.0			
	0.1	08/26/99	1430	1.34	<0.05	1.24	0.10		0.26	0.04	0.59	0.89	0.08	0.02	8.3	11.0			
	0.1	09/16/99	1315	1.49	0.06	1.35	0.10		0.41	0.01	1.14	1.56	0.08	0.01	17.0	21.0			
Mean			1.26	0.06	0.94	0.10		0.27	0.47	0.67	1.41	0.13	0.03	20.05	20.67				
SM-2	0.1	04/25/00	1350	1.19	0.13	0.49	0.16		U	0.05	0.52	0.57	0.07	U	5.1	5.4			
	0.1	05/23/00	1345	0.89	<0.05	<0.05	0.07		0.07	U	0.21	0.28	0.03	U	3.0	3.0			
	0.1	06/20/00	0830	1.16	<0.05	0.25	<0.04		0.07	U	0.66	0.73	0.04	U	8.2	7.6			
	0.1	07/25/00	0900	1.36	<0.05	0.41	0.11	0.20	0.49	U	0.04	0.53	0.22	0.08	8.6	6.2			
	0.1	08/23/00	0930	1.21	<0.05	0.32	0.11		0.11	U	0.79	0.90	0.05	0.02	7.0	6.9			
	0.1	09/20/00	0800	1.25	<0.05	0.25	0.10		0.09	U	0.60	0.69	0.05	U	9.3	9.3			
Mean			1.18	0.13	0.34	0.11		0.17	0.05	0.47	0.62	0.08	0.05	6.87	6.40				
SM-3	0.1	04/22/97	1030	2.75	0.22	0.60	0.70		0.44	0.21	0.70	1.35	0.02	0.01	8.4	9.0	16.3		
	0.1	05/20/97	1005	2.66	0.11	0.94	0.58		0.18	0.46	0.80	1.44	0.08	0.02	11.0	10.0	11.6		
	0.1	06/17/97	1159	3.20	0.12	0.93	0.59		0.02	0.37	0.70	1.09	0.39	0.03	3.2	3.0	9.6		
	0.1	07/15/97	1054	3.72	0.12	0.99	0.66		0.05	0.14	0.70	0.89	0.25	0.02	3.3	4.0	5.4		
	0.1	08/13/97	0926	3.22	0.10	0.68	0.55		<0.02	0.01	1.00	1.01	0.30	0.02	5.0	6.0	11.5		
Mean			3.11	0.13	0.83	0.62		0.17	0.24	0.78	1.16	0.21	0.02	6.18	6.40	10.88			
SM-3	0.1	04/23/98	0900	3.05	0.09	0.26	0.50		0.03	0.36	0.20	0.59	0.06	0.03	8.0	7.0	8.3		
	0.1	05/21/98	0900	2.49	0.09	0.31	0.47		0.08	0.22	0.90	1.20	0.11	0.01	6.6	5.0	11.5		
	0.1	06/16/98	0915	2.38	0.13	0.36	0.44		0.18	0.28	0.80	1.26	0.22	0.03	5.0	3.0	13.5		
	0.1	07/22/98	0930	2.44	0.07	0.64	0.49		<0.02	0.02	0.40	0.42	0.09	0.02	5.4	5.0	12.3		
	0.1	08/19/98	0830	2.21	0.06	0.62	0.42		<0.02	0.03	0.50	0.53	0.12	0.02	4.4	4.0	13.6		
	0.1	09/09/98	0900	2.37	0.08	0.55	0.33		0.05	0.05	0.50	0.60	0.07	0.02	7.0	6.0	21.2		
Mean			2.49	0.09	0.46	0.44		0.09	0.16	0.55	0.77	0.11	0.02	6.07	5.00	13.40			
SM-3	0.1	04/12/99	1030	0.91	<0.05	0.13	0.14		U	0.54	0.32	0.86	0.05	0.02	12.0	12.0		0.61	1.68
	0.1	05/18/99	0900	1.95	<0.05	0.42	0.12		0.18	0.68	0.73	1.59	0.35	0.03	15.0	8.3	2.1	0.76	1.83
	0.1	06/22/99	0830	1.10	<0.05	1.36	0.11		0.12	0.96	0.44	1.52	0.05	U	5.3	5.6	4.5	1.31	4.27
	0.1	07/20/99	0830	1.26	0.07	1.05	0.10		0.30	0.71	0.44	1.45	0.05	0.02	3.4	5.6	6.3	1.37	3.05
	0.1	08/26/99	1000	1.51	<0.05	1.25	0.11		U	0.04	0.34	0.38	0.02	0.01	4.5	5.8	7.4	1.22	2.44
	0.1	09/16/99	0900	1.77	0.08	1.42	0.11		0.08	U	0.61	0.69	0.01	U	6.0	5.6	4.5	1.1	2.13
Mean			1.42	0.08	0.94	0.12		0.17	0.59	0.48	1.08	0.09	0.02	7.70	7.15	4.96	1.06	2.57	

STAT	DEPTH m	DATE mm/dd/yy	TIME hhmm	ATZ ug/L	ALA ug/L	METO ug/L	CYAN ug/L	ACET ug/L	NH3 mg/L	NO3/NO2 mg/L	TKN mg/L	TN mg/L	T - P mg/L	T - OP mg/L	TURB NTU	TSS mg/L	CHL ug/L	SECC m	1% m
SM-3	0.1	04/25/00	0930	0.83	0.31	0.26	0.14		U	0.02	0.53	0.55	0.07	U	6.0	7.7	7.9	1.25	3.11
	0.1	05/23/00	0830	1.17	0.09	0.47	0.05		0.04	U	0.40	0.44	0.02	U	2.5	1.9	0.9	2.74	4.88
	0.1	06/20/00	1200	1.65	<0.05	<0.05	0.12		U	U	0.65	0.65	0.05	U	7.0	7.0	10.1	1.07	2.44
	0.1	07/25/00	1230	1.38	<0.05	0.35	0.11	0.22	U	U	0.36	0.36	0.11	U	9.5	10.0	8.5	0.91	2.29
	0.1	08/22/00	0900	1.18	<0.05	0.32	0.10		U	U	0.77	0.77	0.03	0.01	7.2	7.3	5.3	0.91	2.26
	0.1	09/19/00	0930	1.43	<0.05	0.32	0.11		0.05	U	0.50	0.55	0.03	U	6.6	5.7	8.1	1.07	1.98
Mean				1.27	0.20	0.34	0.11		0.05	0.02	0.54	0.55	0.05	0.01	6.47	6.60	6.80	1.33	2.83
SM-3	16.0	04/22/97	1046	2.86	0.19	0.60	0.87		0.11	0.30	1.10	1.51	0.02	0.01	12.0	7.0			
	16.0	05/20/97	1021	2.84	0.13	0.91	0.59		0.24	0.39	0.70	1.33	0.04	0.03	42.0	45.0			
	15.0	06/17/97	1214	2.77	0.10	0.75	0.56		0.02	0.66	0.80	1.48	0.11	0.04	15.0	12.0			
	15.0	07/15/97	1109	2.99	0.12	0.91	0.62		0.34	0.05	1.00	1.39	0.32	0.03	23.0	20.0			
	15.0	08/13/97	0941	3.29	0.16	1.00	0.58		0.94	0.01	2.00	2.95	0.52	0.07	25.0	25.0			
	Mean				2.95	0.14	0.83	0.64		0.33	0.28	1.12	1.73	0.20	0.04	23.40	21.80		
SM-3	11.0	04/23/98	0911	2.81	0.18	0.38	0.48		0.05	0.32	0.20	0.57	0.03	0.03	16.0	9.0			
	16.5	05/21/98	0917	2.74	0.11	0.36	0.52		0.31	0.04	1.00	1.35	0.08	0.02	23.0	24.0			
	14.0	06/16/98	0929	2.60	0.12	0.33	0.48		0.04	0.43	0.60	1.07	0.04	0.03	29.0	46.0			
	15.0	07/22/98	0945	2.22	0.09	0.42	0.44		0.77	0.03	0.80	1.60	0.14	0.08	20.0	19.0			
	15.0	08/19/98	0845	2.03	0.05	0.44	0.38		1.40	0.03	1.80	3.23	0.38	0.13	20.0	15.0			
	15.0	09/09/98	0915	2.30	0.07	0.42	0.38		1.09	0.12	1.50	2.71	0.10	0.04	18.0	11.0			
Mean				2.45	0.10	0.39	0.45		0.61	0.16	0.98	1.76	0.13	0.06	21.00	20.67			
SM-3	14.0	04/12/99	1044	0.89	<0.05	0.13	0.12		0.03	0.53	0.40	0.96	0.07	0.02	20.0	23.0			
	16.0	05/18/99	0916	1.36	<0.05	0.26	0.11		0.32	0.69	0.64	1.65	0.37	0.04	31.0	21.0			
	15.0	06/22/99	0845	0.67	<0.05	0.99	0.07		0.23	0.99	0.52	1.74	0.09	0.01	39.0	29.0			
	15.0	07/20/99	0845	1.23	0.07	1.48	0.08		0.55	0.29	0.97	1.81	0.09	0.03	31.0	30.0			
	15.0	08/26/99	1015	2.06	0.07	1.33	0.10		1.39	0.05	1.68	3.12	0.14	0.07	21.0	19.0			
	14.0	09/16/99	0914	1.82	0.07	1.38	0.05		0.12	U	0.64	0.76	0.03	U	9.0	9.6			
Mean				1.34	0.07	0.93	0.09		0.44	0.51	0.81	1.67	0.13	0.03	25.17	21.93			
SM-3	14.5	04/25/00	0945	1.14	0.19	0.43	0.09		U	0.07	0.55	0.62	0.11	0.02	14.0	11.0			
	14.5	05/23/00	0845	1.03	0.08	0.32	<0.04		0.04	0.03	0.33	0.40	0.04	U	15.0	14.0			
	14.5	06/20/00	1215	1.76	<0.05	0.44	0.12		0.22	U	0.88	1.10	0.07	U	14.0	12.0			
	14.0	07/25/00	1244	1.40	<0.05	0.41	0.11	0.19	0.32	U	0.51	0.83	0.25	0.05	9.5	6.3			
	15.0	08/22/00	0915	1.30	<0.05	0.45	0.11		0.75	U	2.00	2.75	0.20	0.14	12.0	7.2			
	15.0	09/19/00	0945	1.40	<0.05	0.32	0.11		0.10	U	0.50	0.60	0.03	U	9.1	7.2			
Mean				1.34	0.14	0.40	0.11		0.29	0.05	0.80	1.05	0.12	0.07	12.26	9.61			
SM-8	0.1	04/22/97	1200	1.95	0.26	0.40	0.48		0.44	0.41	1.10	1.95	0.05	0.01	24.0	16.0	26.8		
	0.1	05/20/97	1120	4.55	0.11	2.37	0.45		0.03	0.10	0.80	0.93	0.03	0.01	9.0	9.0	17.9		
	0.1	06/17/97	1053	3.04	0.09	0.73	0.53		<0.02	0.11	0.80	0.91	0.40	0.03	6.1	7.0	11.2		
	0.1	07/15/97	1210	3.61	0.17	0.78	0.57		<0.02	0.06	0.60	0.66	0.10	0.02	5.3	7.0	2.4		
	0.1	08/13/97	1042	3.04	0.10	0.45	0.53		0.02	0.01	1.20	1.23	0.38	0.02	8.0	11.0	17.5		
	Mean				3.24	0.15	0.95	0.51		0.16	0.14	0.90	1.14	0.19	0.02	10.48	10.00	15.16	
SM-8	0.1	04/23/98	1000	1.98	0.06	0.12	0.35		0.05	0.37	0.40	0.82	0.03	0.03	9.0	11.0	13.7		
	0.1	05/21/98	0950	2.49	0.06	0.53	0.54		0.07	0.14	0.80	1.01	0.03	0.01	5.6	7.0	11.3		
	0.1	06/16/98	1000	2.34	0.07	0.38	0.46		0.15	0.08	0.70	0.93	0.11	0.03	7.0	7.0	20.4		
	0.1	07/22/98	1045	2.14	0.07	0.31	0.39		<0.02	0.03	0.50	0.53	0.13	0.03	7.3	8.0	13.8		

STAT	DEPTH m	DATE mm/dd/yy	TIME hhmm	ATZ ug/L	ALA ug/L	METO ug/L	CYAN ug/L	ACET ug/L	NH3 mg/L	NO3/NO2 mg/L	TKN mg/L	TN mg/L	T - P mg/L	T - OP mg/L	TURB NTU	TSS mg/L	CHL ug/L	SECC m	1% m
SM-8	0.1	08/19/98	0945	2.05	<0.05	0.34	0.37		0.04	0.02	0.60	0.66	0.13	0.03	6.6	5.0	18.2		
	0.1	09/09/98	1015	2.22	0.09	0.33	0.37		0.10	0.05	0.60	0.75	0.09	0.03	8.5	8.0	15.8		
	Mean			2.20	0.07	0.34	0.41		0.08	0.12	0.60	0.78	0.09	0.03	7.33	7.67	15.53		
SM-8	0.1	04/12/99	1145	0.84	<0.05	0.15	0.09		U	0.10	0.42	0.52	0.05	0.01	13.0	18.0		0.61	1.22
	0.1	05/18/99	0945	2.04	0.06	0.79	0.13		0.30	0.66	0.69	1.65	0.38	0.05	29.0	20.0	7.4	0.46	1.01
	0.1	06/22/99	0930	1.92	<0.05	0.81	0.15		0.14	0.44	0.50	1.08	0.05	0.01	5.7	6.1	11.2	1.01	2.44
	0.1	07/20/99	0900	1.77	0.07	0.76	0.10		U	U	0.58	0.58	0.07	0.02	8.0	11.0	34.5	0.79	1.83
	0.1	08/26/99	1100	1.11	0.26	0.81	0.09		U	0.04	0.30	0.34	0.03	0.01	7.4	7.8	9.5	0.88	1.98
	0.1	09/16/99	1000	1.61	0.08	1.01	0.12		U	U	0.60	0.60	0.04	U	8.0	9.6	1.7	0.76	1.98
	Mean			1.55	0.12	0.72	0.11		0.22	0.31	0.52	0.80	0.10	0.02	11.85	12.08	12.86	0.75	1.74
SM-8	0.1	04/25/00	1045	1.07	0.25	0.40	0.11		U	U	0.55	0.55	0.09	0.01	7.0	6.6	1	1.07	2.83
	0.1	05/23/00	1000	1.25	0.06	0.30	<0.04		U	U	0.34	0.34	0.05	U	7.5	8.4	4.6	0.91	2.38
	0.1	06/20/00	1330	1.67	<0.05	0.44	0.13		U	U	1.00	1.00	0.19	U	11.0	12.0	21.5	0.61	1.55
	0.1	07/25/00	1400	1.27	<0.05	0.29	0.10	0.12	U	U	0.48	0.48	0.19	U	10.0	11.0	17.8	0.82	1.83
	0.1	08/22/00	1000	1.22	<0.05	0.32	0.08		U	U	0.80	0.80	0.04	U	7.1	7.0	15.1	0.85	1.79
	0.1	09/19/00	1000	1.23	<0.05	0.21	0.10		U	U	0.50	0.50	0.05	U	11.5	12.5	15.2	0.7	1.71
Mean			1.29	0.16	0.33	0.10				0.61	0.61	0.10	0.01	9.02	9.58	12.53	0.83	2.02	
SM-8	7.0	04/22/97	1207	2.30	0.13	0.42	0.69		0.10	0.34	0.70	1.14	0.03	0.01	25.0	12.0			
	7.0	05/20/97	1127	2.78	0.12	0.89	0.47		0.25	0.21	0.90	1.36	0.03	0.01	22.0	17.0			
	7.5	06/17/97	1101	3.35	0.15	0.92	0.56		0.46	0.14	1.60	2.20	0.42	0.04	34.0	36.0			
	7.0	07/15/97	1217	3.27	0.11	0.78	0.56		0.08	0.05	0.70	0.83	0.08	0.02	15.0	16.0			
	7.0	08/13/97	1049	3.24	0.13	0.63	0.57		0.06	0.01	1.20	1.27	0.25	0.02	13.0	19.0			
Mean			2.99	0.13	0.73	0.57		0.19	0.15	1.02	1.36	0.16	0.02	21.80	20.00				
SM-8	7.0	04/23/98	1007	2.53	0.13	0.19	0.42		0.15	0.30	0.80	1.25	0.11	0.03	80.0	116.0			
	8.0	05/21/98	0958	2.39	<0.05	0.53	0.51		0.48	0.15	1.20	1.83	0.18	0.02	23.0	29.0			
	8.0	06/16/98	1008	2.18	0.09	0.49	0.44		0.09	0.13	0.90	1.12	0.08	0.03	55.0	80.0			
	7.5	07/22/98	1053	2.08	<0.05	0.33	0.39		0.87	0.04	1.20	2.11	0.12	0.09	65.0	72.0			
	7.0	08/19/98	0952	1.90	<0.05	0.29	0.33		0.23	0.03	0.60	0.86	0.16	0.03	28.0	29.0			
	7.5	09/09/98	1023	2.12	0.08	0.30	0.36		0.09	0.07	0.60	0.76	0.10	0.03	19.0	21.0			
Mean			2.20	0.10	0.36	0.41		0.32	0.12	0.88	1.32	0.13	0.04	45.00	57.83				
SM-8	7.0	04/12/99	1152	0.80	<0.05	0.13	0.10		U	0.59	0.11	0.70	0.11	0.02	37.0	56.0			
	8.0	05/18/99	0953	2.30	0.06	0.82	0.14		0.41	0.68	0.89	1.98	0.40	0.06	67.0	50.0			
	7.0	06/22/99	0937	2.00	0.07	0.87	0.15		0.18	0.58	0.61	1.37	0.07	0.02	26.0	27.0			
	7.0	07/20/99	0907	1.50	0.06	0.72	0.10		0.39	U	1.15	1.54	0.15	0.03	44.0	50.0			
	6.5	08/26/99	1107	1.59	<0.05	0.83	0.12		0.10	0.05	0.35	0.50	0.05	U	21.0	19.0			
	6.5	09/16/99	1007	1.56	<0.05	0.91	0.07		U	U	0.67	0.67	0.06	U	21.0	27.0			
Mean			1.63	0.06	0.71	0.11		0.27	0.48	0.63	1.13	0.14	0.03	36.00	38.17				
SM-8	6.0	04/25/00	1051	0.83	0.22	0.31	0.12		U	U	0.57	0.57	0.07	U	10.0	10.0			
	6.0	05/23/00	1006	0.65	<0.05	<0.05	<0.04		0.04	U	0.64	0.68	0.08	U	27.0	30.0			
	6.5	06/20/00	1337	1.67	<0.05	0.37	0.06		0.06	U	0.63	0.69	0.07	U	20.0	24.0			
	7.0	07/25/00	1407	1.26	<0.05	0.28	0.10	0.15	0.04	U	0.22	0.26	0.10	U	19.0	20.0			

STAT	DEPTH m	DATE mm/dd/yy	TIME hhmm	ATZ ug/L	ALA ug/L	METO ug/L	CYAN ug/L	ACET ug/L	NH3 mg/L	NO3/NO2 mg/L	TKN mg/L	TN mg/L	T - P mg/L	T - OP mg/L	TURB NTU	TSS mg/L	CHL ug/L	SECC m	1% m
SM-8	7.0	08/22/00	1007	0.96	<0.05	0.23	0.08		U	0.07	0.99	1.06	0.11	0.02	41.0	37.0			
	7.0	09/19/00	1007	1.32	<0.05	0.24	0.12		U	U	0.50	0.50	0.05	U	16.5	22.5			
	Mean			1.12	0.22	0.29	0.10		0.05	0.07	0.59	0.63	0.08	0.02	22.25	23.92			
SM-14	0.1	04/22/97	1345	10.66	0.24	6.26	1.85		0.44	2.41	2.10	4.95	0.25	0.12	90.0	52.0	19.9		
	0.1	05/20/97	0905	22.90	<0.10	3.50	<0.10		0.10	1.29	1.10	2.49	0.08	0.05	33.0	17.0	12.2		
	0.1	06/17/97	0930	5.68	0.14	1.53	<0.10		<0.02	0.10	0.80	0.90	0.51	0.03	9.2	10.0	30.8		
	0.1	07/15/97	1406	4.80	0.12	.10K	0.69		<0.02	0.03	0.80	0.83	0.09	0.02	6.7	9.0	2.5		
	0.1	08/13/97	1224	3.54	<0.05	0.82	3.00		0.03	0.01	1.20	1.24	0.33	0.03	13.0	17.0	30.4		
Mean			9.52	0.17	3.03	1.85		0.19	0.77	1.20	2.08	0.25	0.05	30.38	21.00	19.16			
SM-14	0.1	04/23/98	1100	0.86	0.10	0.14	0.13		0.06	1.40	0.80	2.26	0.11	0.05	33.0	27.0	19.5		
	0.1	05/21/98	1100	2.21	0.11	0.36	0.45		0.03	0.10	1.20	1.33	0.29	0.02	9.0	12.0	40.3		
	0.1	06/16/98	1100	3.65	0.14	2.48	0.84		0.50	0.20	1.00	1.70	0.23	0.03	12.0	14.0	24.9		
	0.1	07/22/98	1145	3.03	0.13	2.07	0.55		<0.02	0.03	0.60	0.63	0.12	0.03	12.0	12.0	20.4		
	0.1	08/19/98	1045	2.41	0.08	0.96	0.38		0.08	0.03	0.50	0.61	0.10	0.03	7.9	8.0	23.3		
	0.1	09/09/98	1130	2.30	0.12	0.73	0.33		0.05	0.09	0.90	1.04	0.04	0.04	16.0	15.0	27.6		
Mean			2.41	0.11	1.12	0.45		0.14	0.31	0.83	1.26	0.15	0.03	14.98	14.67	26.00			
SM-14	0.1	04/12/99	1330	0.40	<0.05	0.08	0.05		0.04	0.43	0.45	0.92	0.07	0.03	9.0	12.0		0.76	1.71
	0.1	05/18/99	1045	15.10	0.18	3.18	0.27		0.44	2.71	1.05	4.20	0.46	0.10	44.0	16.0	7.2	0.3	0.61
	0.1	06/22/99	1030	1.38	0.12	2.65	0.12		0.12	1.54	0.65	2.31	0.06	0.02	11.0	8.0	17.6	0.73	1.55
	0.1	07/20/99	1000	1.79	0.11	1.95	0.10		U	0.57	0.84	1.41	0.08	0.02	8.3	11.0	17.7	0.91	2.13
	0.1	08/26/99	1300	1.54	<0.05	1.82	0.11		U	0.07	0.42	0.49	0.07	0.02	10.0	11.0	22.4	0.7	1.58
	0.1	09/16/99	1200	1.72	0.09	1.35	0.11		U	U	0.69	0.69	0.06	U	11.0	13.0	16.7	0.73	1.89
Mean			3.66	0.13	1.84	0.13		0.20	1.06	0.68	1.67	0.13	0.04	15.55	11.83	16.32	0.69	1.58	
SM-14	0.1	04/25/00	1145	1.07	0.26	0.36	<0.04		U	U	0.80	0.80	0.09	U	8.0	8.6	2.5	0.91	1.83
	0.1	05/23/00	1200	0.94	<0.05	0.45	<0.04		0.04	U	0.77	0.81	0.07	U	13.0	14.0	2.9	0.64	1.83
	0.1	06/20/00	1430	2.30	0.09	0.75	<0.04		0.03	U	0.90	0.93	0.10	U	17.0	18.0	20.2	0.7	
	0.1	07/25/00	1530	1.43	0.05	0.44	0.11	0.06	U	U	0.33	0.33	0.21	0.01	17.0	16.0	17.4	0.64	1.28
	0.1	08/22/00	1200	1.23	<0.05	0.35	0.10		U	U	0.84	0.84	0.07	U	8.7	9.4	17.6	0.76	1.52
	0.1	09/19/00	1115	1.28	<0.05	0.24	0.10		U	U	0.70	0.70	0.07	U	17.5	20.7	9.1		1.16
Mean			1.38	0.13	0.43	0.10		0.04		0.72	0.74	0.10	0.01	13.53	14.45	11.62	0.73	1.52	
SM-14	9.0	04/22/97	1354	7.06	0.26	4.24	1.10		0.35	1.52	1.20	3.07	0.15	0.06	54.0	22.0			
	9.0	05/20/97	0914	5.56	0.23	2.71	0.94		0.39	0.96	1.50	2.85	0.17	0.09	140.0	136.0			
	8.0	06/17/97	0938	6.72	0.17	1.75	0.86		0.39	0.28	1.30	1.97	0.51	0.06	39.0	41.0			
	8.5	07/15/97	1415	4.38	0.24	1.14	0.71		0.75	0.04	1.80	2.59	0.25	0.15	56.0	60.0			
	7.5	08/13/97	1232	3.50	0.09	0.61	0.63		0.11	0.01	1.30	1.42	0.36	0.03	26.0	36.0			
Mean			5.44	0.20	2.09	0.85		0.40	0.56	1.42	2.38	0.29	0.08	63.00	59.00				
SM-14	9.0	04/23/98	1109	1.77	0.07	0.14	0.27		0.26	0.91	0.60	1.77	0.09	0.05	38.0	32.0			
	9.0	05/21/98	1109	1.66	<0.05	0.28	0.32		0.92	1.07	1.60	3.59	0.16	0.05	33.0	40.0			
	9.0	06/16/98	1109	12.80	0.74	11.70	1.19		0.31	2.07	2.00	4.38	0.34	0.06	250.0	134.0			
	8.0	07/22/98	1153	3.64	0.36	3.37	0.61		0.92	0.04	1.40	2.36	0.28	0.19	68.0	76.0			
	8.5	08/19/98	1054	2.01	0.12	1.24	0.28		0.14	0.03	1.00	1.17	0.34	0.16	70.0	70.0			
	9.0	09/09/98	1139	1.15	0.07	0.50	0.14		1.02	0.16	1.90	3.08	0.47	0.31	70.0	58.0			
Mean			3.84	0.27	2.87	0.47		0.60	0.71	1.42	2.73	0.28	0.14	88.17	68.33				
SM-14	8.0	04/12/99	1338	0.39	<0.05	0.10	<0.04		0.18	0.46	0.69	1.33	0.09	0.04	26.0	34.0			
	9.0	05/18/99	1054	18.10	0.18	3.07	0.31		0.79	2.43	1.58	4.80	0.60	0.09	181.0	160.0			

STAT	DEPTH m	DATE mm/dd/yy	TIME hhmm	ATZ ug/L	ALA ug/L	METO ug/L	CYAN ug/L	ACET ug/L	NH3 mg/L	NO3/NO2 mg/L	TKN mg/L	TN mg/L	T - P mg/L	T - OP mg/L	TURB NTU	TSS mg/L	CHL ug/L	SECC m	1% m
SM-14	9.0	06/22/99	1039	1.38	0.18	3.80	0.12		0.25	2.23	0.84	3.32	0.13	0.02	40.0	33.0			
	8.0	07/20/99	1008	2.13	0.13	2.94	0.12		0.28	0.92	0.87	2.07	0.18	0.06	30.0	28.0			
SM-14	8.0	08/26/99	1308	1.77	0.07	0.98	0.10		0.15	0.03	0.53	0.71	0.08	0.03	26.0	32.0			
	8.0	09/16/99	1208	1.65	<0.05	1.28	0.10		U	U	0.76	0.76	0.05	0.01	30.0	40.0			
Mean				4.24	0.14	2.03	0.15		0.33	1.21	0.88	2.17	0.19	0.04	55.50	54.50			
SM-14	7.5	04/25/00	1153	0.98	0.53	0.42	0.14		0.10	U	0.85	0.95	0.09	0.02	17.0	17.0			
	7.5	05/23/00	1208	2.02	0.19	0.87	<0.04		0.19	U	1.00	1.19	0.16	0.02	45.0	48.0			
	8.0	06/20/00	1438	2.30	<0.05	1.00	<0.04		0.07	U	0.89	0.96	0.12	U	27.0	32.0			
	6.5	07/25/00	1537	1.37	0.05	0.46	0.09	0.14	0.22	U	0.43	0.65	0.21	0.03	16.0	15.0			
	8.5	08/22/00	1209	1.06	0.07	0.35	0.10		0.17	U	2.00	2.17	0.17	0.05	35.0	41.0			
	8.0	09/19/00	1123	1.30	<0.05	0.31	0.10		U	U	0.70	0.70	0.08	U	30.0	40.5			
Mean				1.51	0.21	0.57	0.11		0.15		0.98	1.10	0.14	0.03	28.33	32.25			
SM-16	0.1	05/21/97	1245	13.84	0.24	3.05	0.95		0.17	0.44	1.70	2.31	0.12	0.02	21.0	38.0			
	0.1	06/17/97	1455	8.54	1.81	17.35	2.51		0.38	3.48	2.70	6.56	0.50	0.17	140.0	102.0			
	0.1	07/15/97	1637	18.50	0.41	4.31	1.68		0.02	0.40	1.40	1.82	0.14	0.02	18.0	36.0			
	0.1	08/13/97	1453	9.60	0.20	2.51	0.86		0.20	0.08	1.80	2.08	0.44	0.04	18.0	27.0			
	Mean			12.62	0.67	6.81	1.50		0.19	1.10	1.90	3.19	0.30	0.06	49.25	50.75			
SM-16	0.1	04/23/98	1330	0.28	0.06	0.07	0.06		0.05	0.97	1.40	2.42	0.20	0.05	26.0	10.0			
	0.1	05/21/98	1330	24.50	0.29	8.10	5.80		0.12	0.16	1.50	1.78	0.12	0.07	21.0	33.0			
	0.1	06/16/98	1345	11.00	0.57	11.50	0.75		0.10	2.62	2.50	5.22	0.55	0.18	500.0	330.0			
	0.1	07/22/98	1430	2.12	0.29	1.66	0.35		0.02	0.05	1.10	1.17	0.09	0.06	16.0	31.0			
	0.1	08/19/98	1315	0.60	0.06	0.51	0.08		0.06	0.16	1.70	1.92	0.66	0.20	35.0	30.0			
	0.1	09/09/98	1445	0.79	0.08	1.22	0.09		0.11	0.60	1.30	2.01	0.48	0.26	38.0	25.0			
Mean			6.55	0.23	3.84	1.19		0.08	0.76	1.58	2.42	0.35	0.14	106.00	76.50				
SM-16	0.1	04/12/99	1600	10.60	0.11	2.94	0.24		0.37	3.18	1.82	5.37	0.27	0.13	39.0	42.0			
	0.1	05/18/99	1300	28.60	0.34	7.00	0.38		0.43	3.15	2.26	5.84	0.80	0.18	225.0	247.0			
	0.1	06/22/99	1300	4.83	0.21	4.19	0.27		0.17	0.98	1.83	2.98	0.17	0.02	18.0	23.0			
	0.1	07/20/99	1200	1.56	0.10	1.09	0.08		0.03	U	1.22	1.25	0.20	0.03	17.0	26.0			
	0.1	08/26/99	1600	1.26	<0.05	0.53	0.09		0.03	U	0.50	0.53	0.09	0.01	16.0	20.0			
	0.1	09/16/99	1430	1.03	<0.05	0.39	0.08		0.07	0.05	0.97	1.09	0.10	0.03	17.0	21.0			
Mean			7.98	0.19	2.69	0.19		0.18	1.84	1.43	2.84	0.27	0.07	55.33	63.17				
SM-16	0.1	04/25/00	1445	30.00	4.26	20.00	0.37		0.38	1.00	2.00	3.38	0.30	0.09	53.0	32.0			
	0.1	05/23/00	1500	34.40	0.47	3.92	0.32		0.08	3.84	3.00	6.92	0.27	U	22.0	24.0			
	0.1	06/20/00	0945	3.64	0.24	2.94	0.08		0.36	2.90	2.00	5.26	0.39	0.25	49.0	43.0			
	0.1	07/25/00	1000	0.74	0.05	0.34	0.05	<0.04	0.02	0.22	0.58	0.82	0.36	0.13	29.0	23.0			
	0.1	08/23/00	0830	0.25	0.08	0.26	<0.04		0.14	0.72	1.00	1.86	0.49	0.32	75.0	48.0			
	0.1	09/20/00	0900	0.63	<0.05	0.27	0.06		0.10	U	1.00	1.10	0.20	0.07	28.2	38.0			
Mean			11.61	1.02	4.62	0.18		0.18	1.74	1.60	3.22	0.34	0.17	42.70	34.67				

Figure 1. Inflow (Sm-16) Total Phosphorus Concentrations, 1997-2000

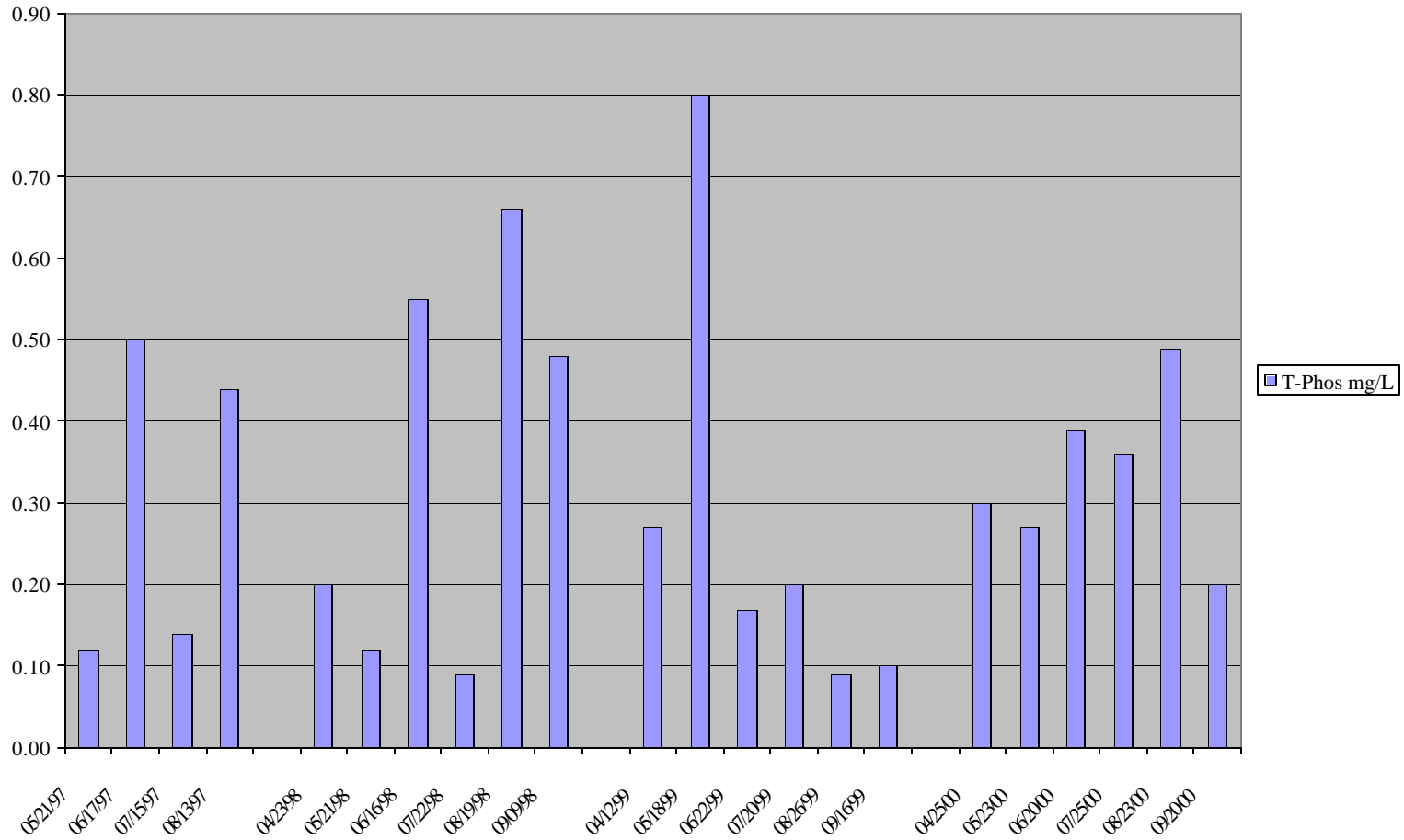


Figure 2. Inflow (Sm-16) Atrazine Concentrations, 1997-2000

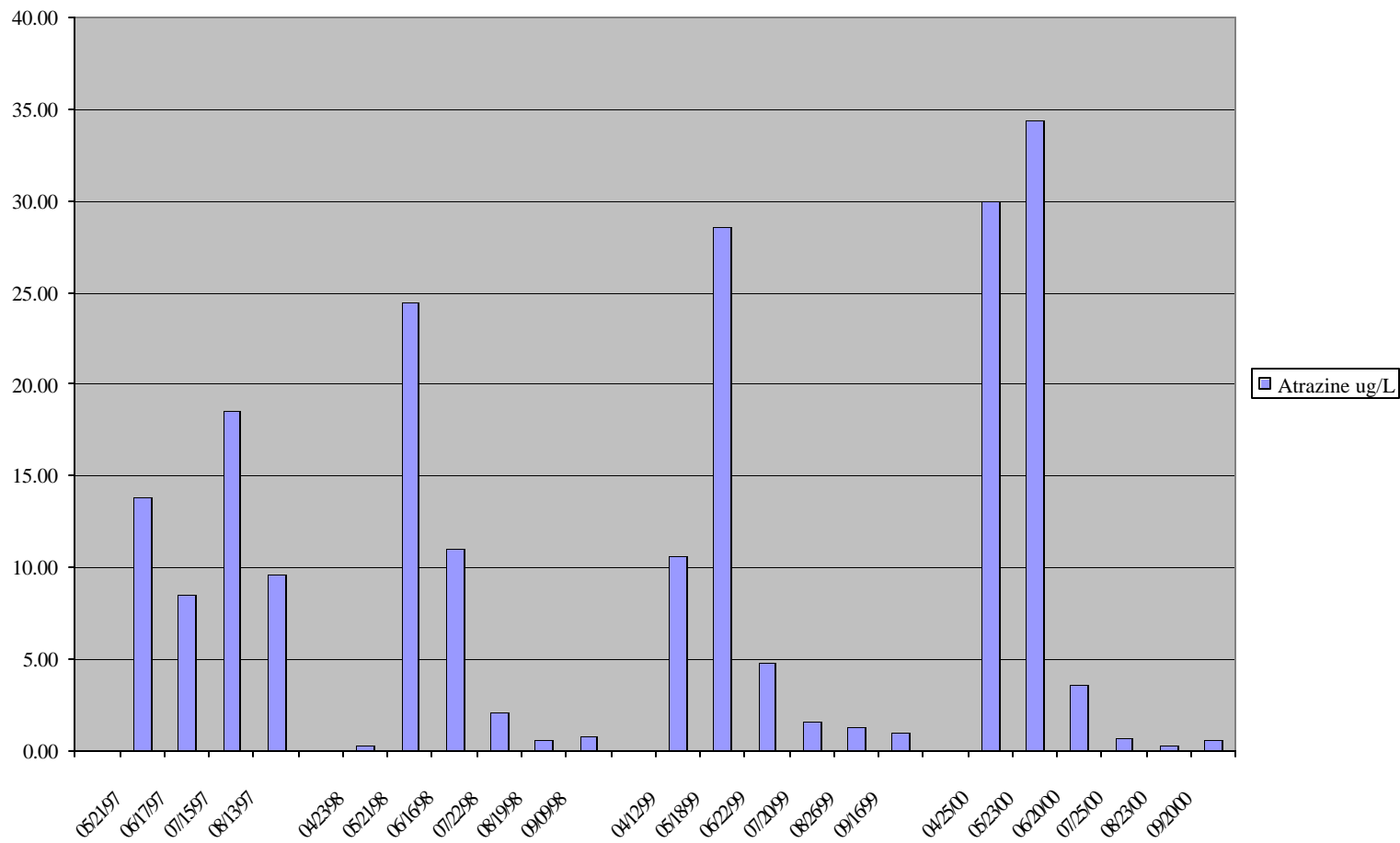


Figure 3. Down Lake (Sm-3) Chlorophyll and Total Nitrogen Concentrations, 1997-2000

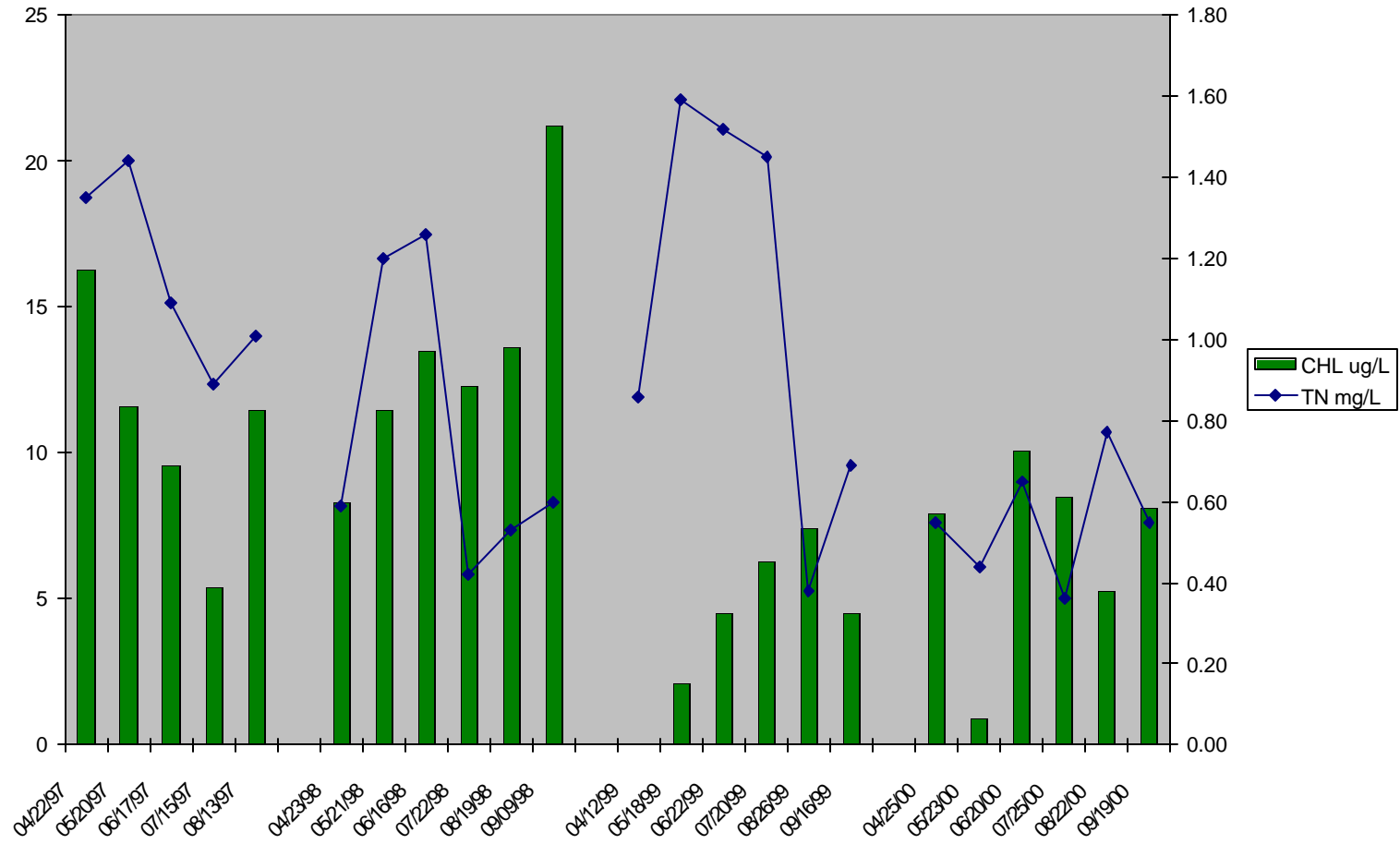


Figure 4. Camp Branch Arm (Sm-8) Chlorophyll and Total Nitrogen Concentrations, 1997-2000

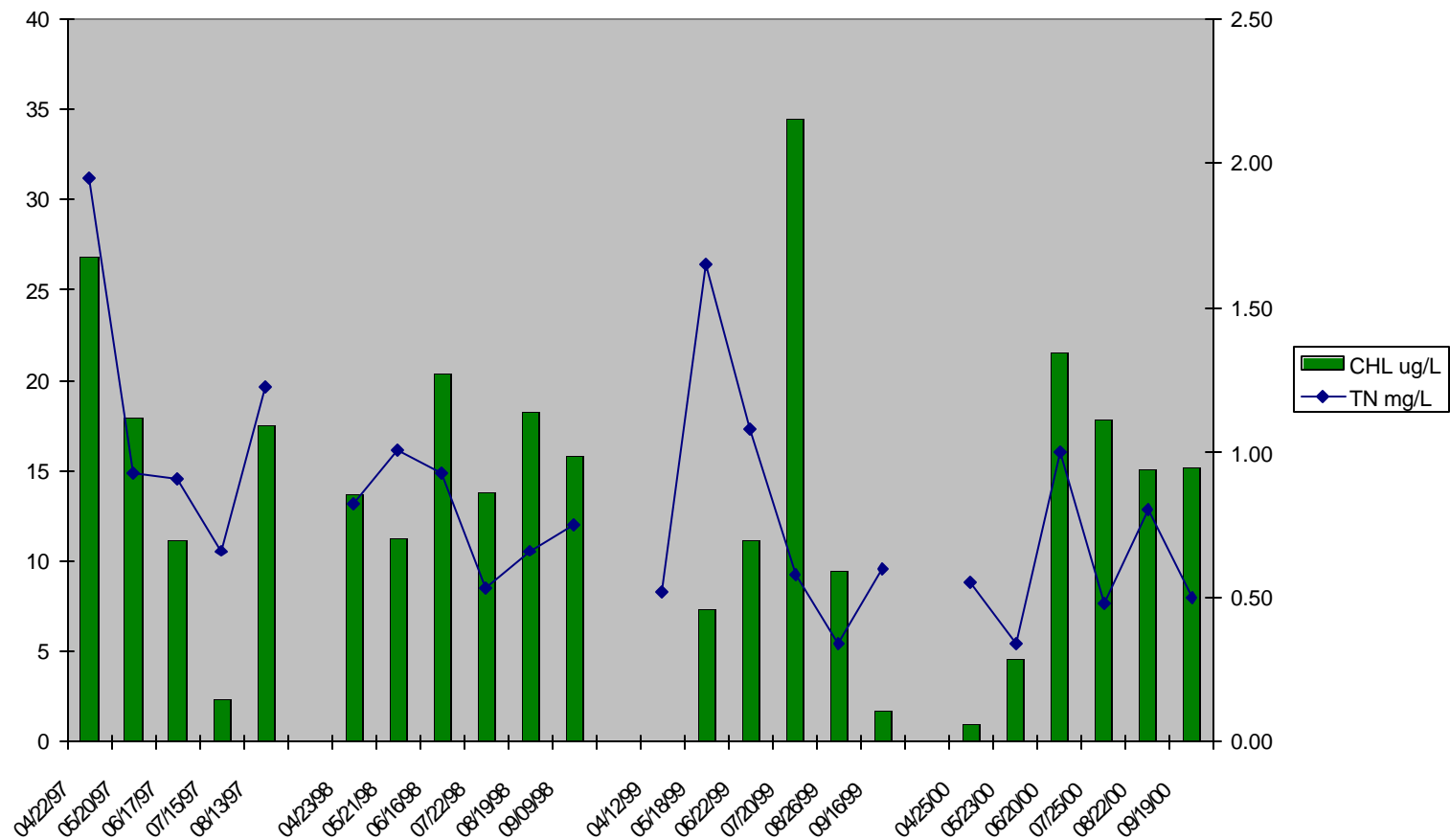


Figure 5. Little Platte Arm (Sm-14) Chlorophyll and Total Nitrogen Concentrations, 1997-2000

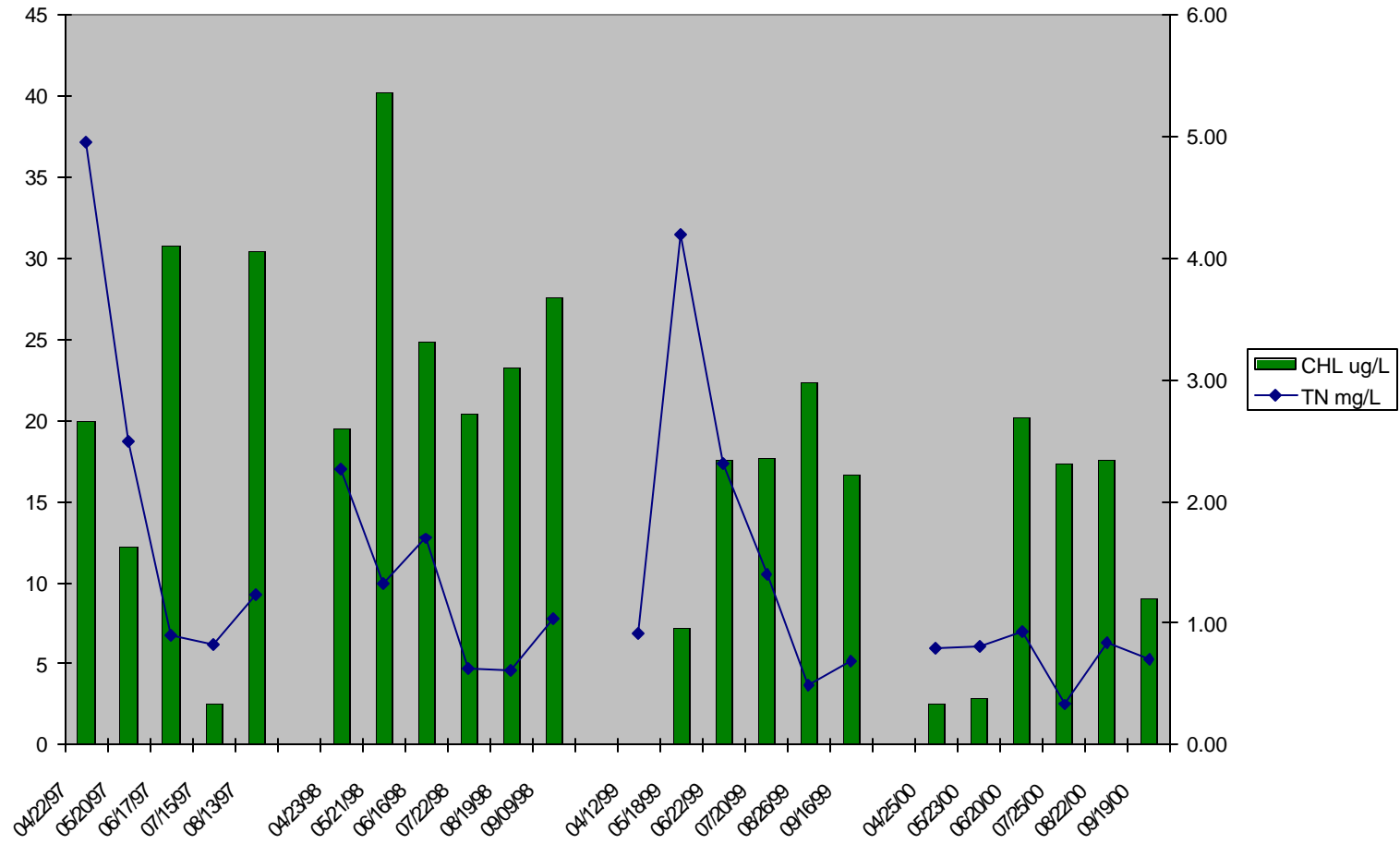


Figure 6. Down Lake (Sm-3) Chlorophyll and Total Phosphorus Concentrations, 1997-2000

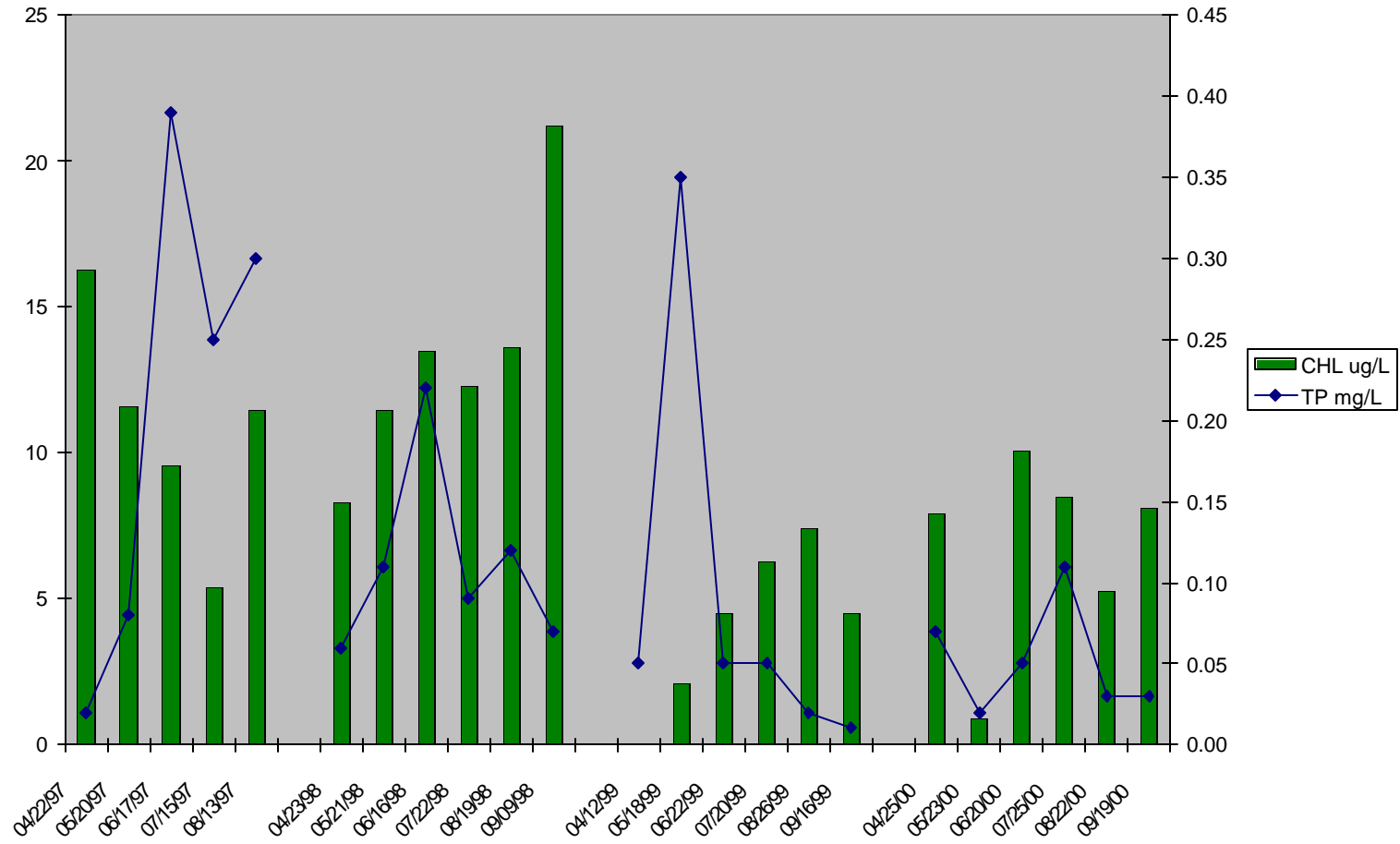


Figure 7. Camp Branch Arm (Sm-8) Chlorophyll and Total Phosphorus Concentrations, 1997-2000

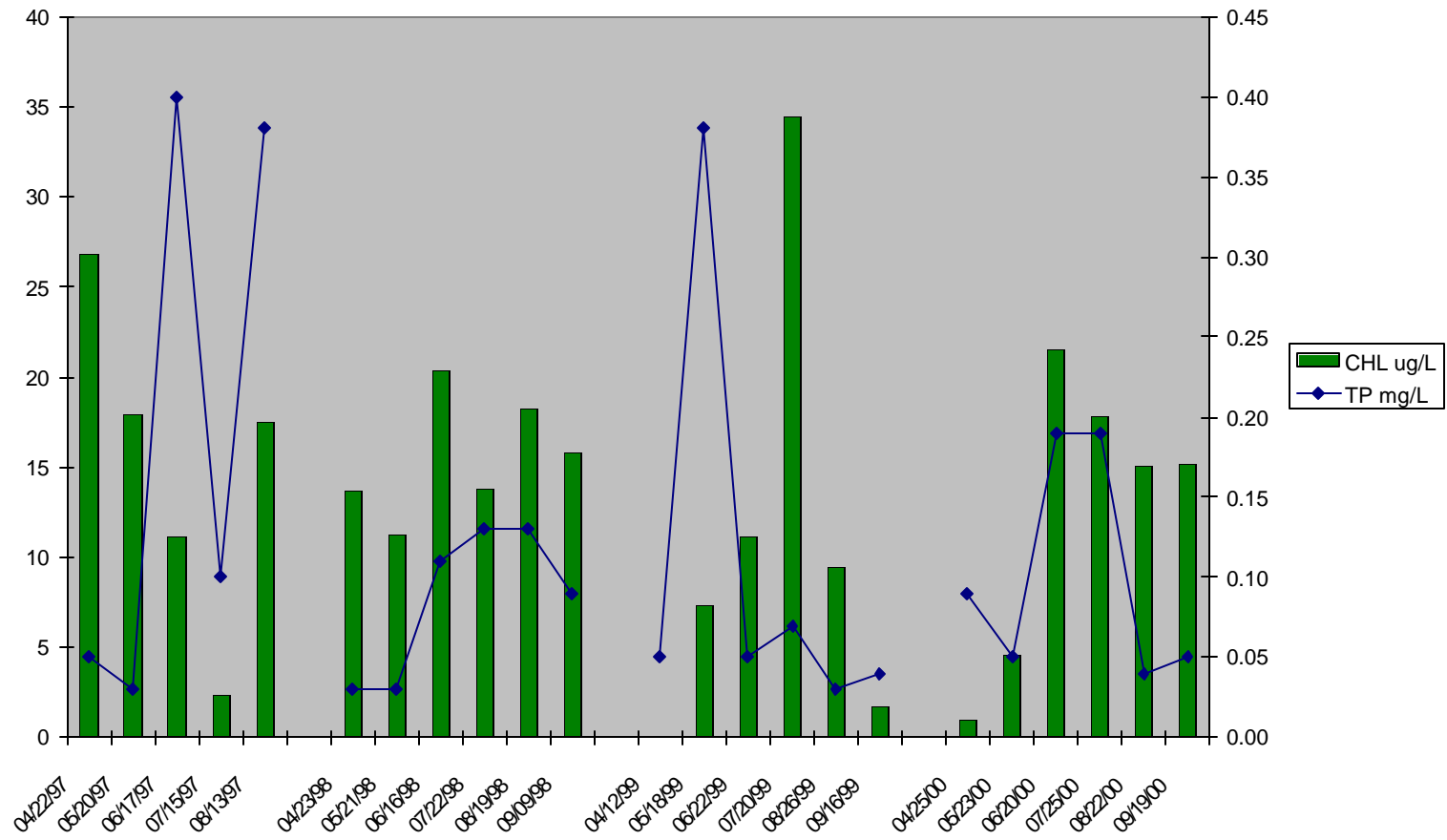


Figure 8. Little Platte Arm (Sm-14) Chlorophyll and Total Phosphorus Concentrations, 1997-2000

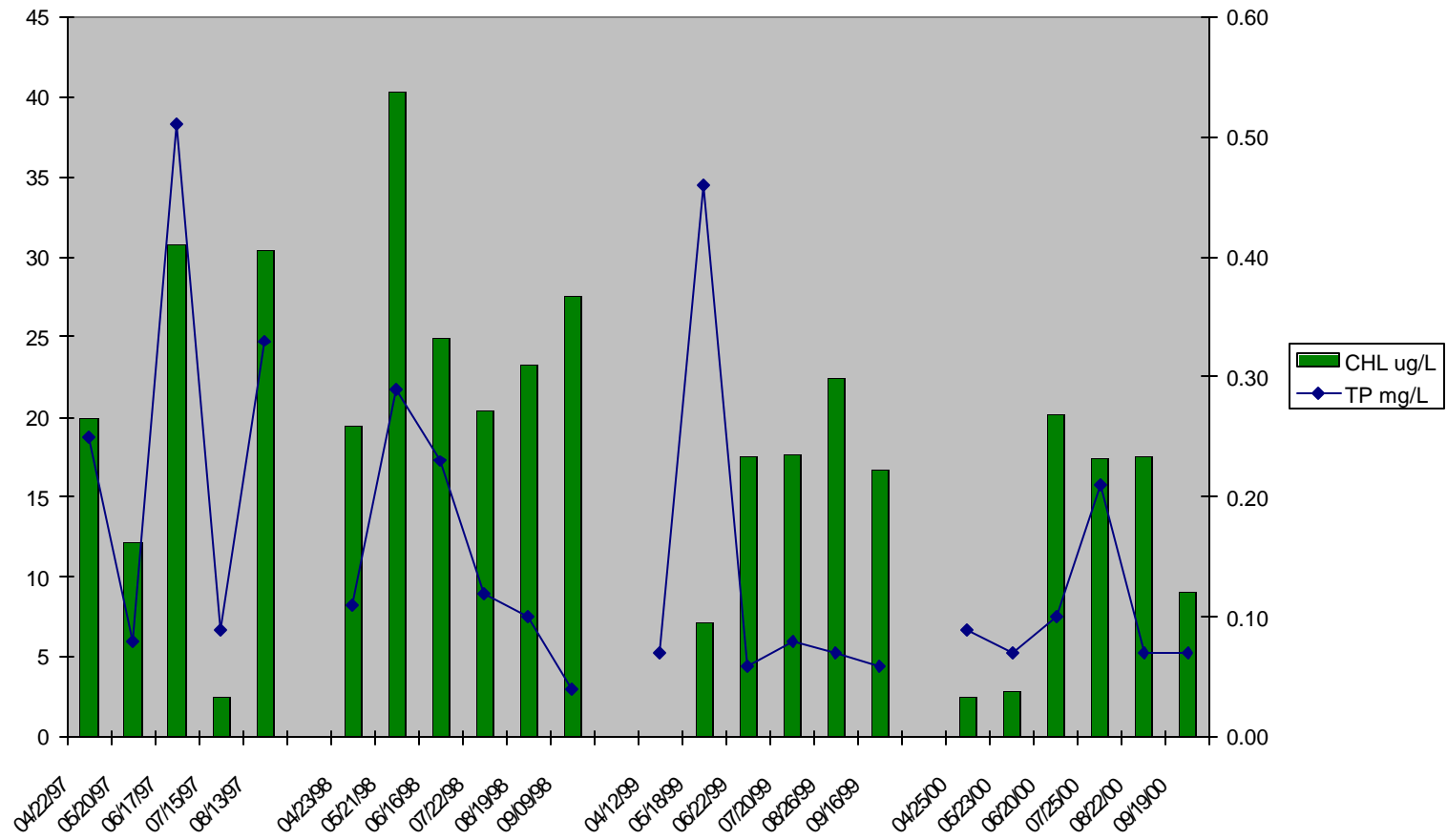


Figure 9. Down Lake (Sm-3) Chlorophyll and Total Suspended Solids Concentrations, 1997-2000

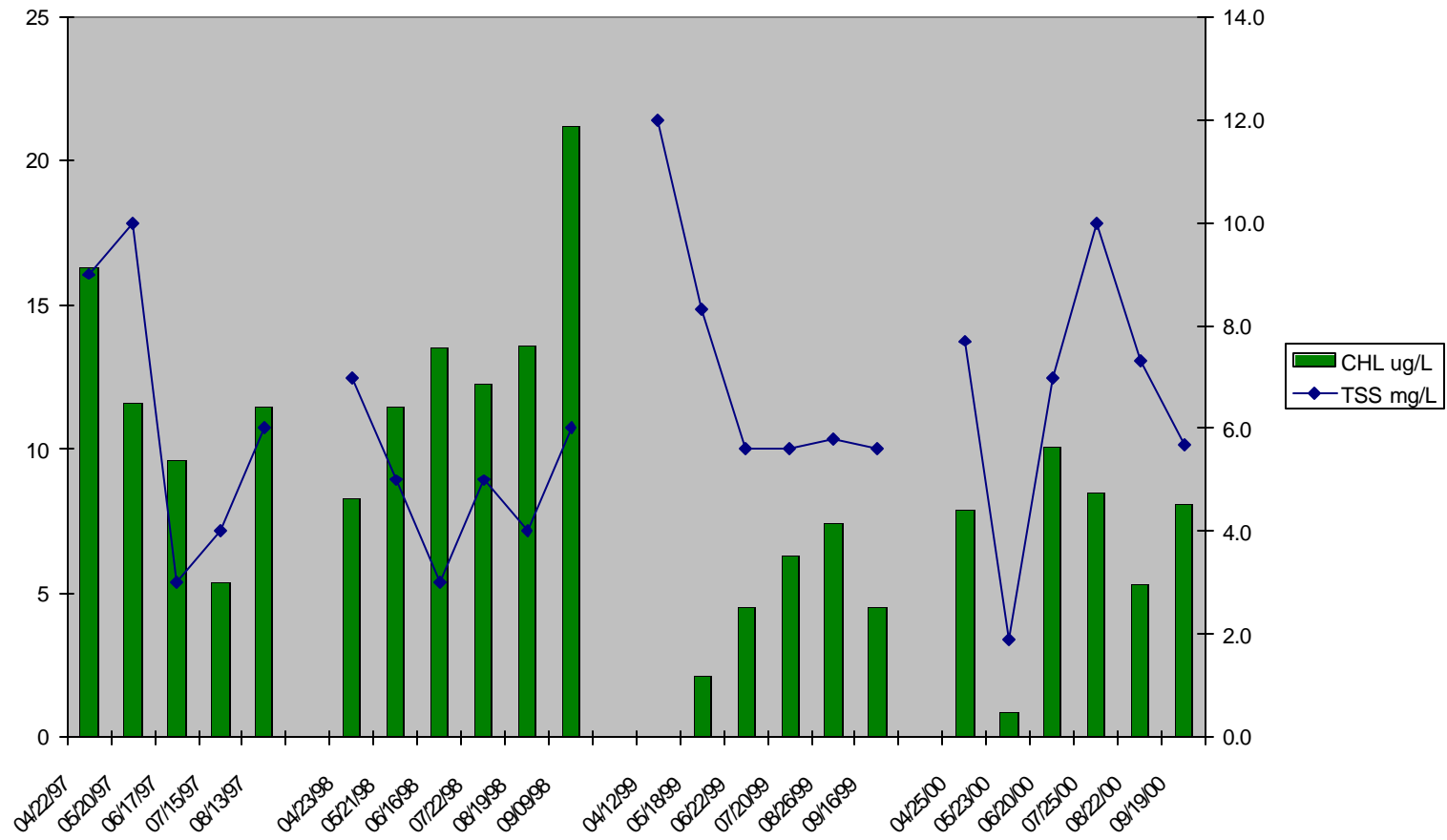


Figure 10. Camp Branch Arm (Sm-8) Chlorophyll and Total Suspended Solids Concentrations, 1997-2000

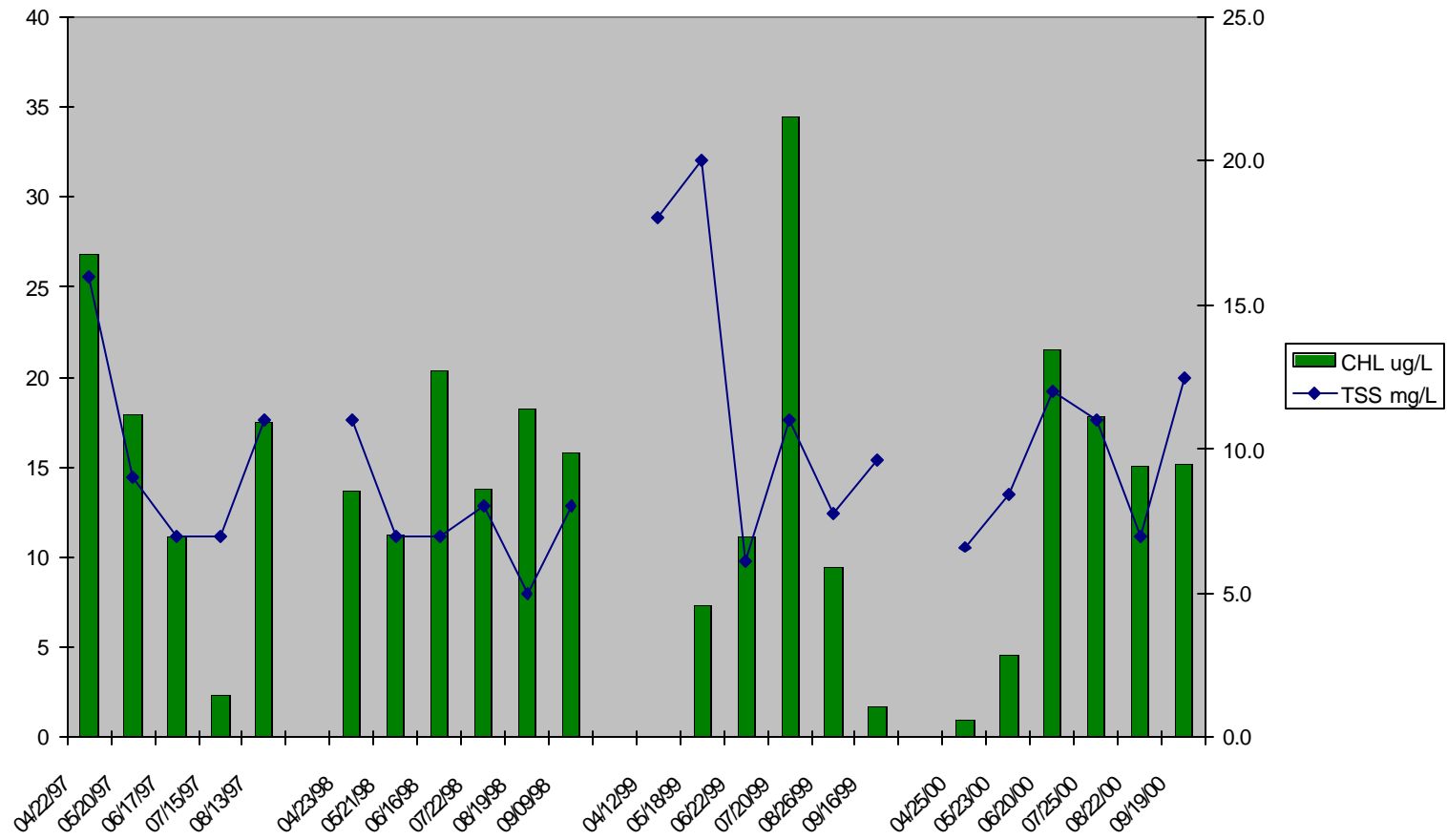


Figure 11. Little Platte Arm (Sm-14) Chlorophyll and Total Suspended Solids Concentrations, 1997-2000

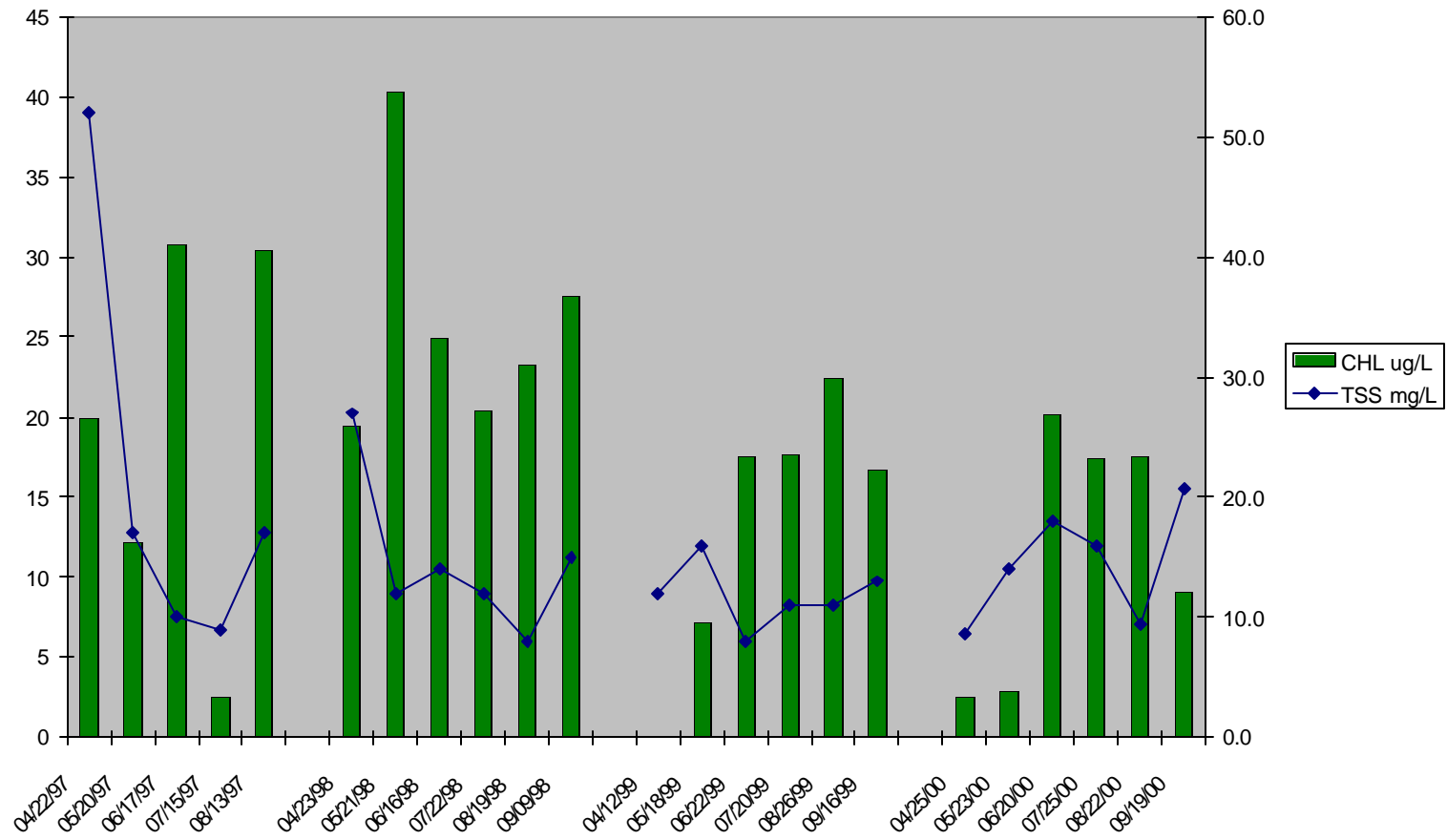


Figure 12. Down Lake (Sm-3) Chlorophyll and Turbidity Concentrations, 1997-2000

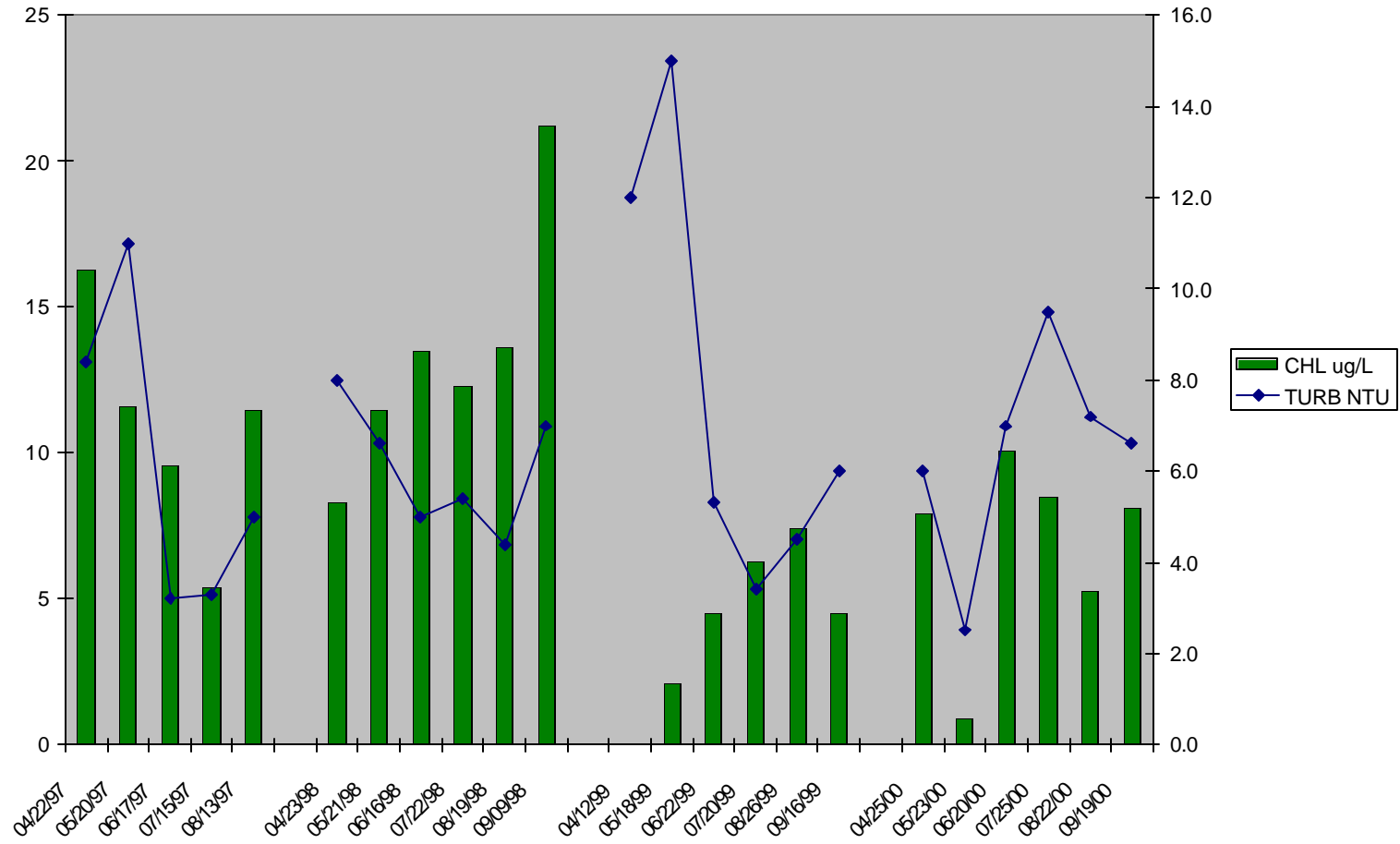


Figure 13. Camp Branch Arm (Sm-8) Chlorophyll and Turbidity Concentrations, 1997-2000

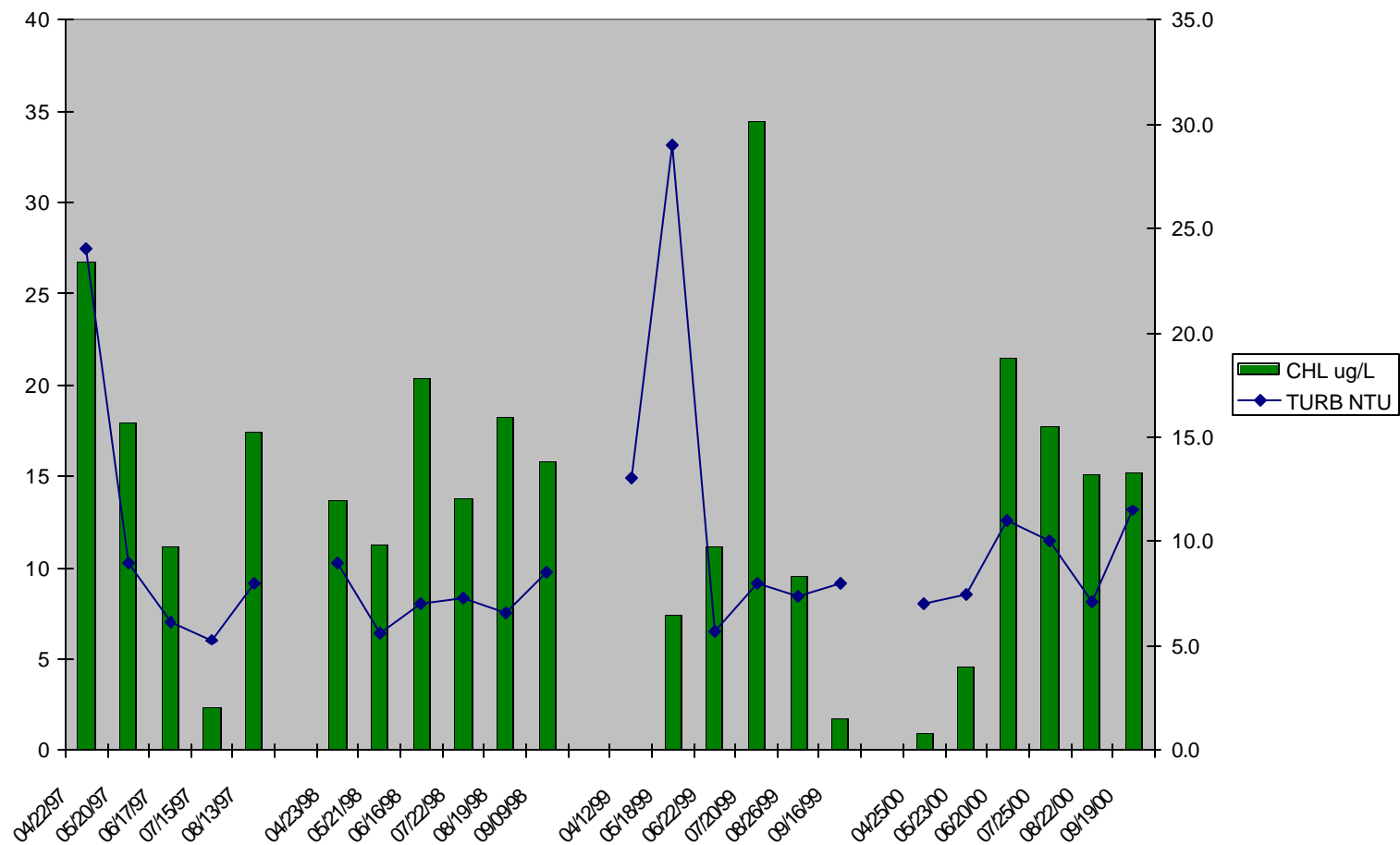


Figure 14. Little Platte Arm (Sm-14) Chlorophyll and Turbidity Concentrations, 1997-2000

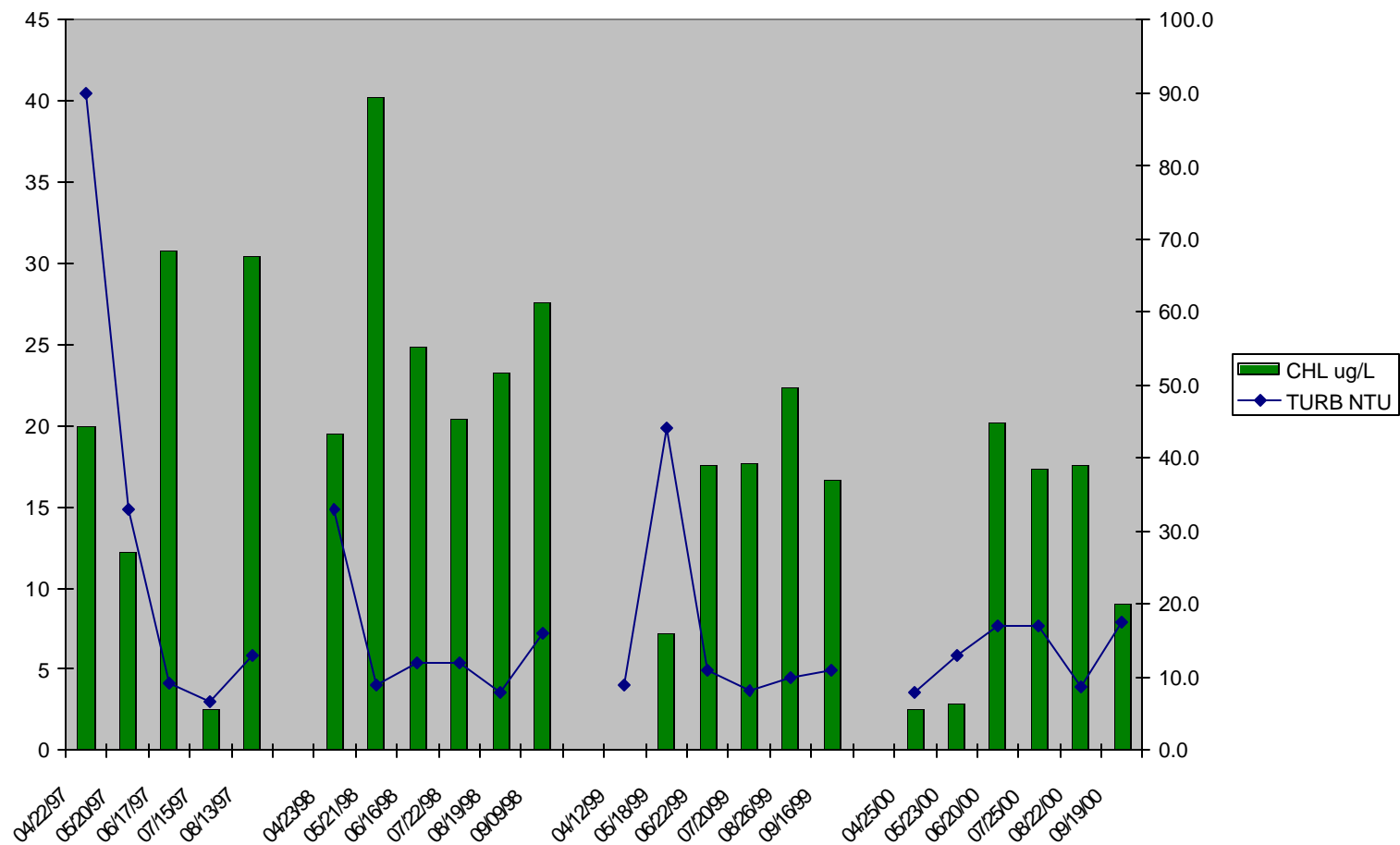


Figure 15. Down Lake (Sm-3) Chlorophyll Concentrations and Secchi Depth, 1997-2000

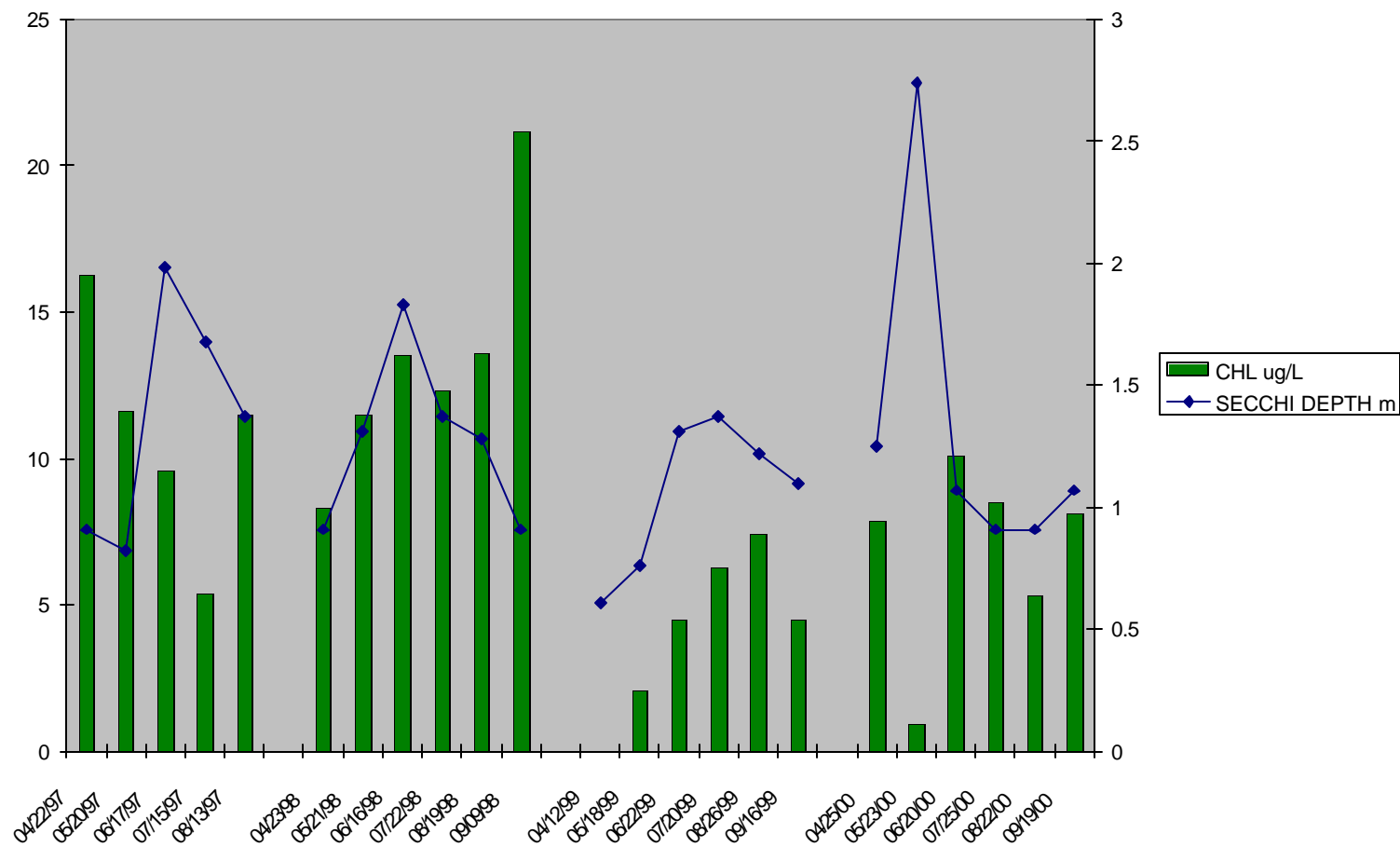


Figure 16. Camp Branch Arm (Sm-8) Chlorophyll Concentrations and Secchi Depth, 1997-2000

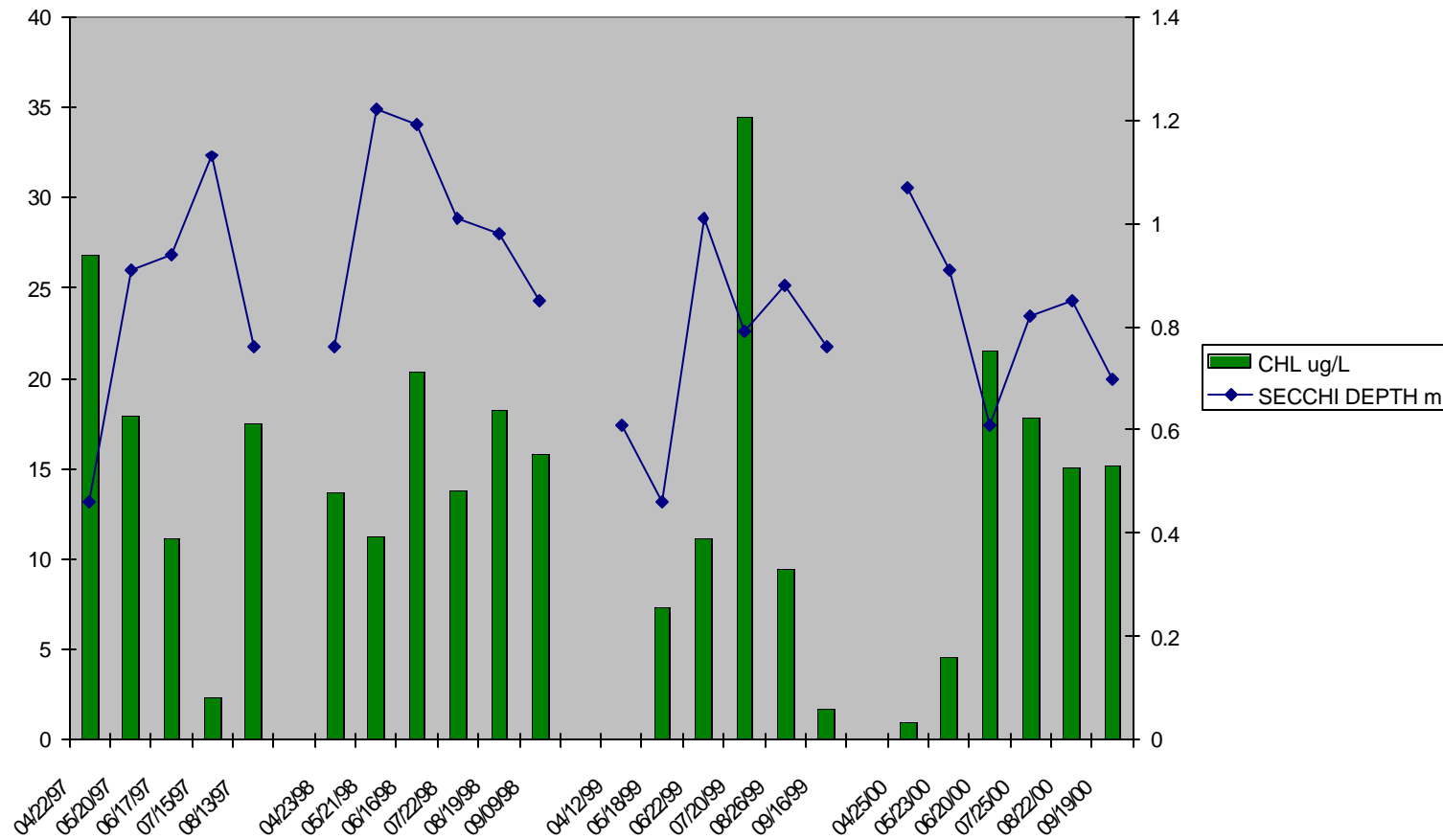


Figure 17. Little Platte Arm (Sm-14) Chlorophyll Concentrations and Secchi Depth, 1997-2000

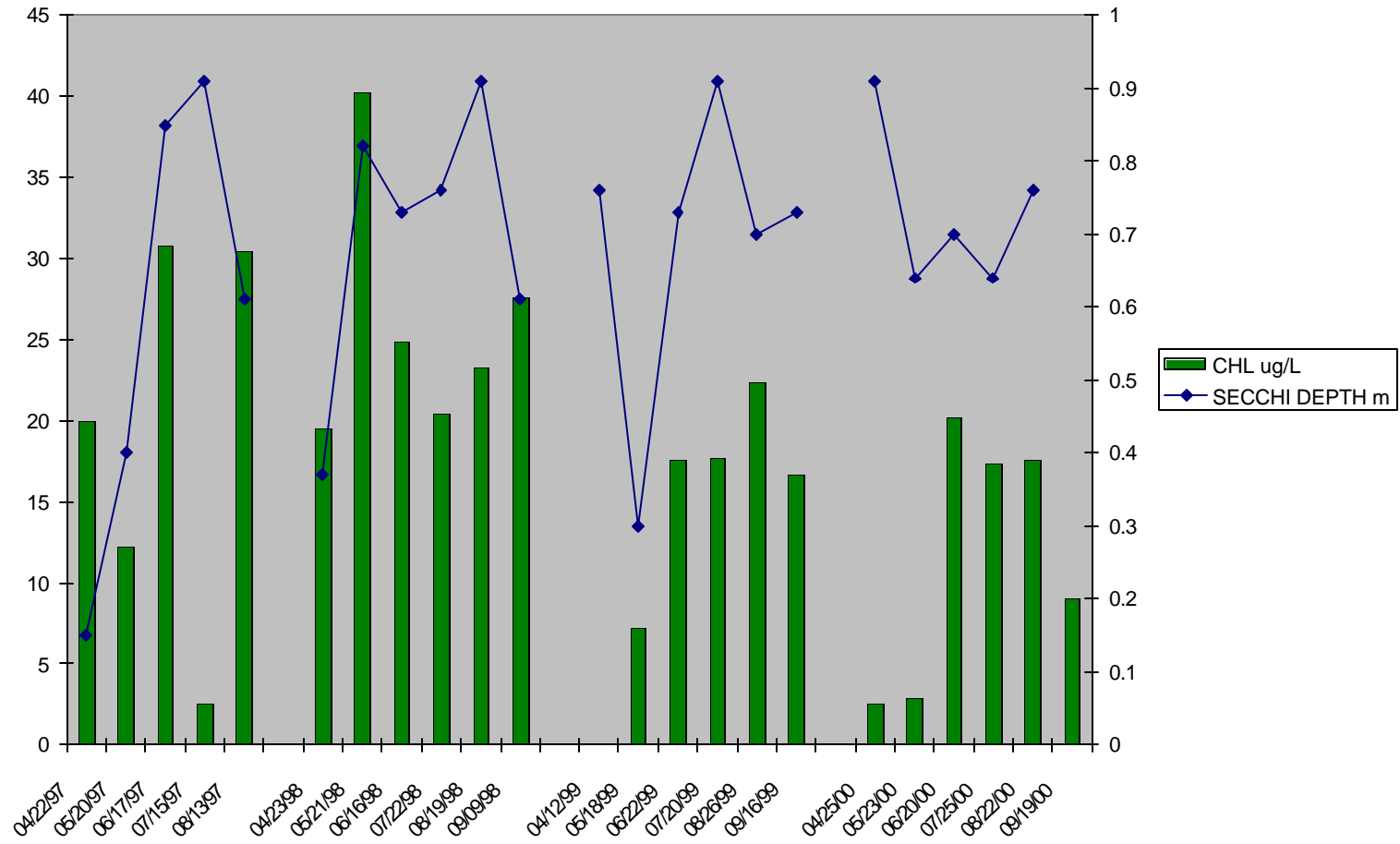


Figure 18. Down Lake (Sm-3) Chlorophyll Concentrations and Photic Zone Depths, 1997-2000

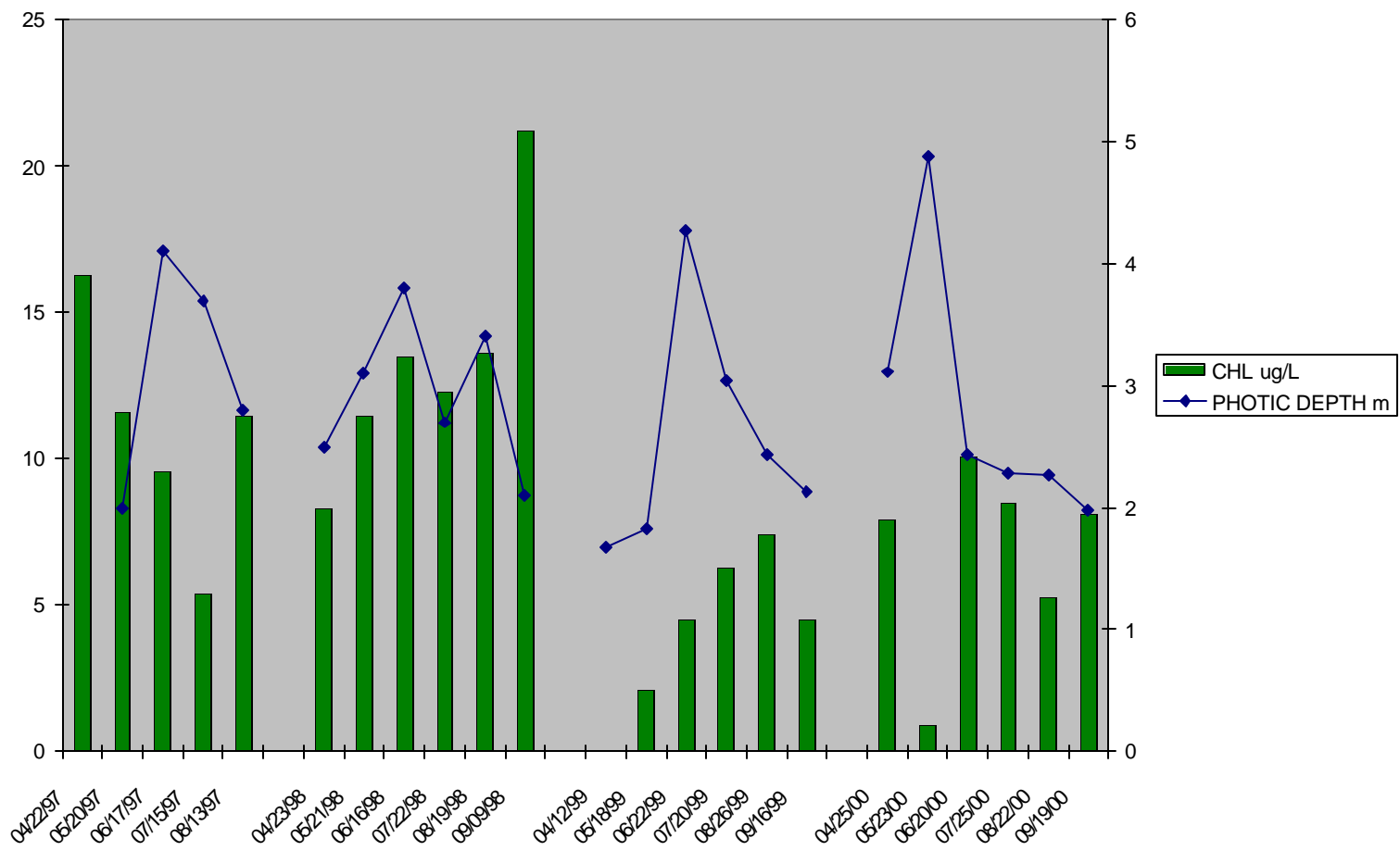


Figure 19. Camp Branch Arm (Sm-8) Chlorophyll Concentrations and Photic Zone Depths, 1997-2000

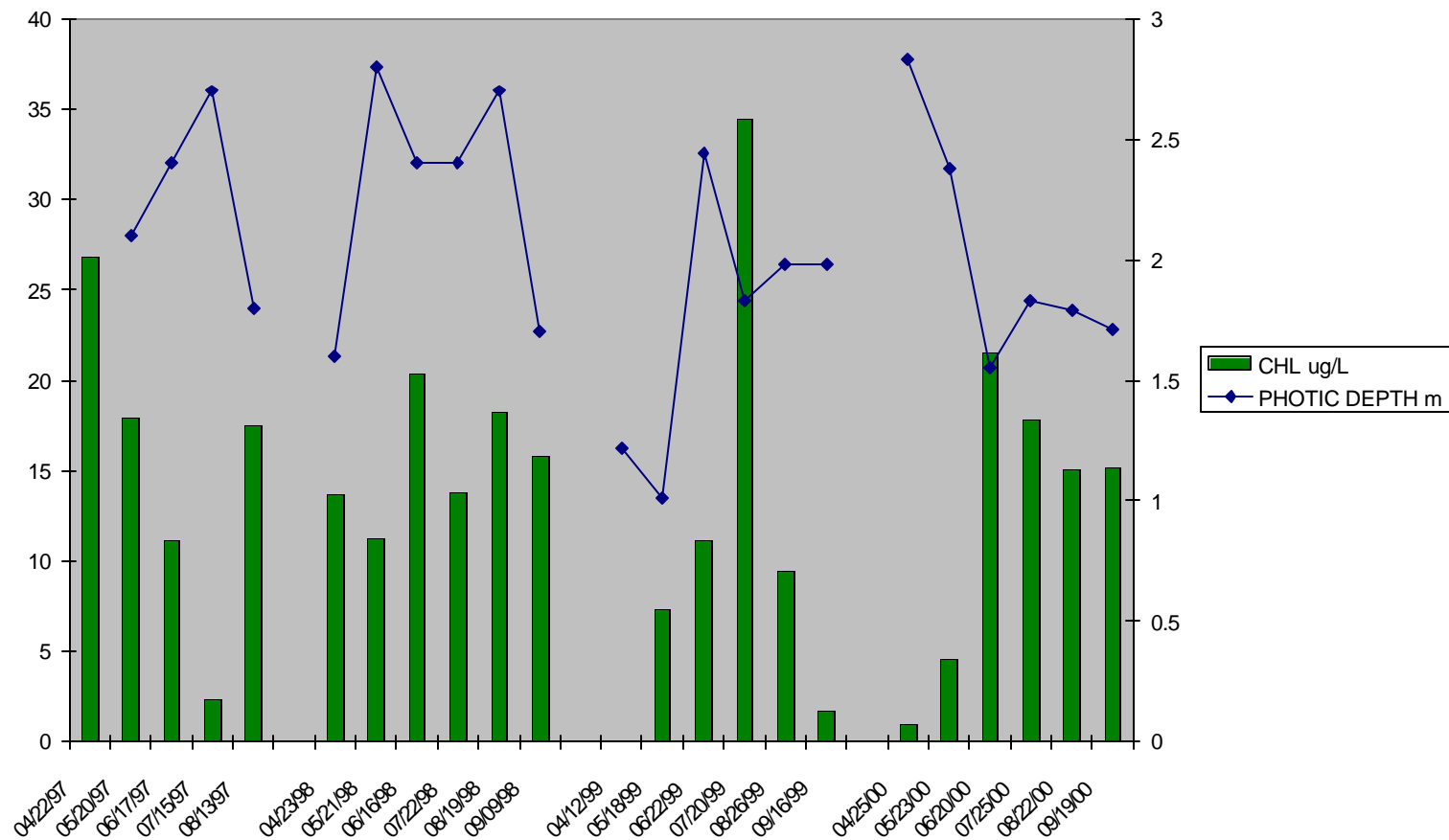


Figure 20. Little Platte Arm (Sm-14) Chlorophyll Concentrations and Photic Zone Depths, 1997-2000

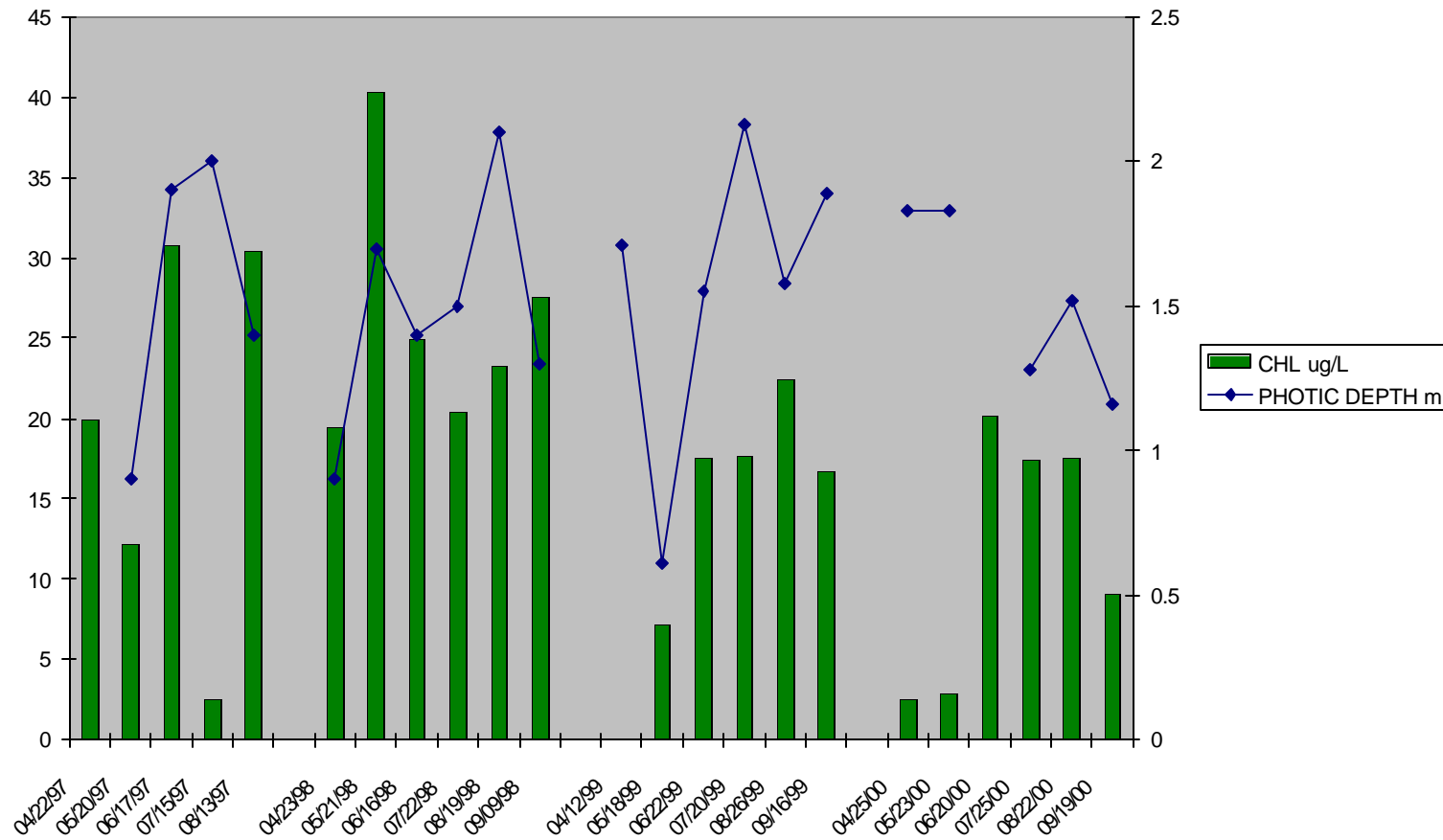


Figure 21. Down Lake (Sm-3) Atrazine Concentrations, 1997-2000

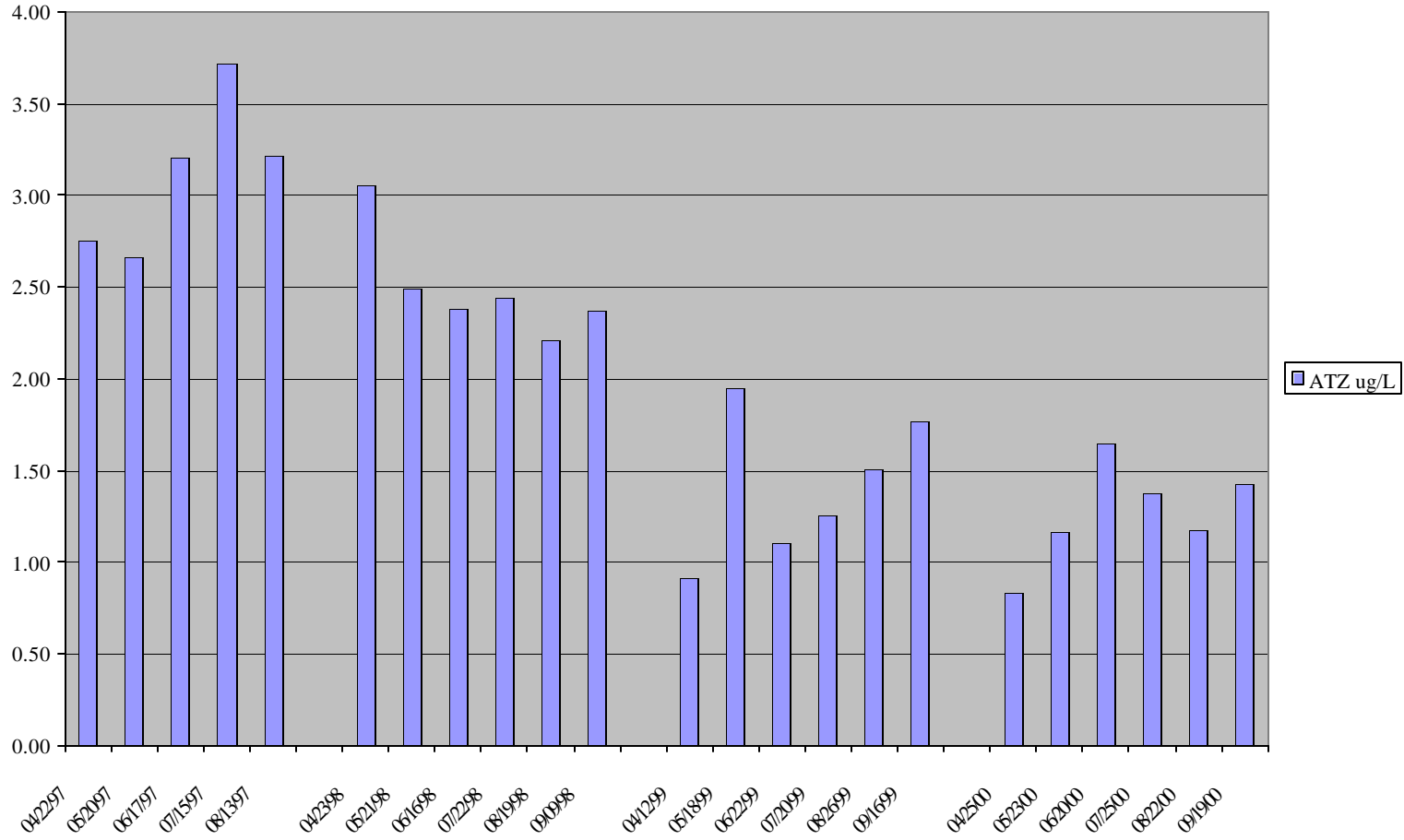


Figure 22. Camp Branch Arm (Sm-8) Atrazine Concentrations, 1997-2000

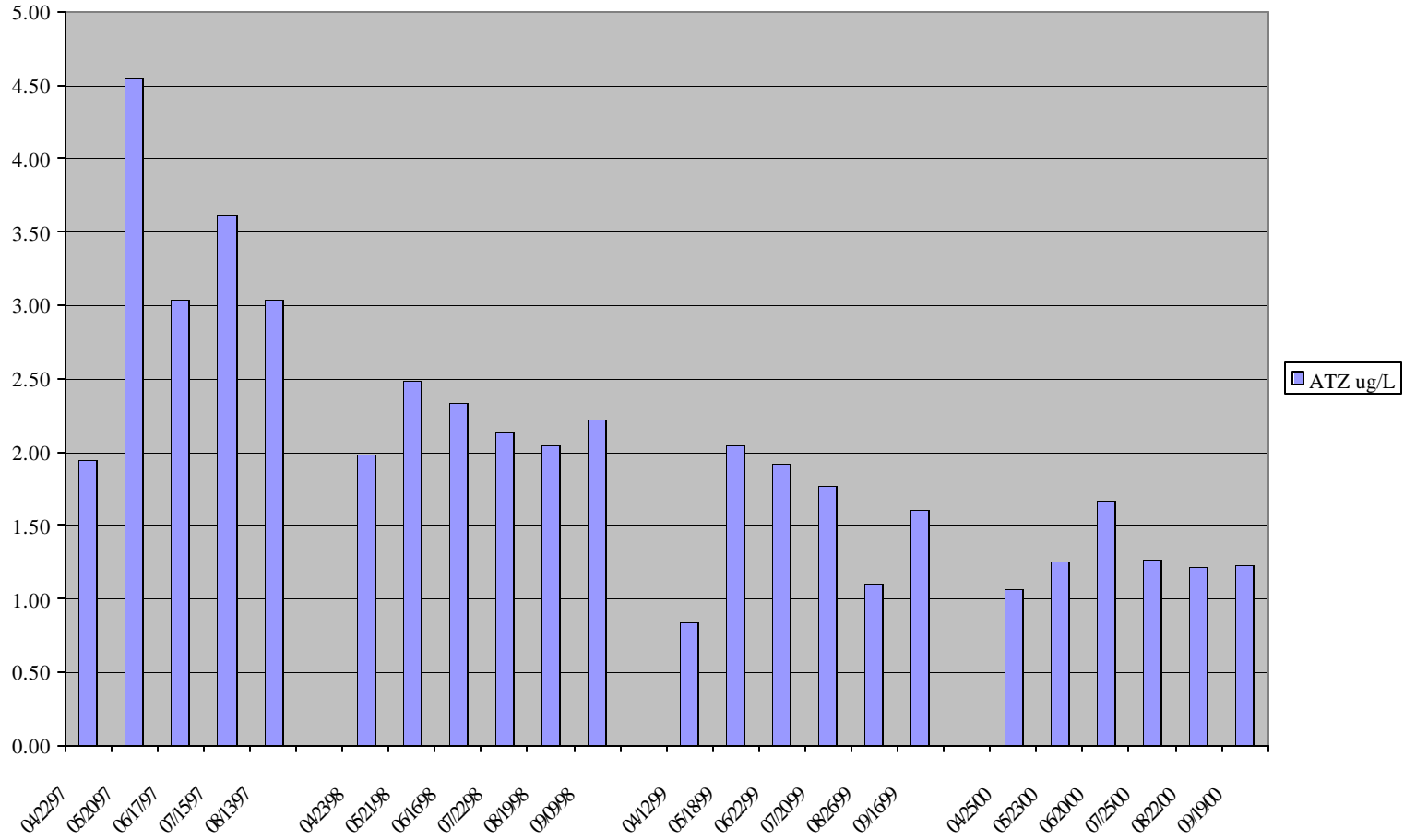


Figure 23. Little Platte Arm (Sm-14) Atrazine Concentrations, 1997-2000

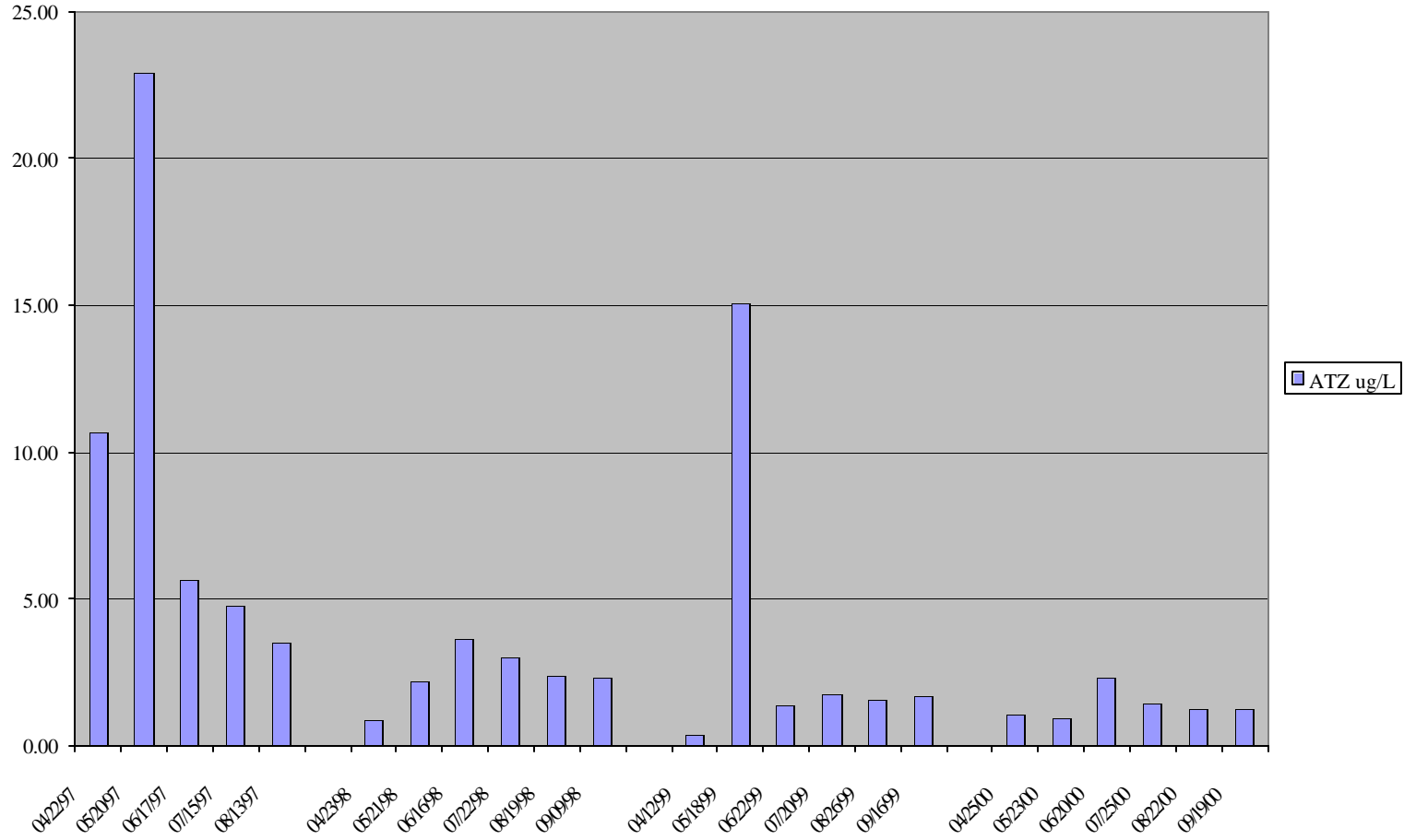


Figure 24. Outlet (Sm-2) Atrazine Concentrations, 1997-2000

