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Lake Whatcom Monitoring Project 1992/1993 Report

Robin A. Matthews
Western Washington University, robin.matthews@wwu.edu

Geoffrey B. Matthews
Western Washington University, geoffrey.matthews@wwu.edu

LAKE WHATCOM
WATERSHED

Lake Whatcom Monitoring Project

1993 Final Report

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1992–1993 Final Report

Dr. R. A. Matthews
Environmental Research and Education Center
Huxley College of Environmental Studies
Dr. G. B. Matthews
Computer Science Department
Western Washington University*

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Executive Summary

This report describes the results from the 1992–1993 Lake Whatcom monitoring program. The objectives of this program were to continue baseline water quality monitoring program in Lake Whatcom and representative creeks in the Lake Whatcom watershed; to provide supplemental coliform and bacteria data for the Silver Beach Creek and near-shore sites in basin 2 of Lake Whatcom; and to estimate hydrologic inputs and outputs for Lake Whatcom using the HSPF model.

The winter of 1992–1993 was considerably colder than the winter of 1991-1992. The greatest winter temperature differences were measured in basin 1 (Site 1), where the lowest water temperatures differed by approximately 3 degrees (C) between the two years. The summer temperatures were also slightly warmer in 1992 than 1993, but these differences were relatively small. The colder 1992–1993 winter caused the lake to stratify later in 1993 compared to 1992. As a result of the later stratification, the rate of oxygen depletion at Site 1 was slower, less ammonia and soluble phosphate were released from the sediments at Site 1, and algal densities and chlorophyll concentrations were lower throughout the lake.

Despite the cooler winter temperatures, Site 1 (basin 1) was still more biologically productive than Sites 2–4 (basins 2-3). Site 1 continued to have the highest chlorophyll concentrations, lowest hypolimnetic oxygen concentrations, and usually the highest phytoplankton densities (especially bluegreen densities).

Water samples were collected on August 11, 1993 from basin 2 and the Bloedel Donovan area in Lake Whatcom to measure total and fecal coliform counts, total streptococcus counts, total bacterial counts, and total respiring bacterial counts. The fecal coliform, and fecal streptococcus counts from the lake were low except at the Bloedel Donovan site, where there were 71 colonies/100 mL and 26 colonies/100 mL, respectively. The total coliform counts ranged from < 2 colonies/100 mL to 6,600 colonies/100 mL. In general, the fecal coliform and fecal streptococcus counts in the lake were similar to those reported by the URS Corp in 1985, but the total coliform counts were much higher. The tributaries all had very high total coliform counts (9,000–23,000 colonies/100 mL), and comparatively high fecal coliform and fecal streptococcus counts (up to 20 colonies/100 mL). However, none of the tributaries had fecal coliform or fecal streptococcus counts that were as high

as those reported for Silver Beach Creek and the Park Place drain.

Water samples were collected from eight sites in the Silver Beach Creek watershed on June 7, 1993 and were analyzed to count total and fecal coliforms, fecal streptococcus, total bacteria, and total respiring bacteria. The coliform and streptococcus counts were relatively high at all sites, especially high downstream from E. Oregon St. The high counts measured in June are consistent with the results from the regular creek monitoring (July 12, 1993) where the Silver Beach outlet yielded fecal coliform counts of 42,000/100 mL and fecal streptococcus counts of 250,000/100 mL. The Silver Beach Creek total bacteria counts ranged from 1.6–2.86 $\times 10^6$, compared to 0.55–1.73 $\times 10^6$ in Austin, Blue Canyon, and Wildwood Creeks. The Park Place drain, which often has the poorest water quality of the six, had counts of 4.75–5.28 $\times 10^6$ bacteria.

The HSPF hydrologic model was used to estimate inputs (precipitation and the diversion from the middle fork of the Nooksack River) and outputs (Whatcom Creek, the Whatcom Falls fish hatchery, Georgia Pacific, the Bellingham water treatment plant, Water District #10, and lake evaporation) for Lake Whatcom. Whatcom Creek and Georgia Pacific were the major outputs; watershed runoff and the Nooksack River diversion were the major inputs.

1 Introduction

The Lake Whatcom watershed has been the subject of considerable interest recently because of its many, diverse values to the residents of Bellingham and Whatcom County. Lake Whatcom is the primary drinking water source for most of Bellingham and Sudden Valley, and provides high quality water for the Georgia-Pacific Corporation mill. The lake and parts of the watershed provide recreational opportunities, as well as providing important habitats for fish and wildlife. The lake is used as a storage reservoir to buffer peak storm water flows in Whatcom Creek. Much of the watershed is zoned for forestry and is managed by state or private timber companies. Finally, because of its aesthetic appeal, much of the Lake Whatcom watershed is highly valued for residential development.

The City of Bellingham and Western Washington University have collaborated on investigations of the water quality in Lake Whatcom since the early 1960's. Beginning in 1981, a monitoring program was initiated by the City and WWU that was designed to provide long-term data for Lake Whatcom for basic parameters such as temperature, pH, dissolved oxygen, conductivity, turbidity, nutrients (nitrogen and phosphorus), and other representative water quality measurements. The major goal of the long-term monitoring effort is to provide a record of Lake Whatcom's water quality over time. In addition, since the City and WWU review the scope of work for the monitoring program each year, short-term water quality questions can be addressed as needed.

This report describes the results from the 1992–1993 Lake Whatcom monitoring program. The major objectives of the 1992–1993 monitoring program were to continue the City's water quality monitoring program in Lake Whatcom, as part of a baseline study to monitor changes in the raw water quality of Lake Whatcom; to monitor selected parameters from representative tributary streams in the Lake Whatcom watershed in order to provide baseline stream quality and quantity data; to provide supplemental coliform and bacteria data for the Silver Beach Creek and near-shore sites in basin 2 of Lake Whatcom; and to maintain the HSPF[1] hydrologic data base in order to provide estimates of the hydrologic budget for Lake Whatcom.

[1]The Hydrologic Simulation Program–FORTRAN (HSPF) model was calibrated for the Lake Whatcom watershed during an earlier storm water monitoring project, and is described in detail in the final report for that project (Walker, et al., 1992).

This report will be subdivided into five major categories, each of which addresses one of the objectives listed above. These categories include:

- Lake Whatcom water quality monitoring,
- Creek water quality monitoring,
- Silver Beach Creek bacteria sampling,
- Near-shore lake bacteria sampling, and
- HSPF hydrologic modelling.

All of the tables and figures can be found at the end of the report in Sections 9–10. Detailed site descriptions and raw data are included in Appendices A–C.

2 Lake Whatcom Water Quality Monitoring

2.1 Site Descriptions

Water quality samples were collected at five sites in Lake Whatcom (Figure 1). Sites 1–2 are located at the deepest points in their respective basins. The Intake site is located adjacent to the underwater intake point where the City of Bellingham withdraws raw water from basin 2. Site 3 is located at the deepest point in the northern subbasin of basin 3 (north of the Sunnyside Sill), and Site 4 is located at the deepest point in the southern subbasin of basin 3 (south of the Sunnyside Sill). An orange marker buoy is anchored at each of the sampling sites. Detailed descriptions are included in Appendix A.

Water samples were also collected at the City of Bellingham Water Treatment Plant gatehouse, which is located onshore and west of the intake site.

2.2 Field Sampling and Analytical Methods

The lake was sampled on October 5, November 11, and December 14, 1992, and on February 2, April 1, May 6, June 3, July 1, August 5, and September

1, 1993. The water quality parameters measured for the 1992–1993 lake monitoring program are shown in Table 1.

A Surveyor II Hydrolab was used to measure temperature, pH, dissolved oxygen, and conductivity in the lake as outlined in Table 1. All water samples (including bacteriological samples) collected in the field were stored on ice and in the dark until they reached the laboratory, and were analyzed following the procedures listed in Table 2 (APHA, 1992; EPA, 1983; Lind, 1985). The total metals analyses (arsenic, cadmium, chromium, copper, iron, mercury, nickel, lead, and zinc) were done by AmTest[2]. The coliform and fecal streptococcus samples were analyzed by the City of Bellingham at their water treatment plant. All other analyses were done by the field and laboratory personnel hired by this grant.

Plankton samples were collected at each site, placed in a cooler, and returned to the laboratory unpreserved. In the laboratory the sample volumes were measured and each sample was split into a taxonomic sample and an archived sample. The samples were preserved with Lugol's Solution and analyzed as soon as possible. Originally, we intended to collect the plankton samples using a 20 m vertical tow. However, due to problems with backflow out of the tow net, plankton were sampled for most of this project at a single depth (5 m). The plankton results reported in the Lake Whatcom Monitoring Project 1991–1992 Final Report (Matthews and Matthews, 1993) were also collected at a single depth (5 m).

2.3 Results and Discussion

2.3.1 Hydrolab data

The 1992–1993 Lake Whatcom Hydrolab data (dissolved oxygen, temperature, pH, and conductivity) are shown in Figure 2 through Figure 21 (Section 10). In order to provide a better analysis of the water quality patterns in the lake, the graphs also include data from the previous contract year[3] (October 1991 through September 1992). In each figure the different lines represent different sampling depths, which each depth connected through time with a continuous line. Because of the large number of sampling depths, it is not

[2]AmTest, 14603 N.E. 87th St., Redmond, WA, 98052.

[3]Data from October 1990–September 1992 can be found in the Lake Whatcom Monitoring Project 1991–1992 Final Report (Matthews and Matthews, 1993).

practical to include a key showing which depths corresponded to which lines. However, all of the raw data are listed in Appendix B. The continuous lines should only be used to help identify seasonal patterns of convergence and divergence; they do not represent continuous sampling. One important caution when viewing these figures is that missing values are not interpolated. Because of this, some of the line patterns join values separated by more than one sampling period.

The temperature data (Figure 2 through Figure 6) indicate that the winter of 1991–1992 was much warmer than the winter of 1992–1993. A similar observation was made in last year's monitoring report (Matthews and Matthews, 1993). The greatest temperature difference was observed at Site 1 in the winter, where there was approximately a 3 degree (C) temperature difference between the years. The other sites (particularly those in basin 3) had smaller temperature differences, although all sites were warmer in the winter of 1992–1993 than in 1991–1992. The summer temperatures were also slightly warmer in 1992, but these differences were relatively small. The cooler winter temperatures in 1992–1993 appear to have delayed the onset of lake stratification until May (basins 1–2) and June (basin 3) compared to April in 1992. The later stratification in 1993 should have a significant effect on the rate of oxygen depletion in basins 1–2, and on many other chemical and biological processes in the lake.

Dissolved oxygen concentrations (Figure 7 through Figure 11) fell below 2–3 mg/L during the summer at Sites 1–2, while remaining high at Sites 3–4 and the Intake. The onset of oxygen depletion at Site 1 was later in the spring of 1993 than 1992 due to the later stratification. For example, by May 1992 the hypolimnetic oxygen concentrations at Site 1 were below 8 mg/L, while in 1993 they were greater than 10 mg/L. By July the difference between years was negligible (Site 1 hypolimnetic oxygen concentrations were approximately 4 mg/L in July 1992 and 1993). This suggests two things: 1) since the onset of stratification was later in 1993, but reached the same oxygen levels in July 1993 as in July 1992, the rate of oxygen loss appears to have been *faster* during the spring of 1993 than the spring of 1992; and 2) once the oxygen concentrations fell below a certain level (~4–5 mg/L), the rate of change slowed during both years, so that the minimum hypolimnetic oxygen concentrations were approximately the same during both years.

The pH data (Figure 12 through Figure 16) were less variable in 1992–1993 than in the previous year (possibly because the Hydrolab pH probe

was replaced). The pH data followed typical lake patterns, with increases in surface pH values during the summer due to photosynthetic activity, and decreases in hypolimnetic pH values due to decomposition. The pH ranges were greater at Sites 1–2 than the other sites due to the greater biological activity in basins 1–2. The hypolimnetic pH values at Site 1 appeared to be 1–2 pH units lower during the summer of 1993 than 1992, but since the accuracy of the Hydrolab pH probe is only ±1 pH unit, this difference may be instrument variability.

The field conductivity data (Figure 17 through Figure 21) suggest that there is a problem with the Hydrolab conductivity probe (or calibration of the probe) that began sometime after February 1993. This problem was undetected until recently because, except for the August and September 1993 values, the difference between the lab and field conductivities was not noticeably large. It is only when the field data are plotted over time that the instrumentation problem becomes clear. It is highly unlikely that the increasing conductivities reflect any actual change in the lake conductivity, which typically falls within 60–80 μMHO.

2.3.2 Other ambient water quality data

The remaining water quality data that were collected monthly or bimonthly (nutrients, alkalinity, turbidity, Secchi depth, chlorophyll, coliforms, bacteria, and plankton) are summarized in Table 3 through Table 7 and graphed in Figure 22 through Figure 101 (see Sections 8–9). The raw data are listed in Appendix B. In order to provide a better analysis of the water quality patterns in the lake, the graphs also include data from the previous contract year[4] (October 1991 through September 1992). Because of the large amount of data presented in these graphs, only the important patterns will be discussed in the text. The metals data from 1992 and 1993 are listed in Table 8, but are not plotted because of the limited number of samples[5].

The alkalinity and conductivity (lab) values (Figure 22 through Figure 31) remained fairly low at all sites except for an occasional increase in alkalinity at the lower depths during the summertime. This is a typical lake water quality pattern, and is most likely due to the release of dissolved com-

[4]Data from October 1990–September 1992 can be found in the Lake Whatcom Monitoring Project 1991–1992 Final Report (Matthews and Matthews, 1993).

[5]The AmTest data report for 1993 is included in Appendix C.

pounds in the lower waters due to decomposition. The apparent decrease in conductivity values on November 11, December 14, and February 2 was caused by problems with the conductivity meter, which was replaced with a new meter in April 1993. The turbidity values (Figure 32 through Figure 36) ranged from <1 NTU to a high of 74 NTU on October 5 (Site 3 at 80 m), with most values falling in the <1–2 NTU range. The high October value was associated with unusually high total and soluble phosphorus concentrations, suggesting that the sample was contaminated with sediment.

The nutrient and chlorophyll data from Site 1 indicate that basin 1 is more productive than the rest of Lake Whatcom. This was also noted in the Lake Whatcom Monitoring Project 1991–1992 Final Report (Matthews and Matthews, 1993). Site 1 had the highest seasonal chlorophyll peaks, the greatest dissolved oxygen deficit, and, except for one sample from Site 2 (20 m), the highest concentrations of hypolimnetic ammonia.

The highest total nitrogen and nitrate/nitrite concentrations in Lake Whatcom were usually measured during the winter (Figure 47 through Figure 51), while the highest ammonia concentrations were measured during the late summer in the hypolimnion (Figure 42 through Figure 46). These patterns also reflected the temperature and oxygen differences between years. Much less ammonia was released from the lake sediments during the summer of 1993 than in 1992. The chlorophyll concentrations at most sites were higher, and peaked earlier, in 1992 than in 1993 (Figure 72 through Figure 76). As a result, the epilimnion nitrate/nitrite concentrations declined earlier and dropped to lower concentrations in 1992 than in 1993[6].

The phosphorus concentrations were never very high in Lake Whatcom, especially during 1992–1993 Occasionally, water samples from the lowest depths had high phosphorus concentrations (usually both total phosphorus and soluble phosphate would be high). When this occurred during the winter or spring, it was most likely due to the inclusion of sediment in the sample, and was accompanied by a high turbidity value for the sample. When the pattern was observed during the summer or fall, it may also have been due to the release of phosphorus from the sediments. In September 1992, Site 3 had unusually high phosphorus concentrations at 5–10 m (SRP at 5 m; TP at 10 m). The source of these high concentrations is unknown.

[6]Nitrate/nitrite is taken up by biota, so the concentrations in the epilimnion usually decrease throughout the summer.

The plankton and chlorophyll data (Figure 72 through Figure 76 and Figure 87 through Figure 91) confirmed that 1992–1993 was cooler than the previous year. All sites typically had lower chlorophyll concentrations and lower plankton counts than were measured during the preceding summer. The only notable exception was the Chlorophyta (green algae), which were all higher in the summer of 1993. Site 1 continued to have the highest chlorophyll concentrations and (usually) the highest phytoplankton densities (especially bluegreen densities). Secchi depths (Figure 97 through Figure 101) continue to show no clear seasonal patterns, probably because transparency in Lake Whatcom is affected both by summer algal blooms and winter storm events.

The coliform counts (Figure 77 through Figure 86) were mostly lower in 1992–1993 than during the preceding year, and did not vary much between sites. The total bacteria counts (Figure 92 through Figure 96) also did not show much variation between the sites or seasons.

The metals data (Table 8) were within typical ranges for surface water in this area (van der Leeden, 1990) except for an unusually high copper concentration at Site 2 (August 31, 1992; 20 m). This value appears to be an outlier because none of the other data indicate elevated copper in the lake. The high hypolimnetic iron concentrations at Sites 1–2 were due to the release of iron from the sediments during periods of low oxygen, which is a normal pattern for lake sediments. Several other metals concentrations were slightly higher than expected (lead at Site 1 , 20 m, on September 1, 1993; nickel at Site 2, 20 m, on September 1, 1993). Both of these samples may have influenced by anaerobic sediment-related phenomena such as de-adsorption from particulates. Since the 1993 samples are analyzed for total metals, it is also possible that the 20 m water samples from basin 1 and 2 contained slightly more suspended sediment (thus, higher metals concentrations) than the basin 3 and surface samples. However, because of the very small sample size for metals concentrations, outlier results are difficult to interpret.

Table 9 shows the trophic classifications for Lake Whatcom based on mean, high, and low values for January-December, 1991, February-September, 1992, and October 1992-September 1993. Category placement is based upon matching the Lake Whatcom data to the closest trophic classification range. Compared to other lakes, most of Lake Whatcom (Sites 2–4) would be classified as oligotrophic, or biologically unproductive based upon its nitrogen and phosphorus concentrations (Table 9).

Site 1 would be classified as mesotrophic (moderately productive) based

upon its total phosphorus concentrations from 1991 and 1992, but would fall into the upper end of the oligotrophic (unproductive) classification based on the 1992–1993 data. Although the total nitrogen concentrations at Site 1 were all at the low end of the oligotrophic range, the chlorophyll *a* concentrations in 1991 and 1992 were in the mesotrophic range. Sites 2–4 had chlorophyll concentrations that were intermediate between the oligotrophic and mesotrophic ranges. All of the sites had Secchi depths that overlapped and fell within the mesotrophic range. This may be due to the large amounts of sediments that enter the lake during storm events (Walker, et al., 1992).

Table 9 illustrates the effect that annual climatic changes can have on indices such as trophic classification. It is very unlikely that basin 1 actually changed from a moderately productive basin to an unproductive basin between 1991 and 1993. Warmer than average winters lead to higher than average algal densities and chlorophyll concentrations during the summer, and vice versa. The best indication that basin 1 (and basin 2) are biologically productive comes from the dissolved oxygen data, which consistently show summer depletions of oxygen in the hypolimnia of both basins (due to biological activity), with the worst depletions occurring in basin 1 during warm years.

3 Near-Shore Lake Bacteria Sampling

3.1 Field Sampling and Analytical Methods

A total of 14 water samples were collected on August 11, 1993 from basin 2 and the Bloedel Donovan area in Lake Whatcom. An additional 3 samples were collected on August 12 from flowing (and accessible) tributaries in Basin 2. The locations for each sampling site are shown in Figure 102 and described in Appendix A. The basin 2 sites were approximately the same as those sampled 1985 by the URS Corporation (URS, 1985). The samples were analyzed to determine total and fecal coliform counts, total streptococcus counts, total bacterial counts, and total respiring bacterial counts[7].

[7]The coliform and fecal streptococcus counts were done by the City of Bellingham.

3.2 Results and Discussion

The total bacteria, and most of the coliform counts, from the near-shore areas in basin 2 were all within the ranges that have been measured for the rest of Lake Whatcom (Figure 103 through Figure 106, and Appendix B). The total bacteria counts were approximately 1–3 $\times$ 10^6 cells/mL, which is consistent with the monthly bacteria counts. Of these, approximately 20–30% were actively respiring, which is typical for freshwater bacteria.

The fecal coliform and fecal streptococcus counts from the lake were nearly all $<$ 2 colonies/100 mL, except at the Bloedel Donovan site, where there were 71 mFC/100 mL and 26 FS/100 mL, respectively. The total coliform counts ranged from $<$ 2 colonies/100 mL to 6,600 colonies/100 mL (Site 6). In general, the fecal coliform and fecal streptococcus counts in the lake were similar to those reported in 1985, but the total coliform counts were much higher. The higher total coliform counts are most likely due to the use of a more accurate counting method (membrane filter) in 1993.

The tributaries all had very high total coliform counts (9,000–23,000 colonies/100 mL), and comparatively high fecal coliform and fecal streptococcus counts (up to 20 colonies/100 mL). However, none of the tributaries had fecal coliform or fecal streptococcus counts that were as high as those reported for Silver Beach Creek and the Park Place drain (see Table 11).

4 Creek Water Quality Monitoring

4.1 Site Descriptions

Six creeks were sampled biannually during the 1992–1993 monitoring program, including Austin Creek, the Park Place storm drain, Silver Beach Creek, Smith Creek, the unnamed creek the flows through the Wildwood campground, and the northern unnamed creek on Blue Canyon Rd. (Blue Canyon #1). The exact sampling locations for these sites are described by Walker, et al. (1992), and are summarized in Appendix A. These creeks included two small, mostly forested creeks located in the southern portion of the watershed (Wildwood Creek and Blue Canyon Creek); two large, perennial creeks (Austin Creek and Smith Creek); a small residential creek located in the northeastern portion of the watershed (Silver Beach Creek); and one underground storm drain (Park Place drain). These six creeks represent water

quality conditions ranging from heavily impacted by residential runoff (Park Place drain) to relatively unaffected[8] by residential development (e.g., Blue Canyon Creek). Of the two large creeks, Austin Creek, which was sampled near its mouth, receives residential runoff from Sudden Valley. Smith Creek, which was also sampled near its mouth, receives relatively little residential runoff.

4.2 Field Sampling and Analytical Methods

The creeks were sampled on February 9 and July 12, 1993. The water quality parameters measured for the 1992–1993 creek monitoring program are shown in Table 10. The analytical procedures were summarized earlier in Table 2. All water samples (including bacteriological samples) collected in the field were stored on ice and in the dark until they reached the laboratory. Once in the laboratory the handling procedures that were relevant for each analysis were followed (see Table 2). The total metals analyses (arsenic, cadmium, chromium, copper, iron, mercury, nickel, lead, and zinc) were done by AmTest, Inc[9]. The coliform samples were analyzed by the City of Bellingham at their water treatment plant. All other analyses were done by the field and laboratory personnel hired by this grant.

4.3 Results and Discussion

The primary purpose for the biannual creek monitoring was to provide data that can be compared to the more complete data set generated in 1990 during the storm water runoff project (Walker, et al., 1992). Tables 11–12 shows selected creek data from the 1992–1993 compared to the 1990 average water quality values for each of the six creeks.

Most of the 1992–1993 creek data fell within the 1990 ranges defined for that creek. The ammonia concentrations were mostly lower in 1993 than in 1990, except for the Park Place drain, which had an unusually high ammonia concentration in February, 1993. The Park Place drain total suspended sediment concentration was also unusually high in February. All of the creeks sampled had higher nitrite/nitrate concentrations in February than in July.

[8]None of the creeks in this study are completely unaffected by development.

[9]The AmTest data report for 1993 is included in Appendix C.

and most had higher total nitrogen concentrations in February. A similar pattern was observed during 1991–1992 (Matthews and Matthews, 1993). The highest coliform counts were measured in the residential creeks and drains, which is consistent with previous results (Walter, et al., 1992; Matthews and Matthews, 1993). Despite the change in analytical methods and laboratories, most of the metals data were similar to the 1990 results. As with the coliform counts, the highest metals concentrations were usually found in the residential streams, especially the Park Place drain.

The Blue Canyon sampling site had unusually high concentrations of chromium, iron, lead, and zinc. In addition, the conductivities from the Blue Canyon stream have been consistently higher than at other sampling sites. The Blue Canyon region contains old coal mines (Moen, 1969), and although we were not able to find any references to mining activities in the vicinity of our sampling site, the conductivity and metals data suggest that there may be mineral deposits in the Blue Canyon stream's watershed.

5 Silver Beach Creek Investigative Study

5.1 Field Sampling and Analytical Methods

Water samples were collected from eight sites in the Silver Beach Creek watershed on June 7, 1993. The samples were analyzed to count total and fecal coliforms, fecal streptococcus, total bacteria, and total respiring bacteria. The site locations and bacteria data are plotted in Figure 107 through Figure 112. All raw data are included in Appendix B.

5.2 Results and Discussion

The coliform and streptococcus counts were relatively high at all sites, especially high downstream from E. Oregon St. The high counts measured in June are consistent with the results from the regular creek monitoring (July 12, 1993) where the Silver Beach outlet yielded fecal coliform counts of 42,000/100 mL and fecal streptococcus counts of 250,000/100 mL. These data strongly suggest that Silver Beach Creek itself, and the nearby sections of Lake Whatcom should be investigated as possible public health hazards. The lower section of Silver Beach Creek appears to be more severely impacted

than the upper section. However, all of the fecal coliform counts are higher than would be expected in nonresidential portions of the watershed[10].

All of the Silver Beach Creek total bacteria counts were higher than other Lake Whatcom creeks (see Appendix B). The Silver Beach samples ranged from 1.6–2.86 $\times 10^6$, compared to 0.55–1.73 $\times 10^6$ in Austin, Blue Canyon, and Wildwood Creeks. The Park Place drain, which often has the poorest water quality of the six, had counts of 4.75–5.28 $\times 10^6$ bacteria. These patterns are similar to other water quality trends (poor water quality in Silver Beach Creek and Park Place drain); however, because 1992–1993 was the first year that we collected bacteria data, no strong conclusions should be made at this point.

6 HSPF Hydrologic Modelling

The HSPF model calibrations were originally completed as part of an earlier project (Walker, et al., 1992). Information regarding updates to that model are discussed in the Lake Whatcom Monitoring Project 1991–1992 Final Report (Matthews and Matthews, 1993). The time series data utilized in, and produced by, the HSPF model for the September, 1992–August 1993 period are available in Quattro Pro and Lotus 123 format from R. Matthews or S. Walker (Huxley College of Environmental Studies, Western Washington University, Bellingham, WA). The files are titled LW-HSPF.WQ1 and LW-HSPF.WKS, respectively. Each record (row in the spreadsheet) represents a single day's data, while each field (column) contains data for a single element of the water balance analysis. Monthly totals for all fields except lake stage are presented in Tables 13–14. The columns in these two tables are described below:

- Lake Surface PPT: Precipitation on surface of Lake Whatcom (Million Gallons, or MG).
- Watershed Runoff: Watershed runoff into Lake Whatcom, including surface, subsurface, and groundwater flow into the lake (MG).

[10]Based on the Runoff Report, we would expect fecal coliform counts of <100 in areas where most of the watershed is nonresidential.

- Diversion Inflow: Diversion of water from the middle fork of the Nooksack River (MG).
- Tot Inputs: Total Inputs into Lake Whatcom (sum of lake surface precipitation, watershed runoff, and middle fork diversion) (MG)
- Whatcom Creek: Outflow from Lake Whatcom via Whatcom Creek (MG).
- Whatcom Falls Hatchery: Withdrawal from Lake Whatcom for the hatchery at Whatcom Falls Park (MG).
- Georgia Pacific: Withdrawal from Lake Whatcom for the Georgia Pacific mill (MG).
- Bellingham Water Plant: Withdrawal from Lake Whatcom for the Bellingham municipal water treatment plant (MG).
- Whatcom County WD 10: Withdrawal from Lake Whatcom for Whatcom County Water District 10 (MG).
- Total Hydr: Total Hydraulic withdrawals from Lake Whatcom; includes outflow through Whatcom Creek, and the four artificial withdrawals from the Lake (Hatchery, GP, WTP, and WD10).
- Lake Surface Evaporation: Evaporation from the surface of Lake Whatcom (MG).
- Total Outputs: Total Outputs from Lake Whatcom (sum of Whatcom Creek, Hatchery, GP, WTP, WD10, and lake surface evaporation).

Figure 113 through Figure 119 show the predicted hydrologic inputs (lake surface precipitation, watershed runoff, and diversion flow) and outputs (Whatcom Creek, fish hatchery, Georgia-Pacific, Bellingham and Water District #10 withdrawals, and lake evaporation) for Lake Whatcom for the period of July 1990 through August 1993. Whatcom Creek and Georgia Pacific continue to be the major outputs; watershed runoff and the Nooksack River diversion continue to be the major inputs.

7 Quality Control

In order to maintain a high degree of accuracy and confidence in the water quality data, the following quality controls were included in the project design:

1. All personnel associated with this project were trained according to EREC standard operating procedures.

2. Laboratory duplicates were analyzed for at least 10% of all water quality parameters except those collected using the Hydrolab.

3. All chlorophyll analyses and bacterial direct counts were run in duplicate; the coded data represent the average of the duplicates.

4. Field duplicates were collected and analyzed for at least 10% of all of the water quality parameters except those collected using the Hydrolab.

5. Duplicate water samples were analyzed for at least 10% of the Hydrolab measurements using water samples collected from the same depth as the Hydrolab measurement.

6. The field and lab quality control duplicates are reported to the *City in* monthly letter reports along with the monitoring data.

7. Control charts were prepared for as many of the laboratory analyses as possible[11], using a minimum of 10 replicates for each chart. These results are presented in Figure 120 through Figure 127.

8. A taxonomic reference collection has been maintained that is comprised of labeled, photographic slides of representative taxa as well as detailed taxonomic notes and correspondence with the Academy of Natural Sciences of Philadelphia. New personnel working with plankton taxonomy were trained in the identification of the major taxa by individuals familiar with the Lake Whatcom plankton.

[11] Parameters that are sampled infrequently may not have generated enough QC data to develop a control chart.

8 References

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9 Tables

Table 1: Lake Whatcom 1992–1993 lake monitoring schedule

PARAMETER	1992 Oct	Nov	Dec	1993 Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	LOCATION
DO - Hydrolab	•	•	•		•		•	•	•	•	•	•	Sites 1, 2, Intake - every 1 m;
pH - Hydrolab	•	•	•		•		•	•	•	•	•	•	Sites 3, 4 - every 1 m to 10 m
Temp - Hydrolab	•	•	•		•		•	•	•	•	•	•	then every 5 m;
Cond - Hydrolab	•	•	•		•		•	•	•	•	•	•	Gatehouse
Secchi disc	•	•	•		•		•	•	•	•	•	•	Sites 1, 2, 3, 4, Intake
Ammonia	•	•	•		•		•	•	•	•	•	•	Sites 1, 2 - 0.3, 5, 10, 15, 20 m;
Nitrite/Nitrate	•	•	•		•		•	•	•	•	•	•	Intake - 0.3, 5, 10 m;
Total Nitrogen	•	•	•		•		•	•	•	•	•	•	Site 3 - 0.3, 5, 10, 20, 40, 60,
Soluble Phosphate	•	•	•		•		•	•	•	•	•	•	80 m;
Total Phosphorus	•	•	•		•		•	•	•	•	•	•	Site 4 - 0.3, 5, 10, 20, 40, 60,
Alkalinity	•	•	•		•		•	•	•	•	•	•	80, 90 m;
Conductivity	•	•	•		•		•	•	•	•	•	•	Gatehouse
Turbidity	•	•	•		•		•	•	•	•	•	•	
Total Arsenic												•	Sites 1, 2, 3, 4, Intake -
Total Cadmium												•	0.3 m and bottom only
Total Chromium												•	
Total Copper												•	
Total Iron												•	
Total Lead												•	
Total Mercury												•	
Total Nickel												•	
Total Zinc												•	
Total O. Carbon					•							•	Sites 1, 2, 3, 4, Intake - 0.3 m and bottom only
Chlorophyll	•	•	•		•		•	•	•	•	•	•	Sites 1, 2, 3, 4 - 0.3, 5, 10, 15, 20 m; Intake - 0.3, 5, 10 m
Phytoplankton/ Zooplankton	•	•	•		•		•	•	•	•	•	•	Sites 1, 2, 3, 4, Intake- 5 m
Bacteria counts	•	•	•		•		•	•	•	•	•	•	Sites 1, 2, 3, 4, Intake 0.3 m and bottom
Coliforms (City)	•	•	•		•		•	•	•	•	•	•	Sites 1, 2, 3, 4, Intake; 0.3 m

Table 2: Summary of analytical sampling methods

Parameter	Method	Description	Detection Limits or Sensitivity
Alkalinity	APHA 2320 B	Low level method	na
Conductivity - Lab	EPA 120.1	conductivity meter	2 µMHO/cm
Conductivity - Hydrolab	(Appendix I)	Surveyor II	~ 2 µMHO/cm
Discharge	Lind (1985)	Multiple point transect	na
DO - Winkler	EPA 360.2	Winkler titration	0.1 mg/L
DO - Hydrolab	(Appendix I)	Surveyor II	~ 0.1 mg/L
pH - Lab	EPA 150.1	pH meter	~ 0.1 pH unit
pH - Hydrolab	(Appendix I)	Surveyor II	~ 0.1 pH unit
Secchi disk	Lind (1985)		na
Turbidity	EPA 180.1	Nephelometric	0.2 NTUs
T. Susp. Solids	EPA 160.2	Filter, Grav. 100° C	2 mg/L
Temperature	(Appendix I)	Surveyor II	na
Ammonia	APHA 4500-NH3 F	Selective ion electrode	5 µg/L
Nitrite/Nitrate	HACH Chem Co.	Cd reduction	50 µg/L
Soluble Phosphate	APHA 4500-P E	Ascorbic acid	5 µg/L
Total. Nitrogen	Ebina et al. (1983)	Modified, salicylate	100 µg/L
Total O. Carbon	EPA 415.1	OIC carbon analyzer	na
Total Phosphorus	Ebina et al. (1983)	Modified ascorbic acid	5 µg/L
Total Arsenic	EPA 200.7	ICP, acid digestion	30 µg/L
Total Cadmium	EPA 200.7	ICP, acid digestion	2 µg/L
Total Chromium	EPA 200.7	ICP, acid digestion	6 µg/L
Total Copper	EPA 200.7	ICP, acid digestion	2 µg/L
Total Iron	EPA 200.7	ICP, acid digestion	10 µg/L
Total Mercury	EPA 200.7	ICP, acid digestion	10 µg/L
Total Nickel	EPA 200.7	ICP, acid digestion	10 µg/L
Total Lead	EPA 239.2	GF, acid digestion	1 µg/L
Total Zinc	EPA 200.7	ICP, acid digestion	2 µg/L
Chlorophyll *a*	APHA 10200 H	Acetone extract	na
Phytoplankton/ Zooplankton	Lind (1985)	Schindler trap/ counting chamber	na
Bacteria counts	Hobbie, et al. (1977) Porter & Feig (1980)	Epifluor. microscopy/ INT reduction	na

Variable	Mean (9/92-10/93)	Std. Dev.	Min.	Max.
Site 1				
Alkalinity (mg/L $CaCO_3$)	18.7	1.8	16.5	26.4
Conductivity - lab (μMHO)	55.8	11.8	30.0	71.3
Conductivity - Hydrolab (μMHO)	77.1	7.2	65.0	94.0
Dissolved oxygen (mg/L)	9.2	3.3	0.2	12.8
pH	7.5	0.4	6.5	8.7
Temperature (°C)	11.8	4.4	4.7	22.4
Turbidity (NTU)	1.0	0.8	0.4	4.3
Nitrogen, ammonia (μg/L)	18	35	< 5	159
Nitrogen, nitrate/nitrite (μg/L)	224	100	67	412
Nitrogen, total (μg/L)	370	< 100	< 100	555
Phosphorus, sol. phosphate (μg/L)	< 5	5	< 5	38
Phosphorus, total (μg/L)	6	< 5	< 5	12
Chlorophyll a (mg/m^3)	2.8	1.8	0.7	8.1
Secchi depth (m)	4.6	0.6	3.8	5.7
Coliforms, fecal (col/100 mL)	4	9	< 2	30
Coliforms, total (col/100 mL)	68	50	4	140
Total bacteria (cells/mL)	2.07×10^6	0.88×10^6	1.10×10^6	4.75×10^6

Table 3: Site 1 average ambient water quality data.

Variable	Mean (9/92-10/93)	Std. Dev.	Min.	Max.
Site 2				
Alkalinity (mg/L $CaCO_3$)	17.8	1.4	15.7	25.3
Conductivity - lab (μMHO)	55.8	8.9	34.0	68.6
Conductivity - Hydrolab (μMHO)	75.1	7.1	62.0	91.0
Dissolved oxygen (mg/L)	10.3	2.0	1.5	12.2
pH	7.6	0.4	6.7	8.4
Temperature (°C)	12.0	4.5	5.9	22.7
Turbidity (NTU)	0.6	0.2	0.3	1.4
Nitrogen, ammonia (μg/L)	12	32	< 5	170
Nitrogen, nitrate/nitrite (μg/L)	292	104	110	533
Nitrogen, total (μg/L)	405	< 100	221	544
Phosphorus, sol. phosphate (μg/L)	< 5	< 5	< 5	8
Phosphorus, total (μg/LL)	< 5	< 5	< 5	11
Chlorophyll a (mg/m^3)	2.7	1.1	0.9	4.7
Secchi depth (m)	5.2	1.0	3.8	7.0
Coliforms, fecal (col/100 mL)	< 2	< 2	< 2	4
Coliforms, total (col/100 mL)	38	27	7	80
Total bacteria (cells/mL)	2.32×10^6	1.26×10^6	1.22×10^6	6.24×10^6

Table 4: Site 2 average ambient water quality data.

Variable	Mean (9/92-10/93)	Std. Dev.	Min.	Max.
Intake				
Alkalinity (mg/L $CaCO_3$)	17.9	0.9	16.4	20.3
Conductivity - lab (μMHO)	54.4	10.0	34.0	62.6
Conductivity - Hydrolab (μMHO)	74.0	6.2	63.0	86.0
Dissolved oxygen (mg/L)	10.8	0.9	9.3	12.2
pH	7.8	0.4	7.1	8.4
Temperature (°C)	13.4	4.9	6.0	23.0
Turbidity (NTU)	0.5	0.2	0.3	0.9
Nitrogen, ammonia (μg/L)	7	12	< 5	57
Nitrogen, nitrate/nitrite (μg/L)	262	92	96	450
Nitrogen, total (μg/L)	407	< 100	262	638
Phosphorus, sol. phosphate (μg/L)	< 5	< 5	< 5	< 5
Phosphorus, total (μg/L)	< 5	< 5	< 5	12
Chlorophyll a (mg/m^3)	2.6	0.6	1.4	3.7
Secchi depth (m)	5.1	0.8	4.0	6.7
Coliforms, fecal (col/100 mL)	< 2	< 2	< 2	4
Coliforms, total (col/100 mL)	65	60	2	170
Total bacteria (cells/mL)	1.89×10^6	0.63×10^6	1.19×10^6	3.53×10^6

Table 5: Intake site average ambient water quality data.

Variable	Mean (9/92-10/93)	Std. Dev.	Min.	Max.
Site 3				
Alkalinity (mg/L $CaCO_3$)	17.3	0.8	15.7	21.7
Conductivity - lab (μMHO)	57.0	7.5	33.5	67.2
Conductivity - Hydrolab (μMHO)	73.9	7.0	61.0	87.0
Dissolved oxygen (mg/L)	10.4	1.1	3.6	12.3
pH	7.4	0.4	6.6	8.4
Temperature (°C)	10.1	4.6	5.8	22.8
Turbidity (NTU)	1.5	8.8	0.0	74.0
Nitrogen, ammonia (μg/L)	10	16	< 5	82
Nitrogen, nitrate/nitrite (μg/L)	341	126	145	764
Nitrogen, total (μg/L)	452	< 100	238	668
Phosphorus, sol. phosphate (μg/L)	< 5	< 5	< 5	10
Phosphorus, total (μg/L)	6	18	< 5	156
Chlorophyll a (mg/m^3)	2.7	1.4	0.9	6.3
Secchi depth (m)	5.6	1.2	4.0	7.3
Coliforms, fecal (col/100 mL)	2	4	< 2	13
Coliforms, total (col/100 mL)	24	21	2	70
Total bacteria (cells/mL)	2.12×10^6	1.11×10^6	0.82×10^6	4.44×10^6

Table 6: Site 3 average ambient water quality data.

Variable	Mean (9/92-10/93)	Std. Dev.	Min.	Max.
Site 4				
Alkalinity (mg/L $CaCO_3$)	17.1	0.9	11.3	19.3
Conductivity - lab (μMHO)	56.1	8.3	33.5	63.5
Conductivity - Hydrolab (μMHO)	73.4	6.7	59.0	87.0
Dissolved oxygen (mg/L)	10.5	0.9	8.2	12.2
pH	7.4	0.4	6.8	8.4
Temperature (°C)	9.7	4.4	5.8	22.0
Turbidity (NTU)	0.5	0.2	0.2	0.9
Nitrogen, ammonia (μg/L)	11	23	< 5	185
Nitrogen, nitrate/nitrite (μg/L)	373	124	137	799
Nitrogen, total (μg/L)	468	< 100	251	719
Phosphorus, sol. phosphate (μg/L)	< 5	< 5	< 5	6
Phosphorus, total (μg/L)	< 5	< 5	< 5	7
Chlorophyll a (mg/m^3)	2.4	1.4	0.0	5.0
Secchi depth (m)	5.6	1.3	4.0	8.0
Coliforms, fecal (col/100 mL)	< 2	< 2	< 2	2
Coliforms, total (col/100 mL)	24	24	< 2	80
Total bacteria (cells/mL)	1.74×10^6	0.78×10^6	0.79×10^6	3.67×10^6

Table 7: Site 4 average ambient water quality data.

Site	Date	Depth	As (μg/L)	Cd (μg/L)	Cr (μg/L)	Cu (μg/L)	Fe (μg/L)	Hg (μg/L)	Ni (μg/L)	Pb (μg/L)	Zn (μg/L)
Intake	Feb 2 92	0	-99	< 0.5	< 0.5	< 5	37	-99	< 5	< 5	< 200
Intake	Feb 2 92	10	-99	< 0.5	< 0.5	< 5	40	-99	< 5	< 5	< 200
Intake	Aug 31 92	0	-99	< 0.5	< 0.5	< 5	< 5	-99	< 5	< 5	< 200
Intake	Aug 31 92	10	-99	< 0.5	< 0.5	< 5	< 5	-99	< 5	< 5	< 200
Intake	Sept 1 93	0	< 30	< 2	< 6	< 2	40	< 10	< 10	< 1	18
Intake	Sept 1 93	10	30	< 2	< 6	< 2	30	< 10	< 10	< 1	8
Site 1	Feb 2 92	0	-99	< 0.5	< 0.5	6	67	-99	< 5	< 5	< 200
Site 1	Feb 2 92	20	-99	< 0.5	< 0.5	< 5	67	-99	< 5	< 5	< 200
Site 1	Aug 31 92	0	-99	< 0.5	< 0.5	< 5	< 5	-99	< 5	< 5	< 200
Site 1	Aug 31 92	20	-99	< 0.5	< 0.5	< 5	436	-99	< 5	< 5	< 200
Site 1	Sept 1 93	0	< 30	< 2	< 6	< 2	40	< 10	< 10	< 1	12
Site 1	Sept 1 93	20	< 30	< 2	< 6	3	550	< 10	< 10	6	21
Site 2	Feb 2 92	0	-99	< 0.5	< 0.5	< 5	41	-99	< 5	< 5	< 200
Site 2	Feb 2 92	20	-99	< 0.5	< 0.5	< 5	47	-99	< 5	< 5	< 200
Site 2	Aug 31 92	0	-99	< 0.5	< 0.5	< 5	< 5	-99	< 5	< 5	< 200
Site 2	Aug 31 92	20	-99	< 0.5	< 0.5	59	230	-99	< 5	< 5	< 200
Site 2	Sept 1 93	0	< 30	< 2	< 6	< 2	30	< 10	< 10	2	13
Site 2	Sept 1 93	20	< 30	< 2	< 6	< 2	220	< 10	20	< 1	15
Site 3	Feb 2 92	0	-99	< 0.5	< 0.5	< 5	35	-99	< 5	< 5	< 200
Site 3	Feb 2 92	80	-99	< 0.5	< 0.5	< 5	47	-99	< 5	< 5	< 200
Site 3	Aug 31 92	0	-99	< 0.5	< 0.5	< 5	< 5	-99	< 5	< 5	< 200
Site 3	Aug 31 92	80	-99	< 0.5	< 0.5	6	< 5	-99	< 5	< 5	< 200
Site 3	Sept 1 93	0	< 30	< 2	< 6	< 2	30	< 10	< 10	< 1	10
Site 3	Sept 1 93	80	< 30	< 2	< 6	< 2	40	< 10	< 10	< 1	14
Site 4	Feb 2 92	0	-99	< 0.5	< 0.5	< 5	44	-99	< 5	< 5	< 200
Site 4	Feb 2 92	90	-99	< 0.5	< 0.5	< 5	47	-99	< 5	< 5	< 200
Site 4	Aug 31 92	0	-99	< 0.5	< 0.5	< 5	< 5	-99	< 5	< 5	< 200
Site 4	Aug 31 92	90	-99	< 0.5	< 0.5	6	< 5	-99	< 5	< 5	< 200
Site 4	Sept 1 93	0	< 30	< 2	< 6	< 2	30	< 10	< 10	< 1	20
Site 4	Sept 1 93	90	< 30	< 2	< 6	< 2	40	< 10	< 10	1	14

All 1993 metals samples were analyzed by AmTest for total metals (unfiltered, digested).
All 1992 metals samples were analyzed by the Institute for Watershed Studies (WWU) for dissolved metals

Table 8: Lake Whatcom metals data, 1992–1993.

Parameter		Oligotrophic	Mesotrophic	Eutrophic
Total phosphorus (μg/L)				
Typical mean (range)		*8.0 (3-17)*	*27 (11-96)*	*84.4 (16-386)*
Lake Whatcom	Site 1, 1991		9 (< 5-27)	
	Site 1, 1992		10 (< 5-23)	
	Site 1, 1992-1993	6 (< 5-12)		
	Site 2, 1991	6.3 (< 5-20)		
	Site 2, 1992	7.4 (< 5-42)		
	Site 2, 1992-1993	< 5 (< 5-11)		
	Site 3, 1991	5.3 (< 5-16)		
	Site 3, 1992	5.7 (< 5-17)		
	Site 3, 1992-1993	6 (< 5-156*)		
	Site 4, 1991	< 5 (< 5-12)		
	Site 4, 1992	< 5 (< 5-9)		
	Site 4, 1992-1993	< 5 (< 5-7)		
Total nitrogen (μg/L)				
Typical mean (range)		*661 (307-1630)*	*753 (361-1387)*	*1875 (393-6100)*
Lake Whatcom	Site 1, 1991	567 (303-431)		
	Site 1, 1992	442 (217-552)		
	Site 1, 1992-1993	370 (96-555)		
	Site 2, 1991	460 (303-575)		
	Site 2, 1992	500 (156-1050)		
	Site 2, 1992-1993	405 (221-544)		
	Site 3, 1991	488 (338-633)		
	Site 3, 1992	492 (198-617)		
	Site 3, 1992-1993	452 (238-668)		
	Site 4, 1991	511 (363-736)		
	Site 4, 1992	515 (175-636)		
	Site 4, 1992-1993	468 (251-719)		
Chlorophyll *a* (mg/m^3)				
Typical mean (range)		*1.7 (0.3-4.5)*	*4.7 (3-11)*	*14.3 (3-78)*
Lake Whatcom	Site 1, 1991		5.4 (1.6-14.8)	
	Site 1, 1992		5.4 (1.3-15.3)	
	Site 1, 1992-1993	2.8 (0.7-8.1)		
	Site 2, 1991	3.5 (0.6-6.9)		
	Site 2, 1992	3.6 (0.4-6.3)		
	Site 2, 1992-1993	2.7 (0.9-4.7)		
	Site 3, 1991	3.2 (0.6-6.2)		
	Site 3, 1992	3.5 (0.9-6.5)		
	Site 3, 1992-1993	2.7 (0.9-6.3)		
	Site 4, 1991	3.1 (0.7-5.4)		
	Site 4, 1992	3.2 (0.8-6.0)		
	Site 4, 1992-1993	2.4 (0.0-5.0)		
Secchi depth (m)				
Typical mean (range)		*9.9 (5.4-28.3)*	*4.2 (1.5-8.1)*	*2.45 (0.8-7.0)*
Lake Whatcom	Site 1, 1991		4.9 (3.0-5.9)	
	Site 1, 1992		4.7 (3.6-5.7)	
	Site 1, 1992-1993		4.6 (3.8-5.7)	
	Site 2, 1991		5.8 (3.3-7.9)	
	Site 2, 1992		5.2 (4.4-6.1)	
	Site 2, 1992-1993		5.2 (3.8-7.0)	
	Site 3, 1991		5.8 (2.8-7.2)	
	Site 3, 1992		5.4 (4.2-6.7)	
	Site 3, 1992-1993		5.6 (4.0-7.3)	
	Site 4, 1991		5.6 (3.5-6.8)	
	Site 4, 1992		5.2 (4.3-6.3)	
	Site 4, 1992-1993		5.6 (4.0-8.0)	

Trophic classification values are from Wetzel (1983).

Table 9: Trophic classification of Lake Whatcom water quality data.

Table 10: Lake Whatcom 1992-1993 creek monitoring schedule

PARAMETER	1992 Oct	Nov	Dec	1993 Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Temperature					•					•		
Discharge					•					•		
Alkalinity					•					•		
Conductivity					•					•		
DO - Winkler					•					•		
pH					•					•		
Suspended Solids					•					•		
Total Solids					•					•		
Turbidity					•					•		
Ammonia					•					•		
Nitrite/Nitrate					•					•		
Total Nitrogen					•					•		
Soluble Phosphate					•					•		
Total Phosphorus					•					•		
Total Organic Carbon					•					•		
Total Arsenic					•							
Total Cadmium					•							
Total Chromium					•							
Total Copper					•							
Total Iron					•							
Total Lead					•							
Total Mercury					•							
Total Nickel					•							
Total Zinc					•							
Coliforms (City)					•					•		
Total bacteria					•					•		

Site	Date	pH	Cond. (μMHO)	NH_3 (μg/L)	TN (μg/L)	NO_{2+3} (μg/L)	SRP (μg/L)	TP (μg/L)	DO (mg/L)	TSS (mg/L)	TC/ (100 mL)	FC/ (100 mL)
Blue	1990 min	8.1	250	10	-99	167	< 5	< 5	9.0	< 2	90	< 2
Canyon	1990 avg	8.4	344	20	-99	336	< 5	13	10.5	5.4	1163	7
	1990 max	8.6	409	34	-99	545	12	25	12.3	29	9000	27
	Feb 1993	8.3	391	< 5	689	452	5	8	10.5	4	500	< 2
	July 1993	8.4	368	< 5	304	274	< 5	18	11.0	7	-99	220
Wildwd	1990 min	6.7	34	8	-99	755	< 5	< 5	6.9	< 2	23	< 2
	1990 avg	7.2	54	189	-99	1790	< 5	9	10.0	2	1164	74
	1990 max	7.6	126	32	-99	4857	9	33	12.3	11	> 16000	1300
	Feb 1993	7.2	54	< 5	2922	2397	< 5	< 5	11.4	< 2	300	< 2
	July 1993	7.5	56	6	2243	1860	6	7	10.5	< 2	-99	30
Austin	1990 min	7.1	50	6	-99	259	< 5	< 5	8.3	< 2	50	7
	1990 avg	7.4	81	20	-99	441	< 5	13	10.5	3	3366	950
	1990 max	7.6	121	40	-99	658	9	23	12.1	13	16000	5000
	Feb 1993	7.2	74	5	1118	779	9	12	11.2	4	220	11
	July 1993	7.5	95	6	603	437	6	15	10.3	< 2	-99	320
Park	1990 min	7.1	118	22	-99	145	6	41	6.4	3	230	8
Place	1990 avg	7.7	245	51	-99	357	22	66	9.1	13	8254	1353
	1990 max	8.1	410	111	-99	549	86	168	11.8	57	> 16000	16000
	Feb 1993	7.4	244	320	1279	548	19	146	10.4	129	> 16000	240
	July 1993	7.7	176	36	1384	250	36	148	8.8	18	-99	220
Silver	1990 min	7.4	103	< 10	-99	173	< 5	27	6.9	< 2	170	5
Beach	1990 avg	7.9	187	19	-99.	583	16	41	9.8	6	7110	3307
	1990 max	8.1	290	43	4 -99	1118	42	61	12.1	12	> 16000	16000
	Feb 1993	7.7	150	5	1688	1235	12	36	11.4	< 2	900	300
	July 1993	7.8	271	40	1092	374	40	87	9.4	7	-99	42000
Smith	1990 min	6.6	44	12	-99	396	< 5	< 5	8.7	< 2	17	< 2
	1990 avg	7.5	64	17	-99	687	< 5	6	10.5	3	1138	14
	1990 max	7.8	90	37	-99	1025	8	12	12.6	10	9000	170
	Feb 1993	7.4	52	< 5	1045	904	5	< 5	10.4	< 2	170	2
	July 1993	7.4	72	< 5	770	698	< 5	< 5	10.3	< 2	-99	250

The 1990 creek data do not include the November 1990 storm event.

Cond = conductivity
NH_3 = ammonia
TN = total nitrogen
NO_{2+3} = nitrate/nitrite
SRP = soluble phosphate
TP = total phosphorus
DO = dissolved oxygen
TSS = total susp. solids
TC = total coliforms
FC = fecal coliforms

Table 11: Creek water quality data compared to 1990 averages.

Site	Date	As (μg/L)	Cd (μg/L)	Cr (μg/L)	Cu (μg/L)	Fe (μg/L)	Hg (μg/L)	Ni (μg/L)	Pb (μg/L)	Zn (μg/L)
Blue	1990 avg	-99	< 0.5	< 0.5	< 5	-99	-99	< 5	< 5	2
Canyon	1990 min	-99	< 0.5	< 0.5	< 5	-99	-99	< 5	< 5	< 0.2
	1990 max	-99	< 0.5	4	9	-99	-99	4	6	33
	Feb 1993	< 30	< 2	8	< 2	150	< 10	< 10	8	17
Wildwd	1990 avg	-99	< 0.5	< 0.5	< 5	-99	-99	< 5	< 5	3
	1990 min	-99	< 0.5	< 0.5	< 5	-99	-99	< 5	< 5	0.5
	1990 max	-99	< 0.5	2	8	-99	-99	7	6	10
	Feb 1993	< 30	< 2	< 6	< 2	20	< 10	< 10	3	16
Austin	1990 avg	-99	< 0.5	< 0.5	< 5	-99	-99	< 5	< 5	5
	1990 min	-99	< 0.5	< 0.5	< 5	-99	-99	< 5	< 5	0.4
	1990 max	-99	< 0.5	7	11	-99	-99	7	26	21
	Feb 1993	< 30	< 2	< 6	< 2	220	< 10	< 10	3	< 2
Park	1990 avg	-99	< 0.5	< 0.5	7	-99	-99	< 5	6	16
Place	1990 min	-99	< 0.5	1	< 5	-99	-99	< 5	< 5	3
	1990 max	-99	< 0.5	10	16	-99	-99	7	20	148
	Feb 1993	< 30	< 2	22	20	8700	< 10	10	10	< 2
Silver	1990 avg	-99	< 0.5	< 0.5	<5	-99	-99	< 5	< 5	2
Beach	1990 min	-99	< 0.5	< 0.5	< 5	-99	-99	< 5	< 5	0.2
	1990 max	-99	< 5	3	7	-99	-99	< 5	< 5	5
	Feb 1993	< 30	< 2	< 6	< 2	1100	< 10	< 10	4	< 2
Smith	1990 avg	-99	< 0.5	< 0.5	< 5	-99	-99	< 5	< 5	2
	1990 min	-99	< 0.5	< 0.5	< 5	-99	-99	< 5	< 5	0.3
	1990 max	-99	< 0.5	2	18	-99	-99	< 5	< 5	3
	Feb 1993	< 30	< 2	< 6	< 2	70	< 10	< 10	< 1	< 2

All 1993 metals samples were analyzed by AmTest for total metals.
All 1992 metals samples were analyzed by the Institute for Watershed Studies (WWU) for dissolved metals.
The 1990 creek data do not include the November 1990 storm event.

Table 12: Creek metals data compared to 1990 averages.

Table 13:

Lake Whatcom Watershed Monthly Hydraulic Data

Millions of Gallons

	Inputs				Outputs							
Month	Lake Surface PPT	Watershed Runoff	Diversion Inflow	Total Inputs	Whatcom Creek	Whatcom Falls Hatchery	Georgia Pacific	Bellingham Water Plant	Whatcom County WD 10	Tot Hyd	Lake Surface Evaporation	Total Outputs
Jul 90	77.1	315.2	1311.5	1703.9	305.6	159.1	1031.6	619.1	10.0	2125.5	717.9	2843.4
Aug	304.9	108.9	1305.1	1718.9	122.2	149.8	987.5	612.0	10.8	1882.3	614.5	2496.8
Sep	124.4	90.8	1263.0	1478.3	352.4	137.8	1058.7	373.5	6.4	1928.8	321.1	2249.9
Oct	958.6	935.9	869.4	2763.9	3133.3	115.5	1064.7	341.8	7.2	4662.4	180.3	4842.7
Nov	2377.5	14157.2	371.5	16906.2	12841.0	109.1	1005.5	293.5	9.5	14258.6	62.1	14320.6
Dec	1047.4	7109.7	0.0	8157.1	9731.0	118.6	1010.7	365.3	10.5	11236.1	27.3	11263.4
Jan 91	752.0	5174.8	603.9	6530.6	6411.0	121.0	987.8	357.5	10.4	7887.8	30.4	7918.2
Feb	534.6	3150.8	906.6	4592.0	3572.0	108.8	934.5	275.0	8.0	4898.3	86.5	4984.8
Mar	413.3	2400.5	1373.4	4187.1	1704.0	126.5	1017.1	299.6	8.9	3156.1	132.6	3288.7
Apr	548.2	2795.8	1315.4	4659.4	1491.0	103.6	927.2	289.2	10.0	2820.9	260.7	3081.6
May	249.9	989.7	1301.6	2541.2	1141.0	148.6	1027.2	301.6	10.3	2628.8	347.8	2976.6
Jun	258.3	493.9	1284.4	2036.5	180.0	142.1	1019.6	326.5	9.2	1677.4	374.4	2051.8
Jul	96.9	252.6	1330.5	1680.0	227.0	147.3	1072.8	544.7	12.3	2004.1	584.6	2588.7
Aug	473.1	153.8	1483.2	2110.1	0.0	143.6	1106.0	534.5	12.8	1797.0	433.1	2230.1
Sep	127.7	259.2	1163.3	1550.2	36.0	144.6	1099.7	375.1	9.4	1664.7	268.8	1933.6
Oct	136.8	117.6	736.5	990.8	1946.0	127.3	945.7	412.7	10.0	3441.8	164.1	3605.8
Nov	841.1	2148.0	1076.5	4065.6	2090.1	114.4	1024.6	315.6	10.6	3555.2	64.7	3619.9
Dec	603.2	5591.8	594.0	6789.0	4206.1	91.0	1044.8	296.5	10.1	5648.5	39.2	5687.7
Jan 92	1140.1	5478.7	645.6	7264.5	4052.9	91.9	1018.3	303.3	10.2	5476.6	59.1	5535.7
Feb	439.5	3914.2	559.5	4913.2	4553.7	101.3	999.6	271.6	8.8	5935.0	96.5	6031.5
Mar	131.1	660.7	1322.4	2114.2	761.5	116.3	1046.8	305.2	9.1	2238.9	193.3	2432.2
Apr	702.7	1866.5	1315.5	3884.7	188.6	127.2	1031.3	304.7	9.5	1661.3	318.4	1979.7
May	110.6	1334.9	1365.0	2810.5	189.5	139.2	1096.2	343.5	11.0	1779.4	463.5	2242.9
Jun	370.6	258.3	1299.0	1928.0	169.4	141.2	1071.2	486.0	12.9	1880.5	585.7	2466.2
Jul	261.6	319.7	1337.4	1918.7	101.4	156.7	1133.7	441.8	12.4	1846.1	511.0	2357.1
Aug	338.6	176.9	1309.2	1824.6	52.9	150.2	1097.1	481.2	10.8	1792.1	425.7	2217.8
Sep	627.0	322.9	756.0	1706.0	265.9	129.7	1070.6	353.5	9.2	1828.8	241.1	2069.9
Oct	537.6	1298.3	0.0	1836.0	2480.0	110.2	995.1	315.9	10.5	3911.7	103.5	4015.2
Nov	862.5	4150.9	810.1	5823.5	3387.3	93.1	1040.9	275.3	9.0	4805.6	60.8	4866.4
Dec	476.5	3729.1	560.1	4765.7	3769.0	95.4	989.1	266.1	8.4	5127.9	33.8	5161.7
Jan 93	585.1	3212.3	933.0	4694.3	3341.8	96.3	936.0	295.1	8.6	4677.9	36.8	4714.7
Feb	42.2	894.1	1189.2	2017.1	2430.2	89.5	893.5	244.7	6.6	3664.6	72.4	3737.0
Mar	491.4	1773.8	1260.7	3525.8	277.7	106.8	1052.6	251.1	8.8	1697.0	157.9	1854.8
Apr	537.3	2325.7	1347.5	4210.6	693.5	118.4	968.2	258.9	7.4	2046.5	253.9	2300.3
May	457.7	1440.2	1356.9	3254.8	2070.1	130.7	1107.6	302.4	8.3	3619.1	442.7	4061.9
Jun	449.9	1162.3	1245.4	2857.6	1161.1	143.6	1066.1	280.4	8.3	2659.4	504.6	3164.0
Jul	307.9	485.8	1255.2	2048.9	553.4	147.9	1236.6	374.5	9.2	2321.7	486.5	2808.1
Aug	76.7	192.6	1218.0	1487.2	466.9	155.2	1249.4	435.3	9.6	2316.3	299.8	2616.1

Table 14:

Lake Whatcom Watershed Monthly Hydraulic Data

	Percent of Total Inputs				Percent of Total Outputs						
Month	Lake Surface PPT	Watershed Runoff	Diversion Inflow	Total Inputs MG	Whatcom Creek	Whatcom Hatchery	Georgia Pacific	Bellingham Water Plant	Whatcom County WD10	Lake Surface Evaporation	Total Outputs MG
Jul	4.5	18.5	77.0	1704	10.7	5.6	36.3	21.8	0.4	25.2	2843
Aug	17.7	6.3	75.9	1719	4.9	6.0	39.6	24.5	0.4	24.6	2497
Sep	8.4	6.1	85.4	1478	15.7	6.1	47.1	16.6	0.3	14.3	2250
Oct	34.7	33.9	31.5	2764	64.7	2.4	22.0	7.1	0.1	3.7	4843
Nov	14.1	83.7	2.2	16906	89.7	0.8	7.0	2.0	0.1	0.4	14321
Dec	12.8	87.2	0.0	8157	86.4	1.1	9.0	3.2	0.1	0.2	11263
Jan 91	11.5	79.2	9.2	6531	81.0	1.5	12.5	4.5	0.1	0.4	7918
Feb	11.6	68.6	19.7	4592	71.7	2.2	18.7	5.5	0.2	1.7	4985
Mar	9.9	57.3	32.8	4187	51.8	3.8	30.9	9.1	0.3	4.0	3289
Apr	11.8	60.0	28.2	4659	48.4	3.4	30.1	9.4	0.3	8.5	3082
May	9.8	38.9	51.2	2541	38.3	5.0	34.5	10.1	0.3	11.7	2977
Jun	12.7	24.2	63.1	2037	8.8	6.9	49.7	15.9	0.4	18.2	2052
Jul	5.8	15.0	79.2	1680	8.8	5.7	41.4	21.0	0.5	22.6	2589
Aug	22.4	7.3	70.3	2110	0.0	6.4	49.6	24.0	0.6	19.4	2230
Sep	8.2	16.7	75.0	1550	1.9	7.5	56.9	19.4	0.5	13.9	1934
Oct	13.8	11.9	74.3	991	54.0	3.5	26.2	11.4	0.3	4.6	3606
Nov	20.7	52.8	26.5	4066	57.7	3.2	28.3	8.7	0.3	1.8	3620
Dec	8.9	82.4	8.7	6789	74.0	1.6	18.4	5.2	0.2	0.7	5688
Jan 92	15.7	75.4	8.9	7264	73.2	1.7	18.4	5.5	0.2	1.1	5536
Feb	8.9	79.7	11.4	4913	75.5	1.7	16.6	4.5	0.1	1.6	6032
Mar	6.2	31.3	62.5	2114	31.3	4.8	43.0	12.5	0.4	7.9	2432
Apr	18.1	48.0	33.9	3885	9.5	6.4	52.1	15.4	0.5	16.1	1980
May	3.9	47.5	48.6	2811	8.4	6.2	48.9	15.3	0.5	20.7	2243
Jun	19.2	13.4	67.4	1928	6.9	5.7	43.4	19.7	0.5	23.7	2466
Jul	13.6	16.7	69.7	1919	4.3	6.6	48.1	18.7	0.5	21.7	2357
Aug	18.6	9.7	71.8	1825	2.4	6.8	49.5	21.7	0.5	19.2	2218
Sep	36.8	18.9	44.3	1706	12.8	6.3	51.7	17.1	0.4	11.6	2070
Oct	29.3	70.7	0.0	1836	61.8	2.7	24.8	7.9	0.3	2.6	4015
Nov	14.8	71.3	13.9	5823	69.6	1.9	21.4	5.7	0.2	1.2	4866
Dec	10.0	78.2	11.8	4766	73.0	1.8	19.2	5.2	0.2	0.7	5162
Jan 93	12.5	68.4	19.9	4694	70.9	2.0	19.9	6.3	0.2	0.8	4715
Feb	2.1	44.3	59.0	2017	65.0	2.4	23.9	6.5	0.2	1.9	3737
Mar	13.9	50.3	35.8	3526	15.0	5.8	56.7	13.5	0.5	8.5	1855
Apr	12.8	55.2	32.0	4211	30.1	5.1	42.1	11.3	0.3	11.0	2300
May	14.1	44.2	41.7	3255	51.0	3.2	27.3	7.4	0.2	10.9	4062
Jun	15.7	40.7	43.6	2858	36.7	4.5	33.7	8.9	0.3	15.9	3164
Jul	15.0	23.7	61.3	2049	19.7	5.3	44.0	13.3	0.3	17.3	2808
Aug	5.2	12.9	81.9	1487	17.8	5.9	47.8	16.6	0.4	11.5	2616

10 Figures

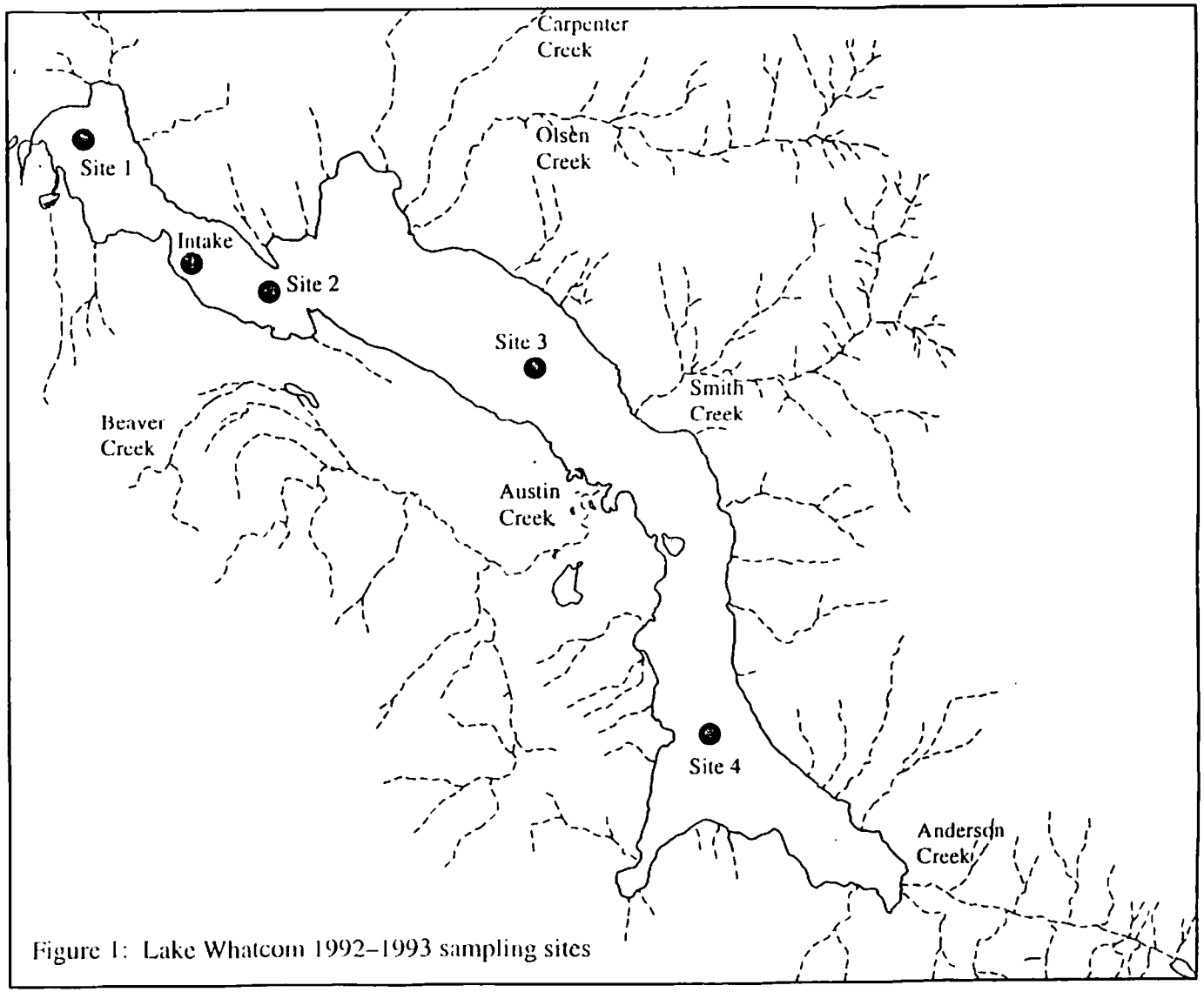


Figure 1: Lake Whatcom 1992–1993 sampling sites

Figure 2: Lake Whatcom temperature data for Site 1, September 1991 through September 1993.

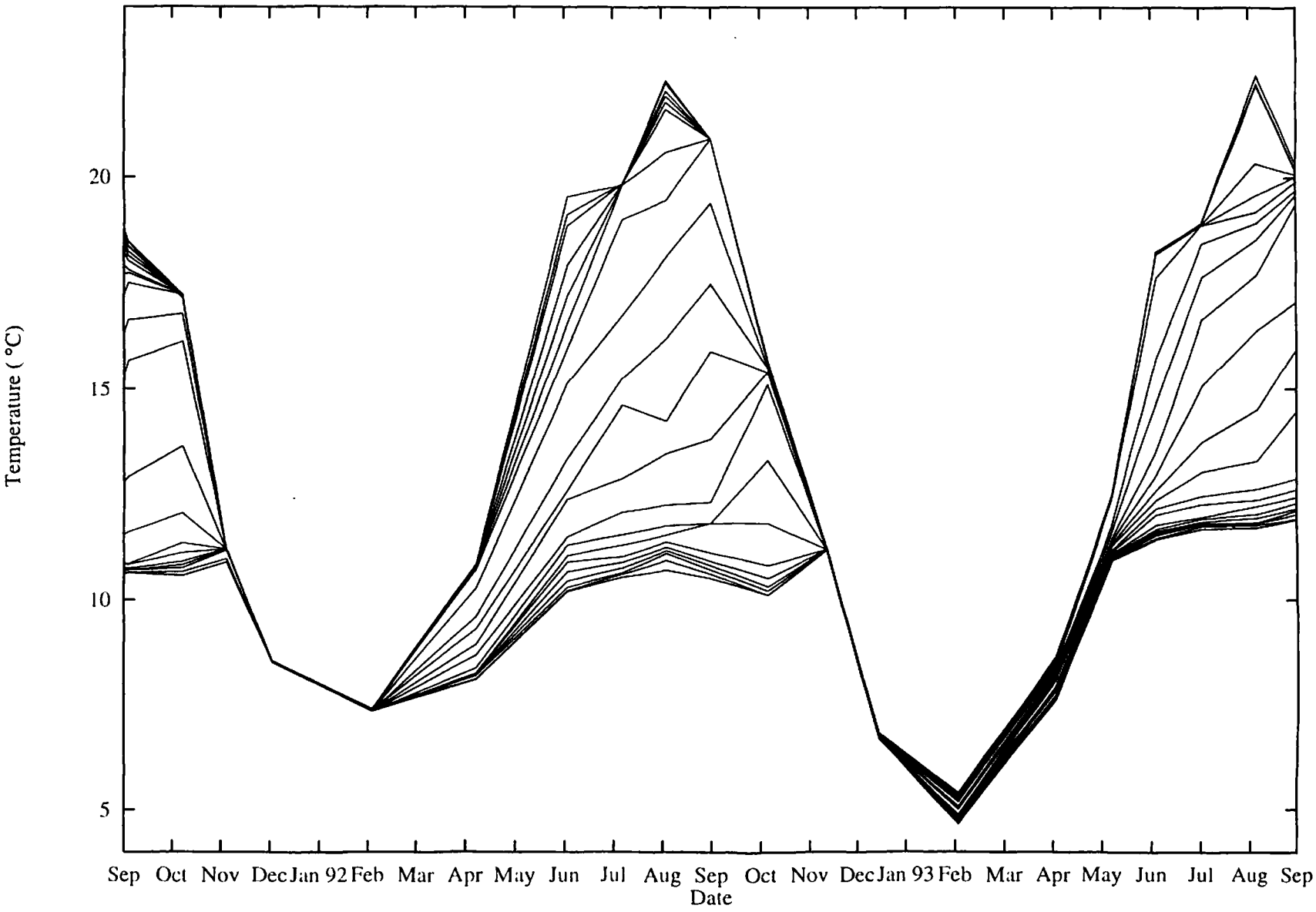


Figure 3: Lake Whatcom temperature data for Site 2, September 1991 through September 1993.

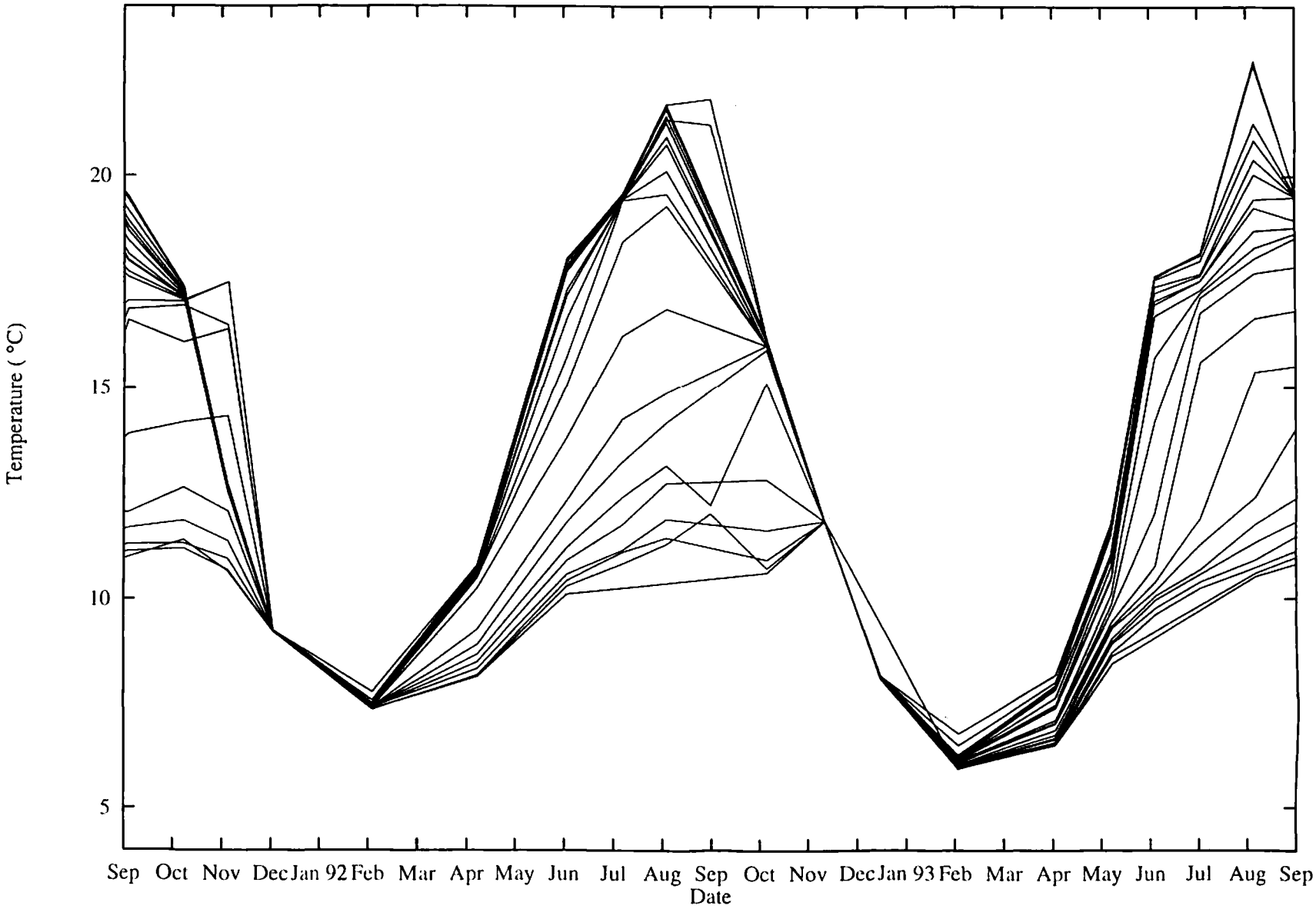


Figure 4: Lake Whatcom temperature data for Intake site (Basin 2), September 1991 through September 1993.

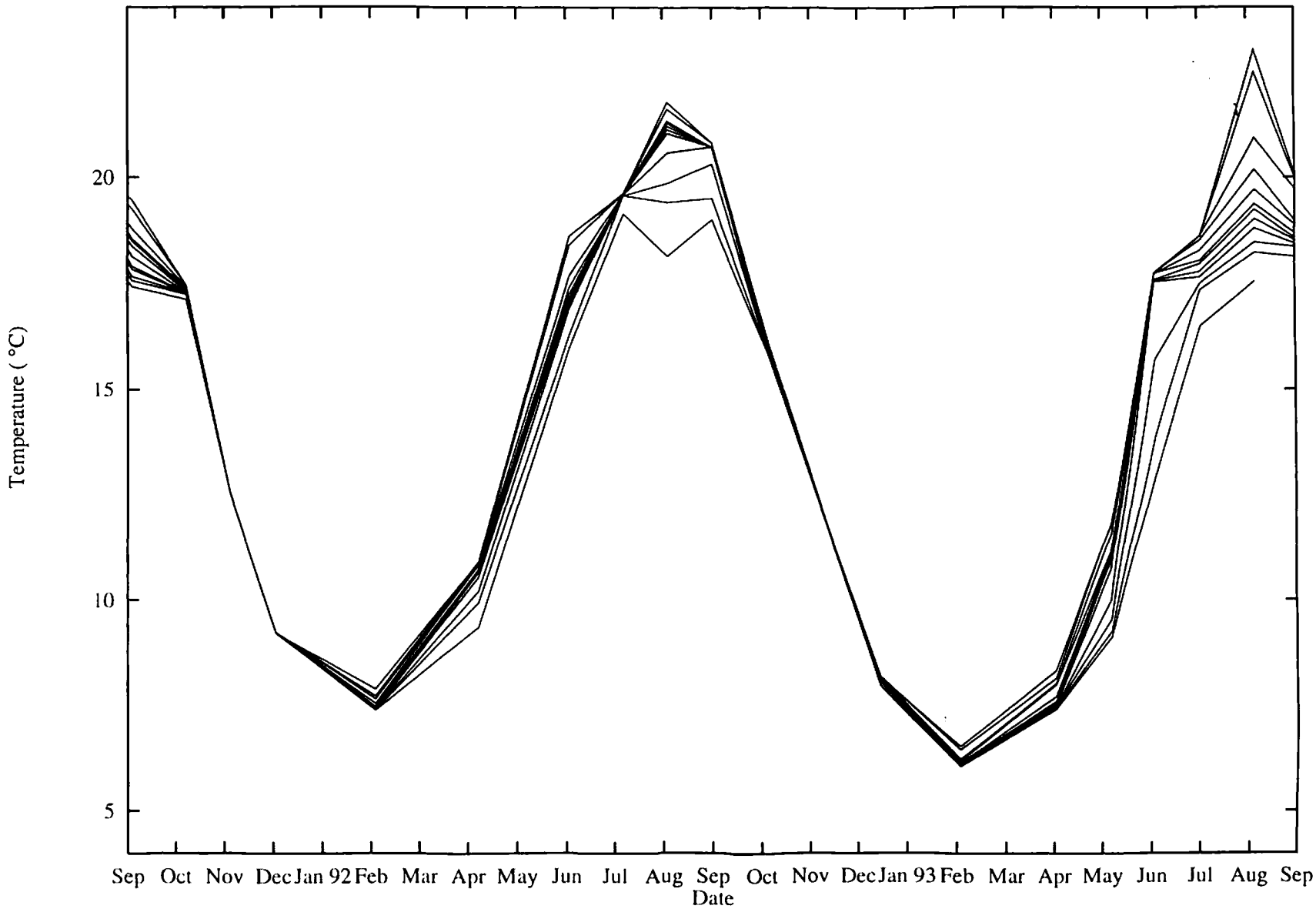


Figure 5: Lake Whatcom temperature data for Site 3, September 1991 through September 1993.

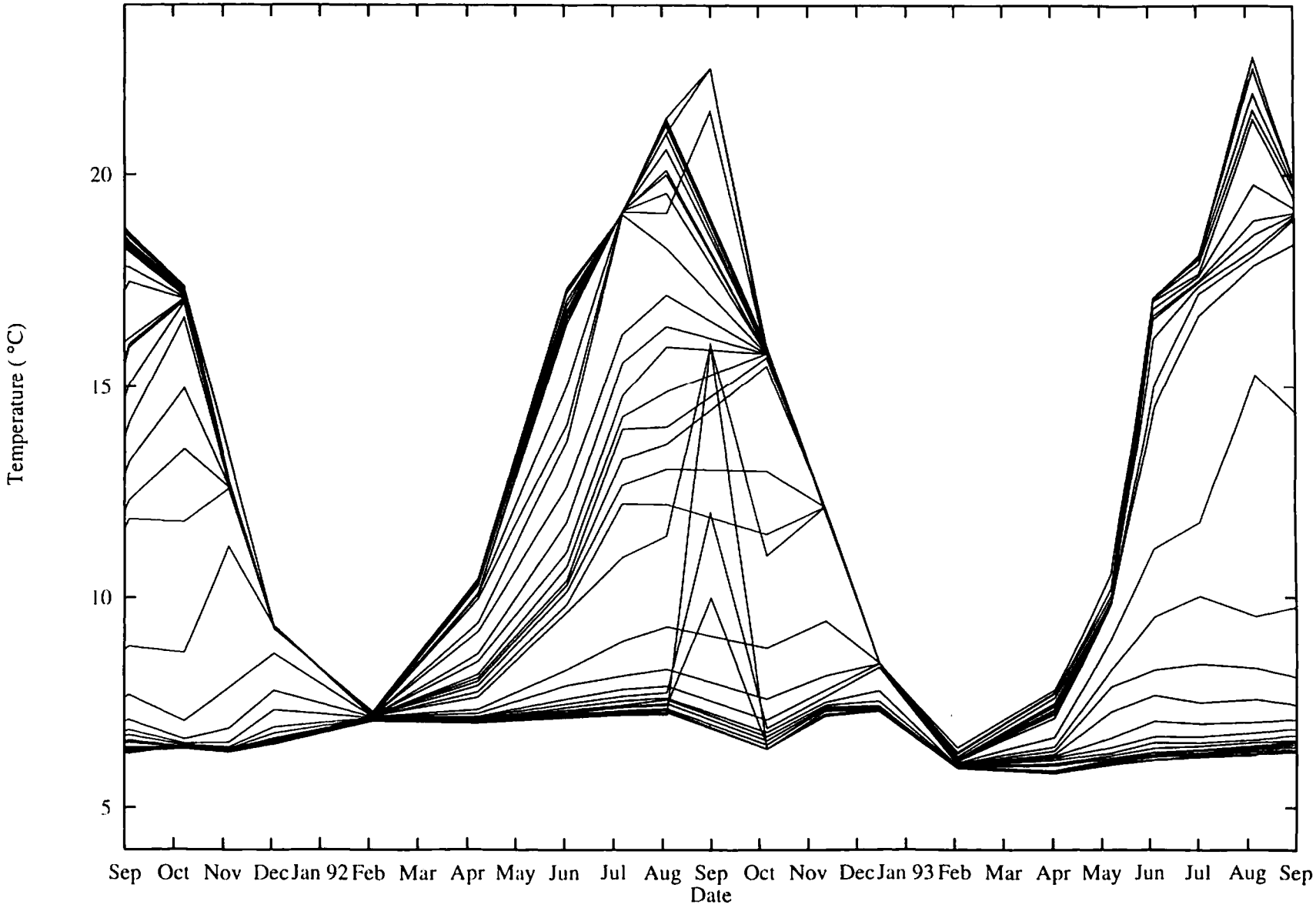


Figure 6: Lake Whatcom temperature data for Site 4, September 1991 through September 1993.

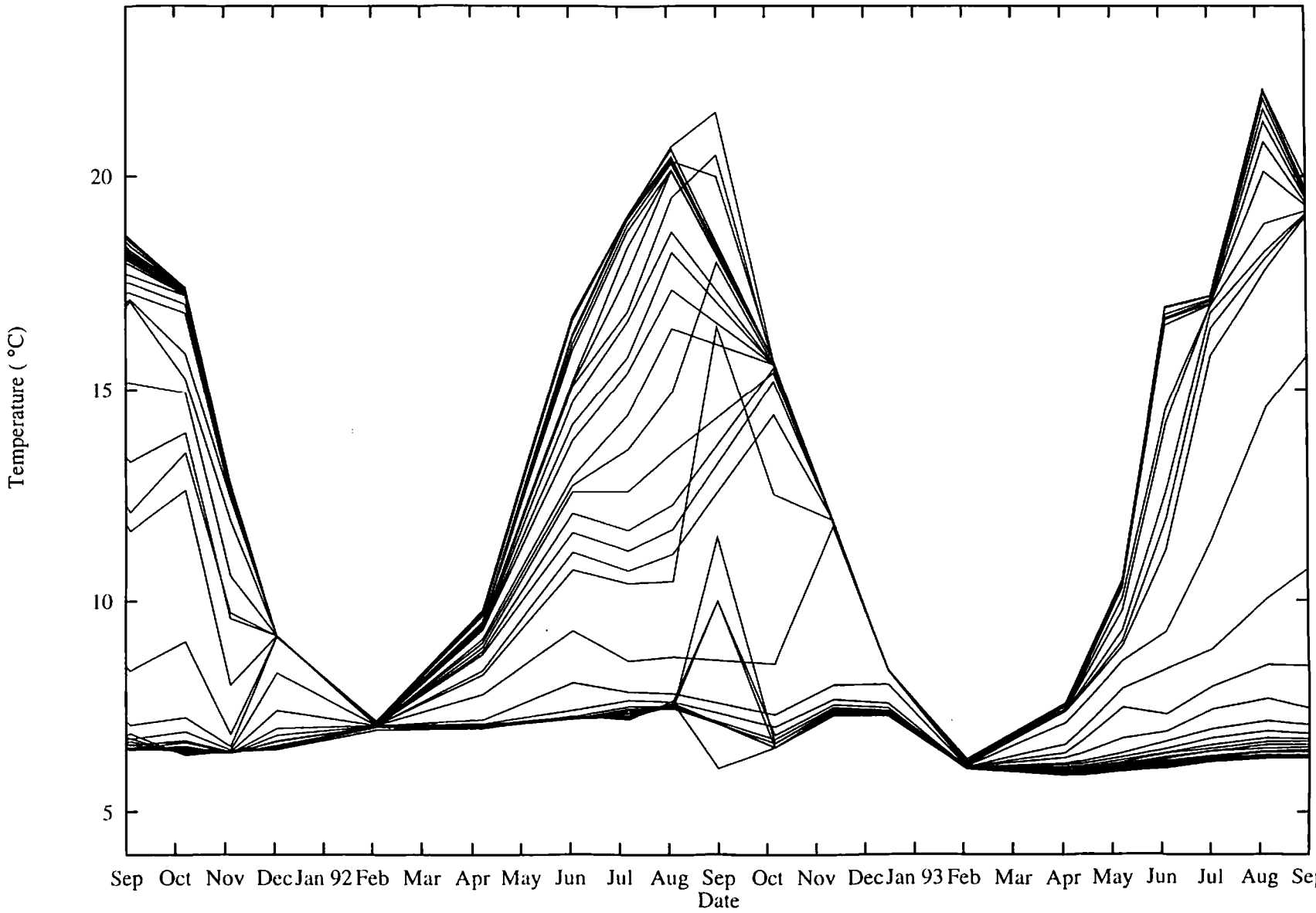


Figure 7: Lake Whatcom dissolved oxygen data for Site 1, September 1991 through September 1993.

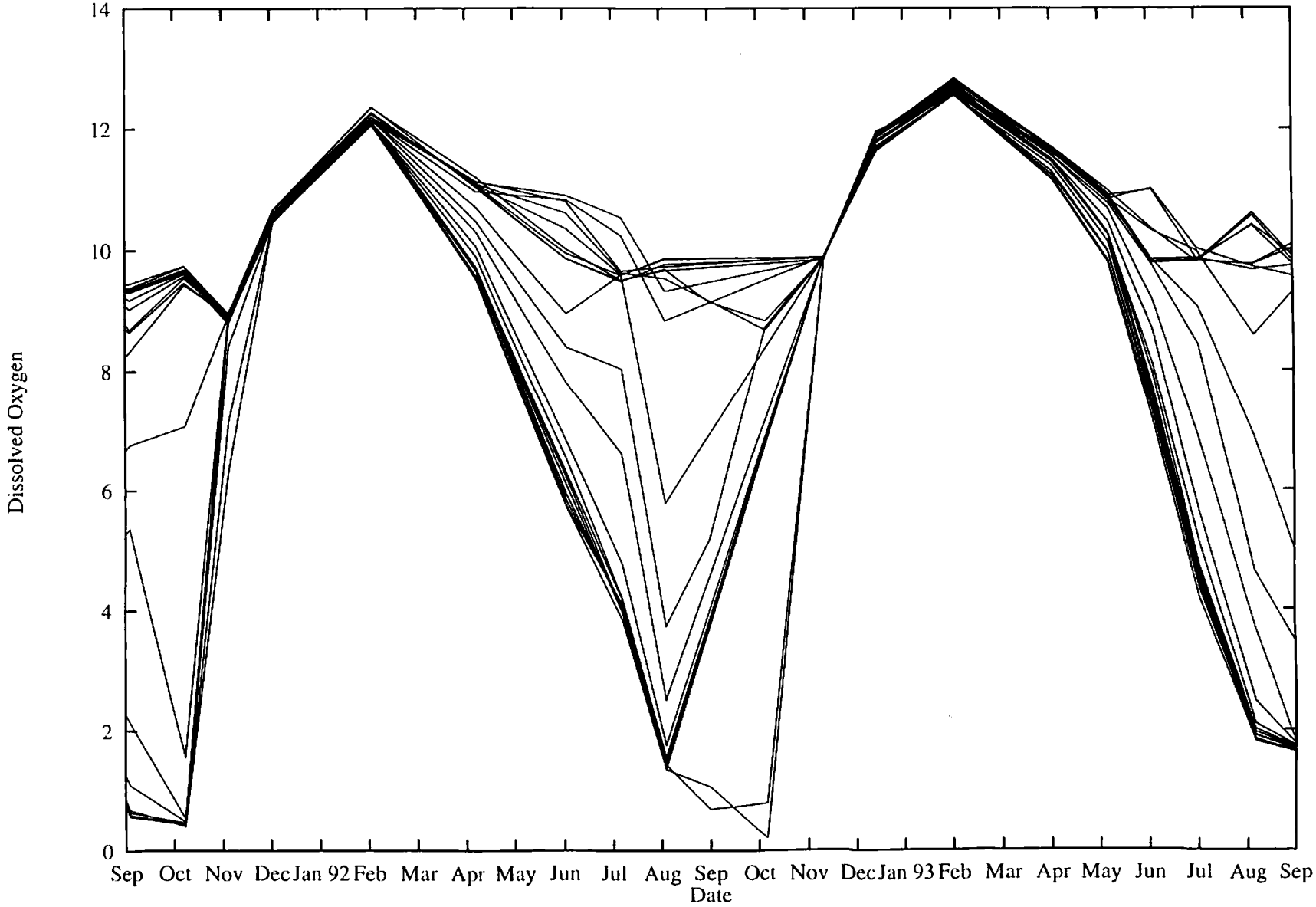


Figure 8: Lake Whatcom dissolved oxygen data for Site 2, September 1991 through September 1993.

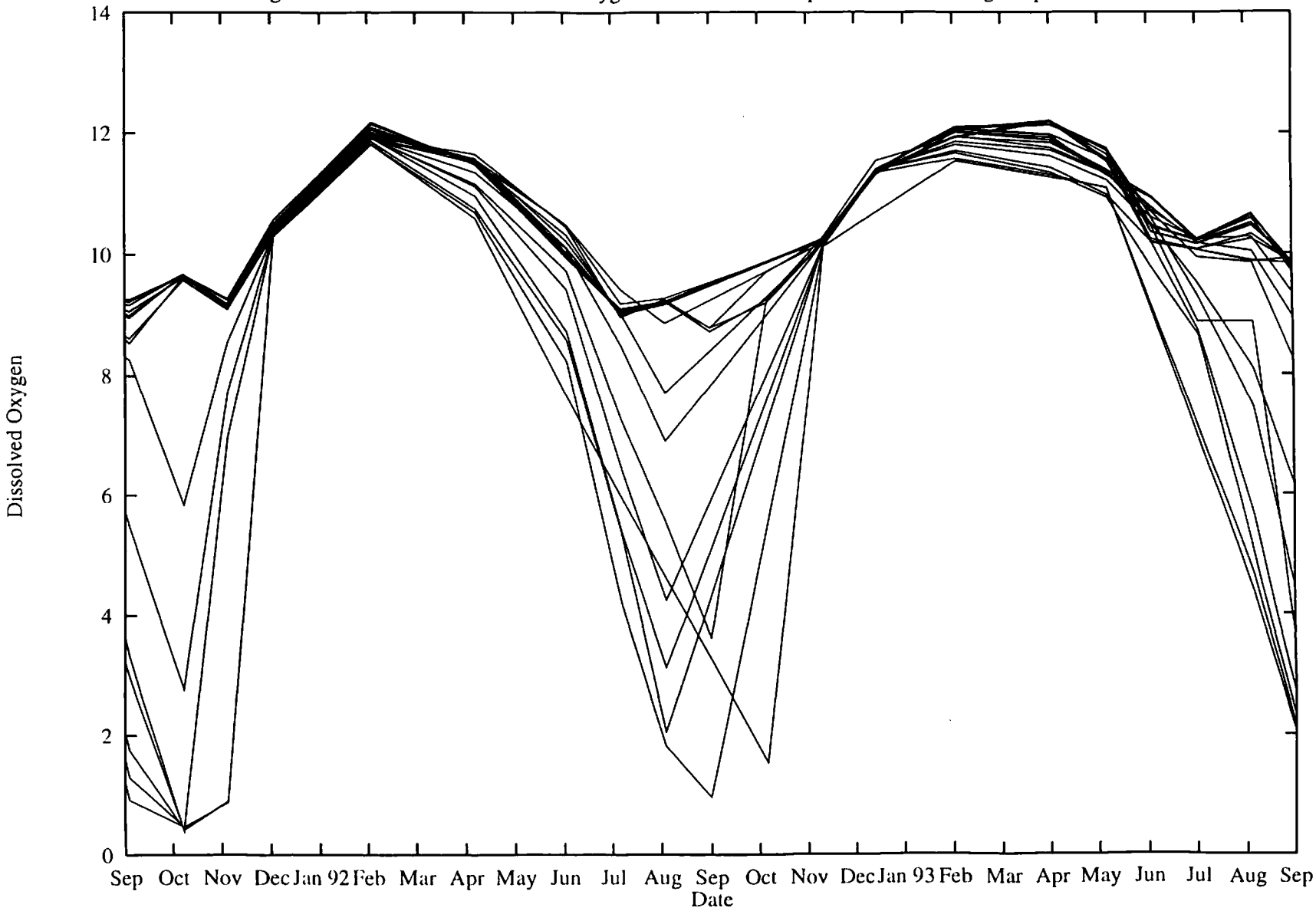


Figure 9: Lake Whatcom dissolved oxygen data for Intake site (Basin 2), September 1991 through September 1993.

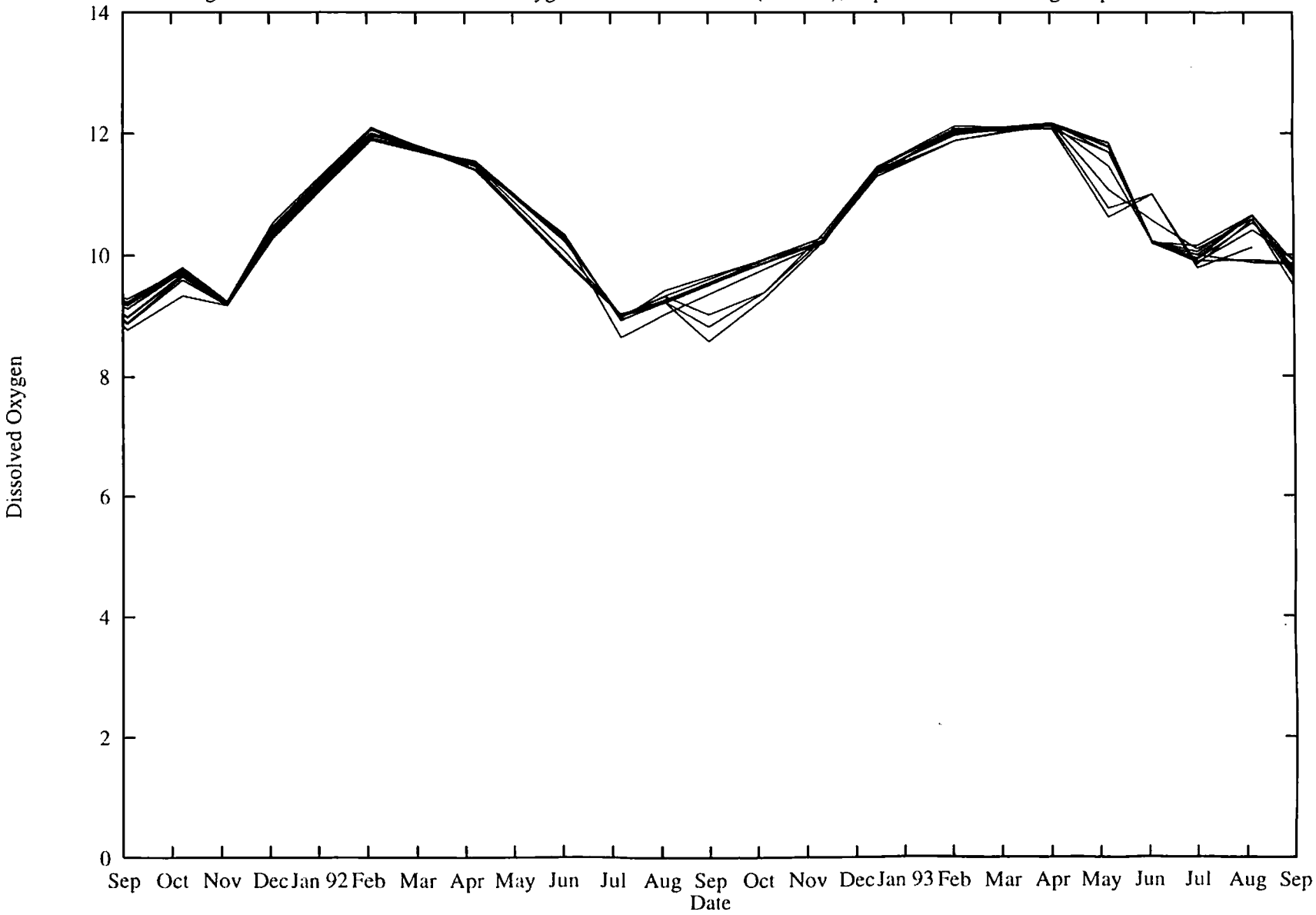


Figure 10: Lake Whatcom dissolved oxygen data for Site 3, September 1991 through September 1993.

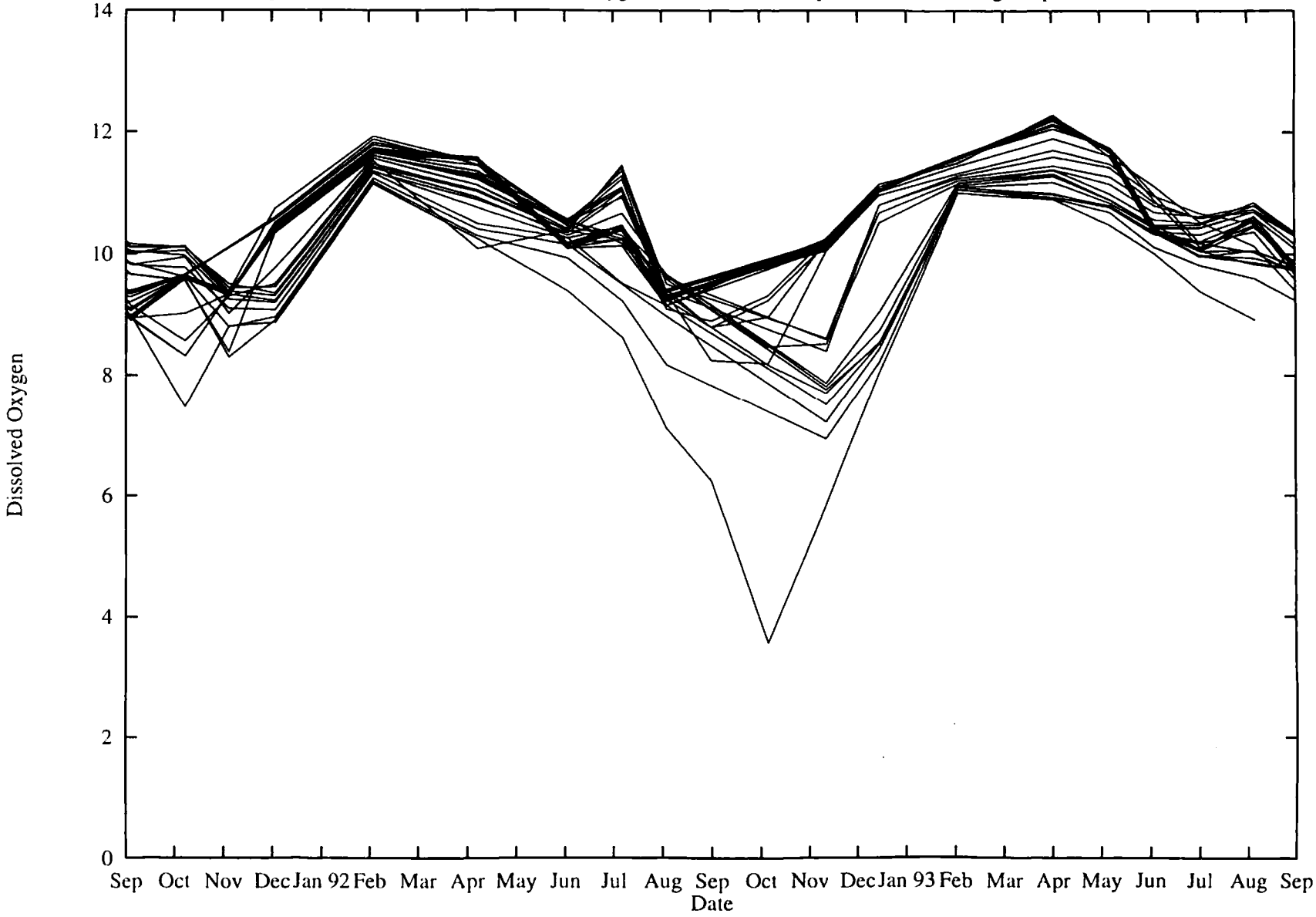
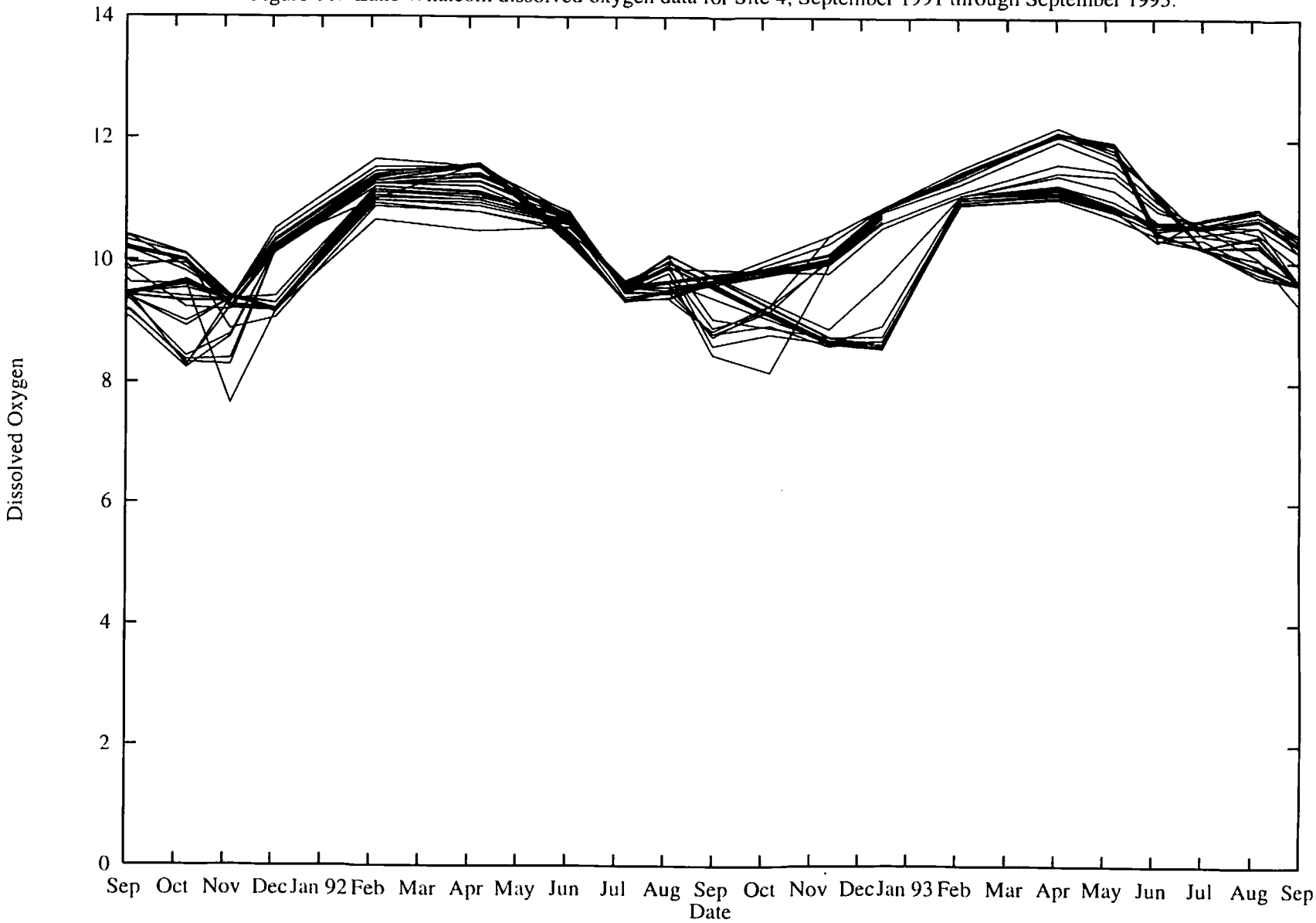


Figure 11: Lake Whatcom dissolved oxygen data for Site 4, September 1991 through September 1993.



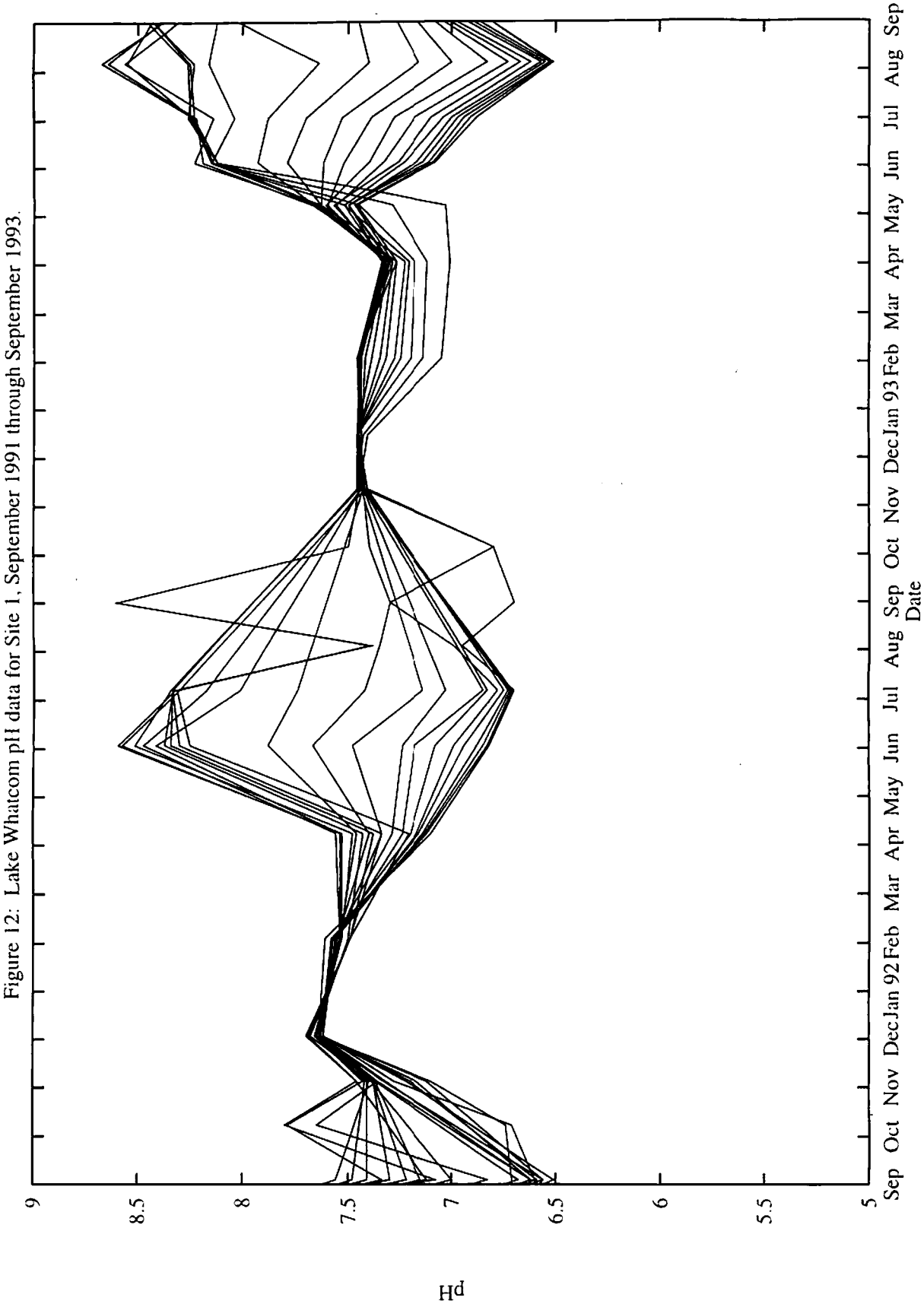


Figure 12: Lake Whatcom pH data for Site 1, September 1991 through September 1993.

Figure 13: Lake Whatcom pH data for Site 2, September 1991 through September 1993.

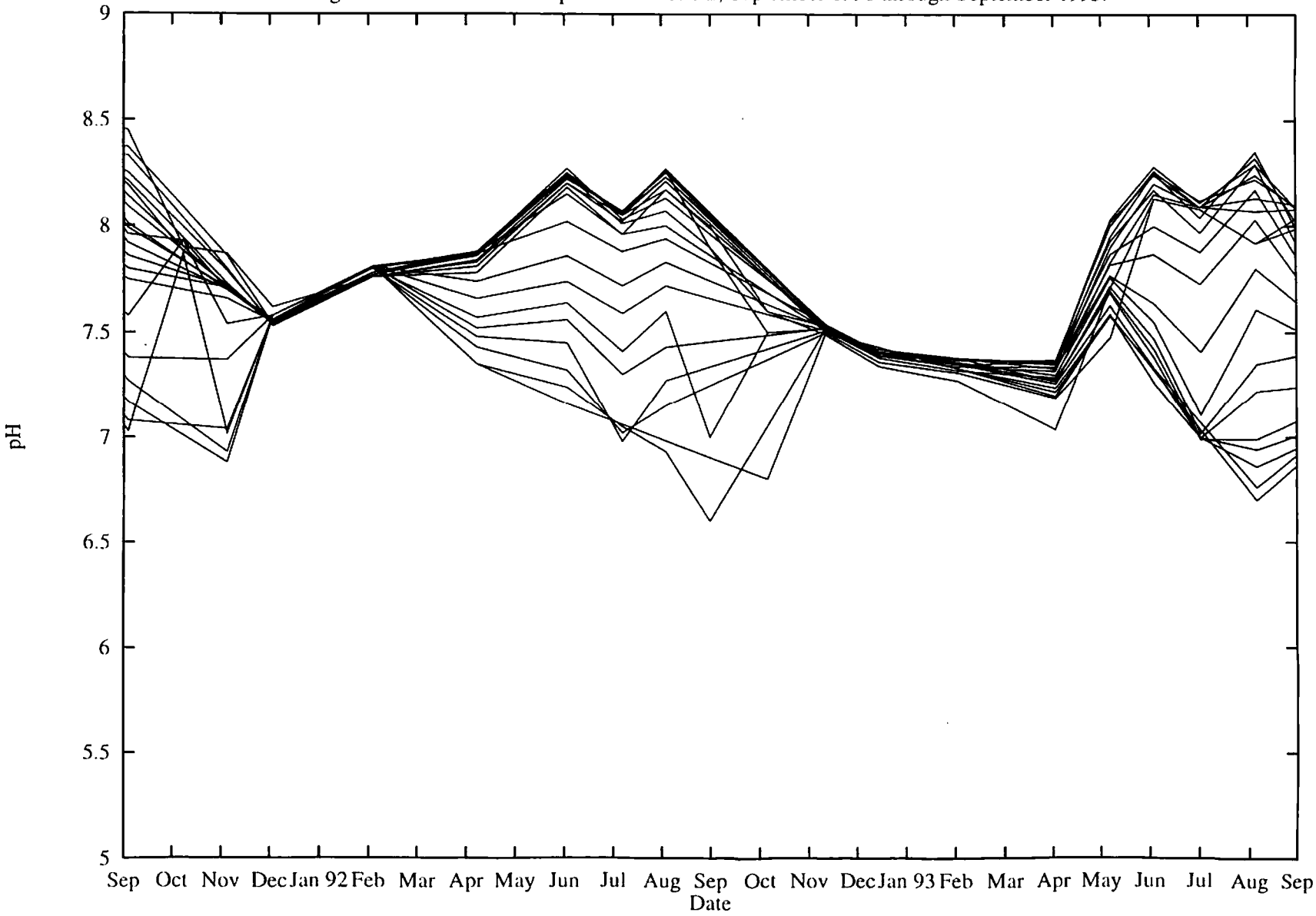


Figure 14: Lake Whatcom pH data for Intake site (Basin 2), September 1991 through September 1993.

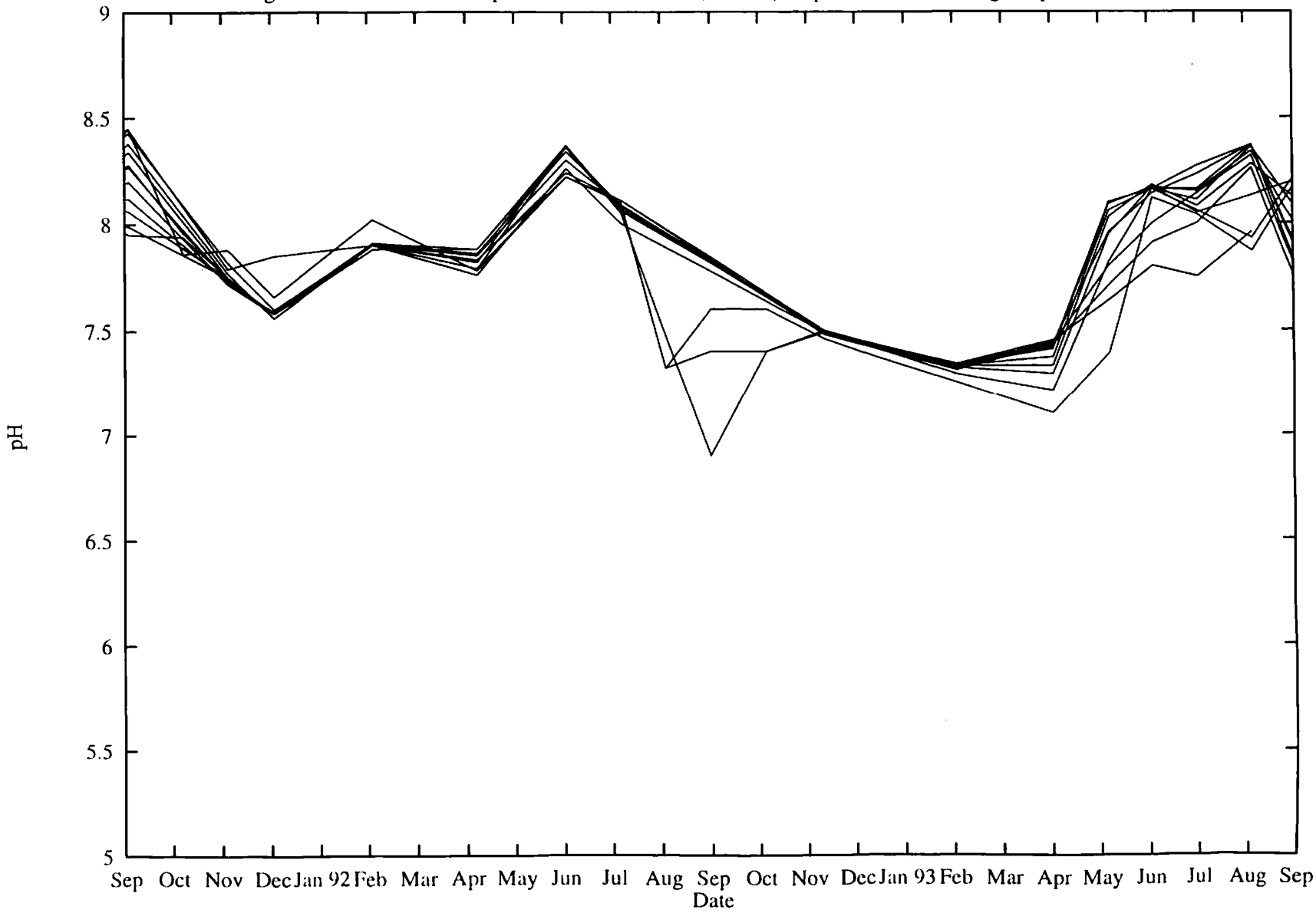


Figure 15: Lake Whatcom pH data for Site 3, September 1991 through September 1993.

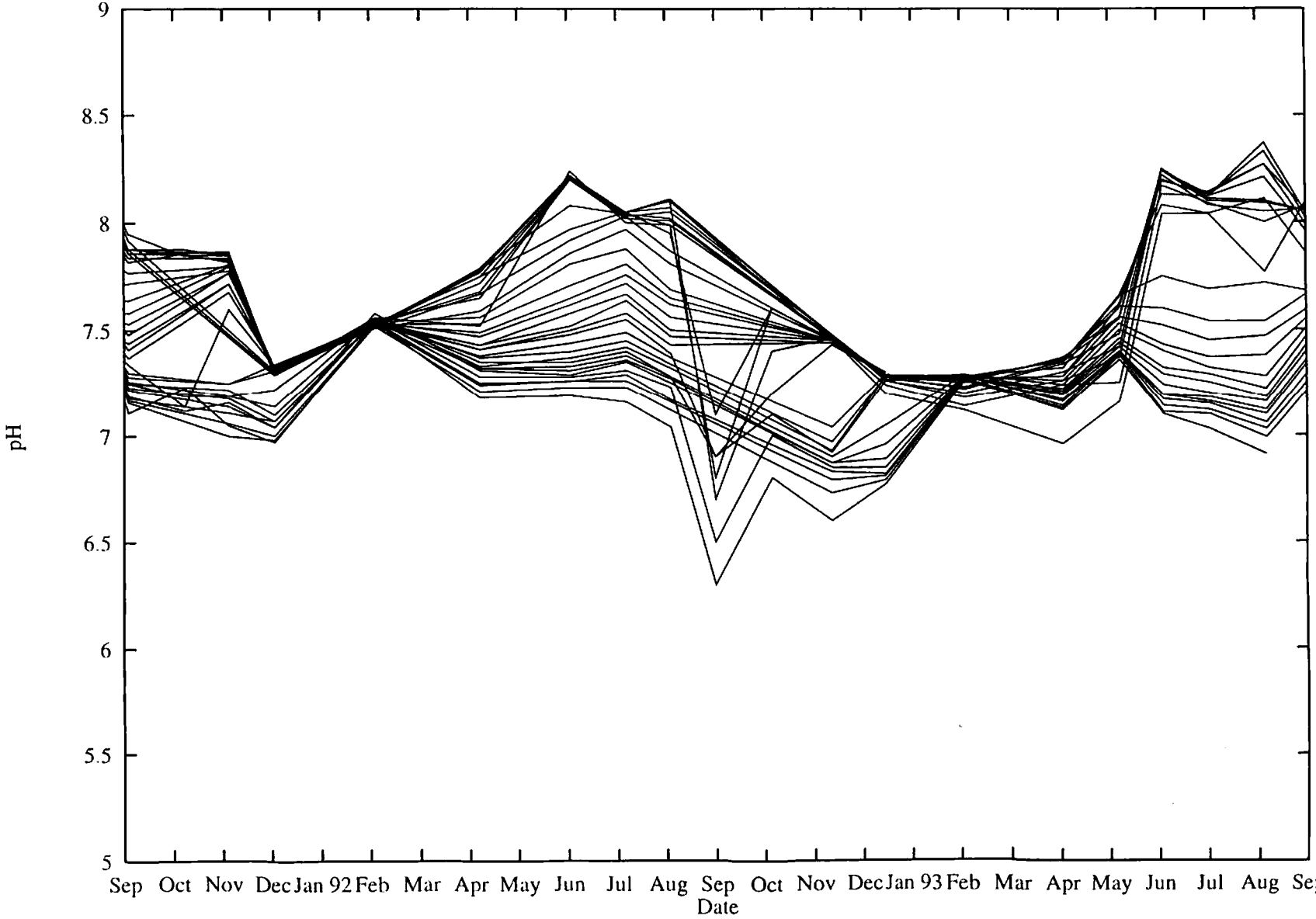


Figure 16: Lake Whatcom pH data for Site 4, September 1991 through September 1993.

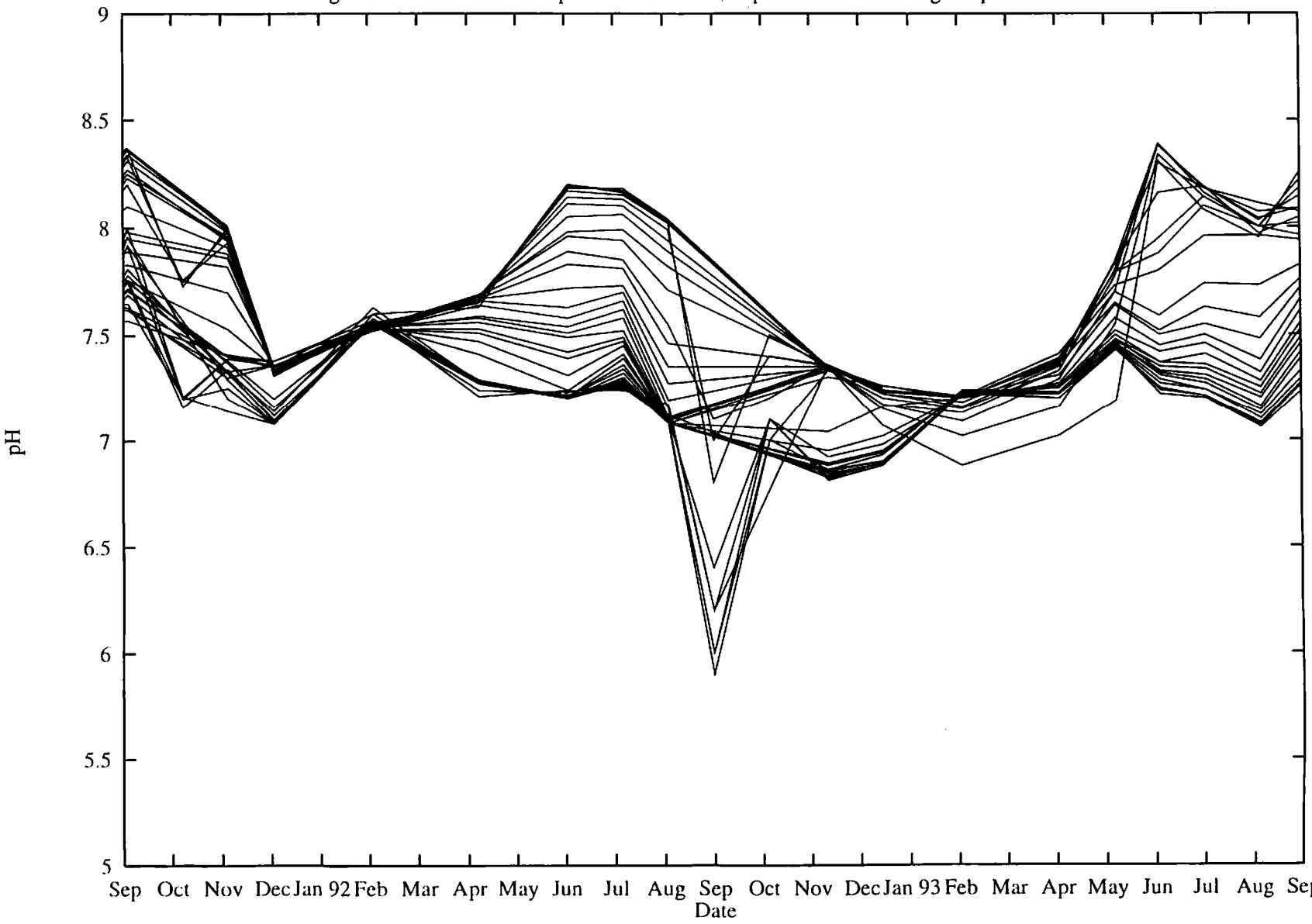


Figure 17: Lake Whatcom conductivity data for Site 1, September 1991 through September 1993.

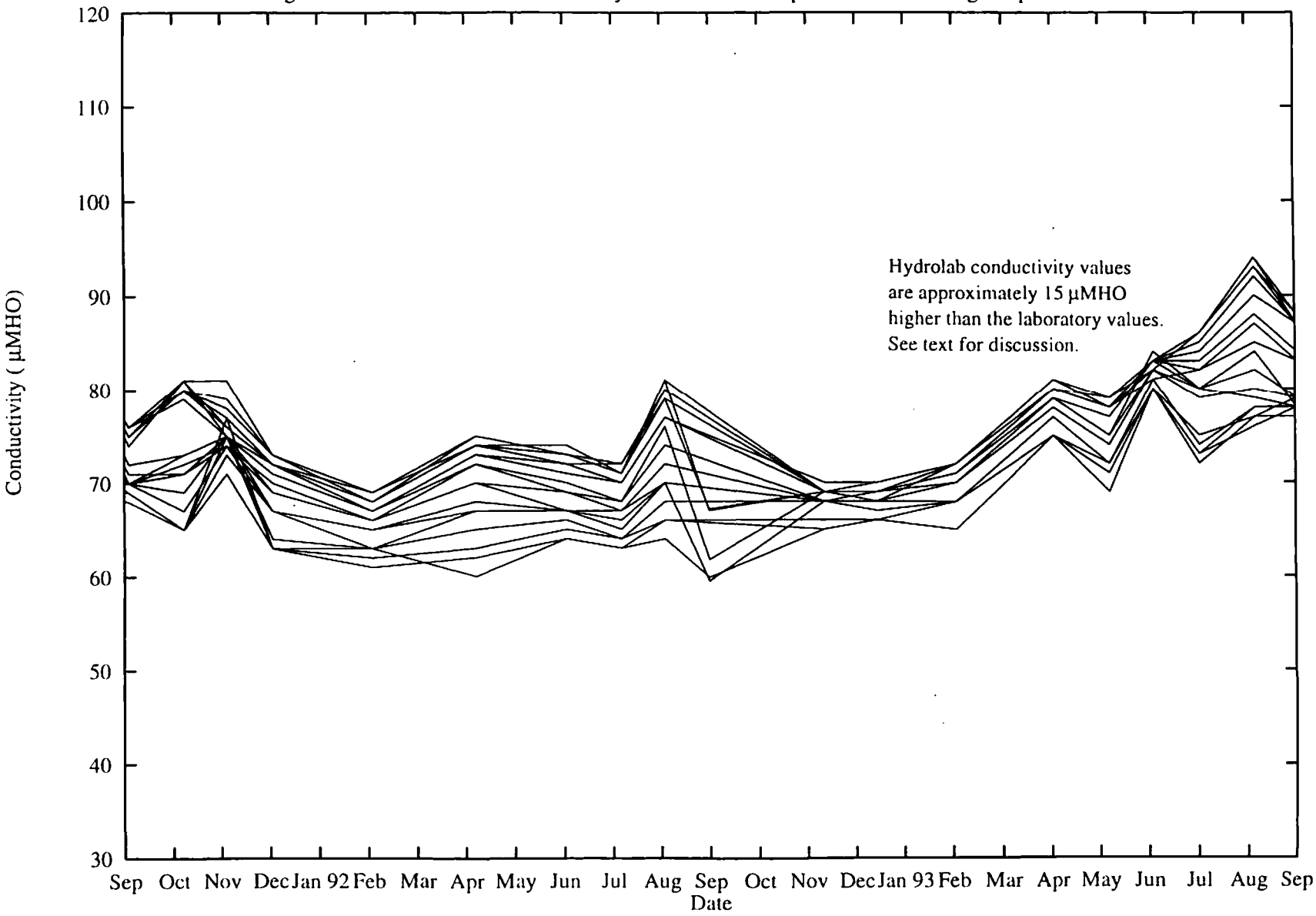


Figure 18; Lake Whatcom conductivity data for Site 2, September 1991 through September 1993.

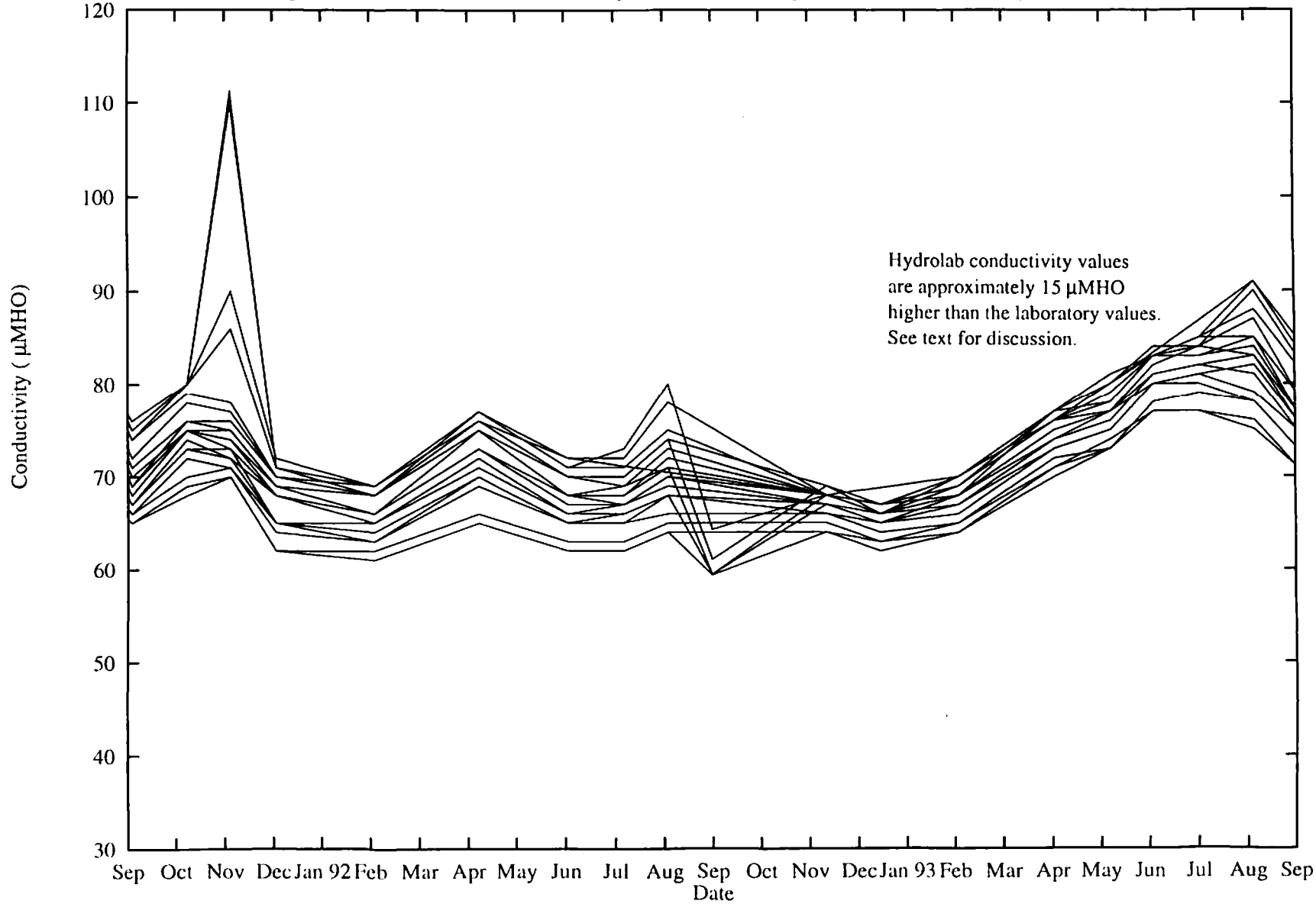


Figure 19: Lake Whatcom conductivity data for Intake site (Basin 2), September 1991 through September 1993.

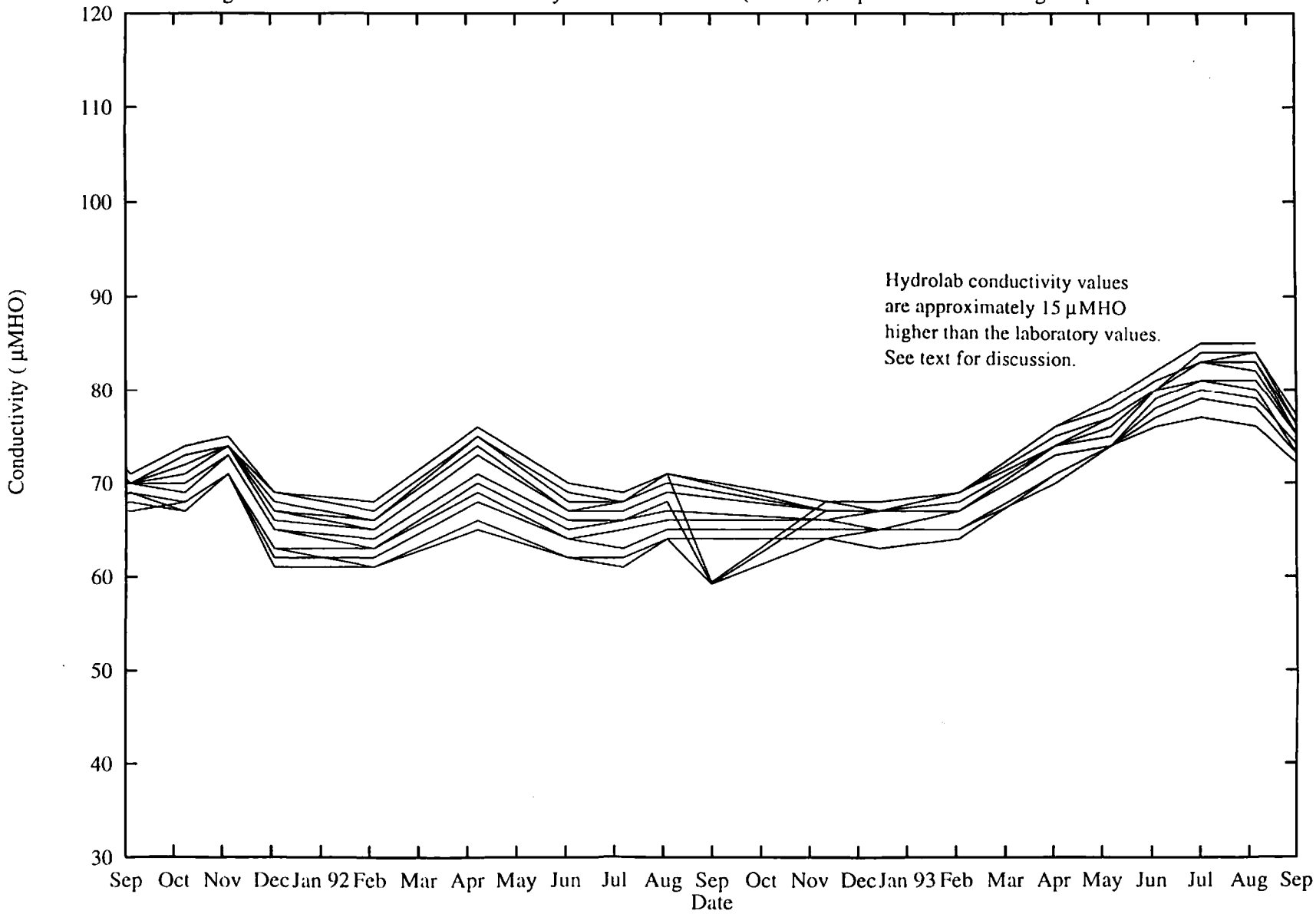


Figure 20: Lake Whatcom conductivity data for Site 3, September 1991 through September 1993.

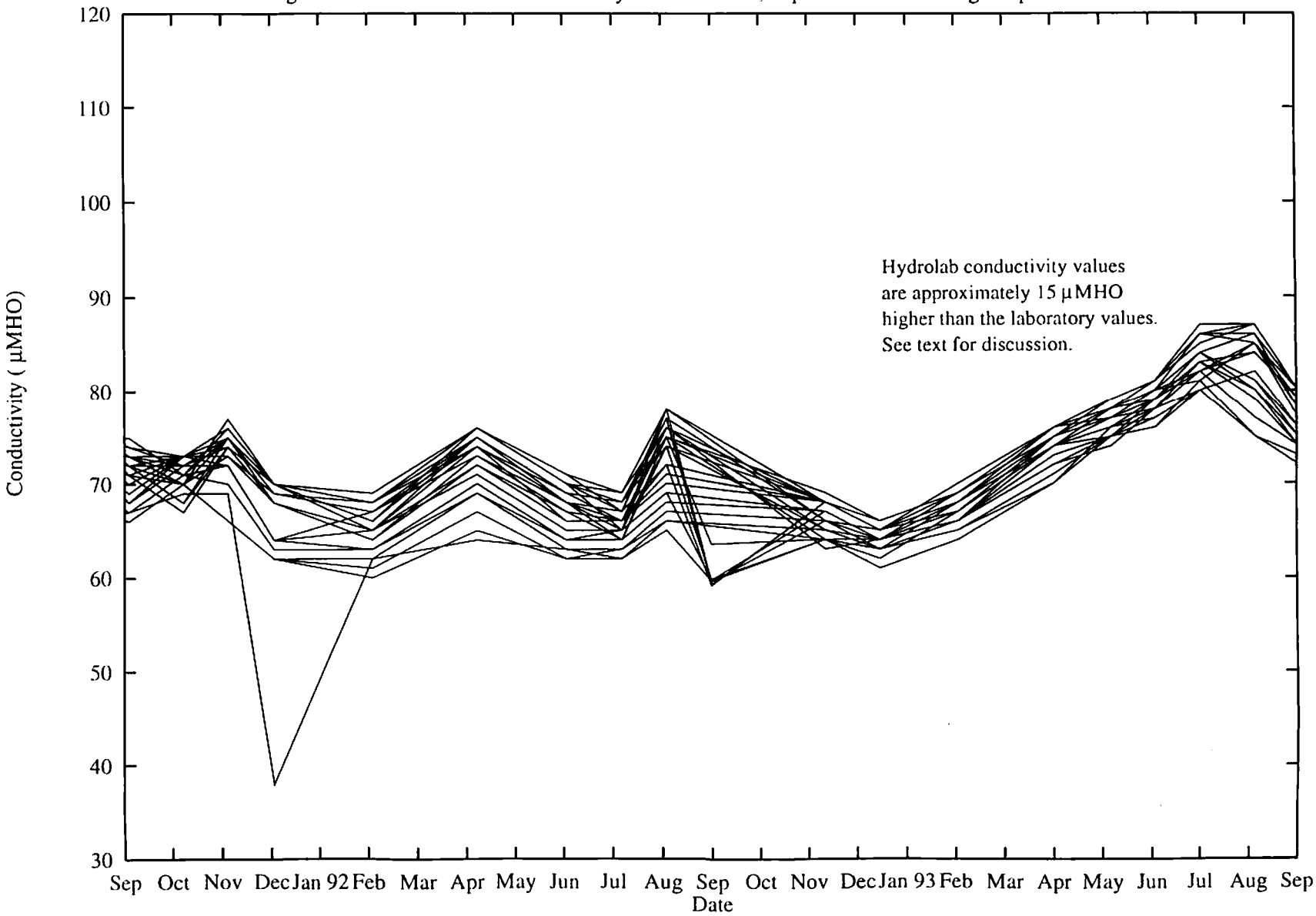


Figure 21: Lake Whatcom conductivity data for Site 4, September 1991 through September 1993.

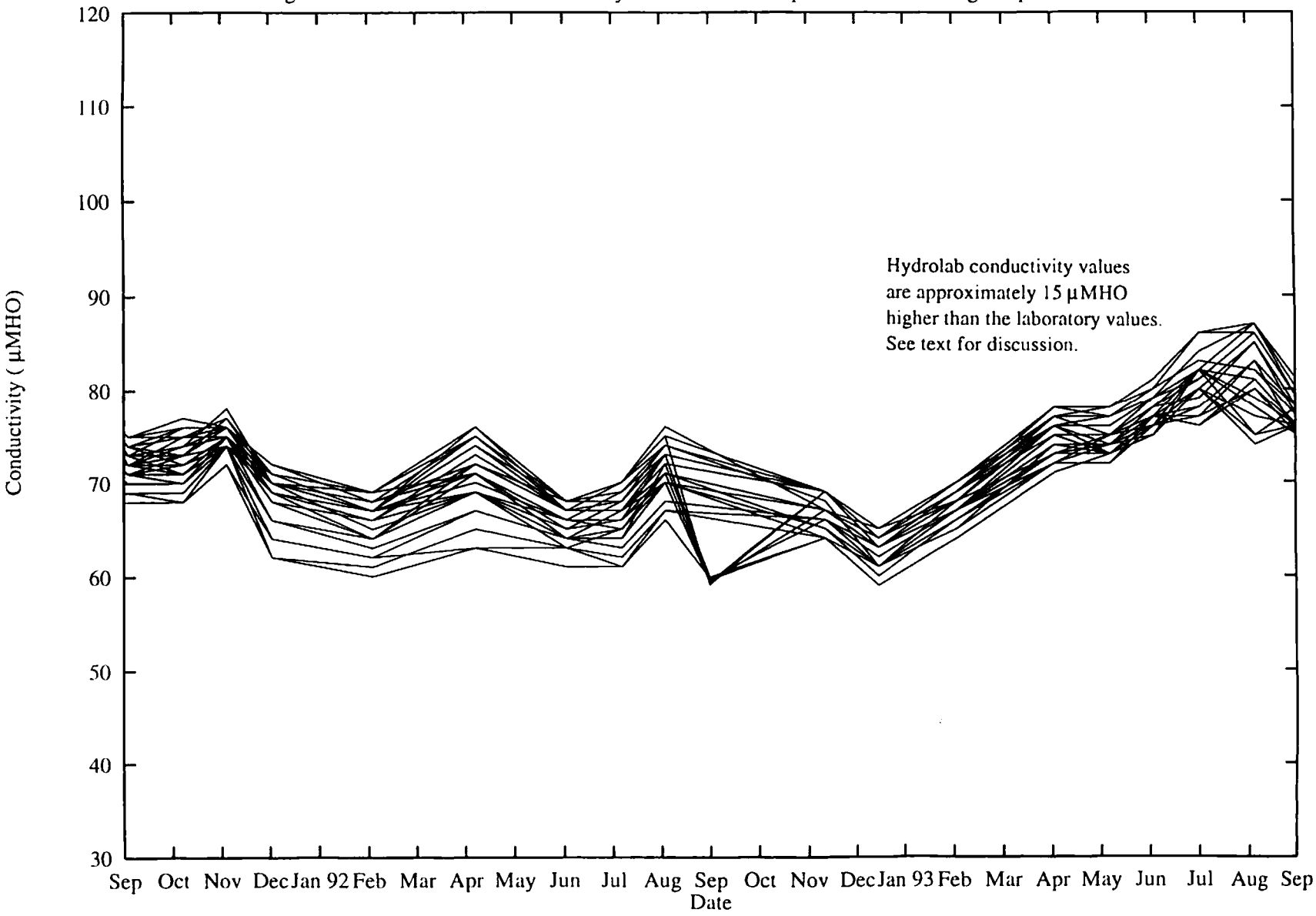


Figure 22: Lake Whatcom alkalinity data for Site 1, September 1991 through September 1993.

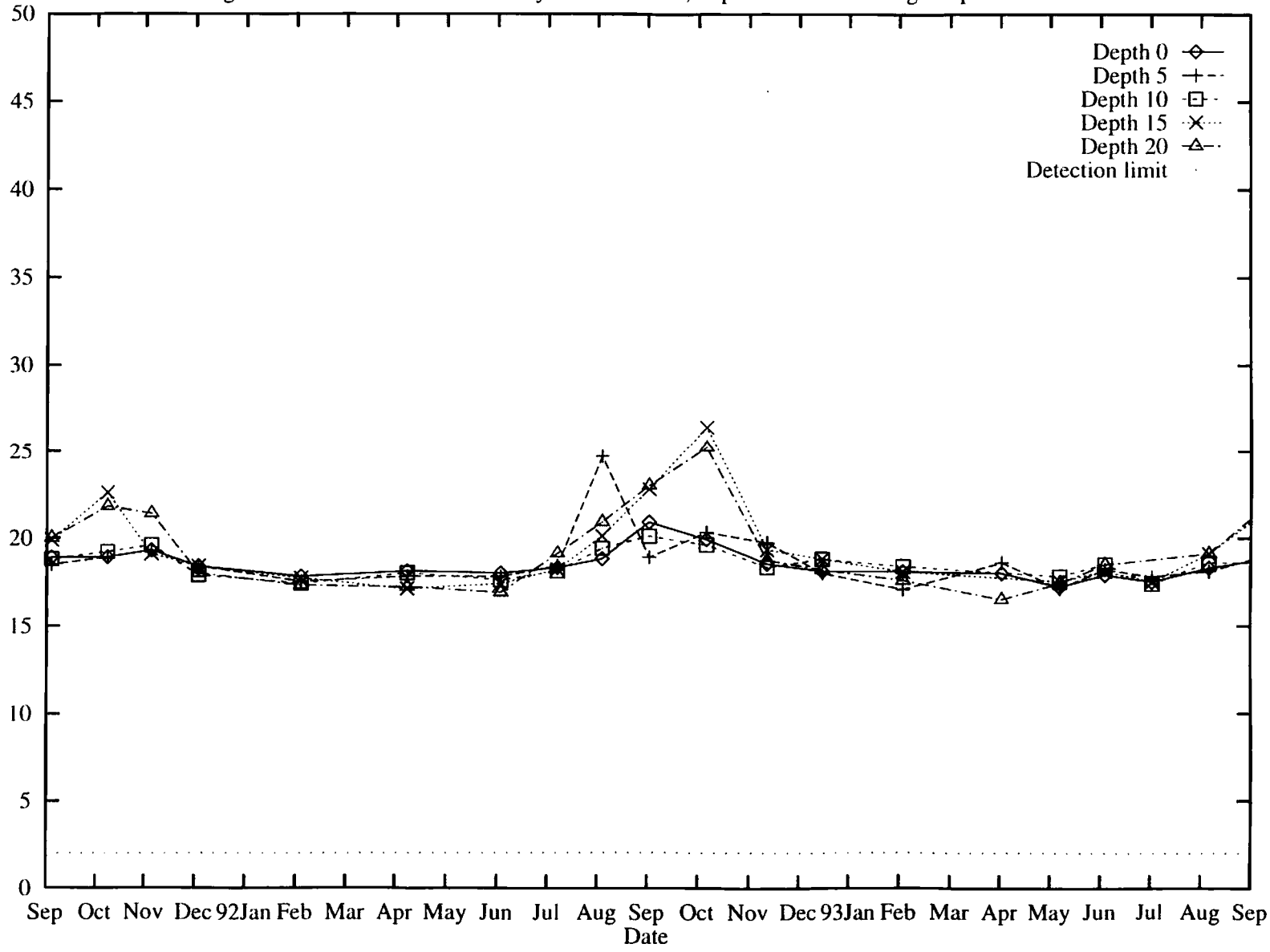


Figure 23: Lake Whatcom alkalinity data for Site 2, September 1991 through September 1993.

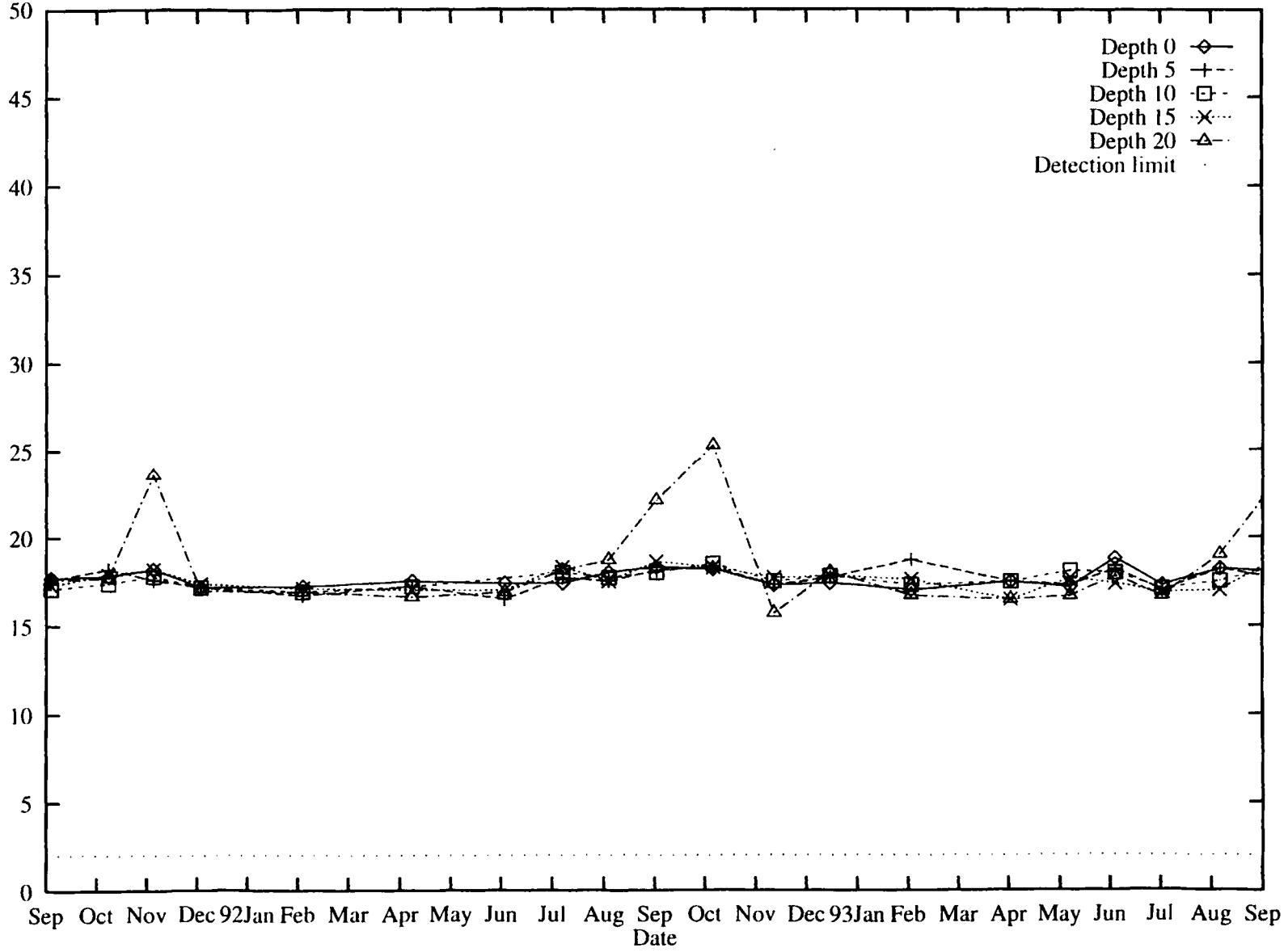


Figure 24: Lake Whatcom alkalinity data for Intake site (basin 2), September 1991 through September 1993.

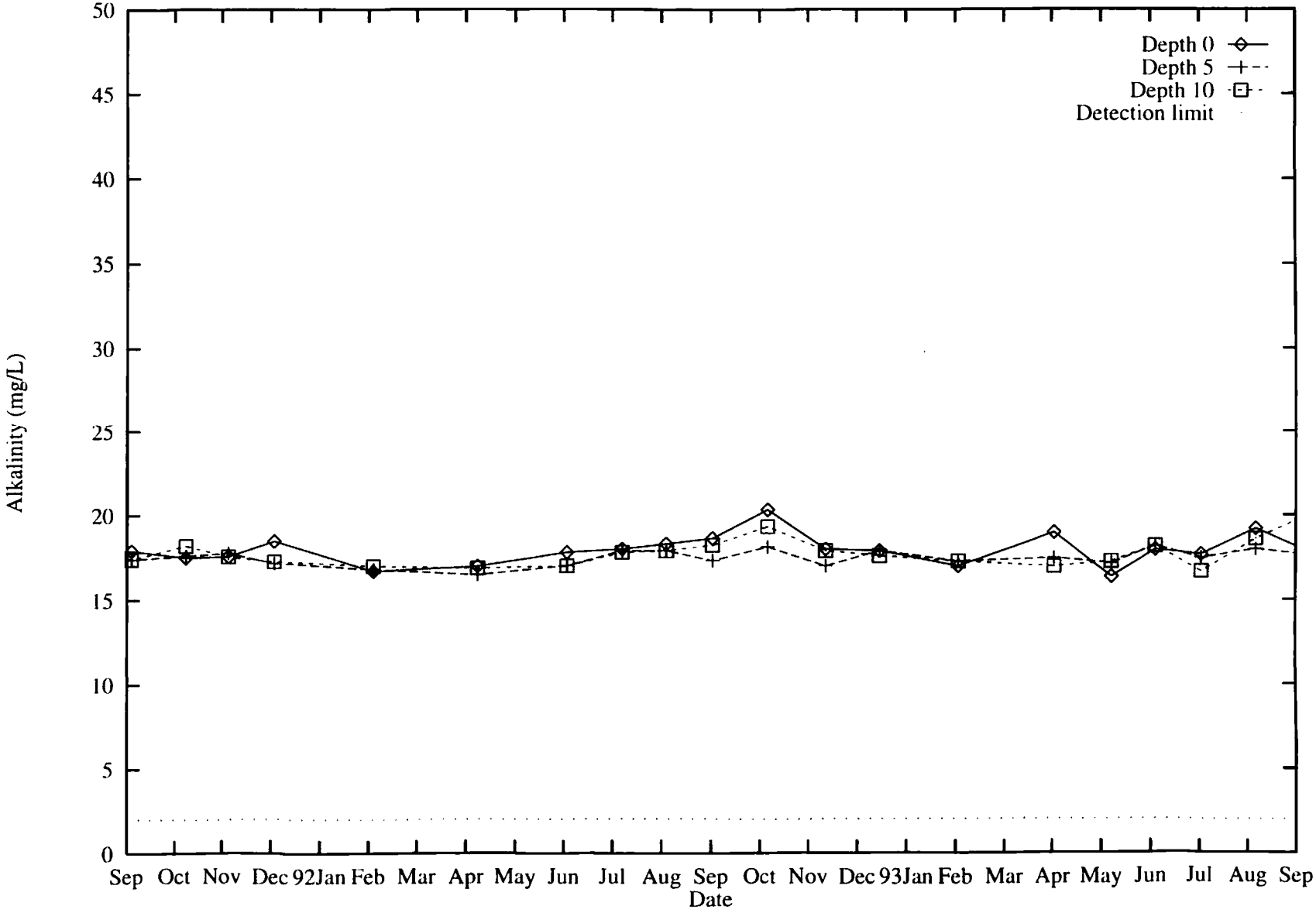


Figure 25: Lake Whatcom alkalinity data for Site 3, September 1991 through September 1993.

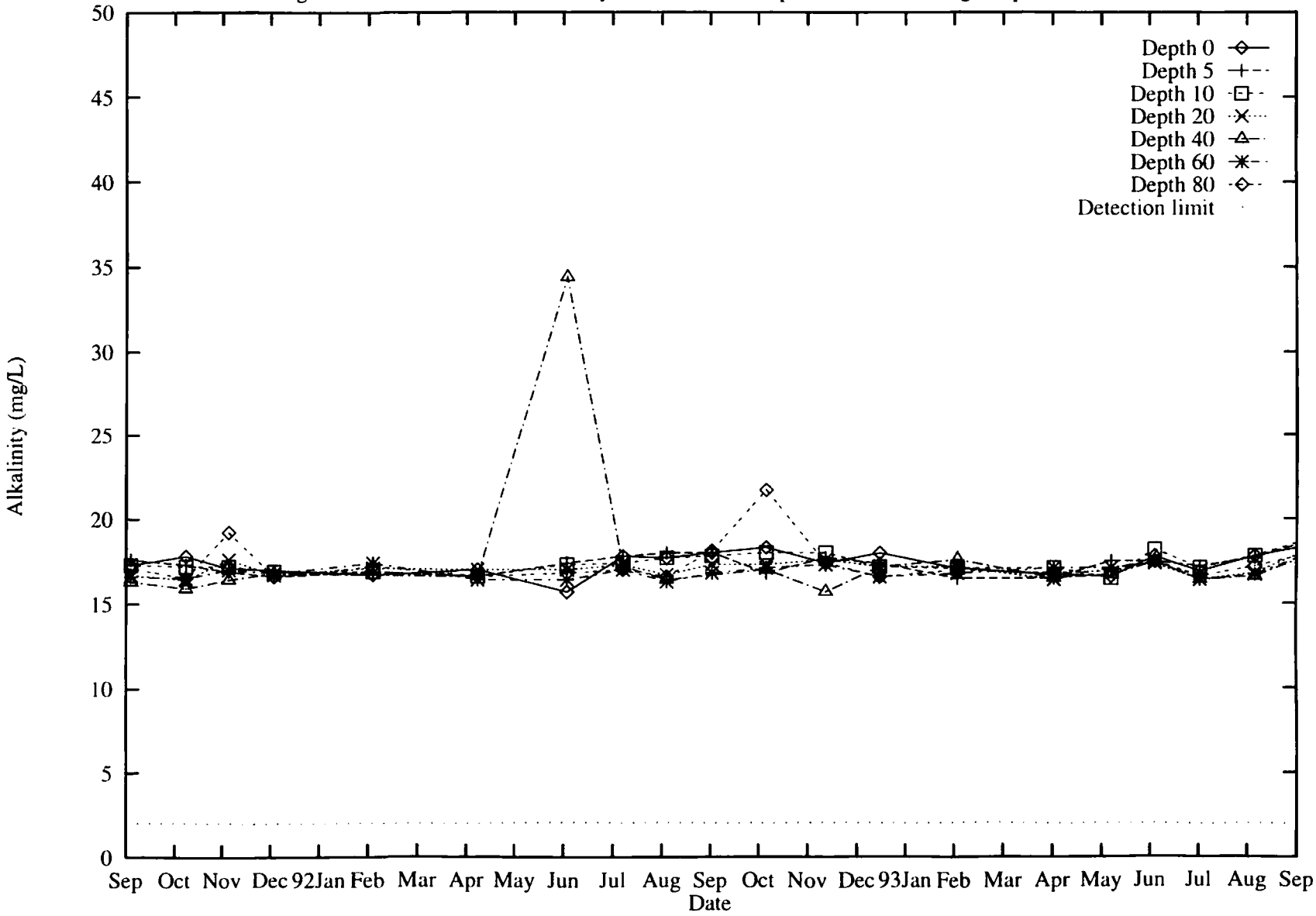


Figure 26: Lake Whatcom alkalinity data for Site 4, September 1991 through September 1993.

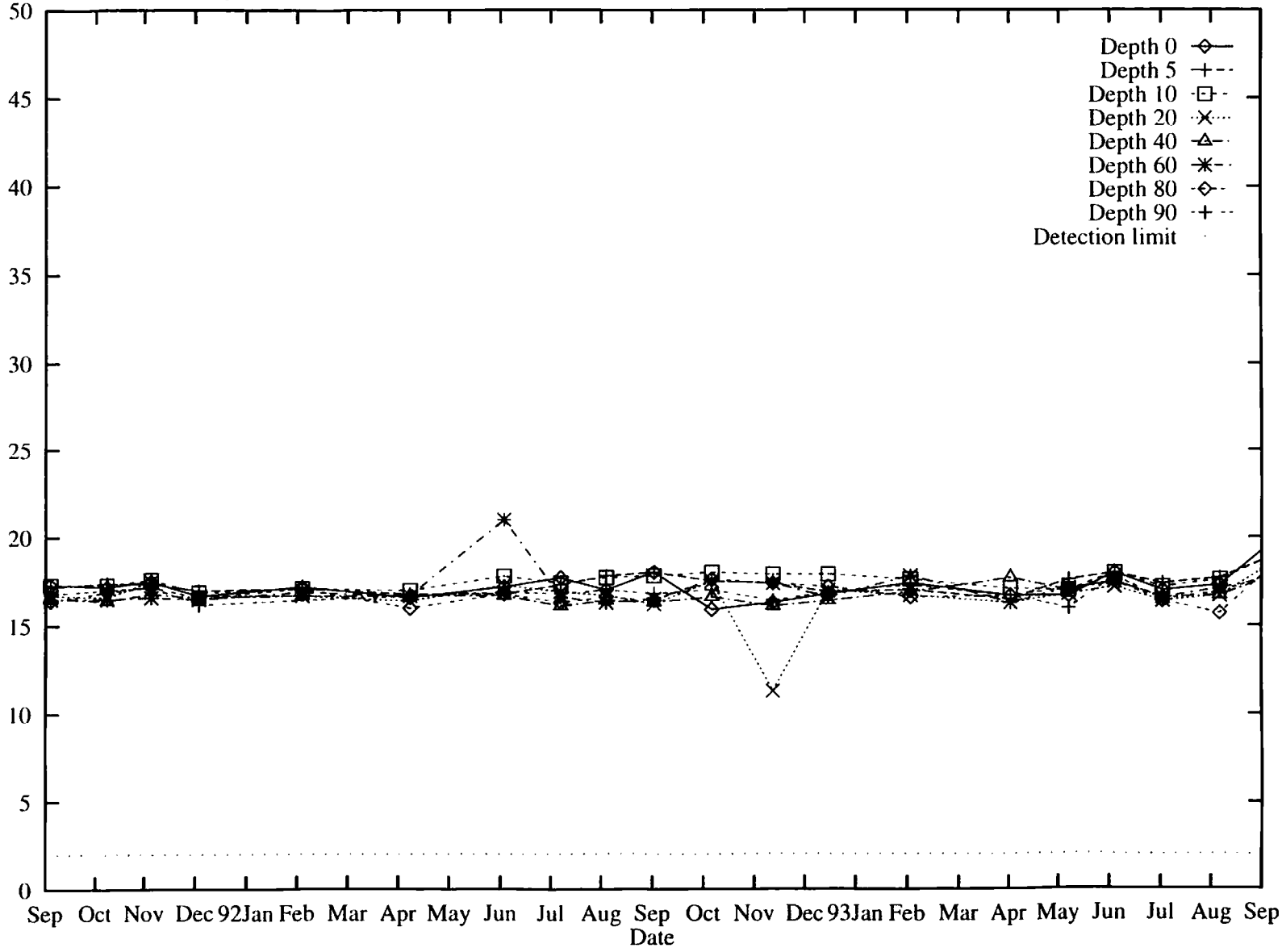


Figure 27: Lake Whatcom conductivity data (laboratory) for Site 1, September 1991 through September 1993.

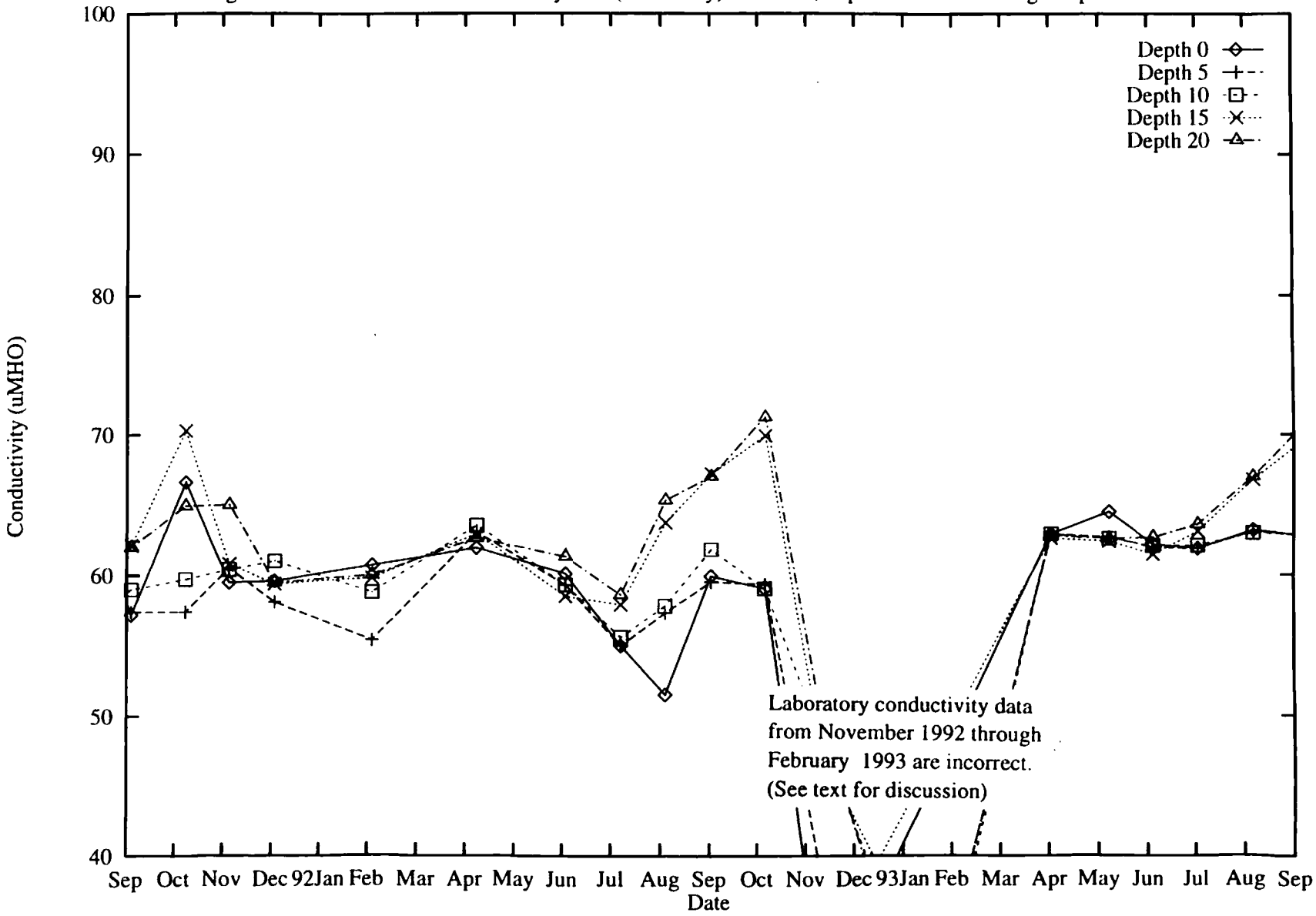


Figure 28: Lake Whatcom conductivity data (laboratory) for Site 2, September 1991 through September 1993.

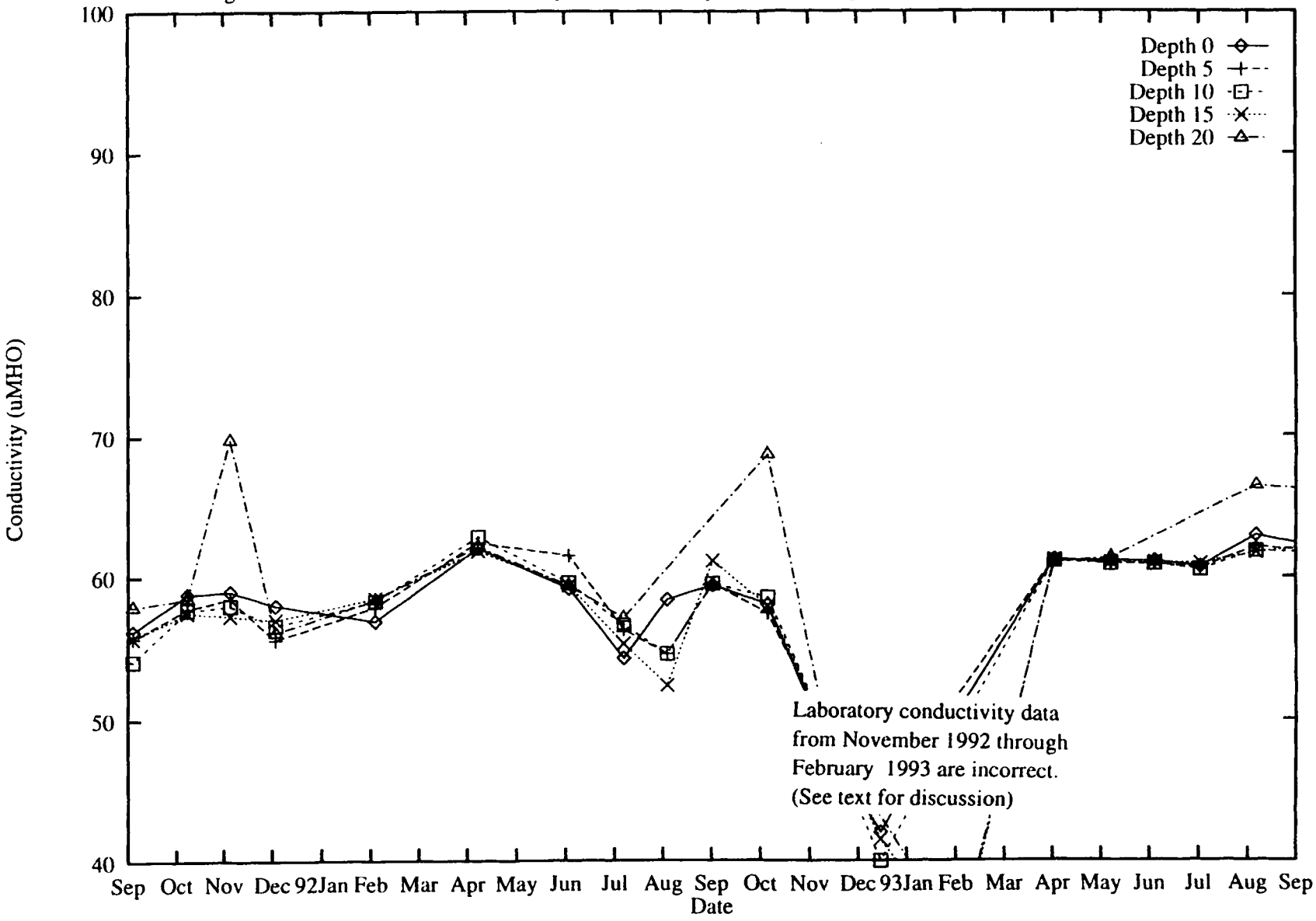


Figure 29: Lake Whatcom conductivity data (laboratory) for Intake site (basin 2), September 1991 through September 1993.

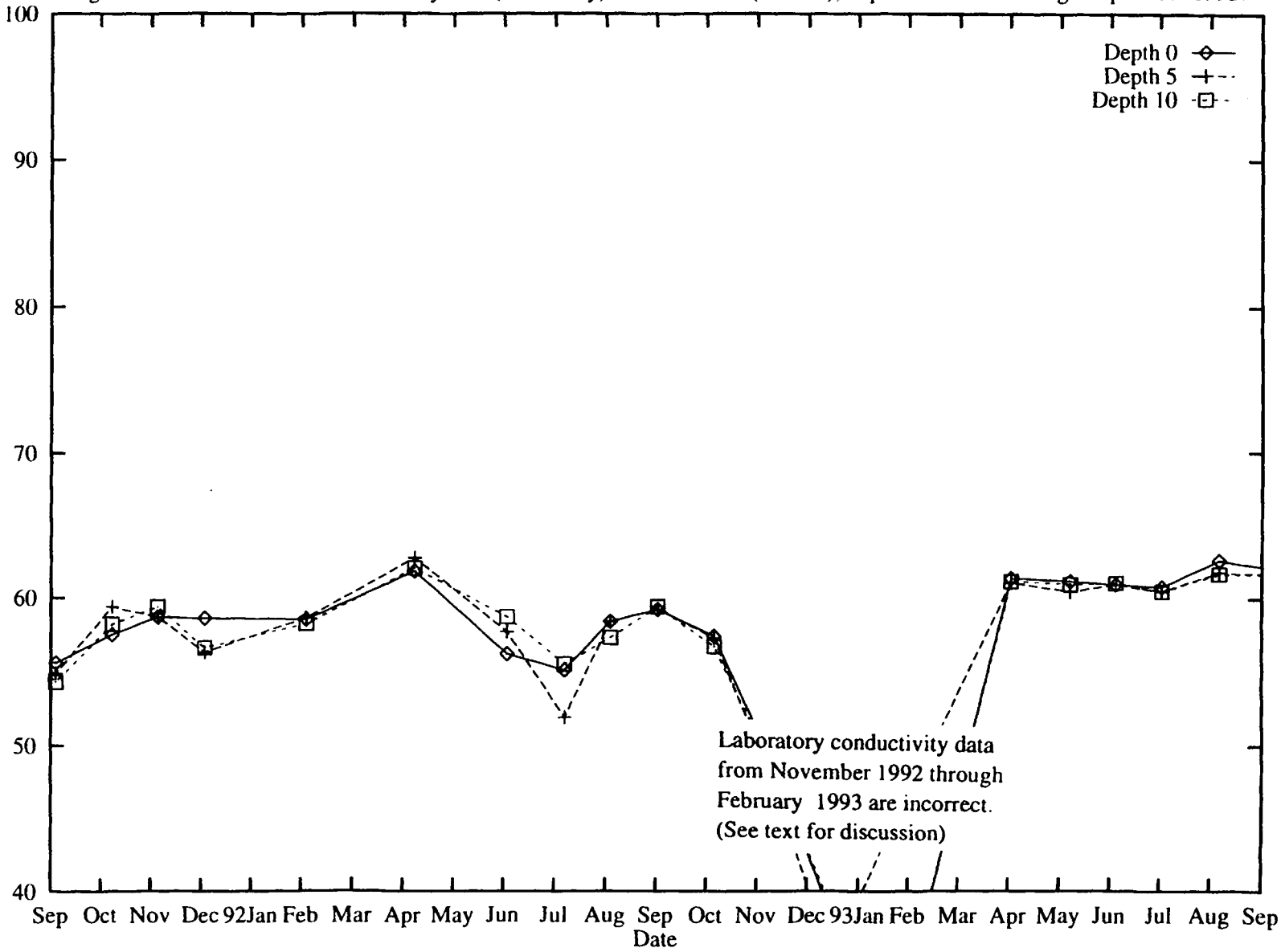


Figure 30: Lake Whatcom conductivity data (laboratory) for Site 3, September 1991 through September 1993.

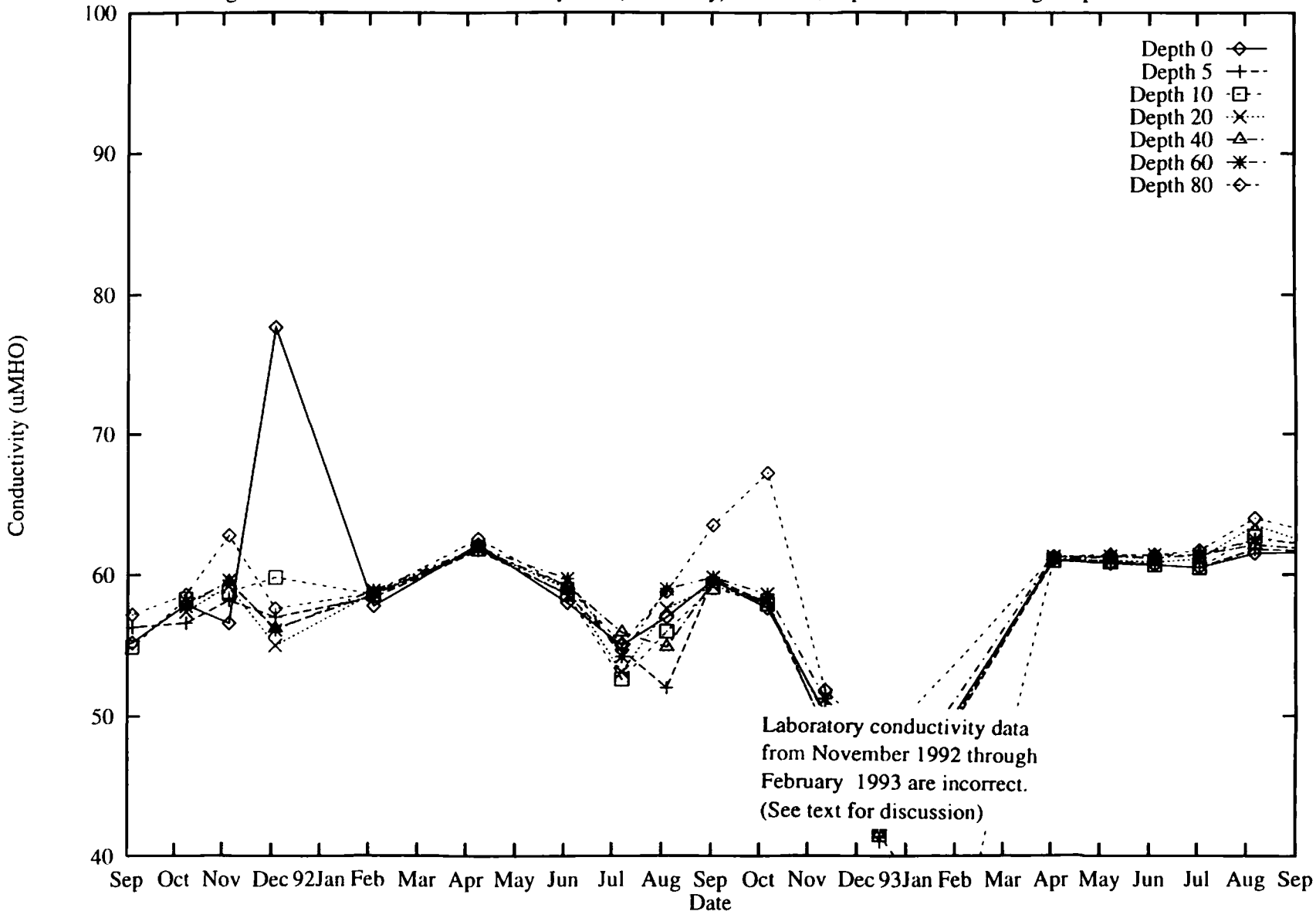


Figure 31: Lake Whatcom conductivity data (laboratory) for Site 4, September 1991 through September 1993.

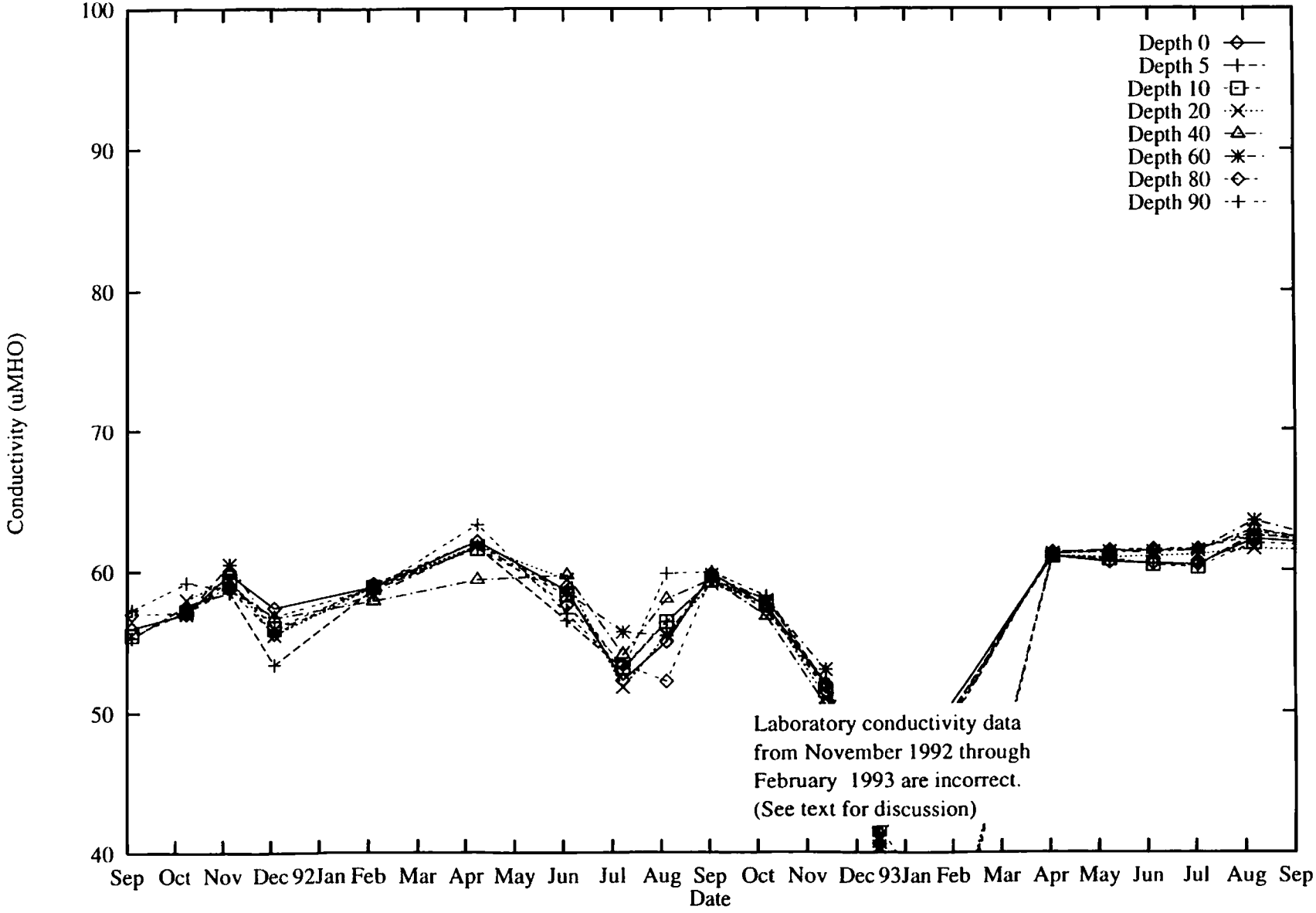


Figure 32: Lake Whatcom turbidity data for Site 1, September 1991 through September 1993.

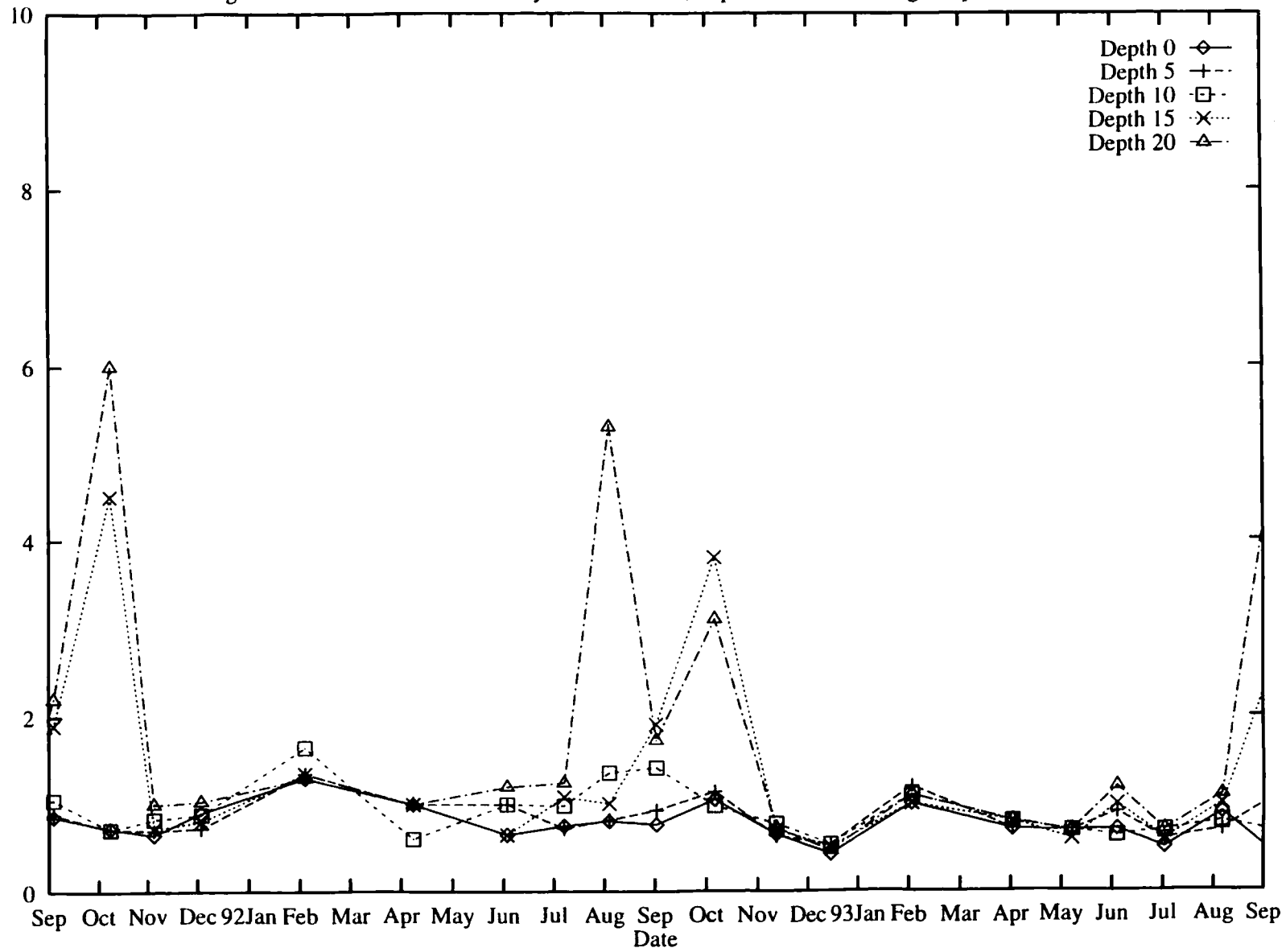


Figure 33: Lake Whatcom turbidity data for Site 2, September 1991 through September 1993.

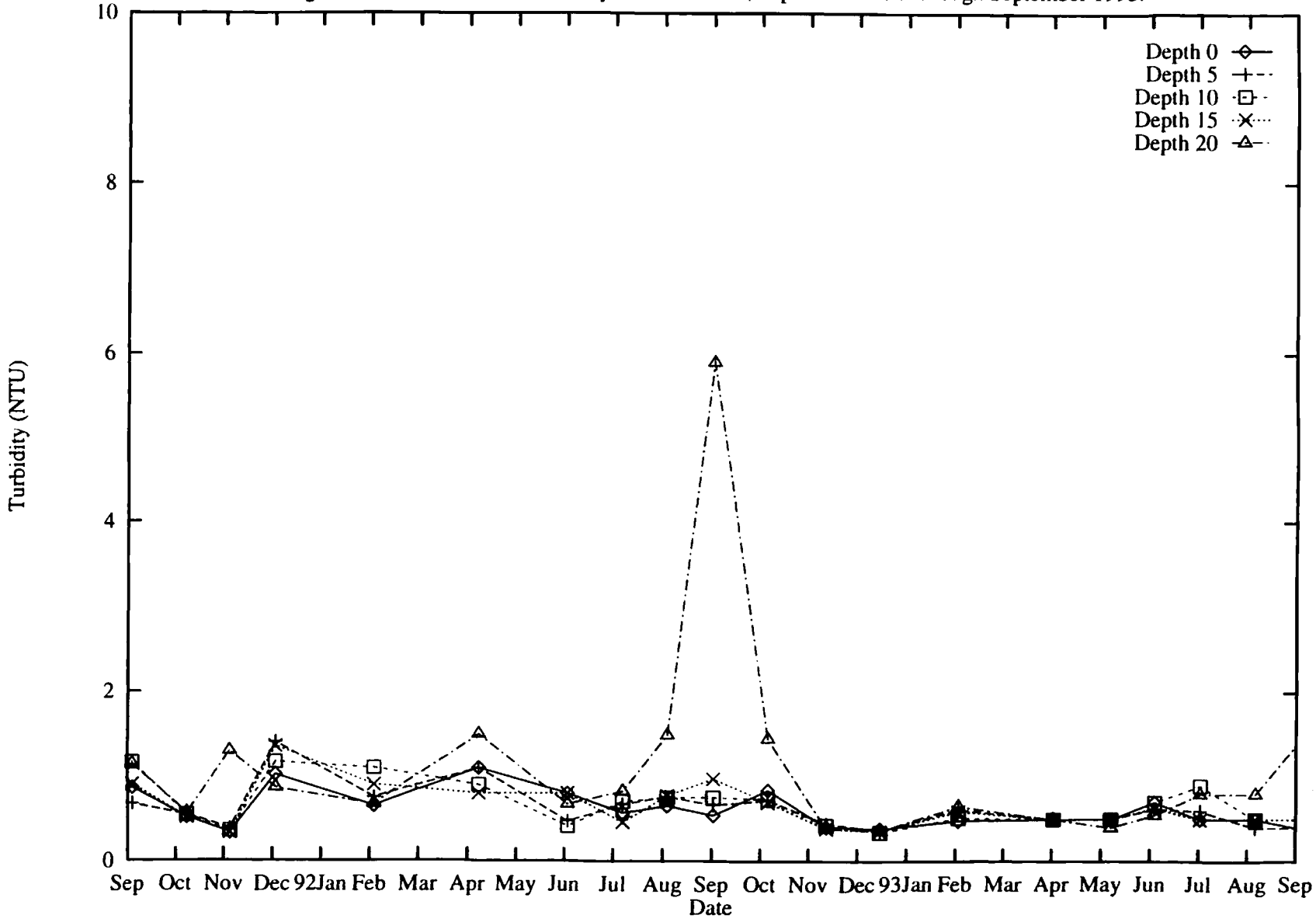


Figure 34: Lake Whatcom turbidity data for Intake site (basin 2), September 1991 through September 1993.

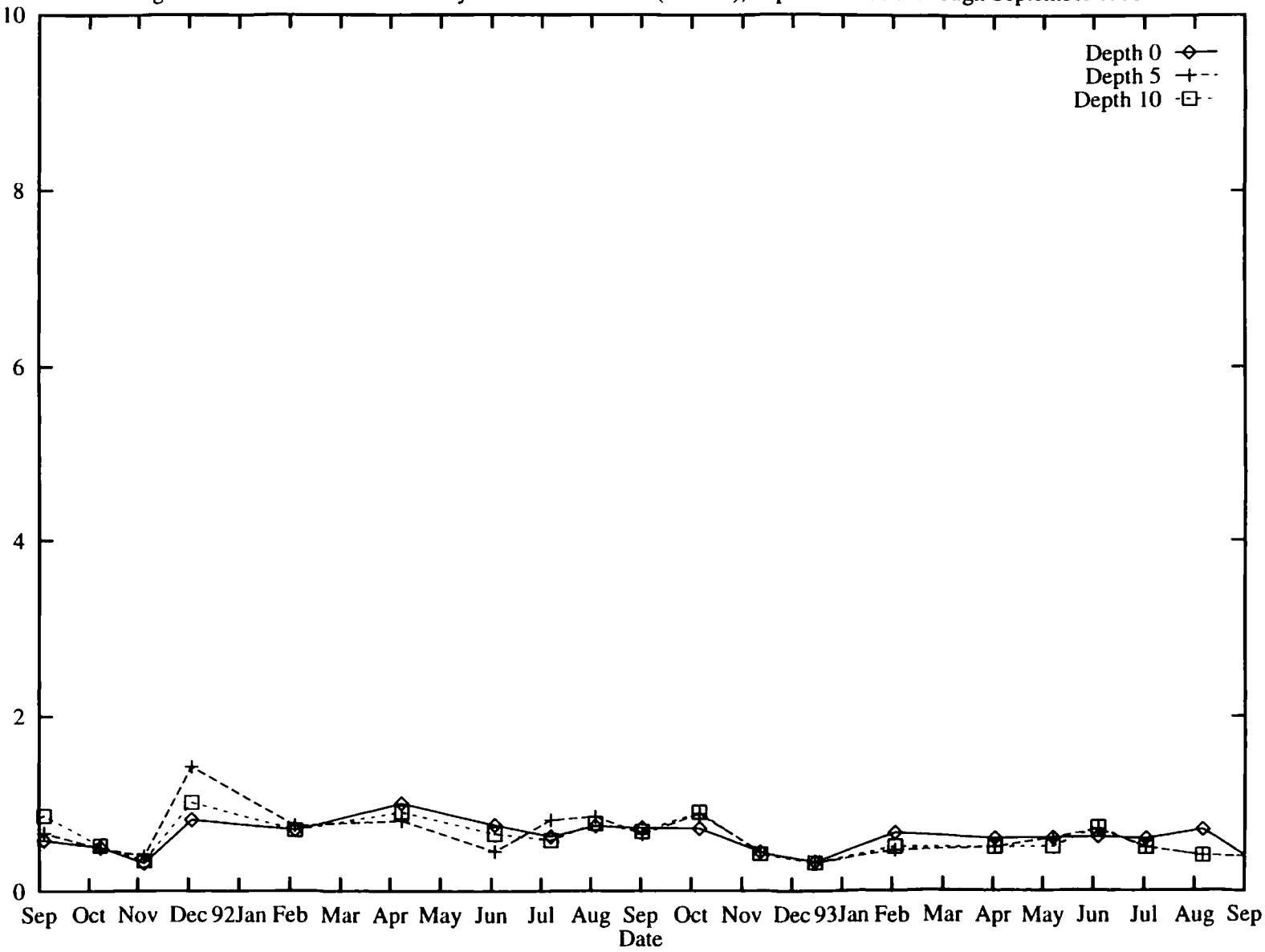


Figure 35: Lake Whatcom turbidity data for Site 3, September 1991 through September 1993.

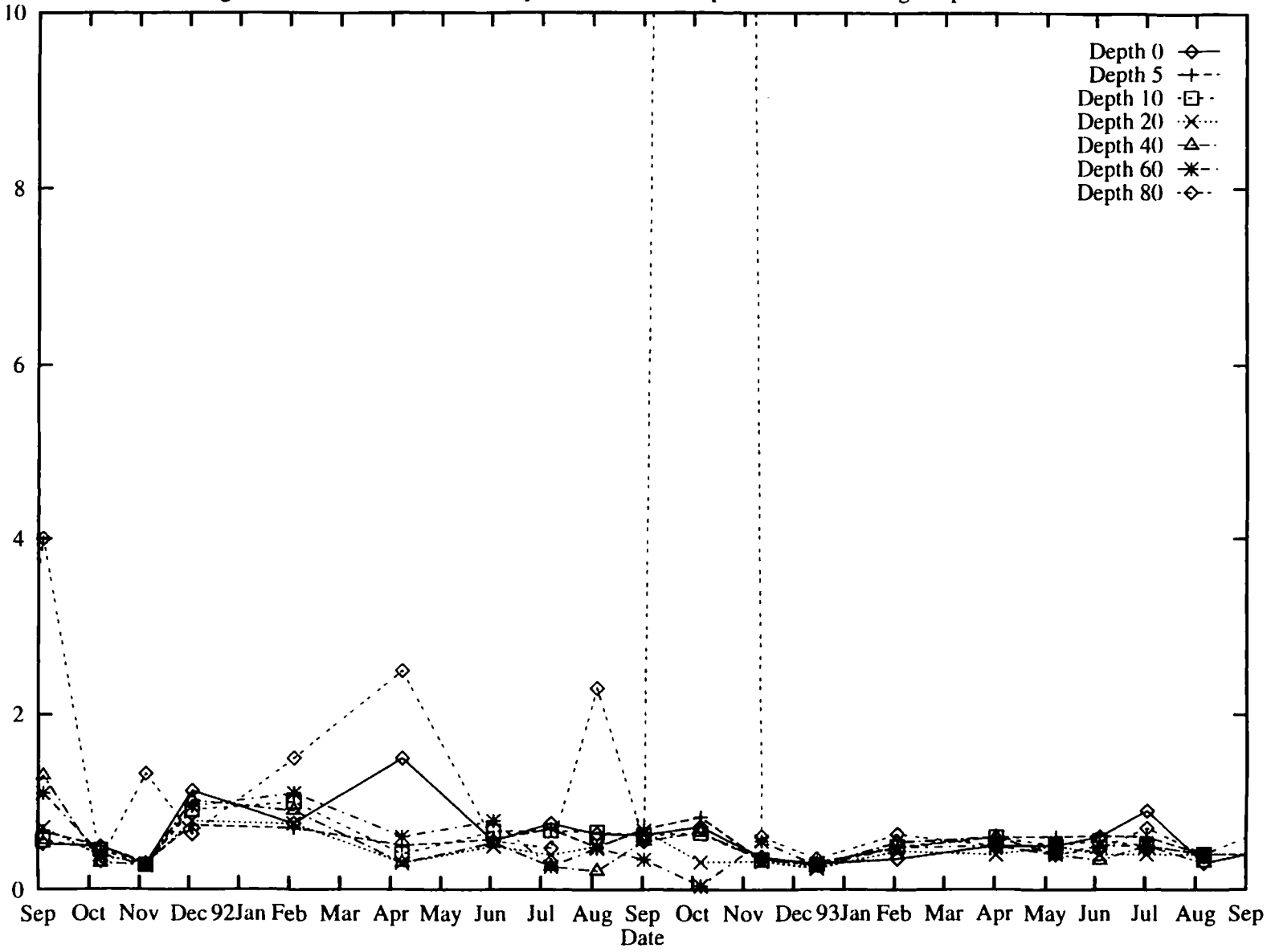


Figure 36: Lake Whatcom turbidity data for Site 4, September 1991 through September 1993.

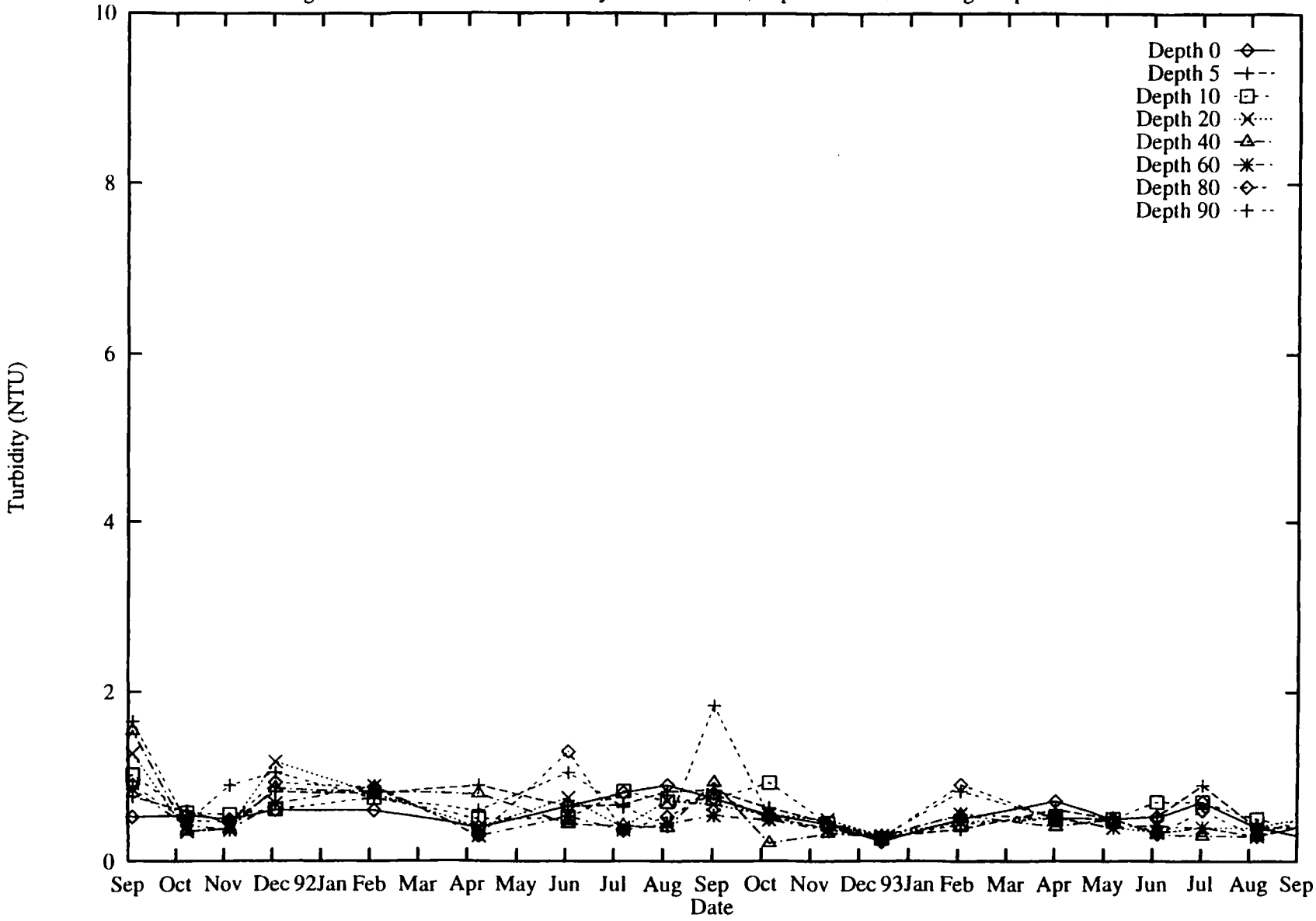


Figure 37: Lake Whatcom nitrogen summary data (ammonia, nitrate/nitrite, and total nitrogen) for Site 1, September 1991 through September 1993.

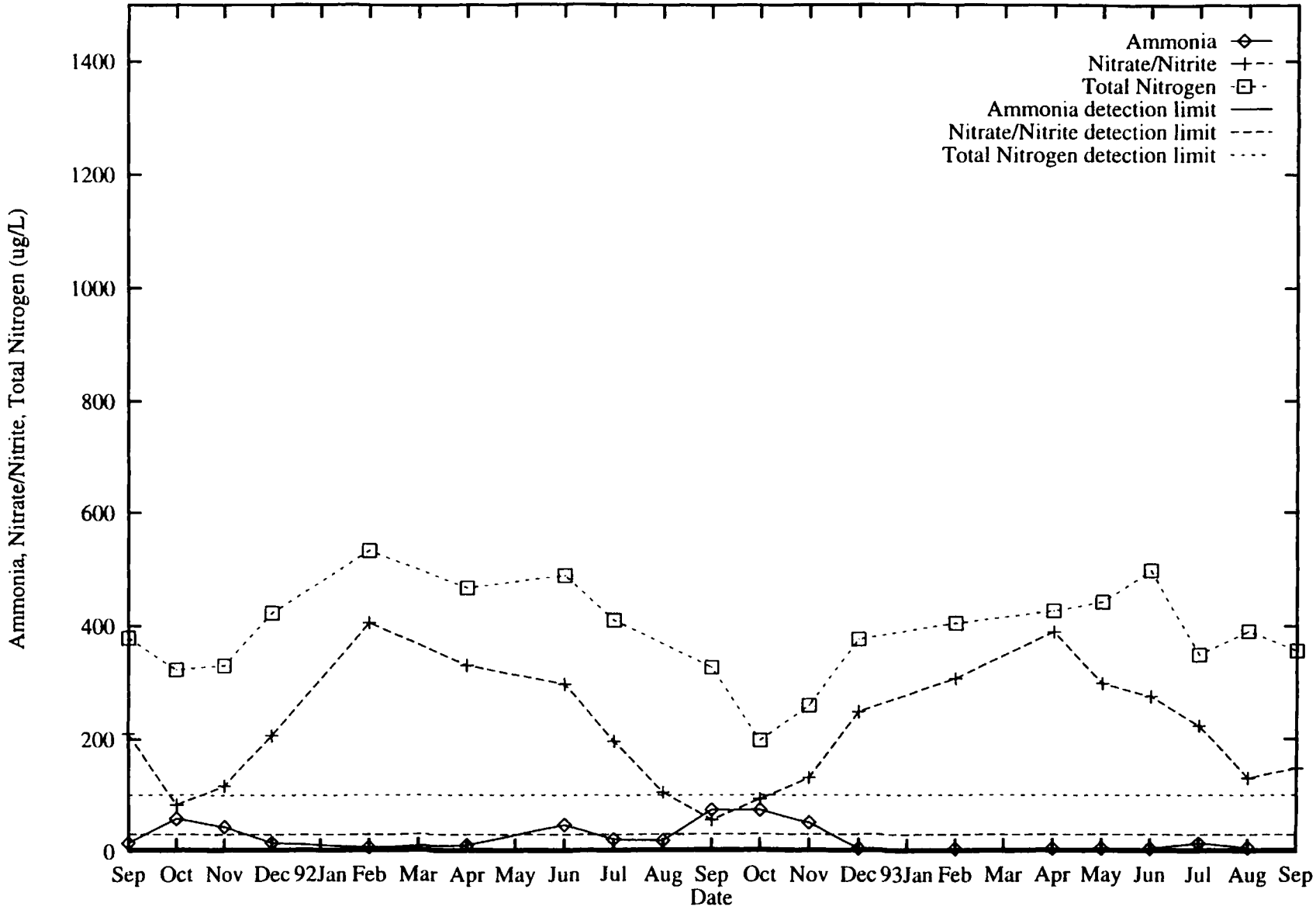


Figure 38: Lake Whatcom nitrogen summary data (ammonia, nitrate/nitrite, and total nitrogen) for Site 2, September 1991 through September 1993.

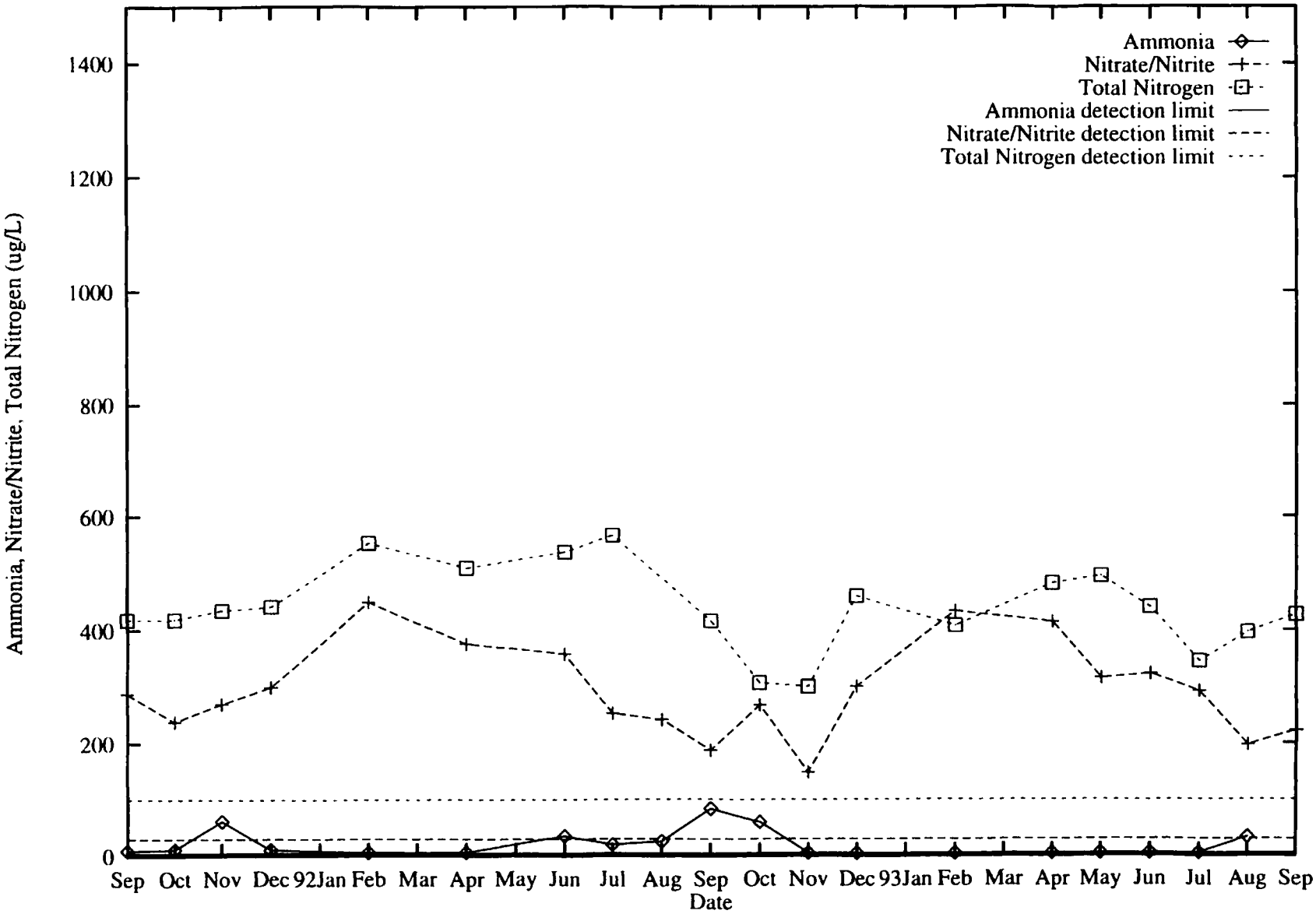


Figure 39: Lake Whatcom nitrogen summary data (ammonia, nitrate/nitrite, and total nitrogen) for Intake site (basin 2), September 1991 through September 1993.

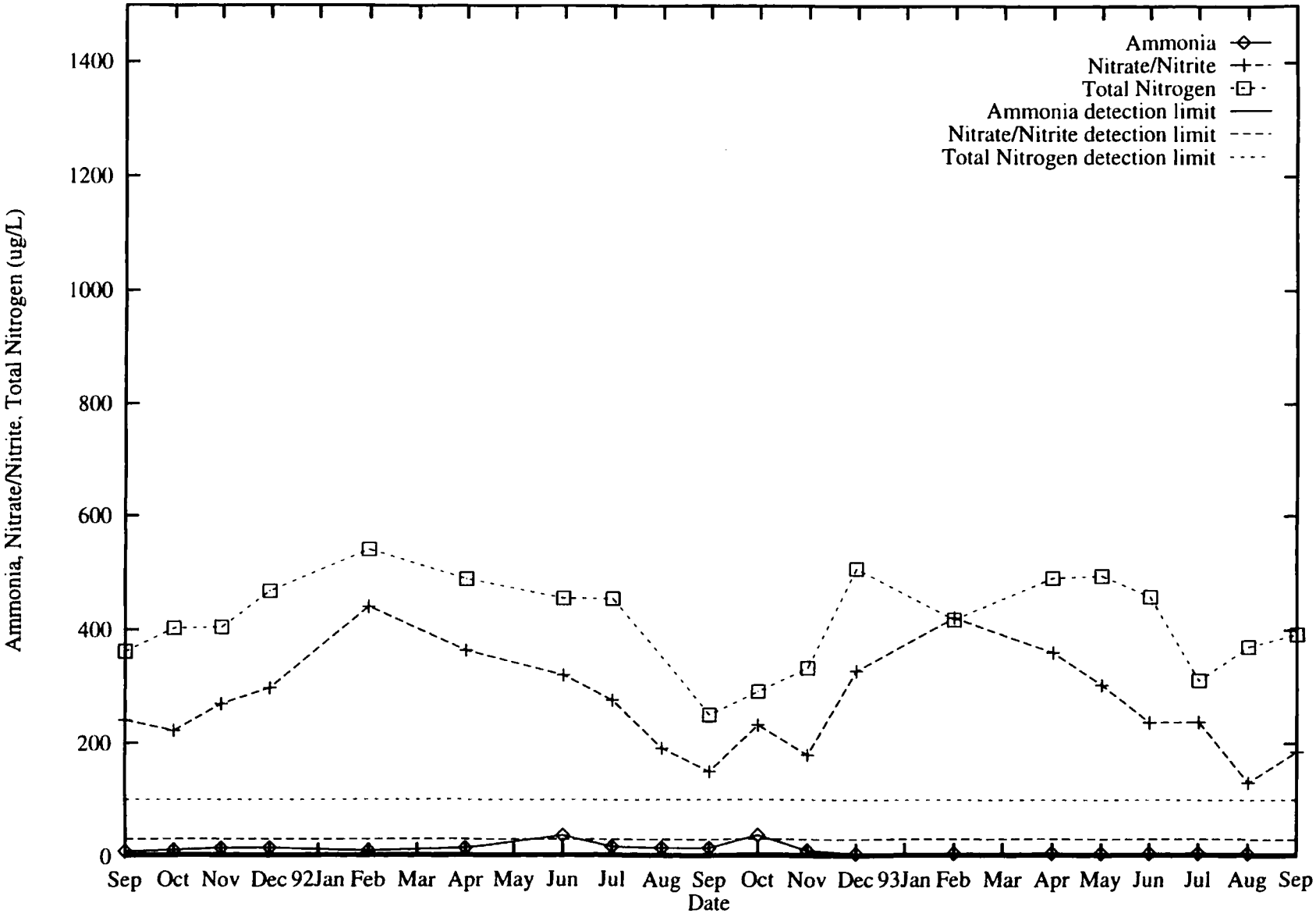


Figure 40: Lake Whatcom nitrogen summary data (ammonia, nitrate/nitrite, and total nitrogen) for Site 3, September 1991 through September 1993.

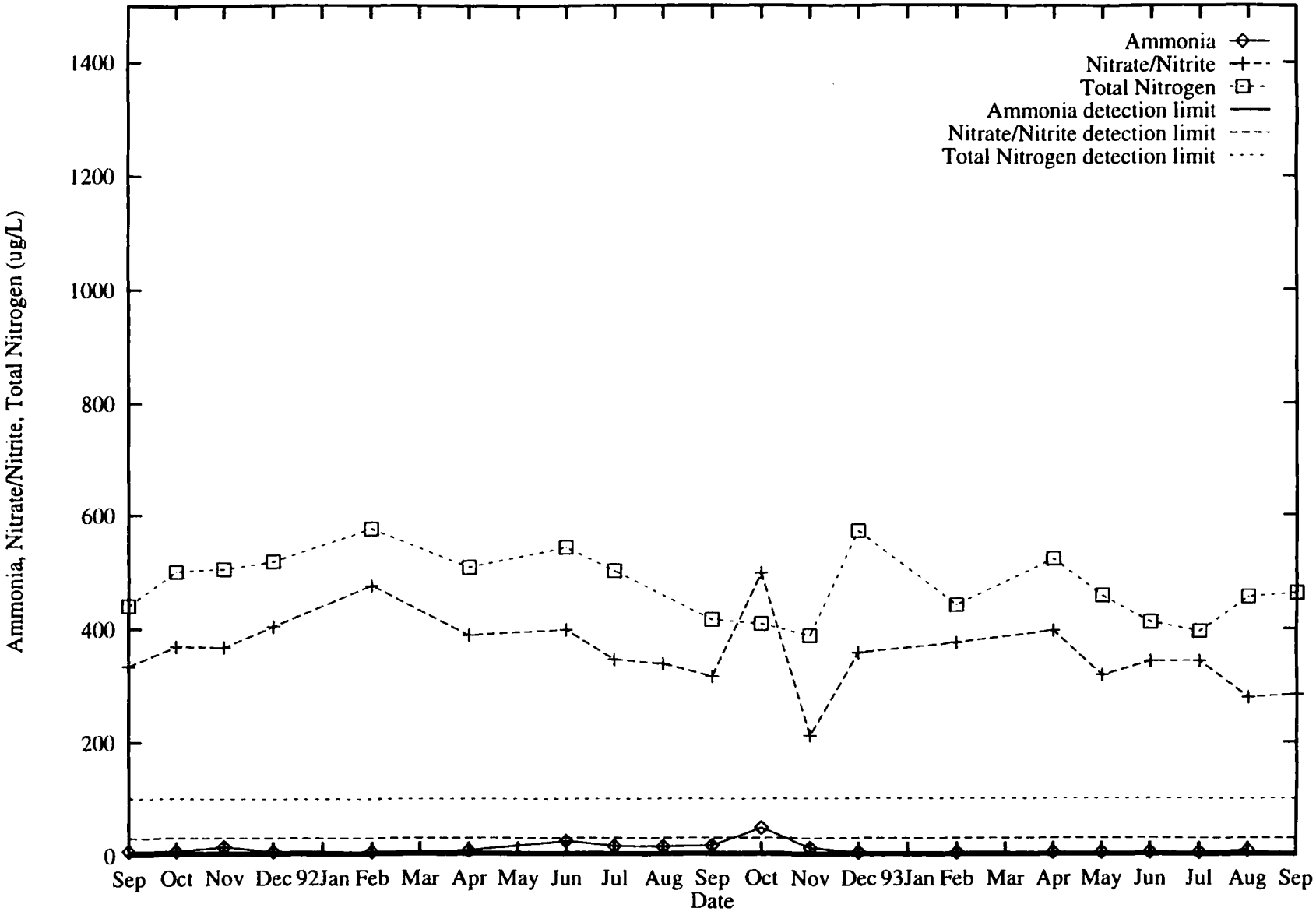


Figure 41: Lake Whatcom nitrogen summary data (ammonia, nitrate/nitrite, and total nitrogen) for Site 4, September 1991 through September 1993.

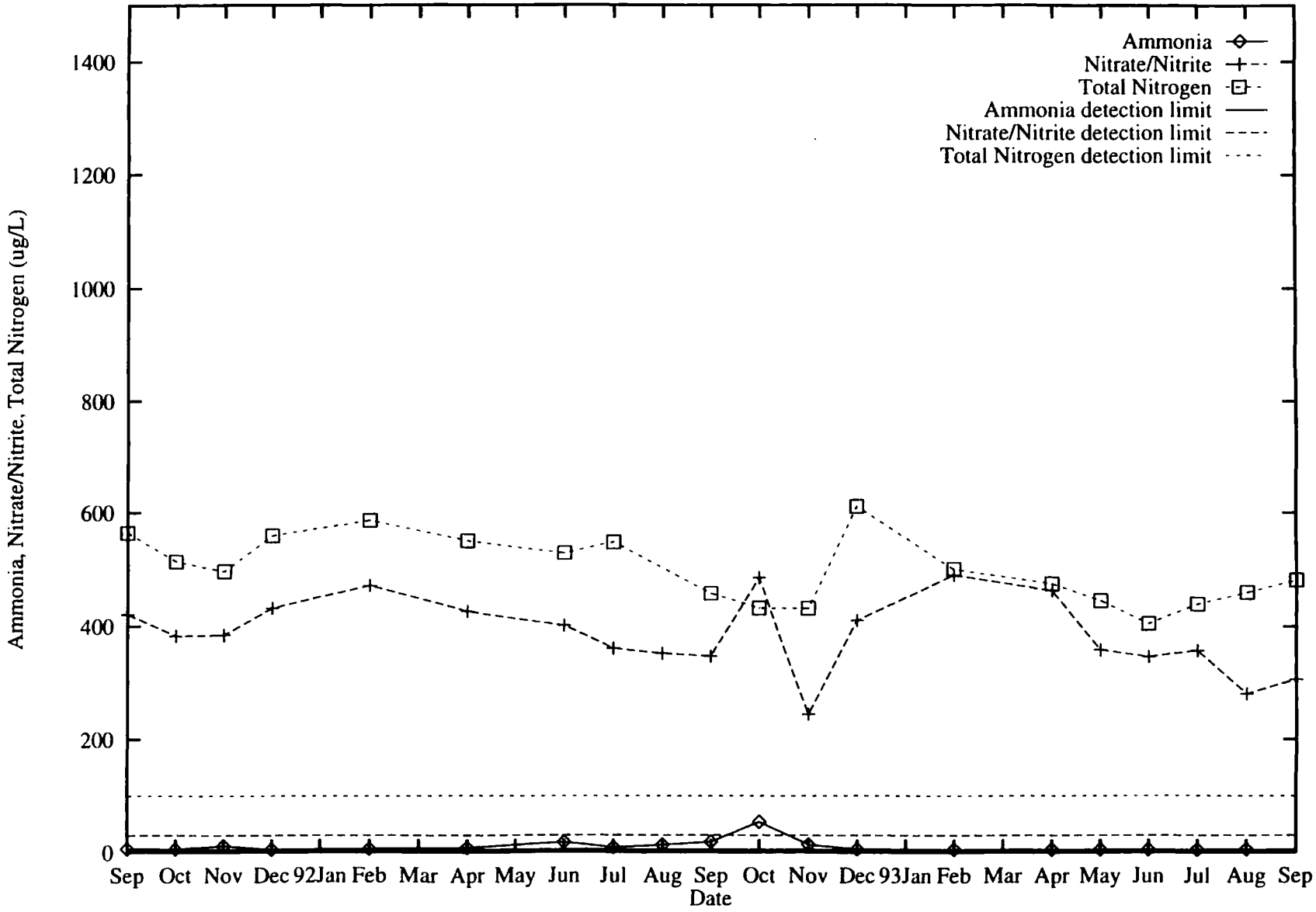


Figure 42: Lake Whatcom ammonia data for Site 1, September 1991 through September 1993.

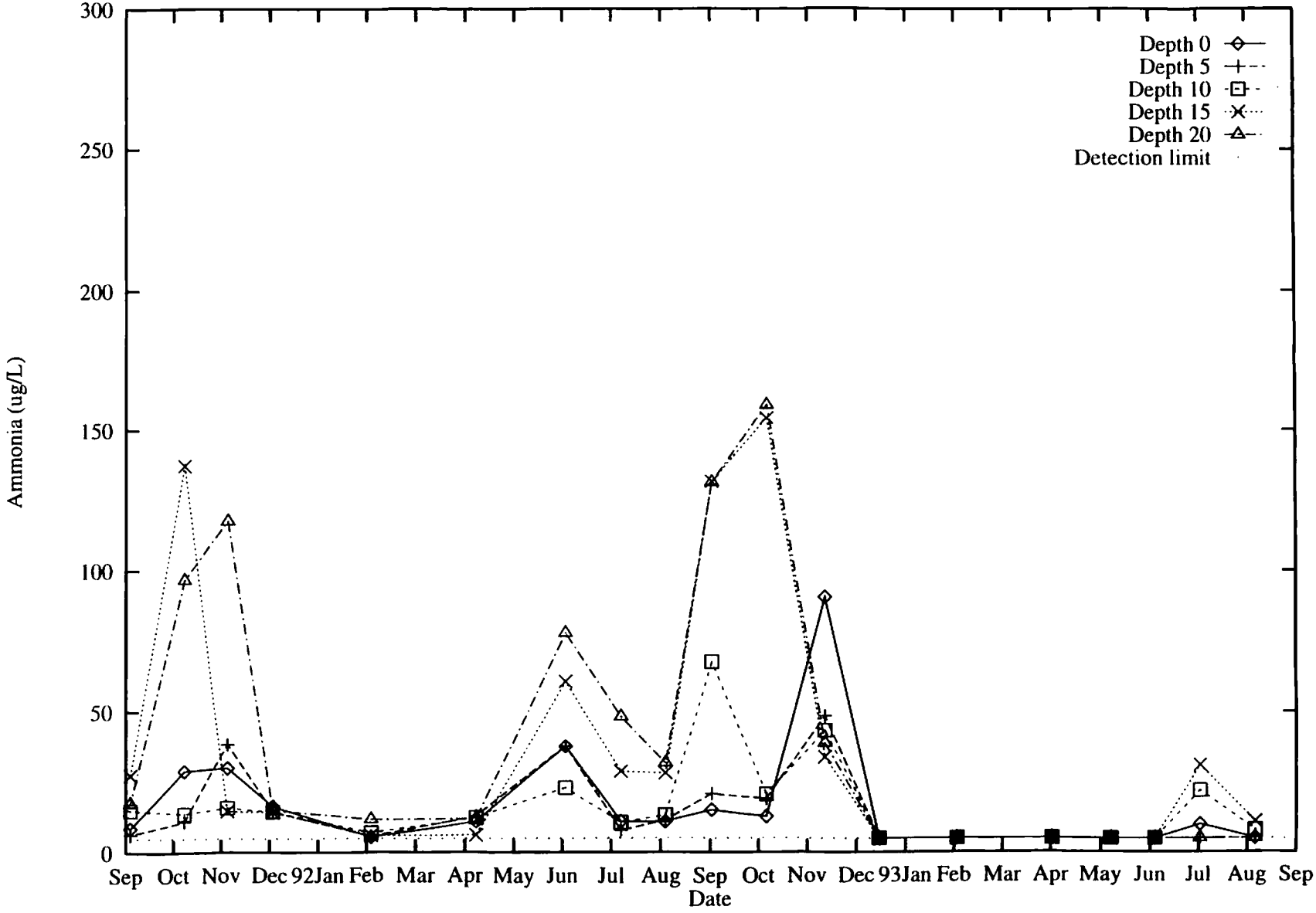


Figure 43: Lake Whatcom ammonia data for Site 2, September 1991 through September 1993.

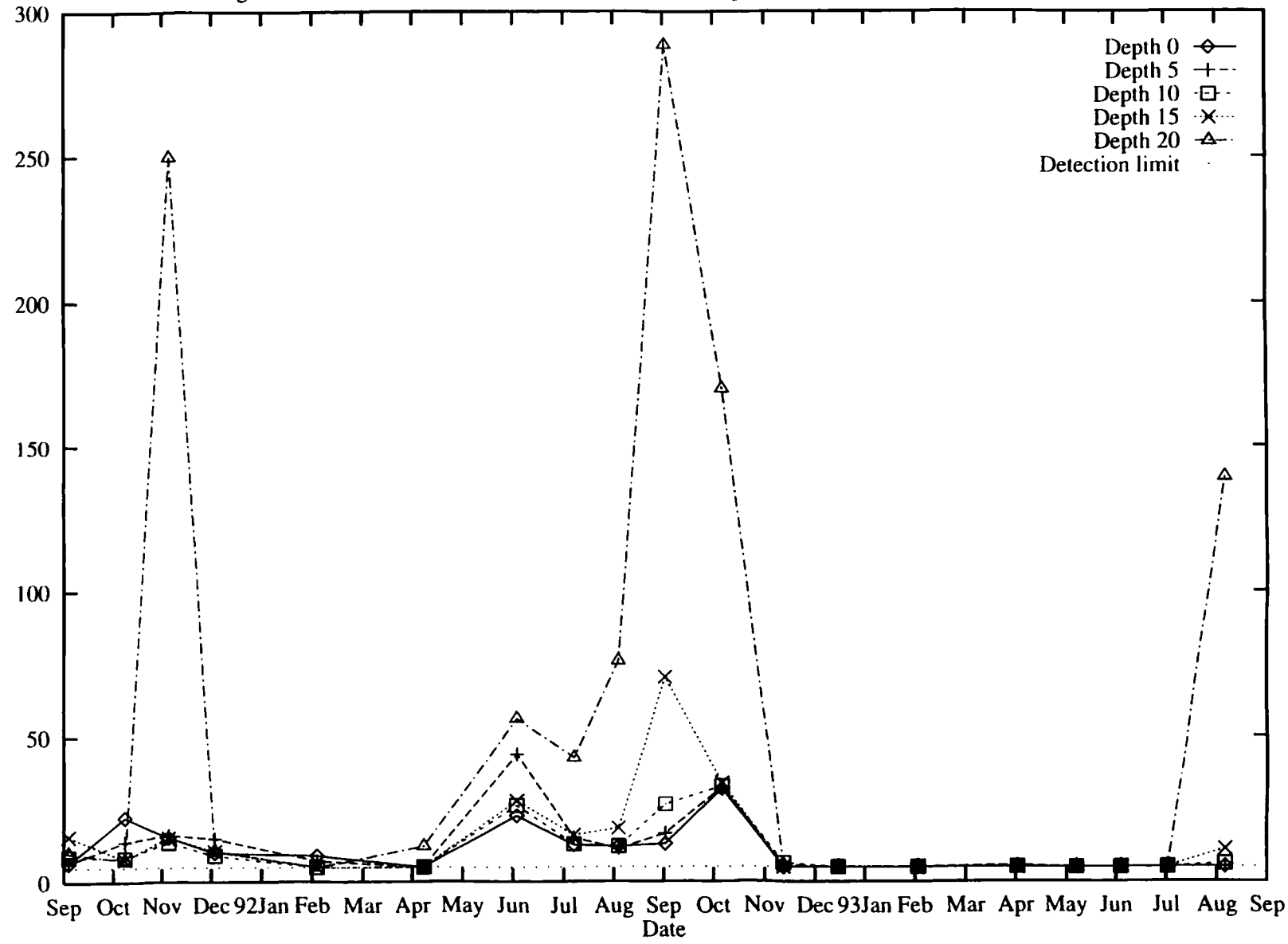


Figure 44: Lake Whatcom ammonia data for Intake site (basin 2), September 1991 through September 1993.

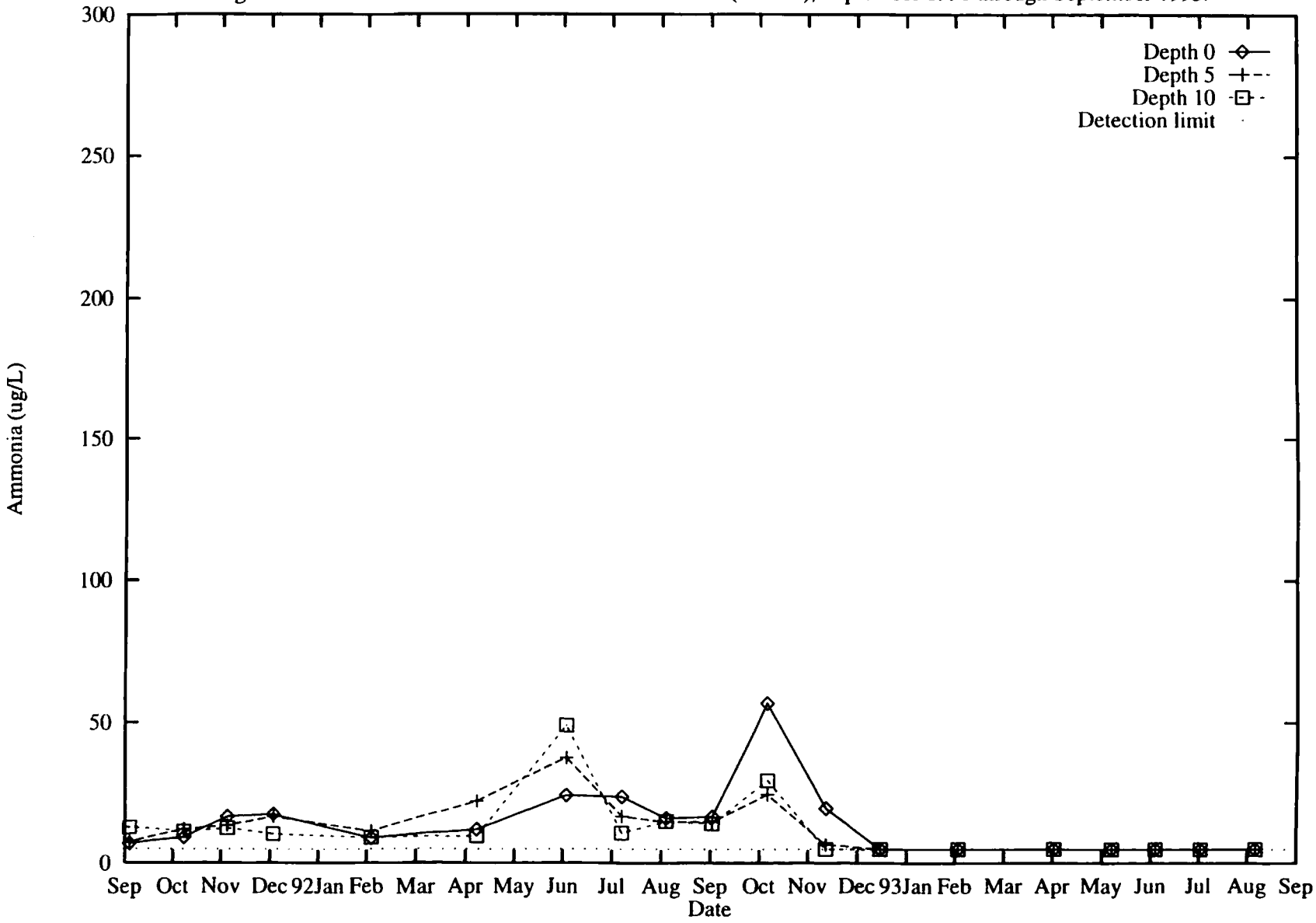


Figure 45: Lake Whatcom ammonia data for Site 3, September 1991 through September 1993.

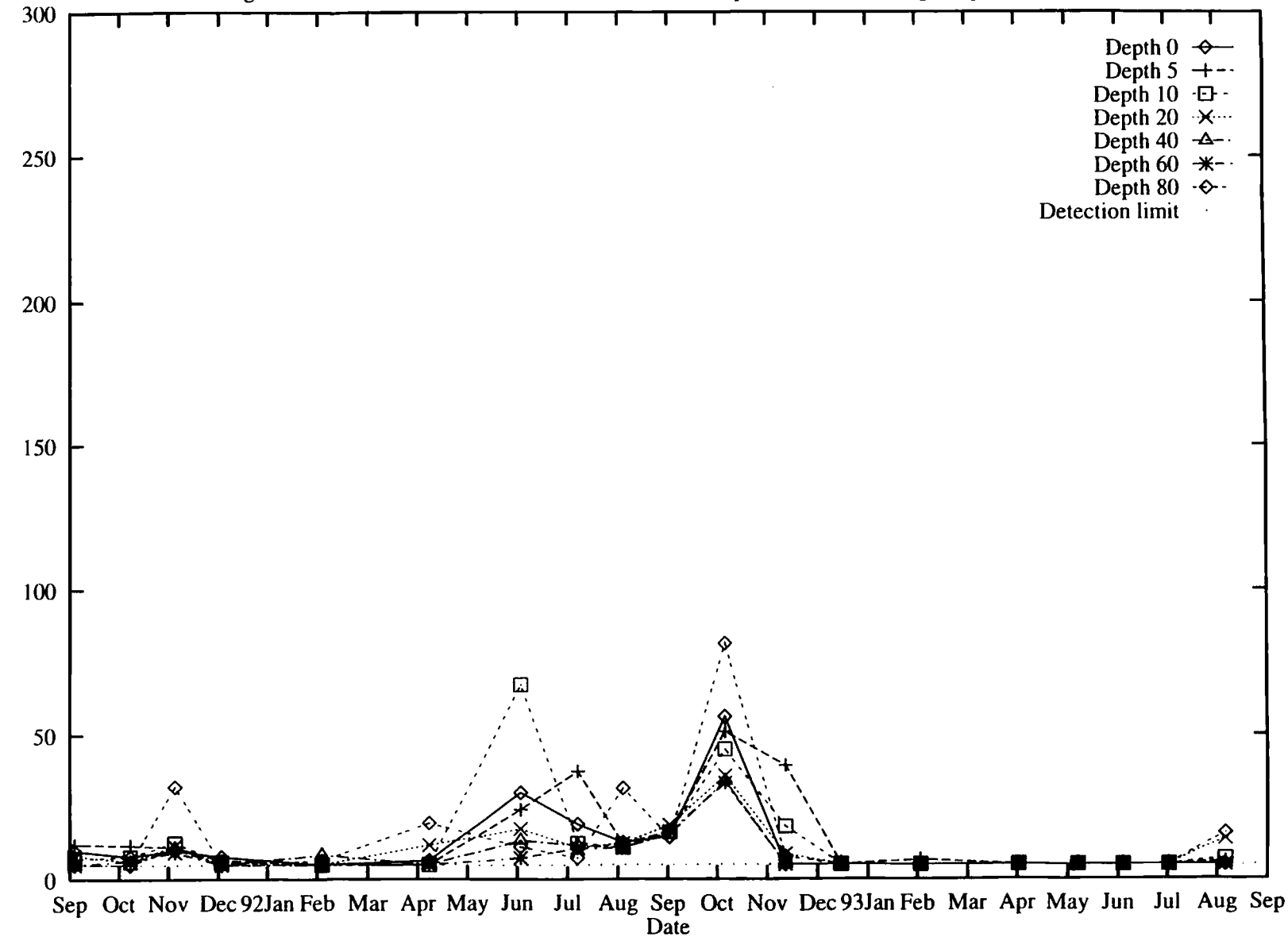


Figure 46: Lake Whatcom ammonia data for Site 4, September 1991 through September 1993.

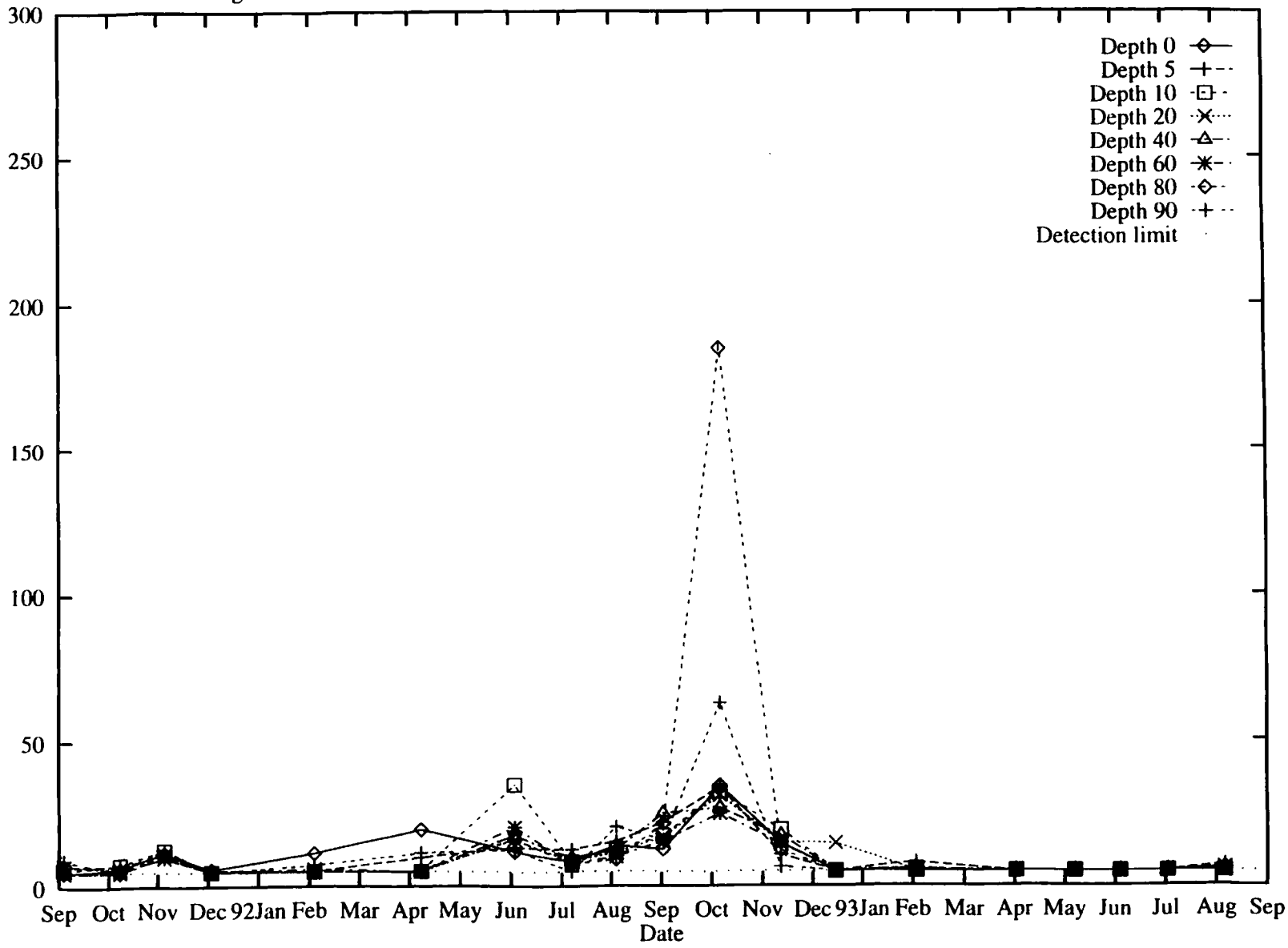


Figure 47: Lake Whatcom nitrate/nitrite data for Site 1, September 1991 through September 1993.

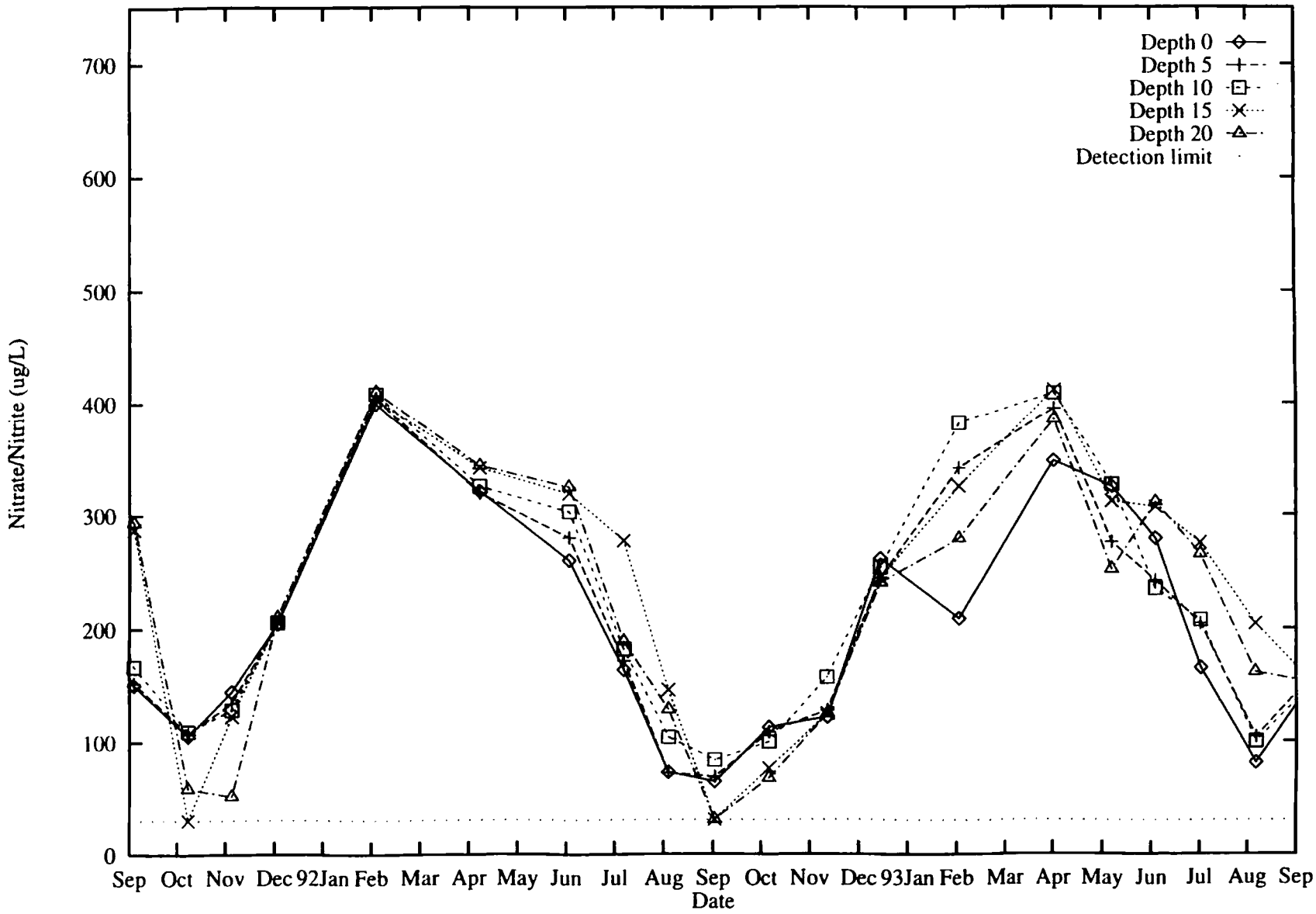


Figure 48: Lake Whatcom nitrate/nitrite data for Site 2, September 1991 through September 1993.

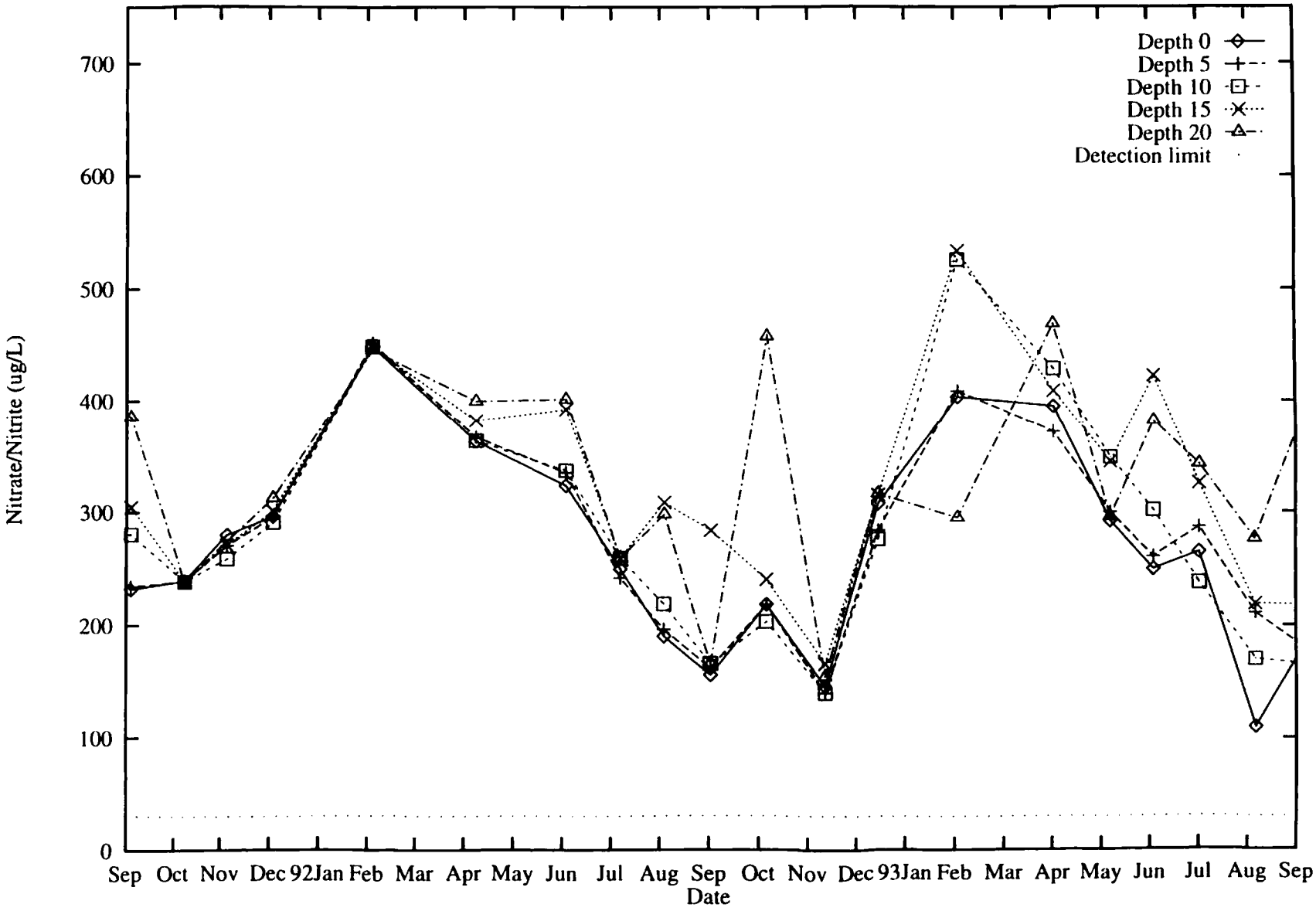


Figure 49: Lake Whatcom nitrate/nitrite data for Intake site (basin 2), September 1991 through September 1993.

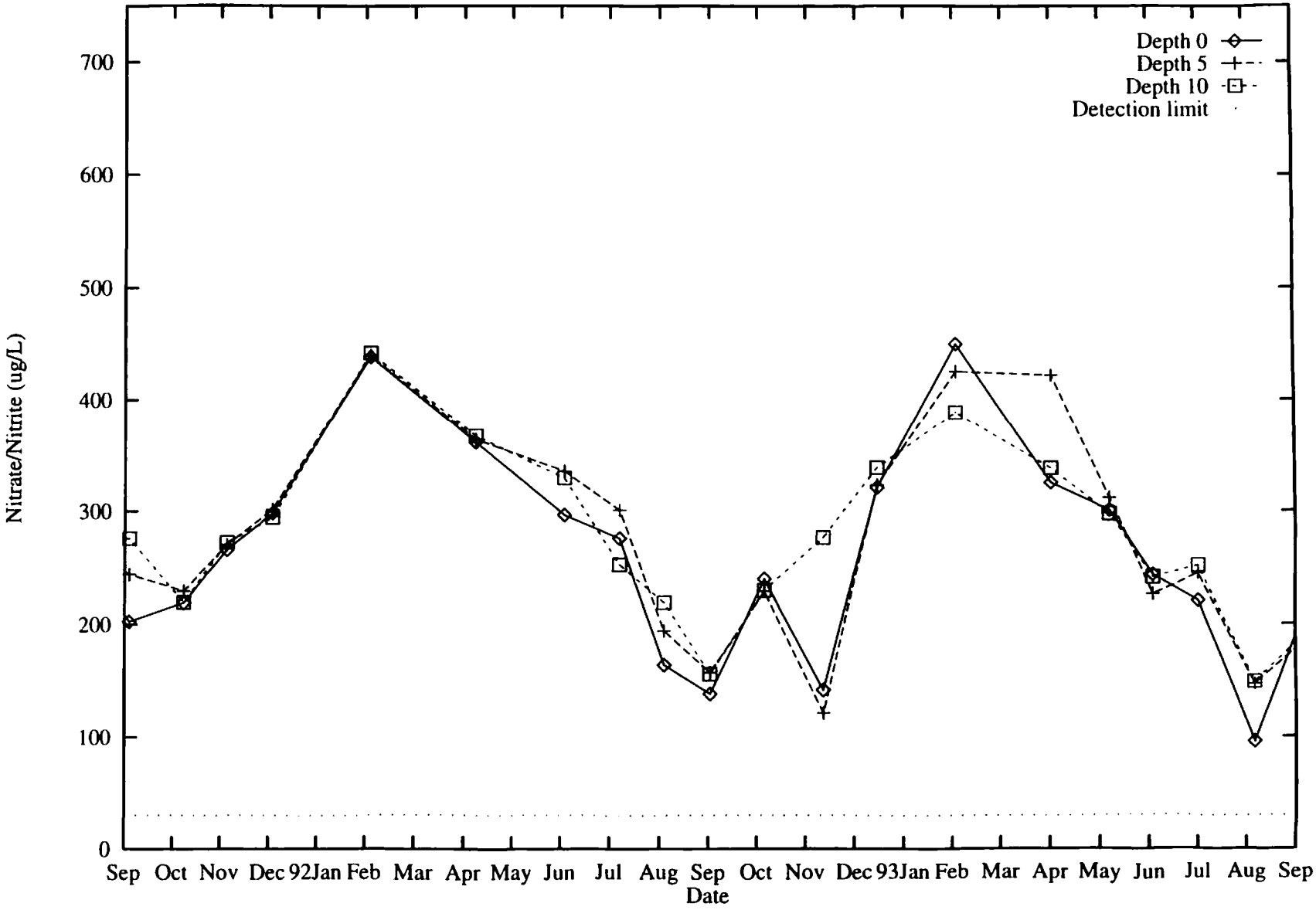


Figure 50: Lake Whatcom nitrate/nitrite data for Site 3, September 1991 through September 1993.

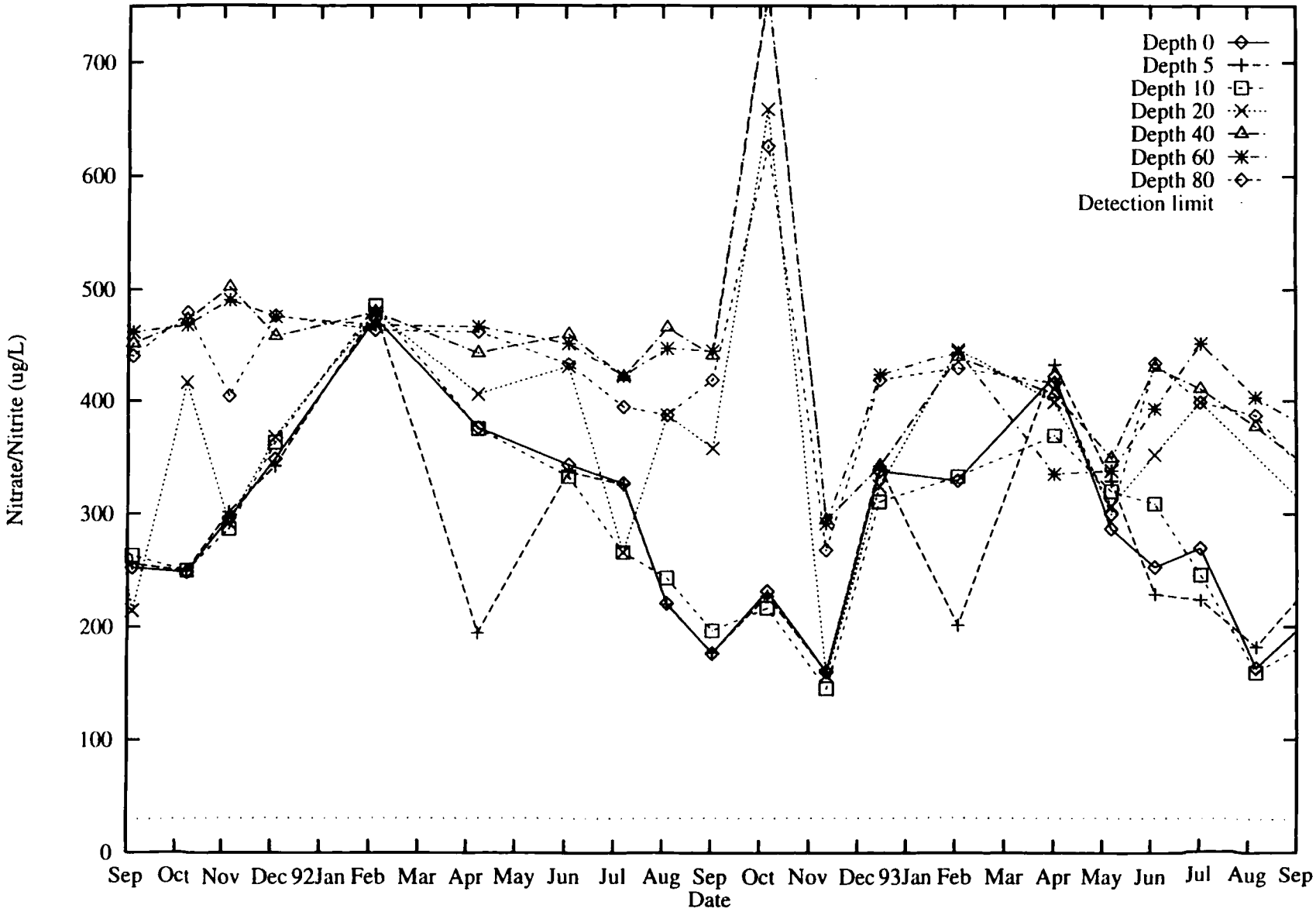


Figure 51: Lake Whatcom nitrate/nitrite data for Site 4, September 1991 through September 1993.

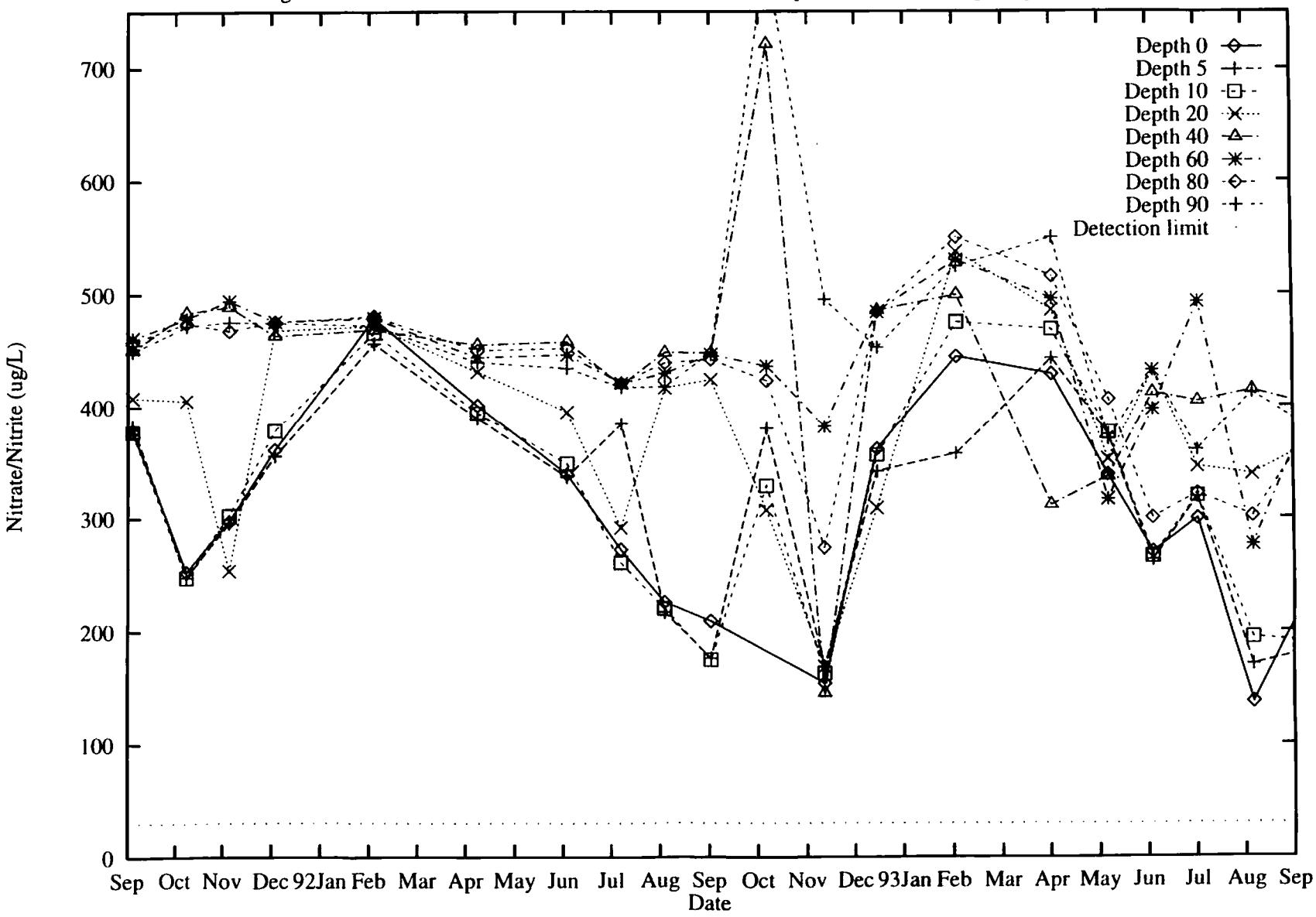


Figure 52: Lake Whatcom total nitrogen data for Site 1, September 1991 through September 1993.

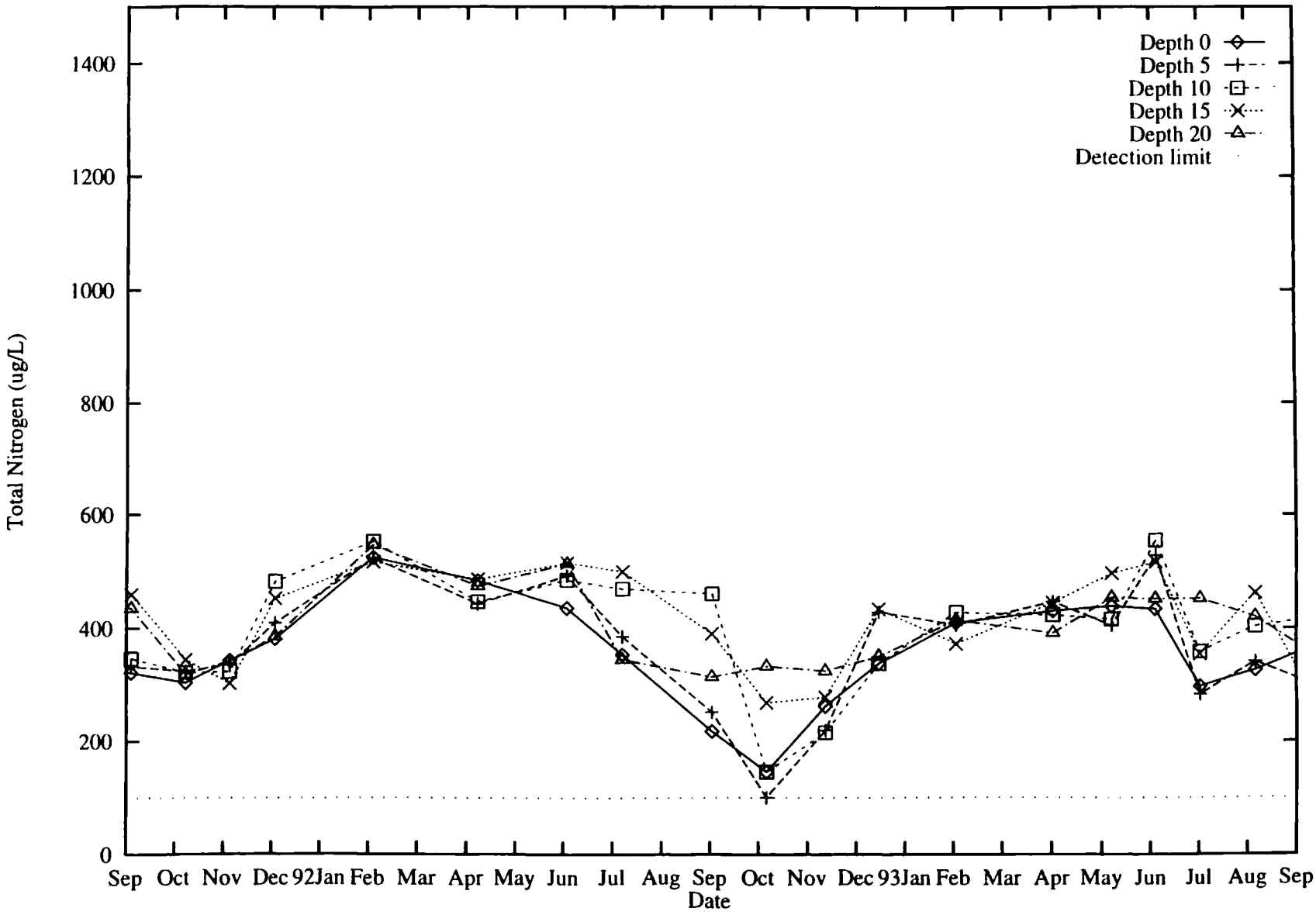


Figure 53: Lake Whatcom total nitrogen data for Site 2, September 1991 through September 1993.

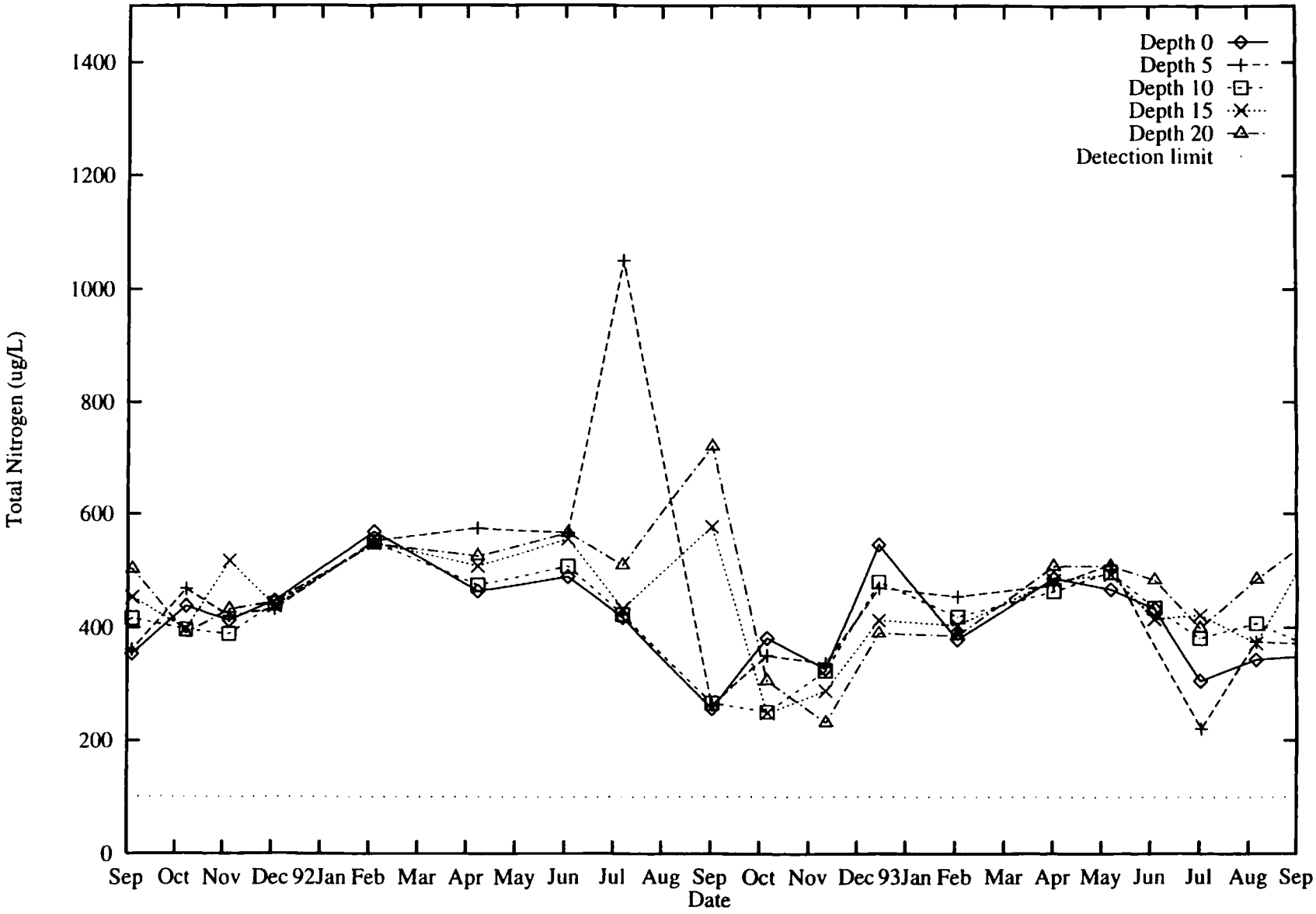


Figure 54: Lake Whatcom total nitrogen data for Intake site (basin 2), September 1991 through September 1993.

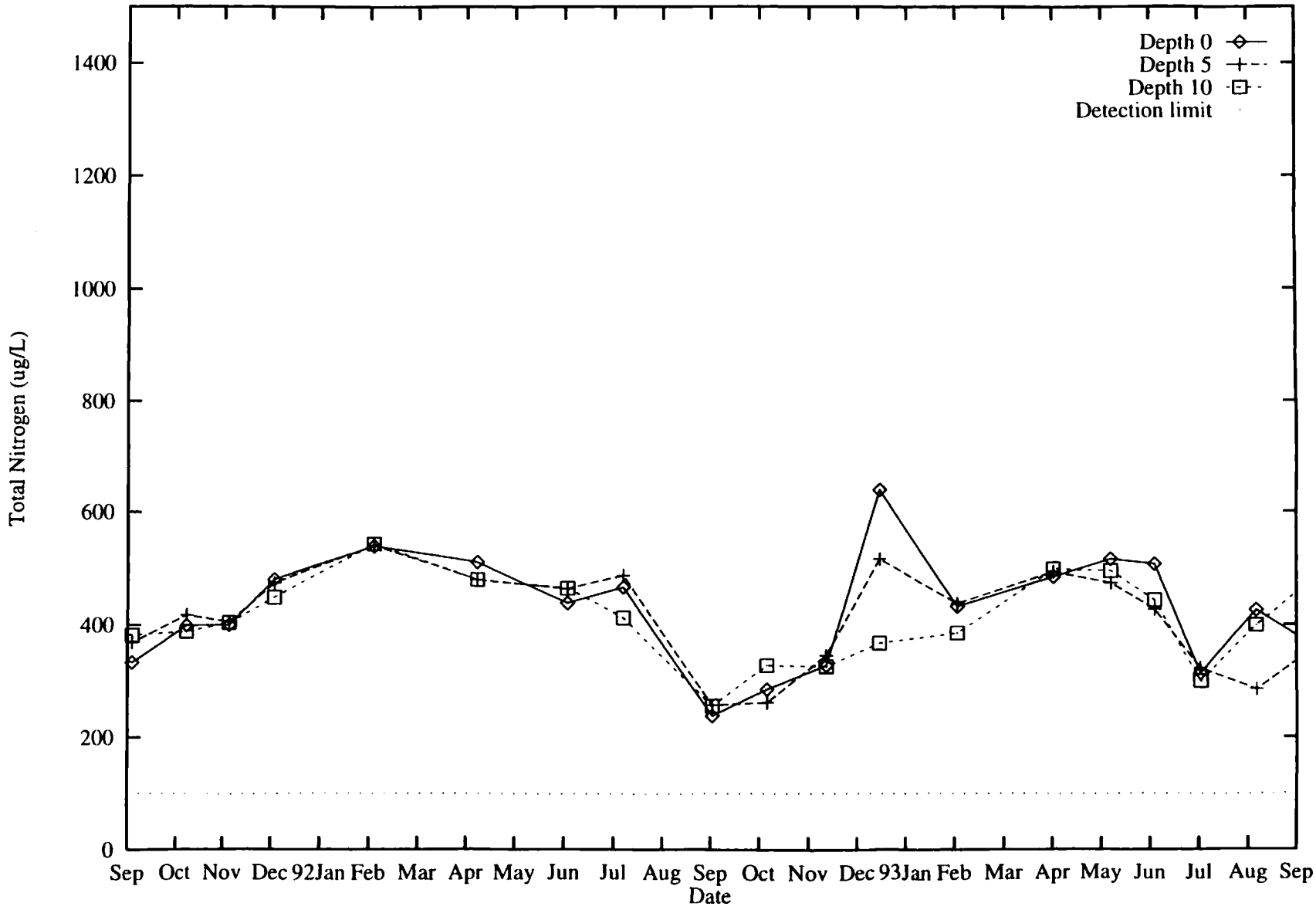


Figure 55: Lake Whatcom total nitrogen data for Site 3, September 1991 through September 1993.

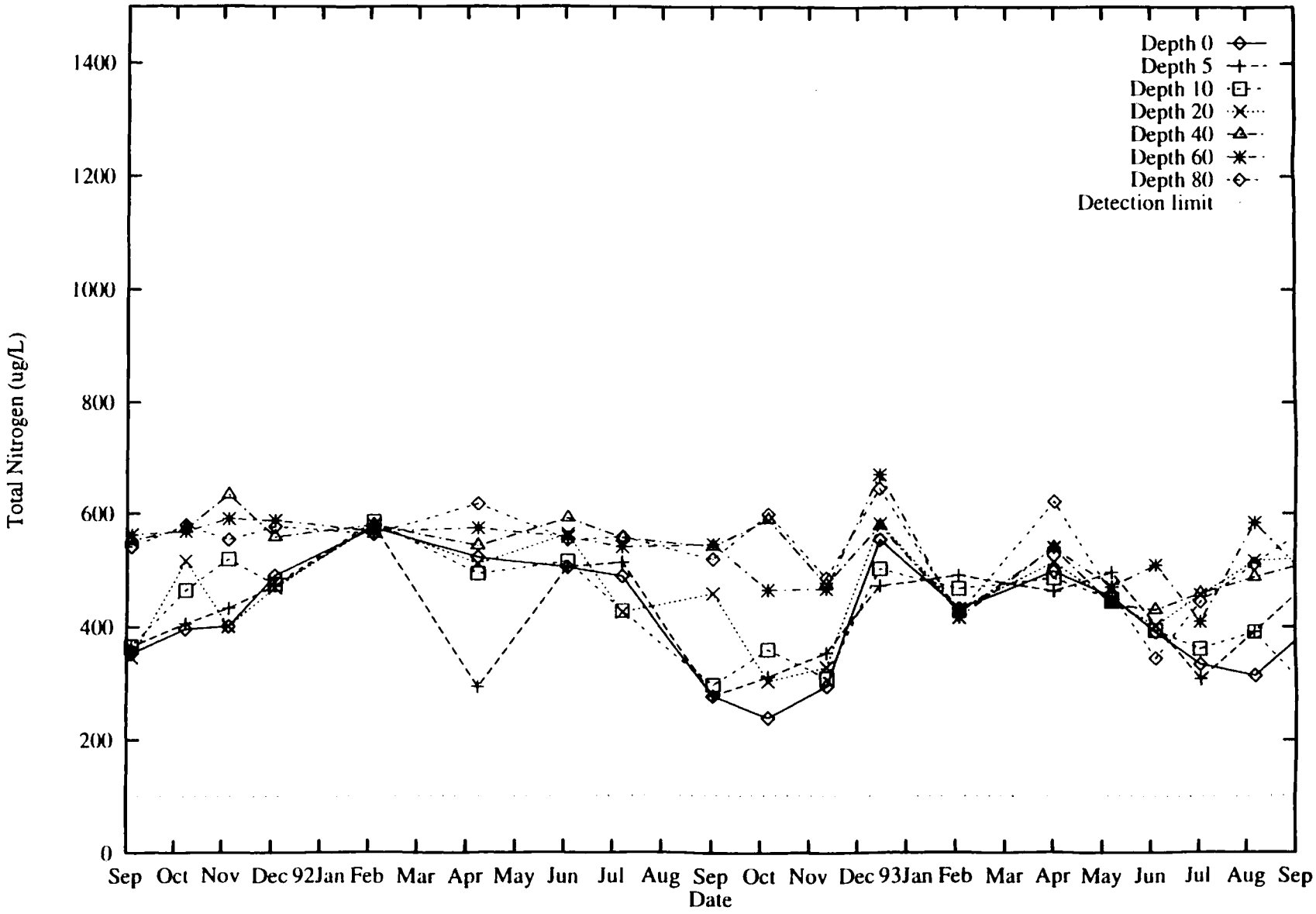


Figure 56: Lake Whatcom total nitrogen data for Site 4, September 1991 through September 1993.

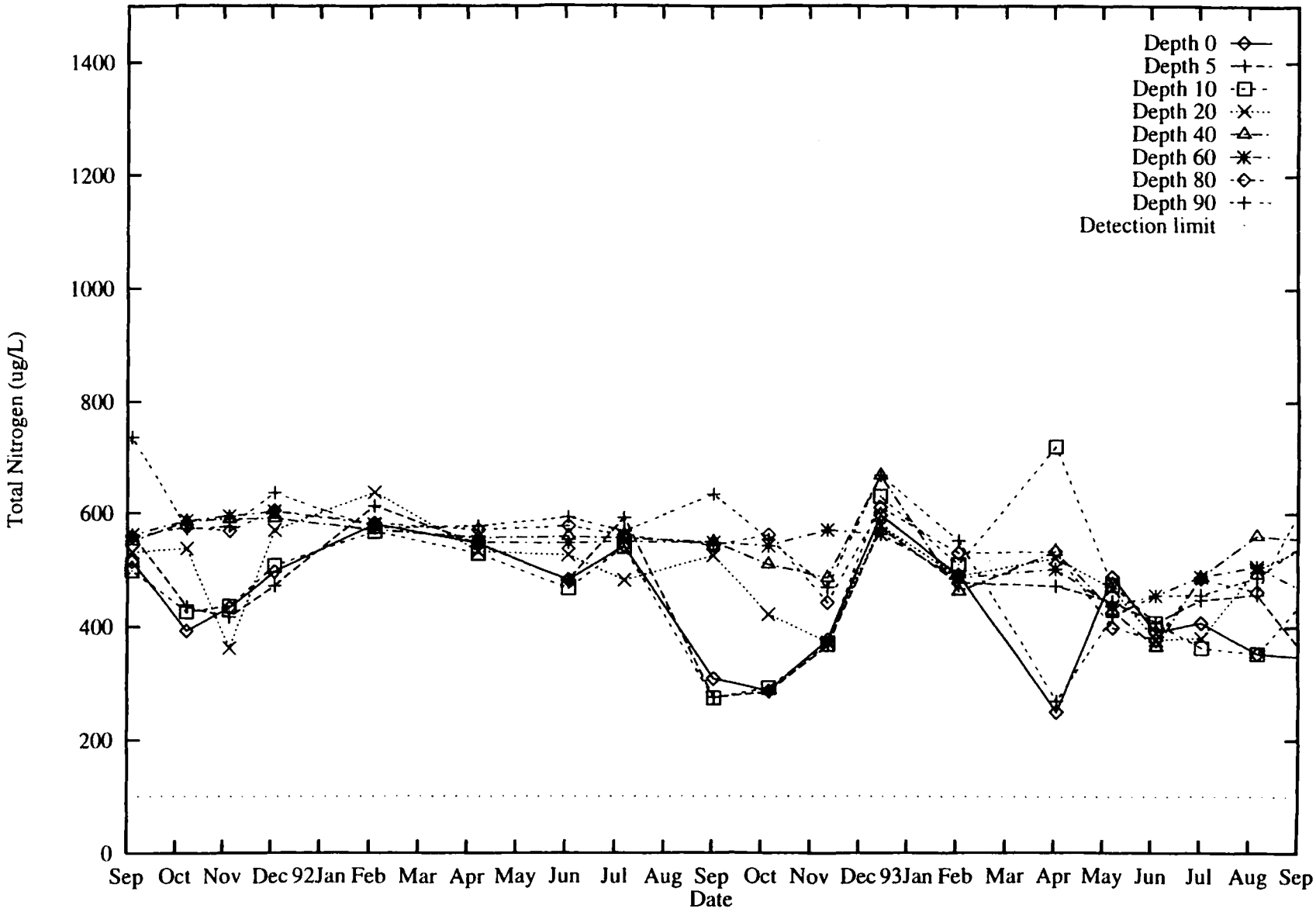


Figure 57: Lake Whatcom phosphorus summary data (total and soluble) for Site 1, September 1991 through September 1993.

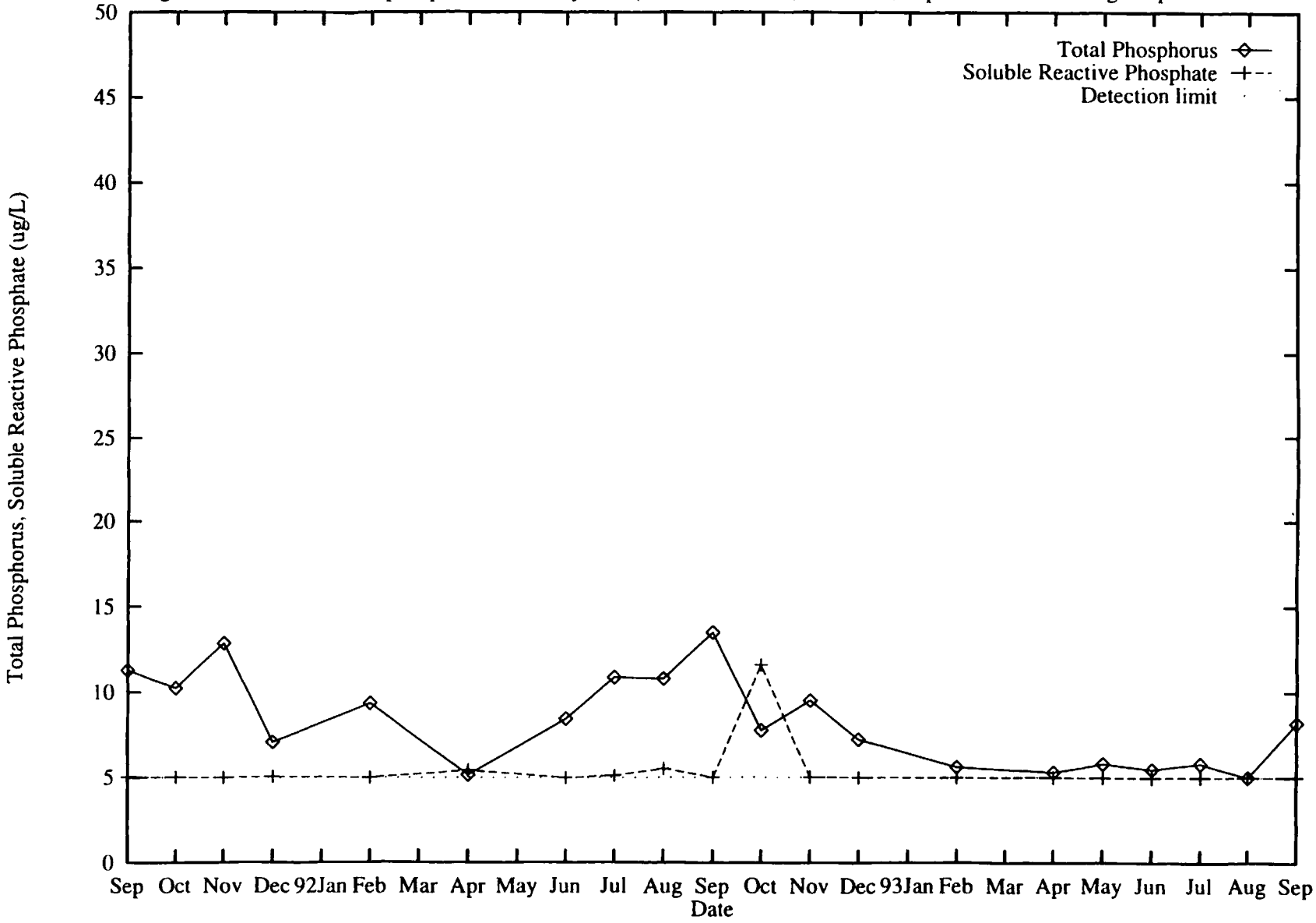


Figure 58: Lake Whatcom phosphorus summary data (total and soluble) for Site 2, September 1991 through September 1993.

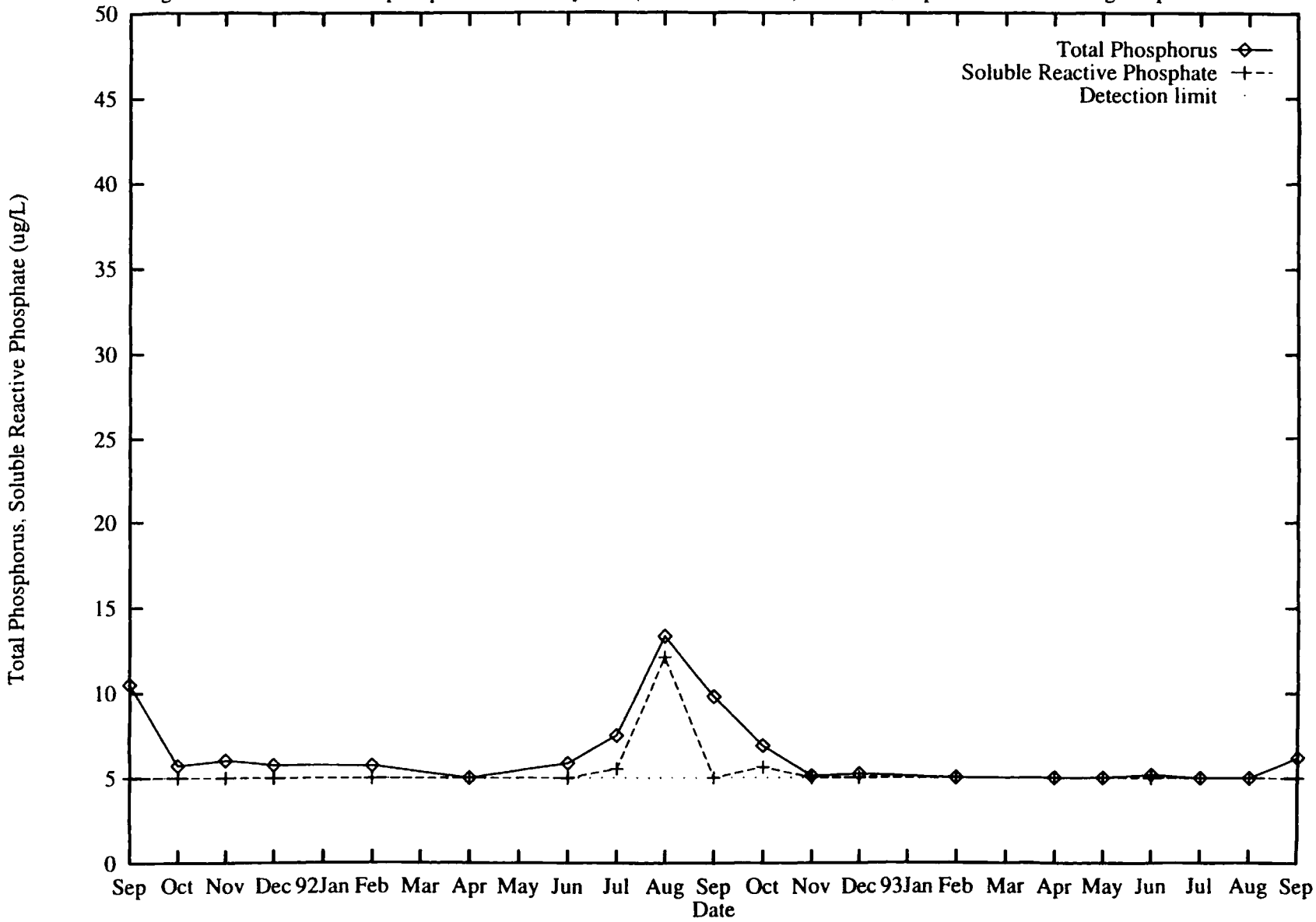


Figure 59: Lake Whatcom phosphorus summary data (total and soluble) for Intake site (basin 2), September 1991 through September 1993.

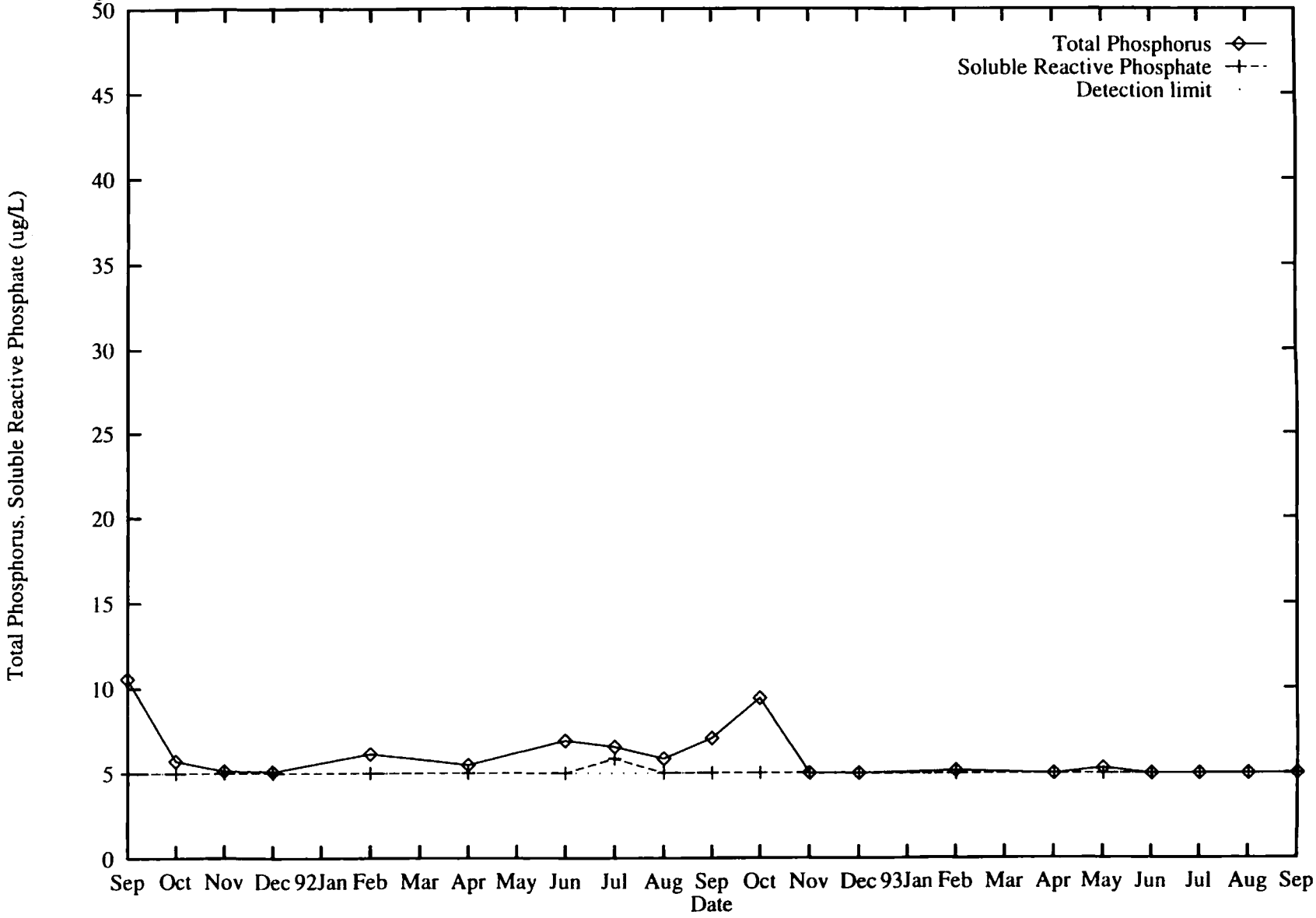


Figure 60: Lake Whatcom phosphorus summary data (total and soluble) for Site 3, September 1991 through September 1993.

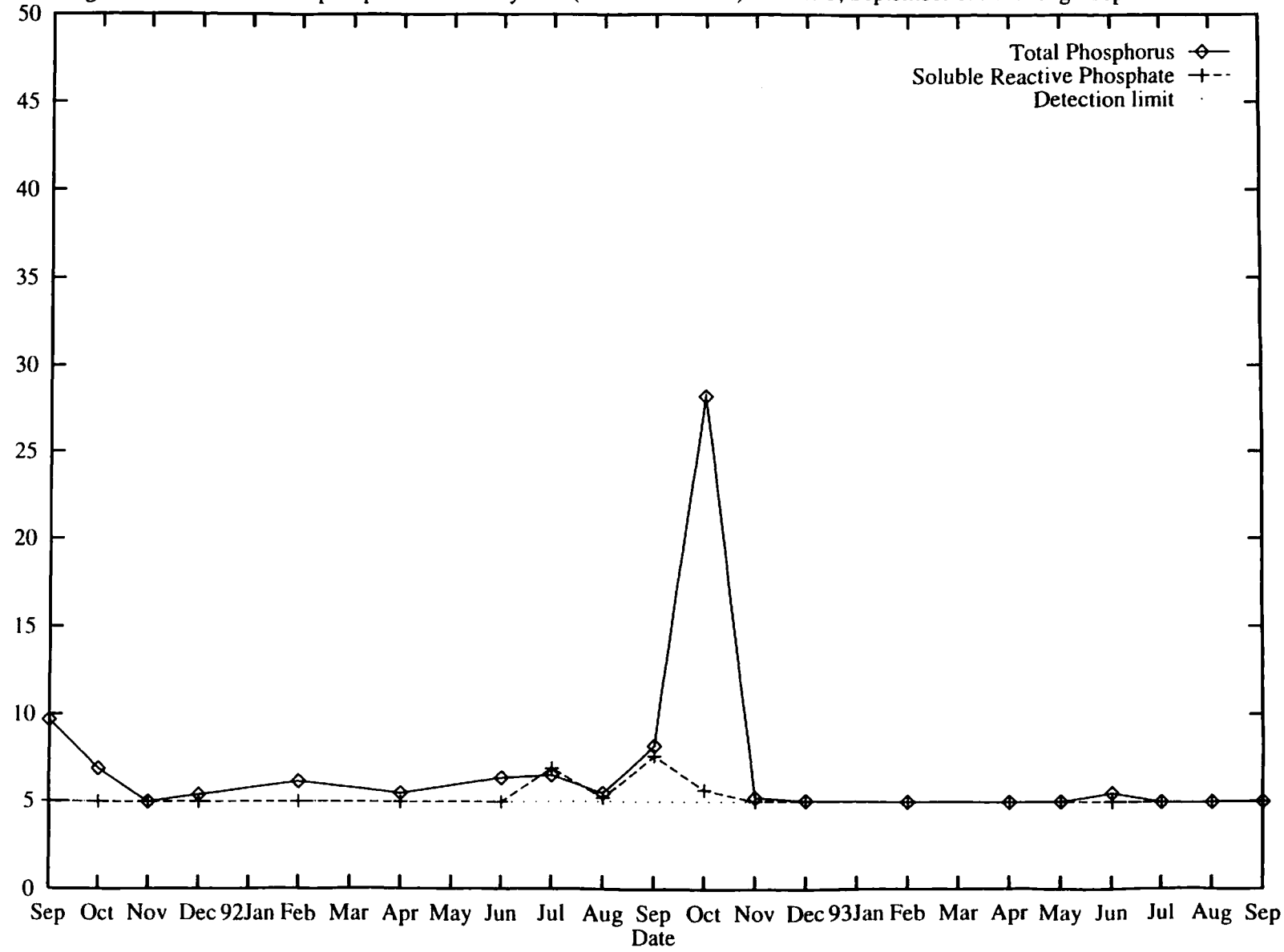


Figure 61: Lake Whatcom phosphorus summary data (total and soluble) for Site 4, September 1991 through September 1993.

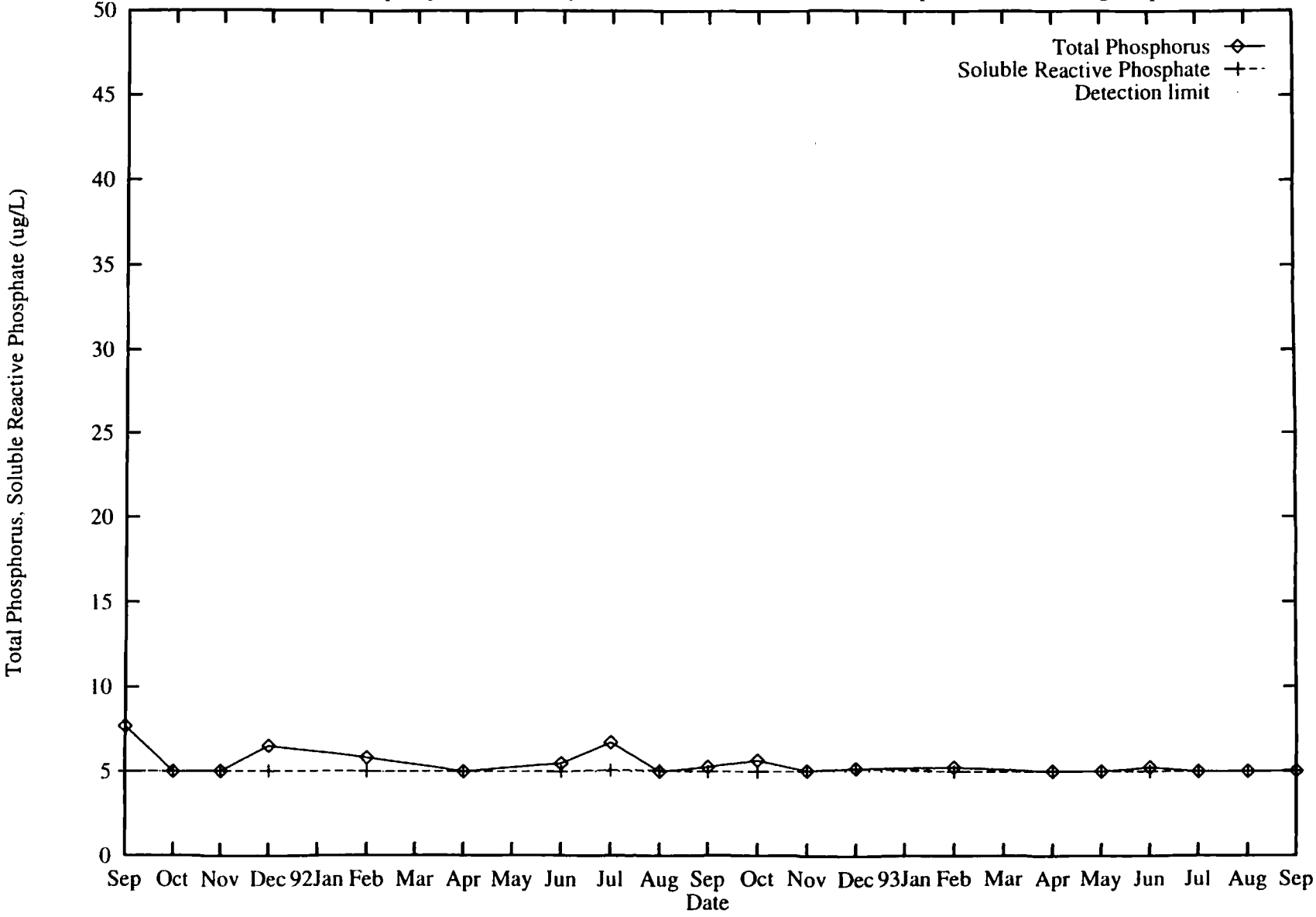


Figure 62: Lake Whatcom soluble reactive phosphate data for Site 1, September 1991 through September 1993.

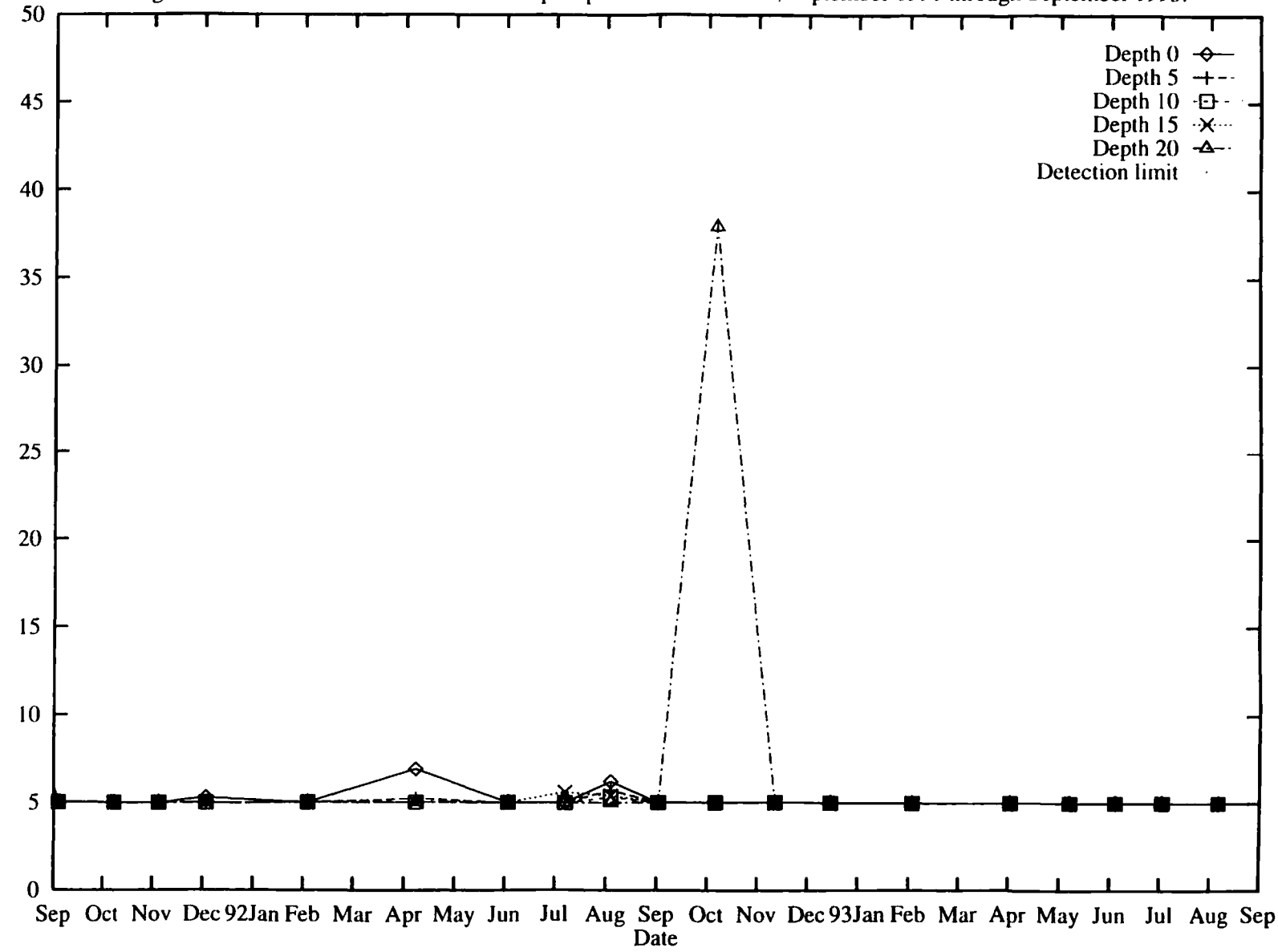


Figure 63: Lake Whatcom soluble reactive phosphate data for Site 2, September 1991 through September 1993.

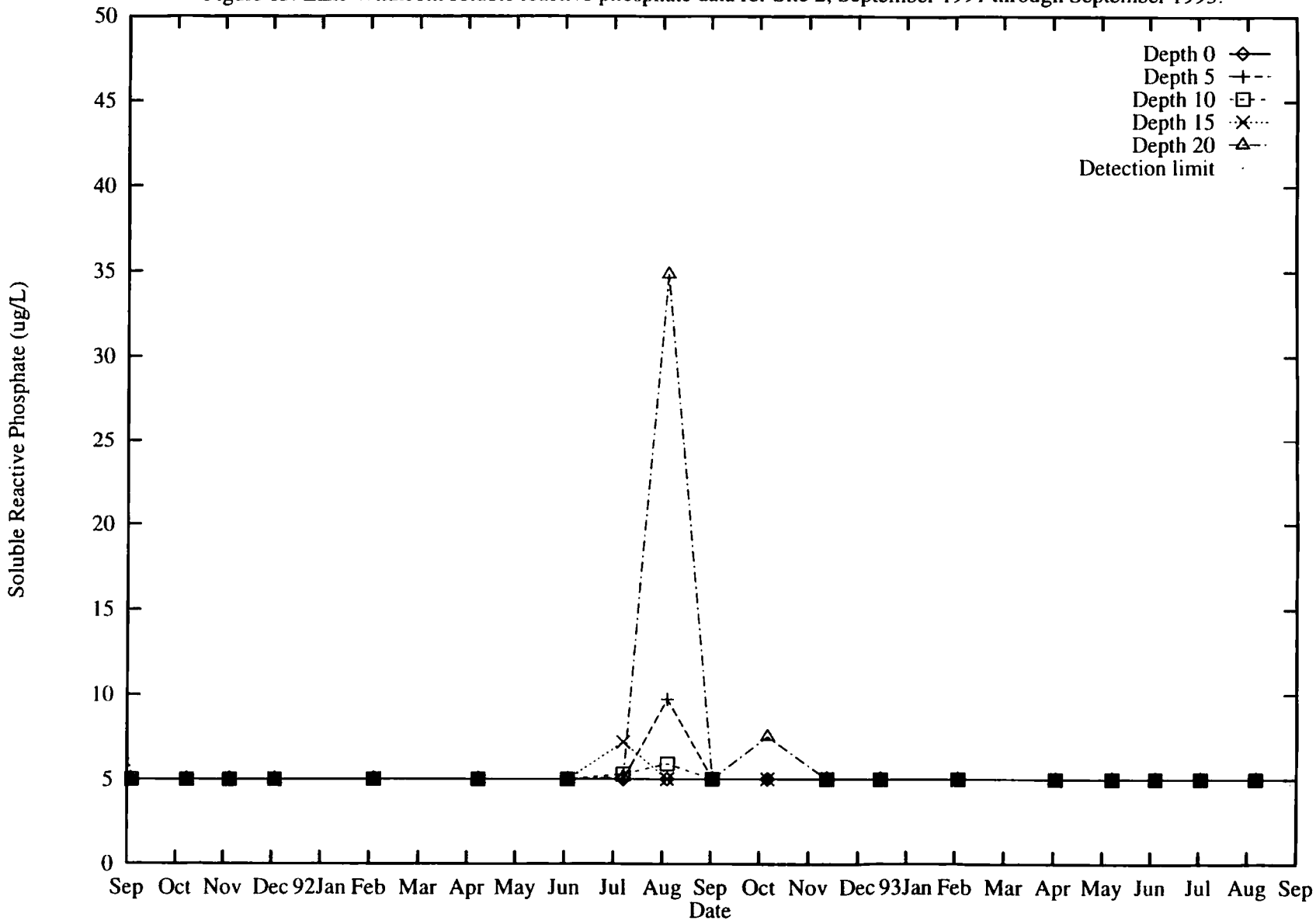


Figure 64: Lake Whatcom soluble reactive phosphate data for Intake site (basin 2), September 1991 through September 1993.

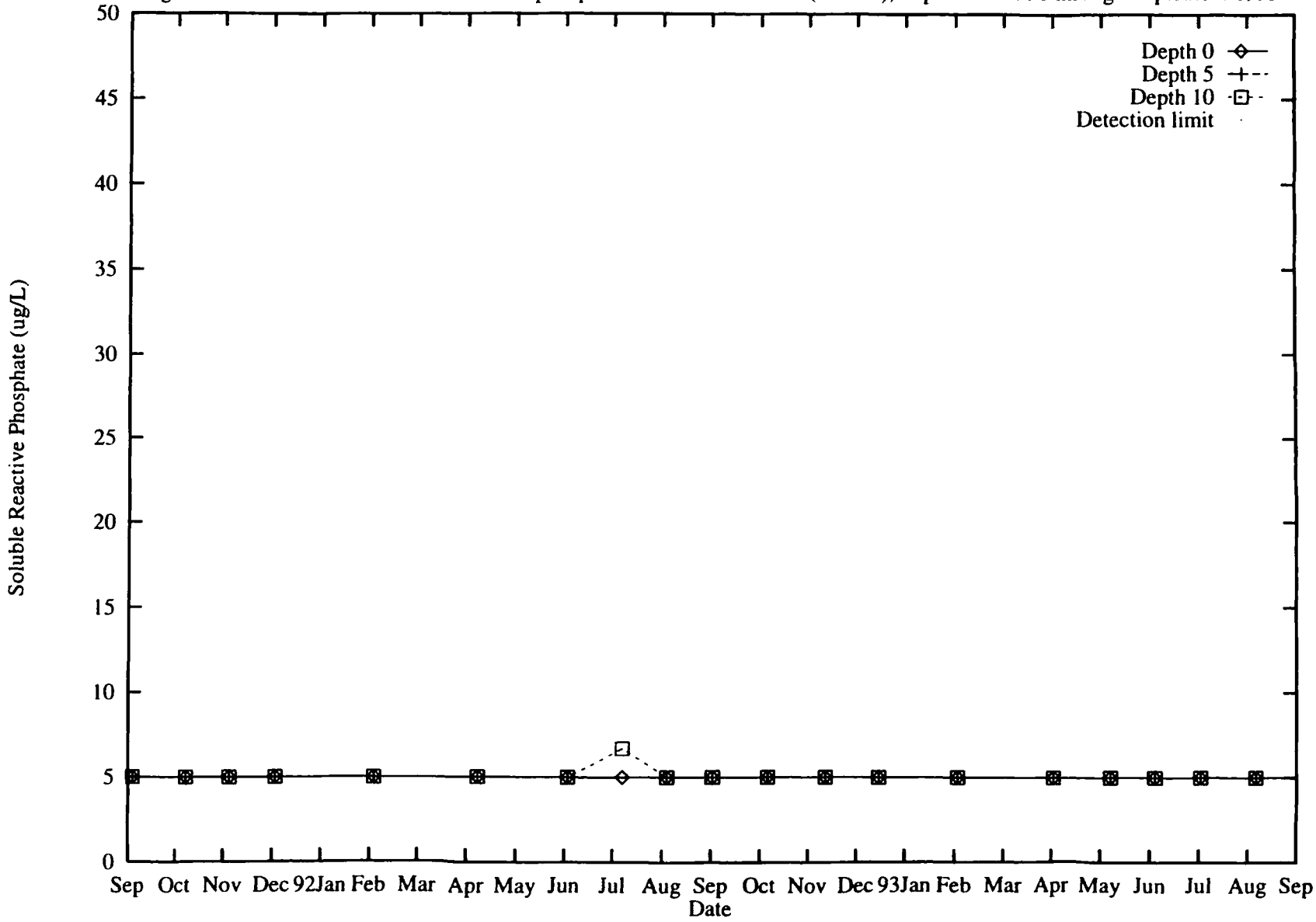


Figure 65: Lake Whatcom soluble reactive phosphate data for Site 3, September 1991 through September 1993.

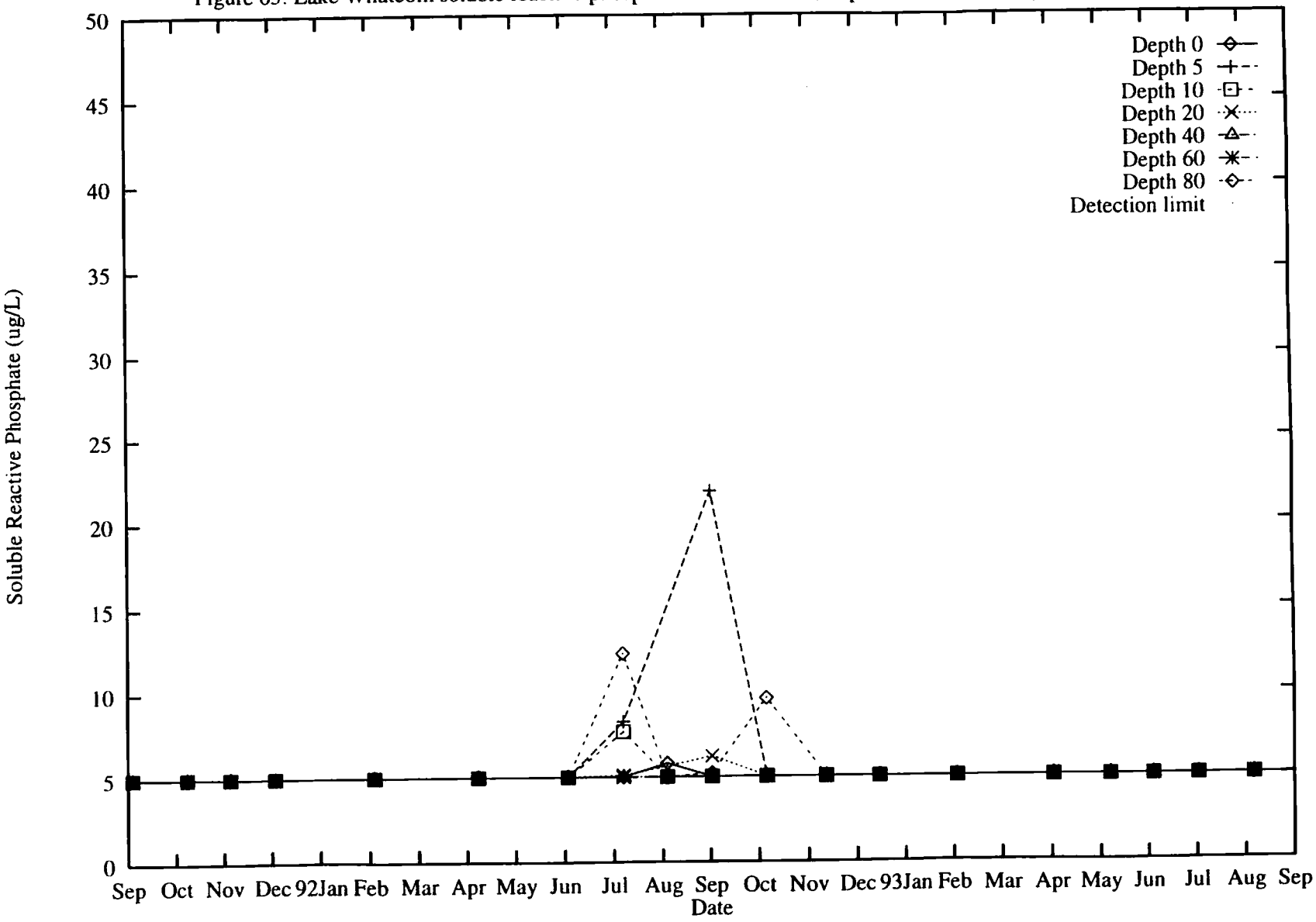


Figure 66: Lake Whatcom soluble reactive phosphate data for Site 4, September 1991 through September 1993.

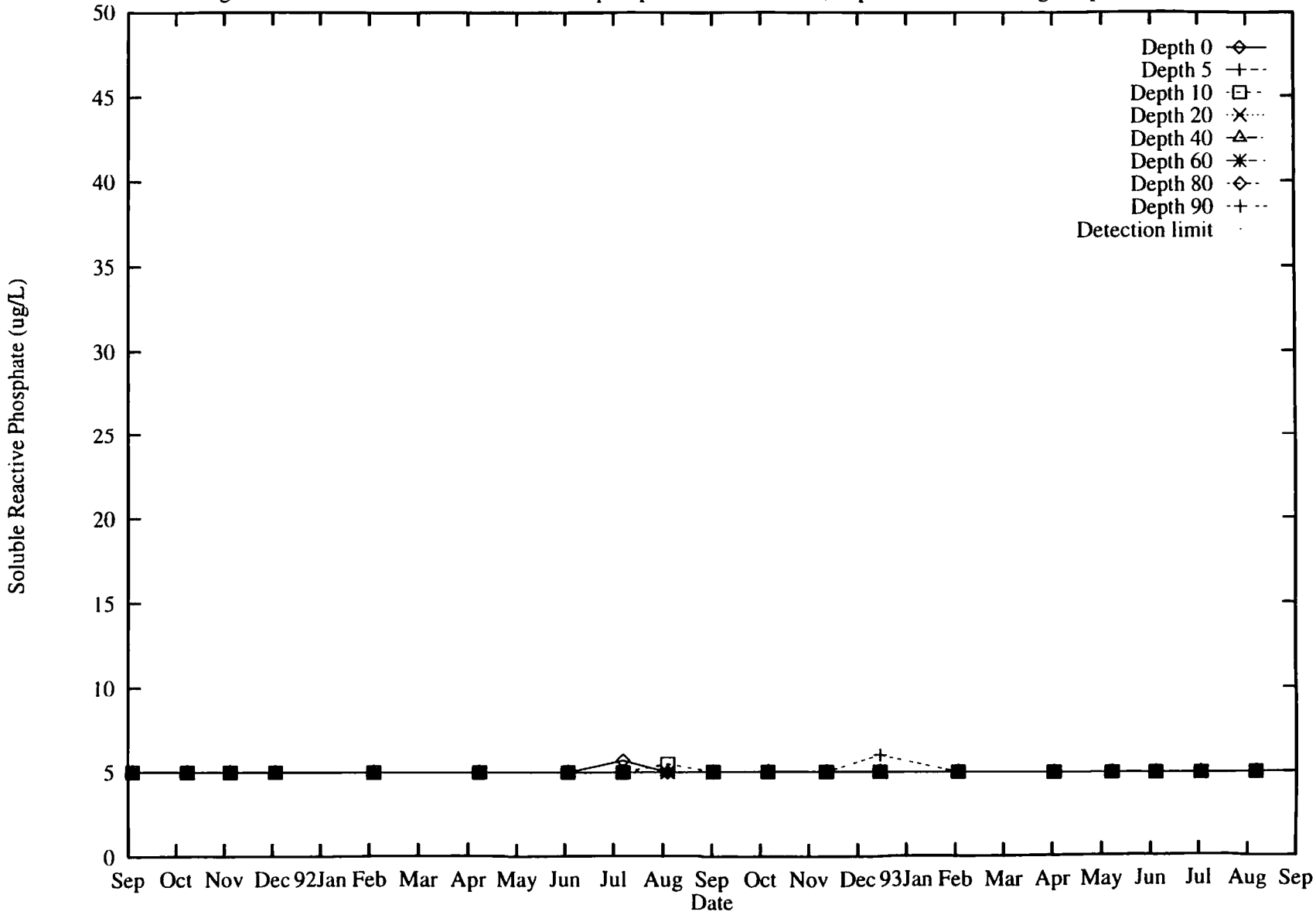


Figure 67: Lake Whatcom total phosphorus data for Site 1, September 1991 through September 1993.

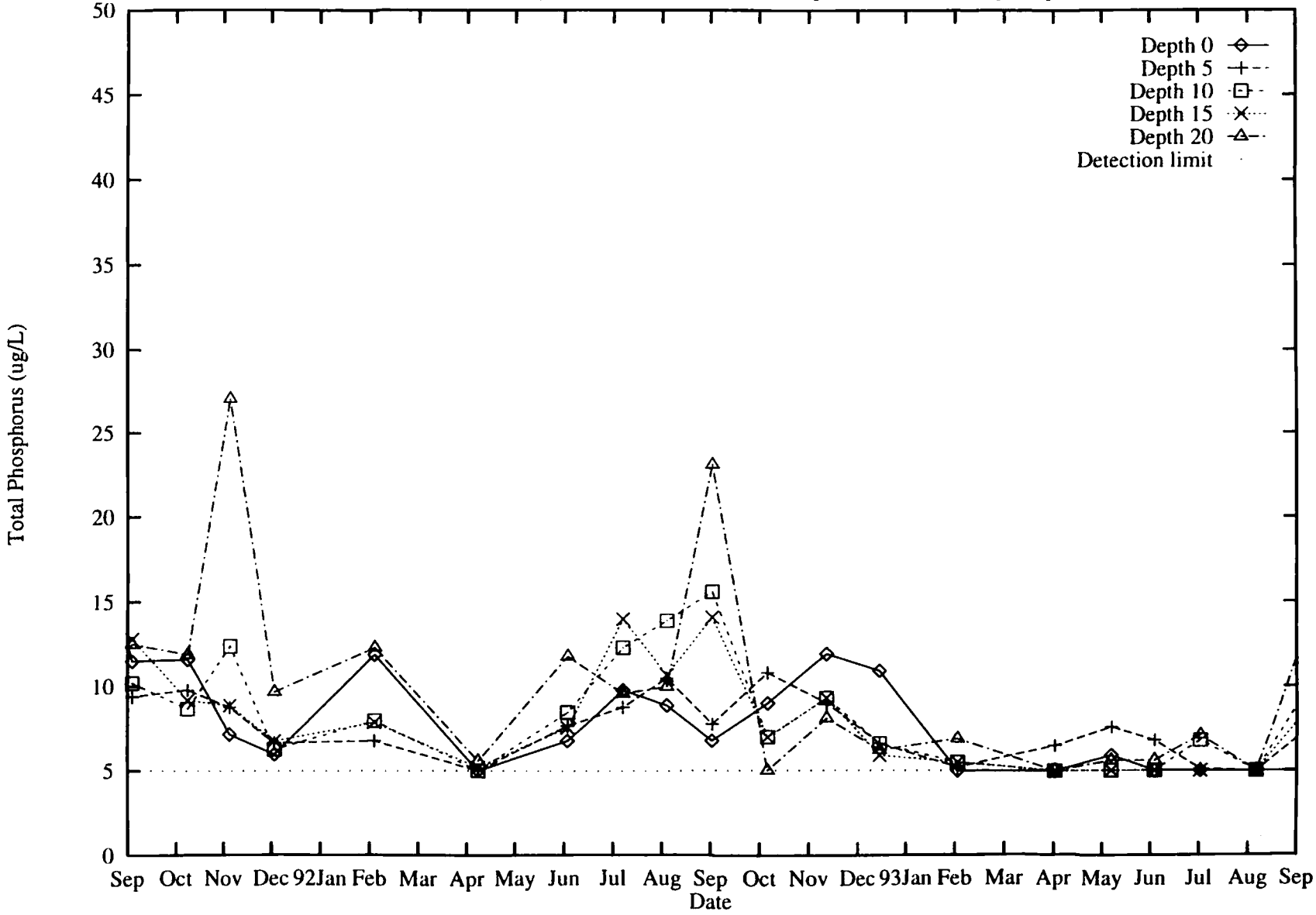


Figure 68: Lake Whatcom total phosphorus data for Site 2, September 1991 through September 1993.

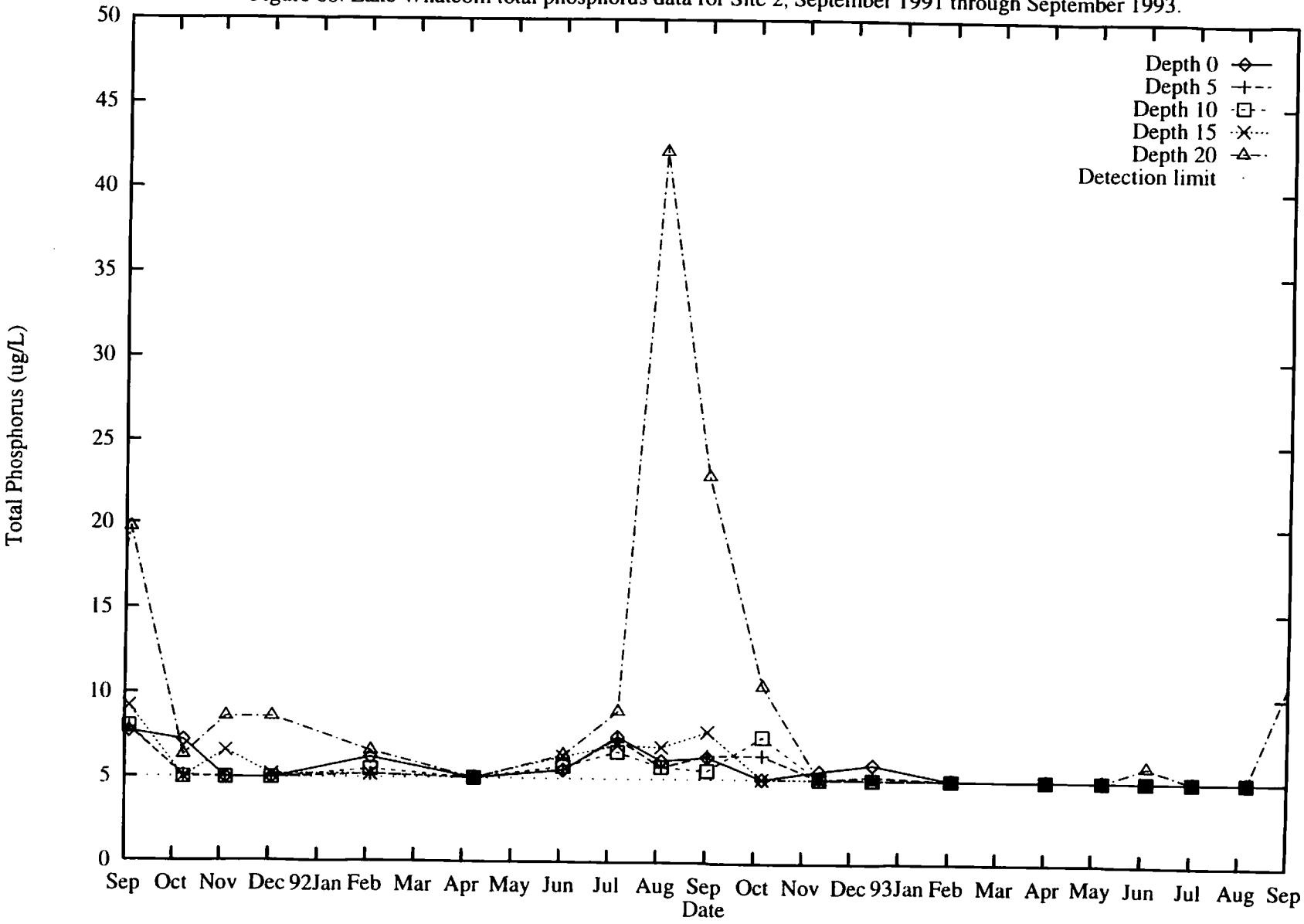


Figure 69: Lake Whatcom total phosphorus data for Intake site (basin 2), September 1991 through September 1993.

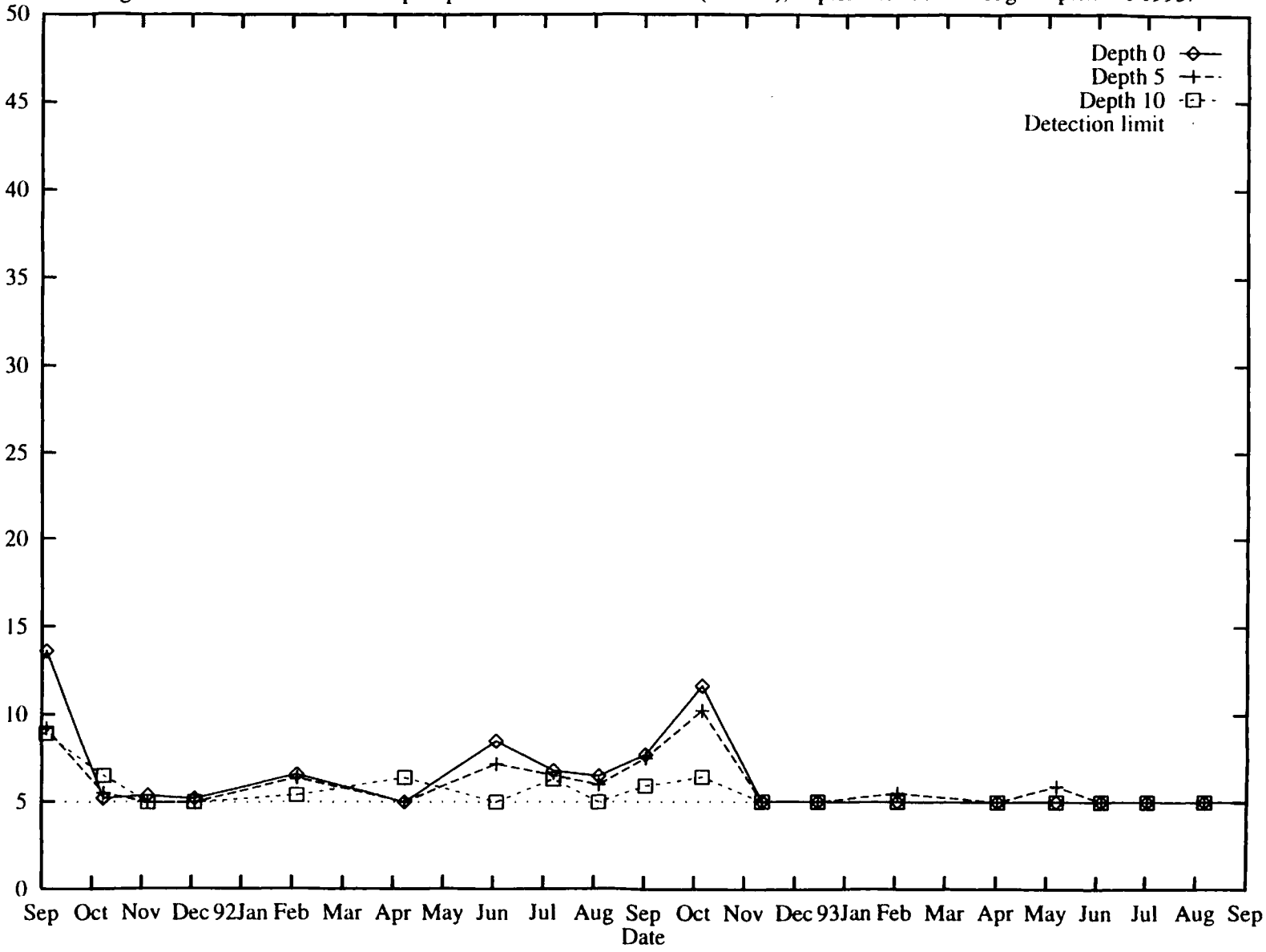


Figure 70: Lake Whatcom total phosphorus data for Site 3, September 1991 through September 1993.

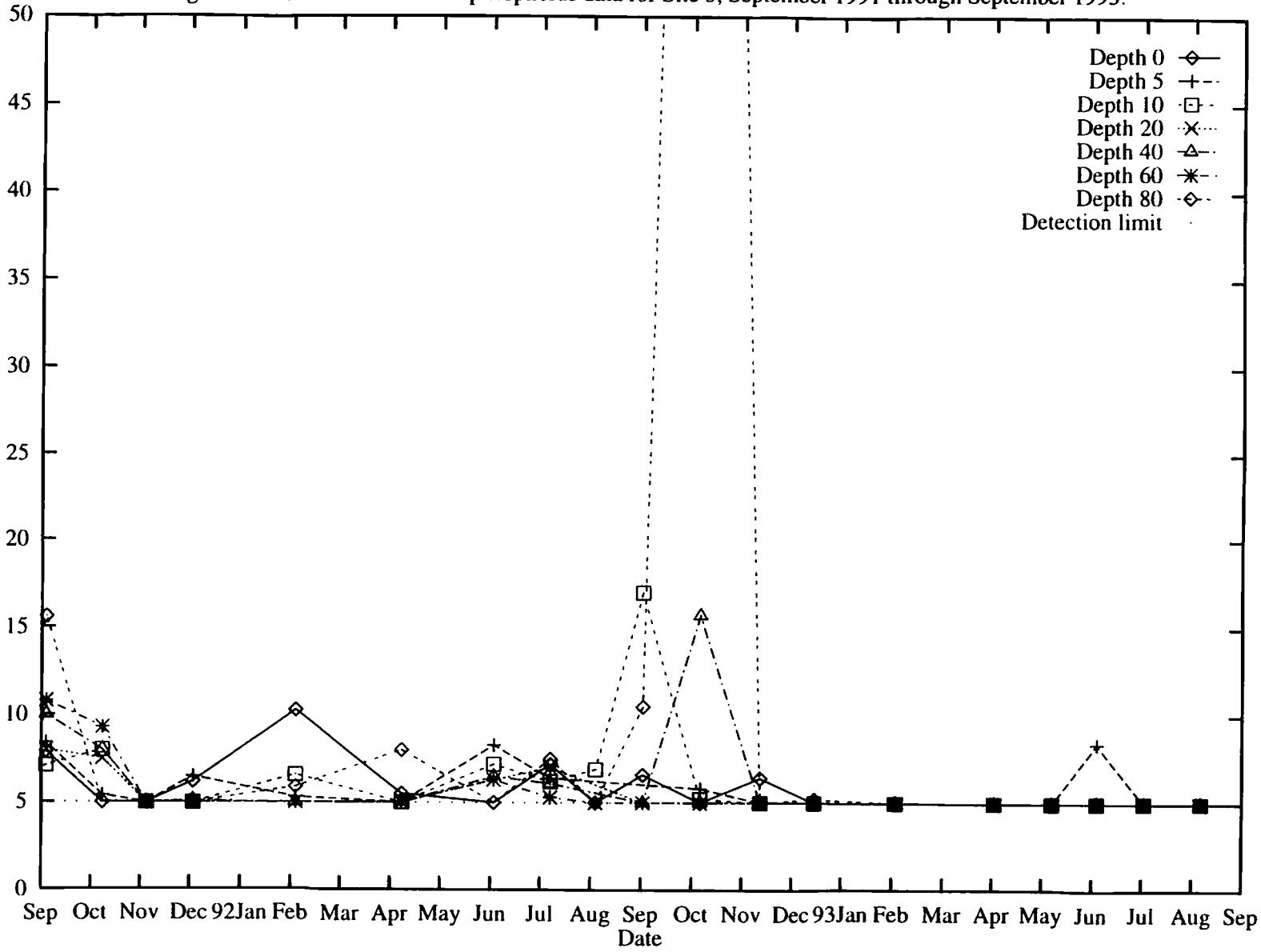


Figure 71: Lake Whatcom total phosphorus data for Site 4, September 1991 through September 1993.

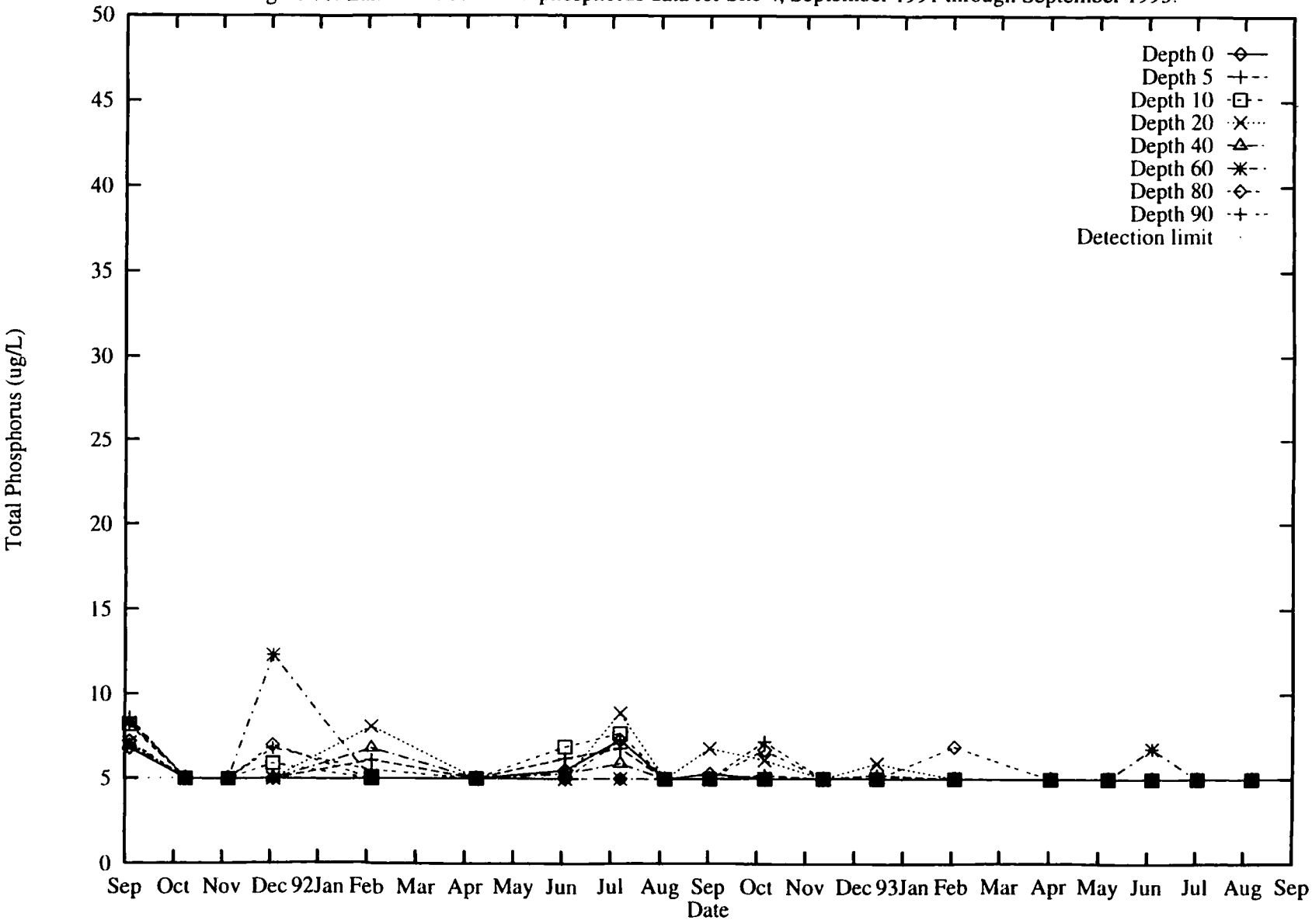


Figure 72: Lake Whatcom chlorophyll data for Site 1, September 1991 through September 1993.

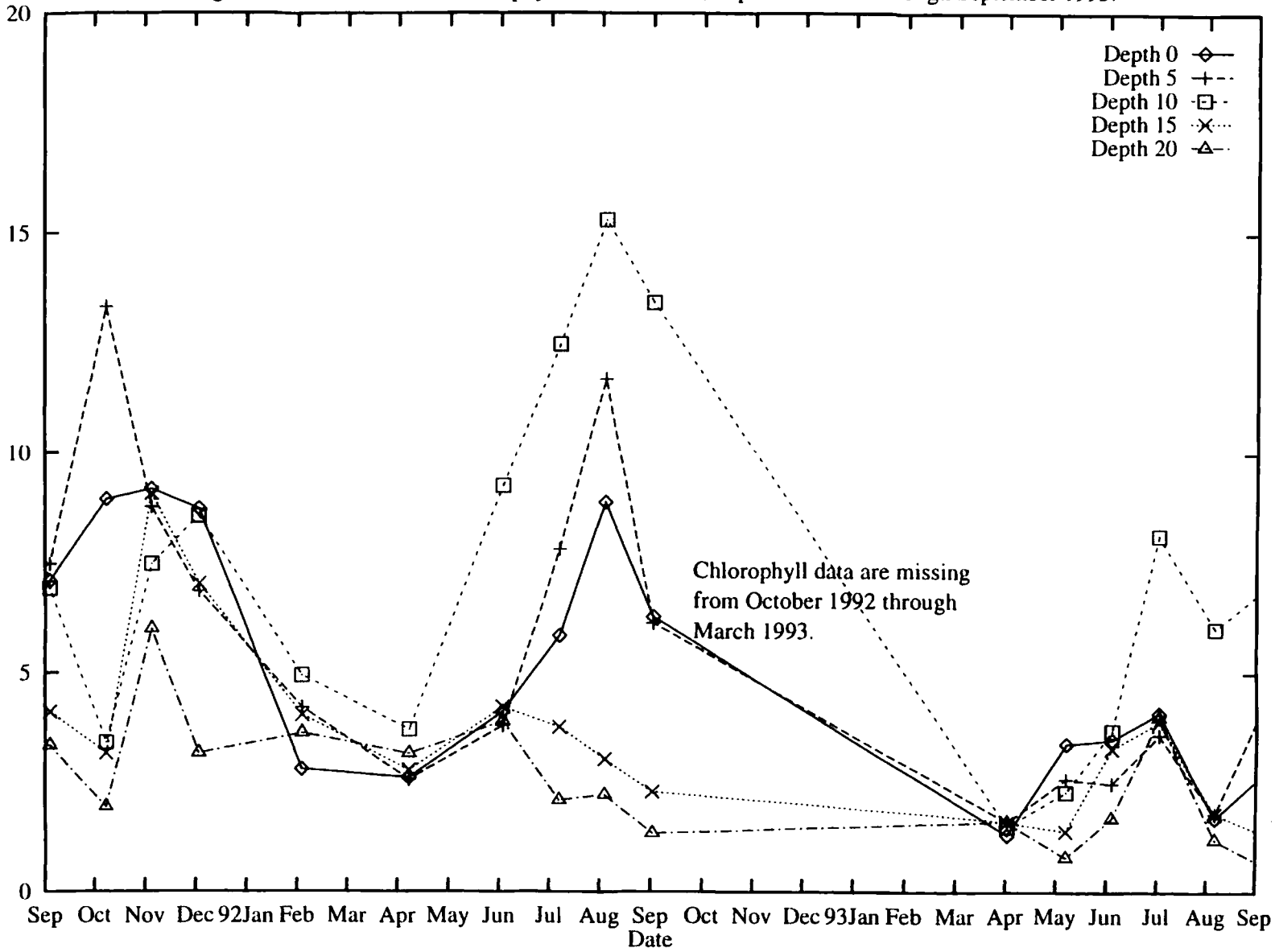


Figure 73: Lake Whatcom chlorophyll data for Site 2, September 1991 through September 1993.

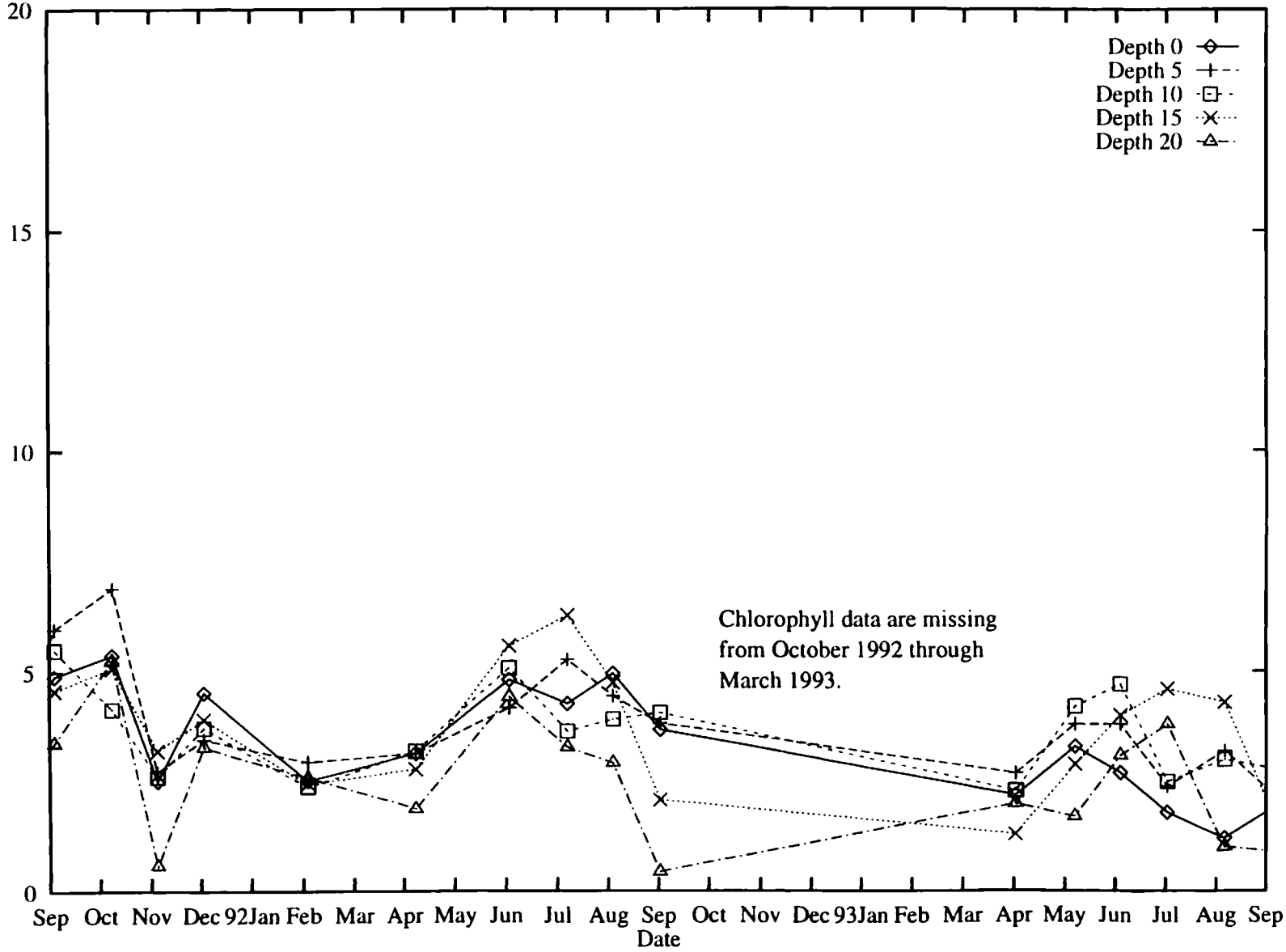


Figure 74: Lake Whatcom chlorophyll data for Intake site (basin 2), September 1991 through September 1993.

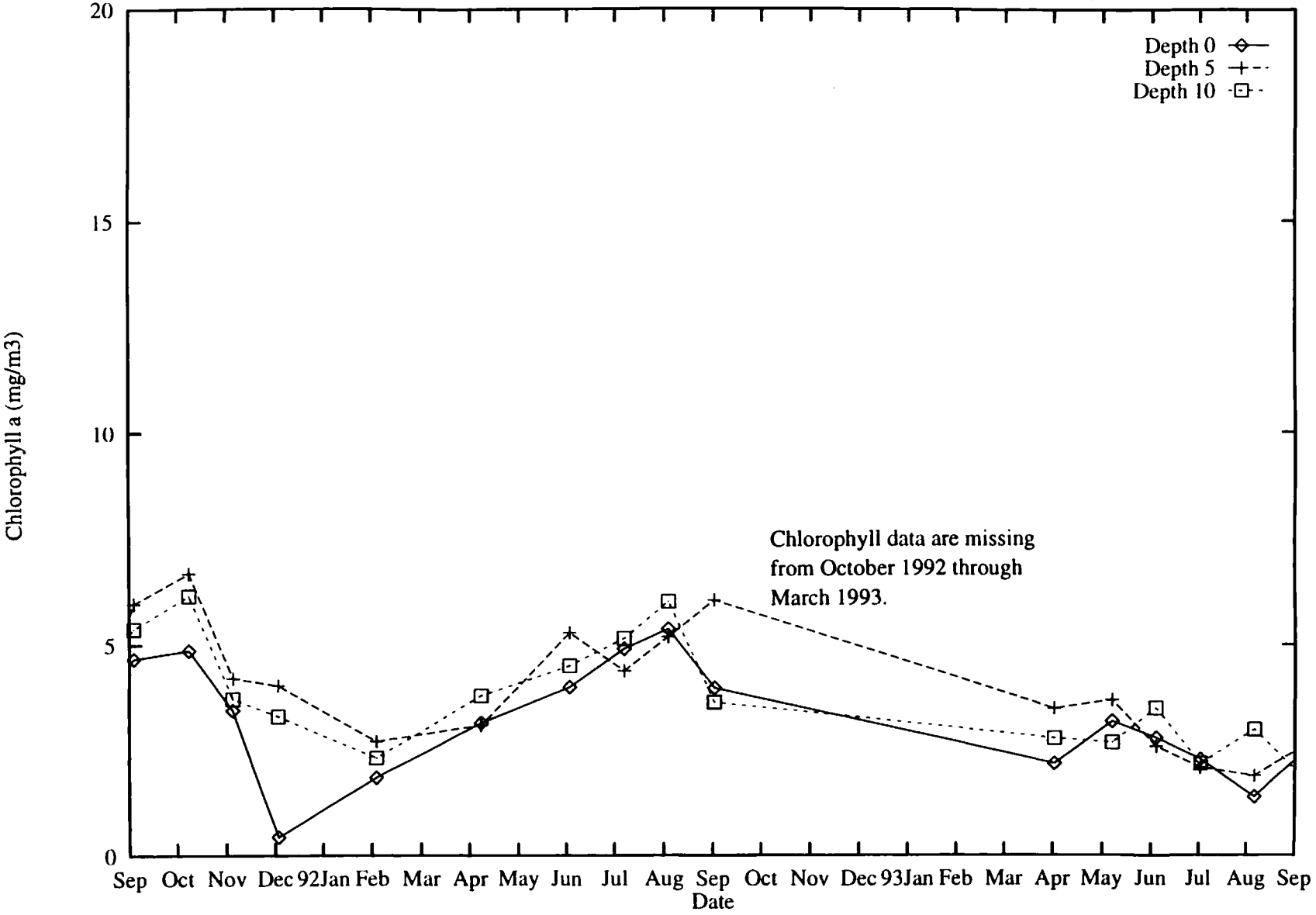


Figure 75: Lake Whatcom chlorophyll data for Site 3, September 1991 through September 1993.

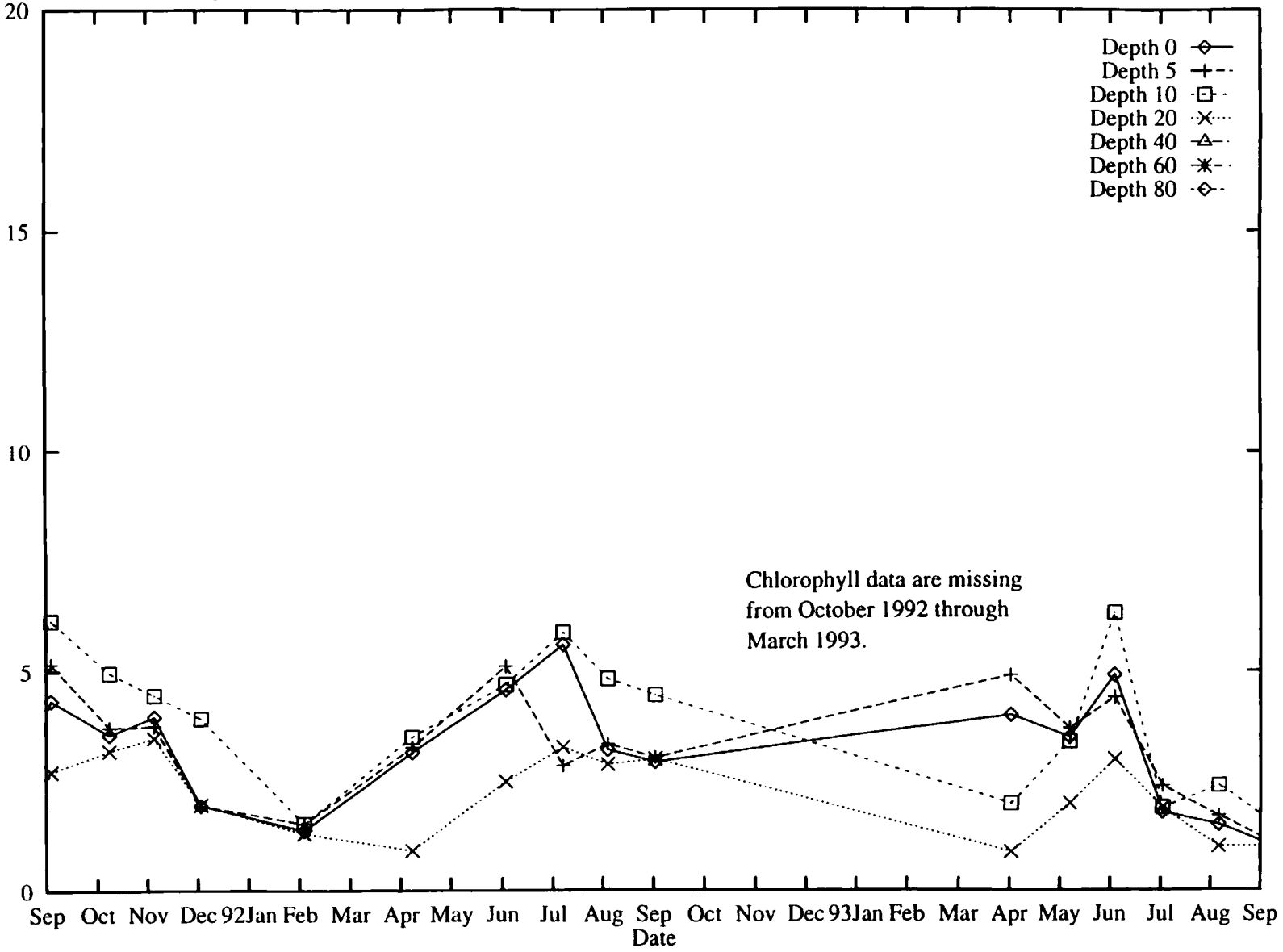


Figure 76: Lake Whatcom chlorophyll data for Site 4, September 1991 through September 1993.

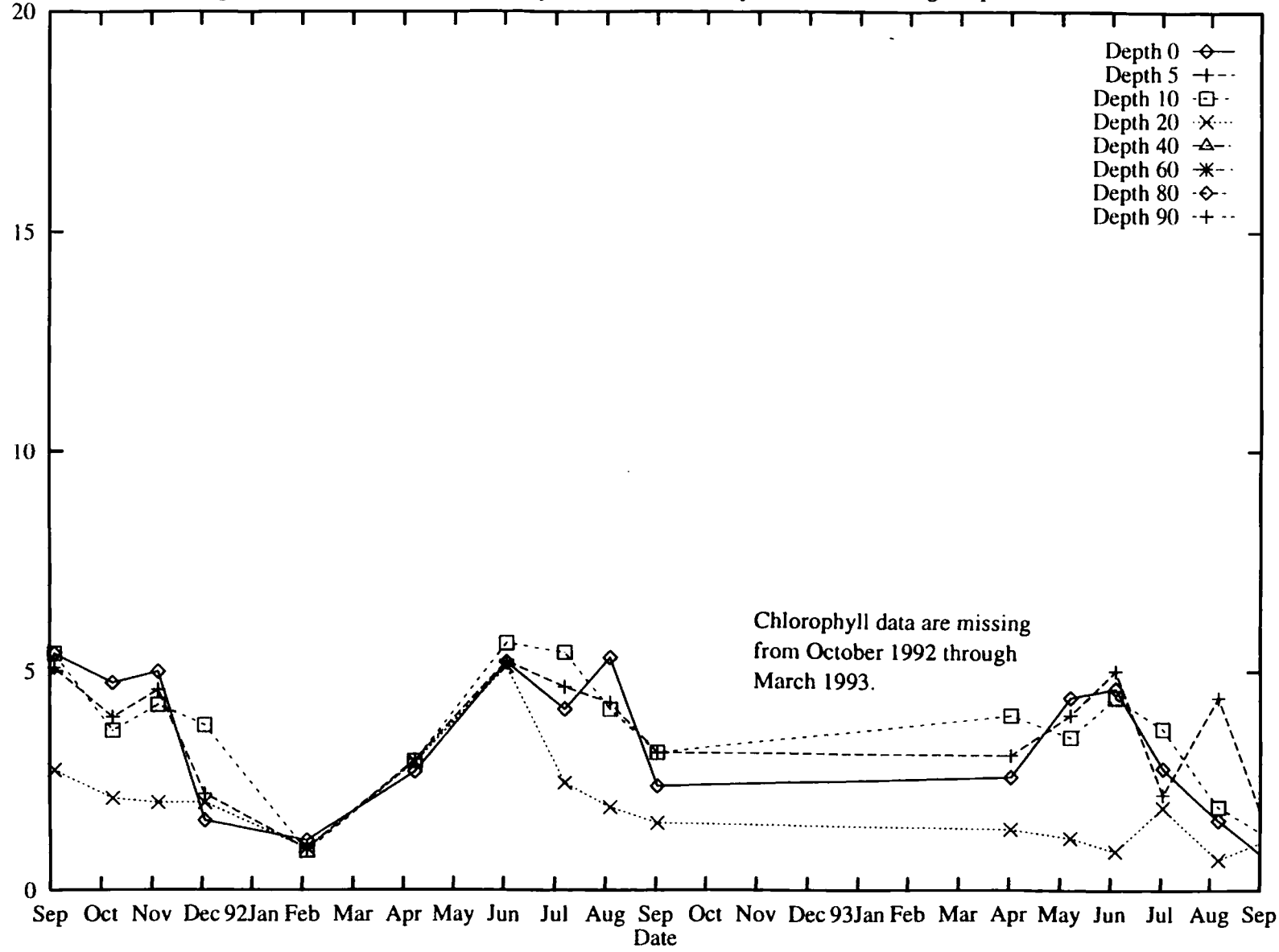


Figure 77: Lake Whatcom total coliform data for Site 1, September 1991 through September 1993.

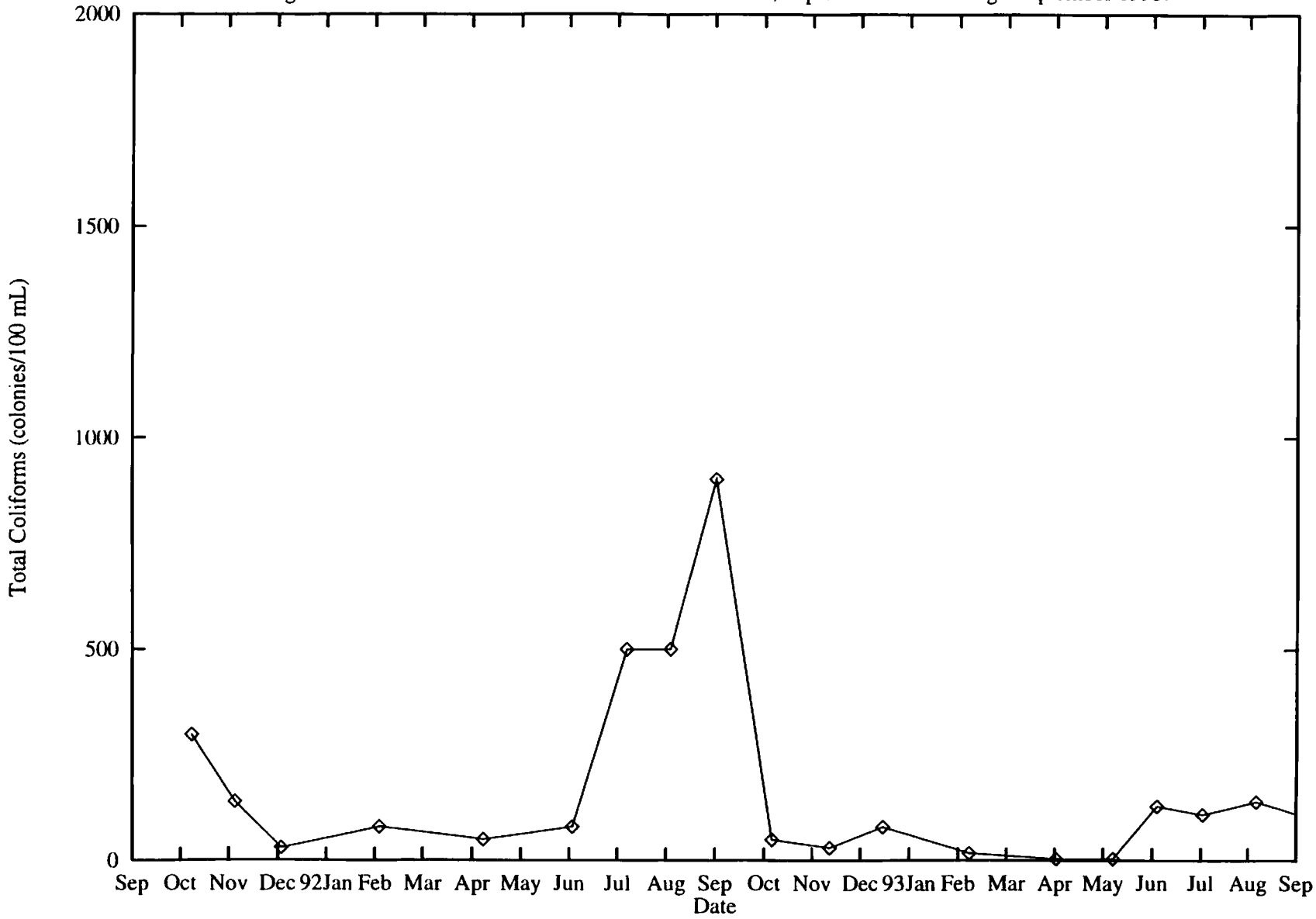


Figure 78: Lake Whatcom total coliform data for Site 2, September 1991 through September 1993.

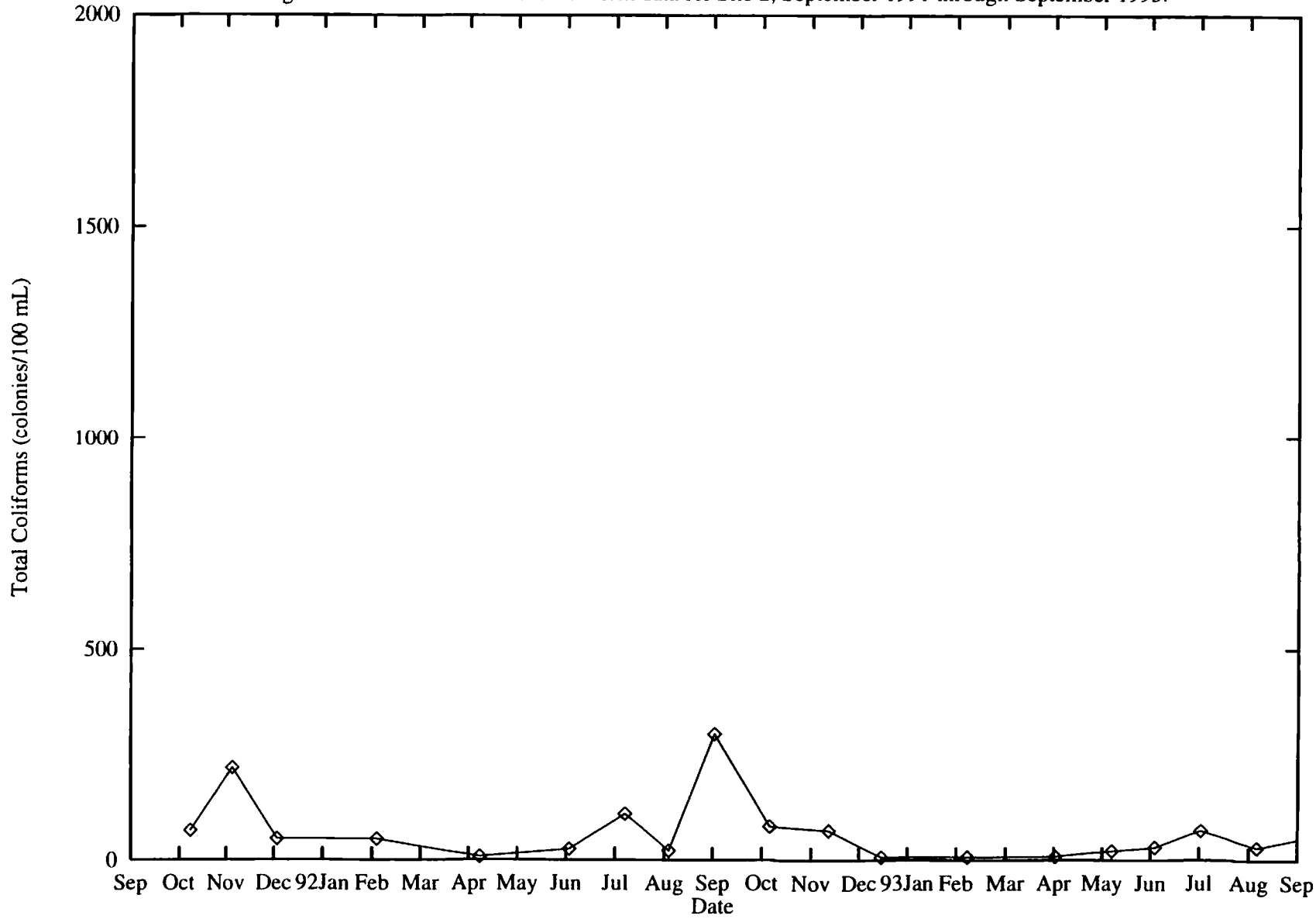


Figure 79: Lake Whatcom total coliform data for Intake site (basin 2), September 1991 through September 1993.

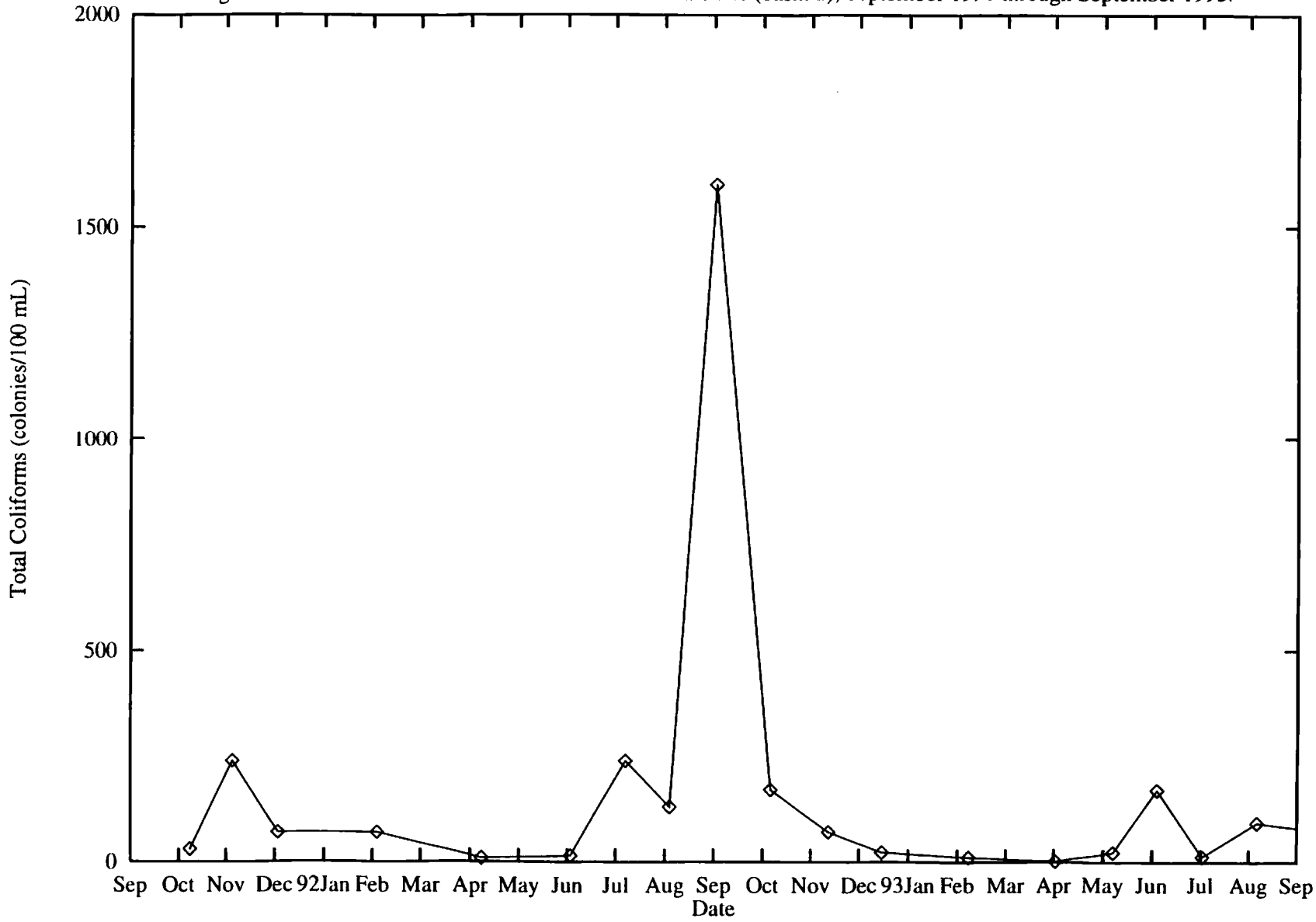


Figure 80: Lake Whatcom total coliform data for Site 3, September 1991 through September 1993.

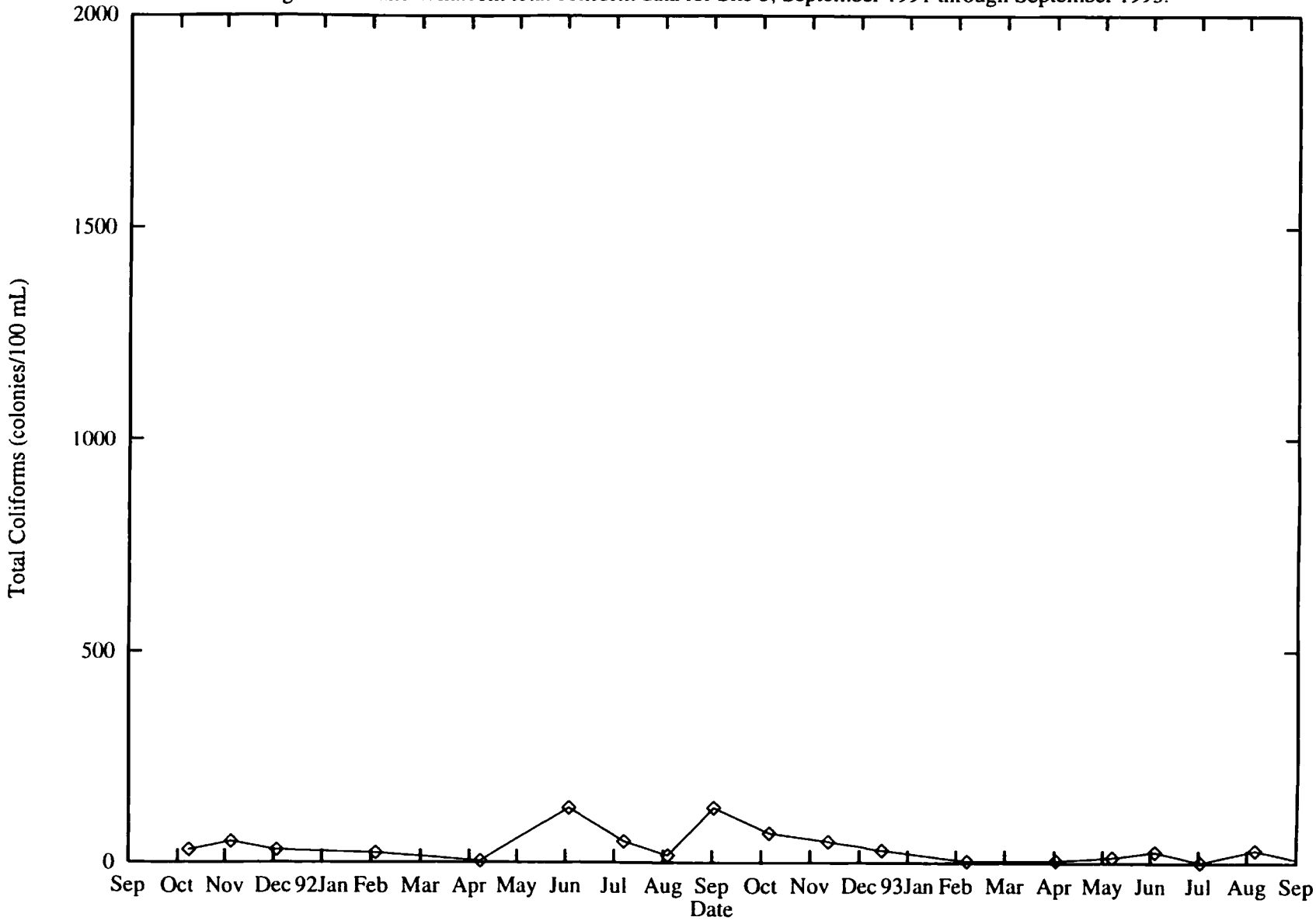


Figure 81: Lake Whatcom total coliform data for Site 4, September 1991 through September 1993.

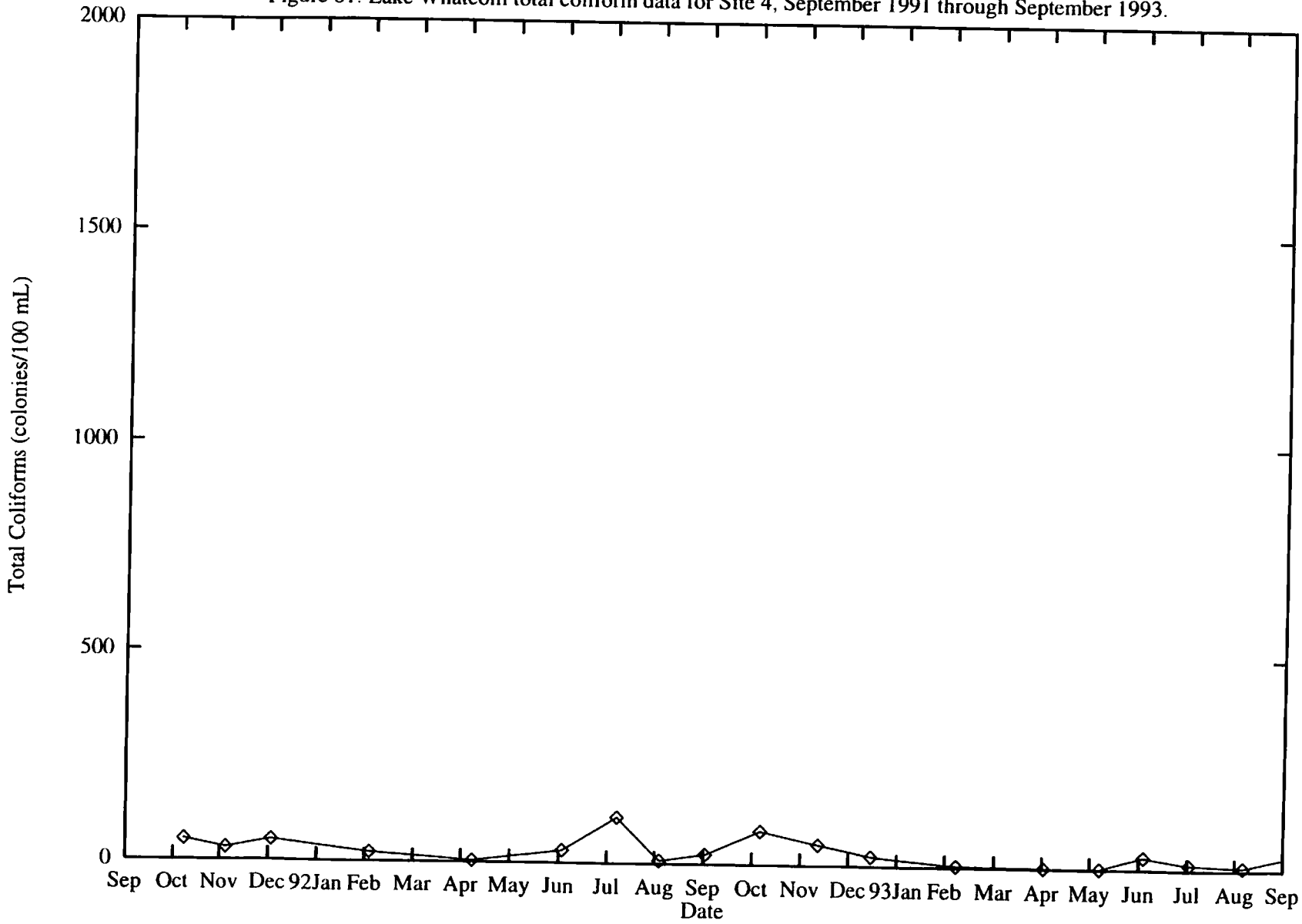


Figure 82: Lake Whatcom fecal coliform data for Site 1, September 1991 through September 1993.

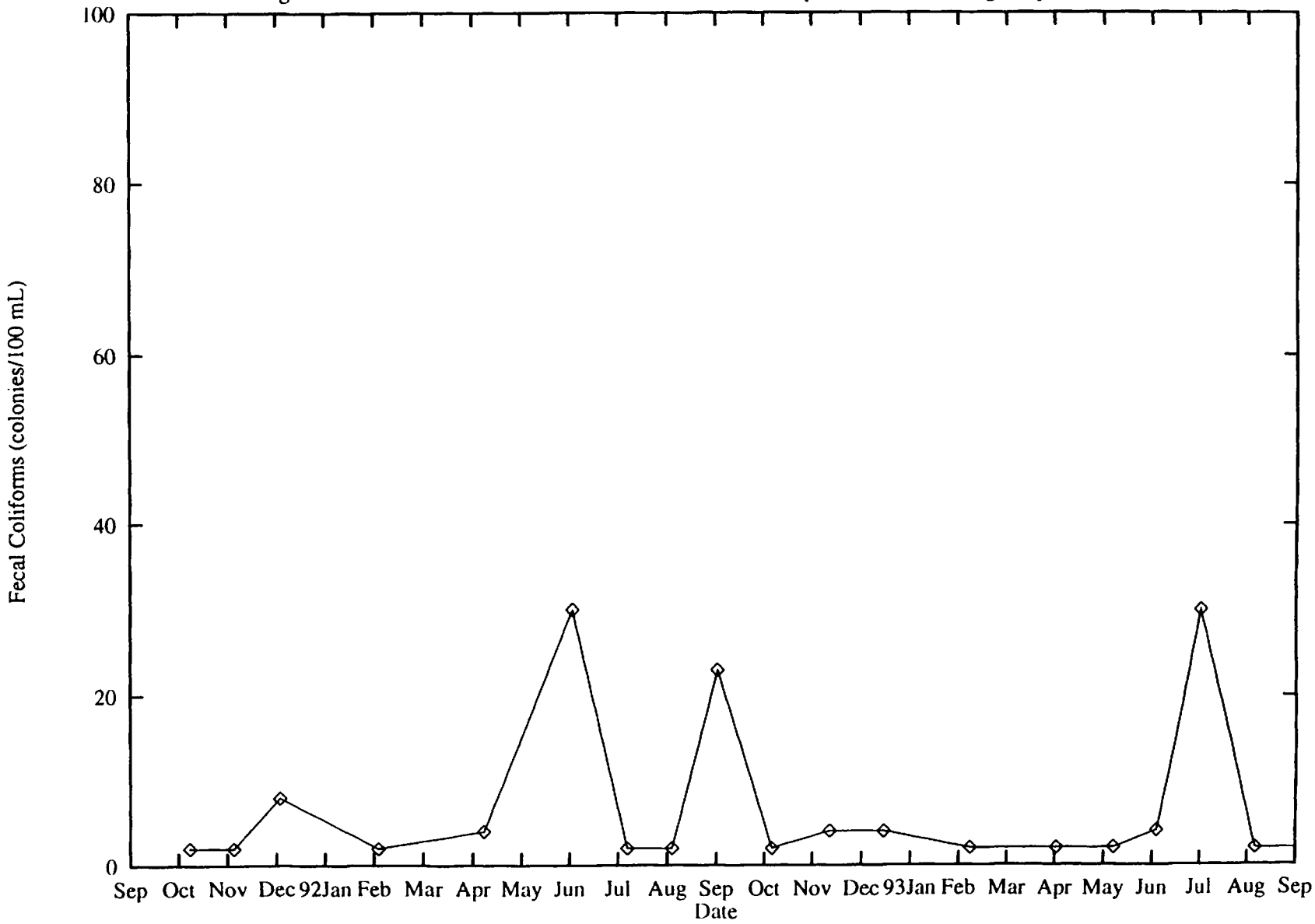


Figure 83: Lake Whatcom fecal coliform data for Site 2, September 1991 through September 1993.

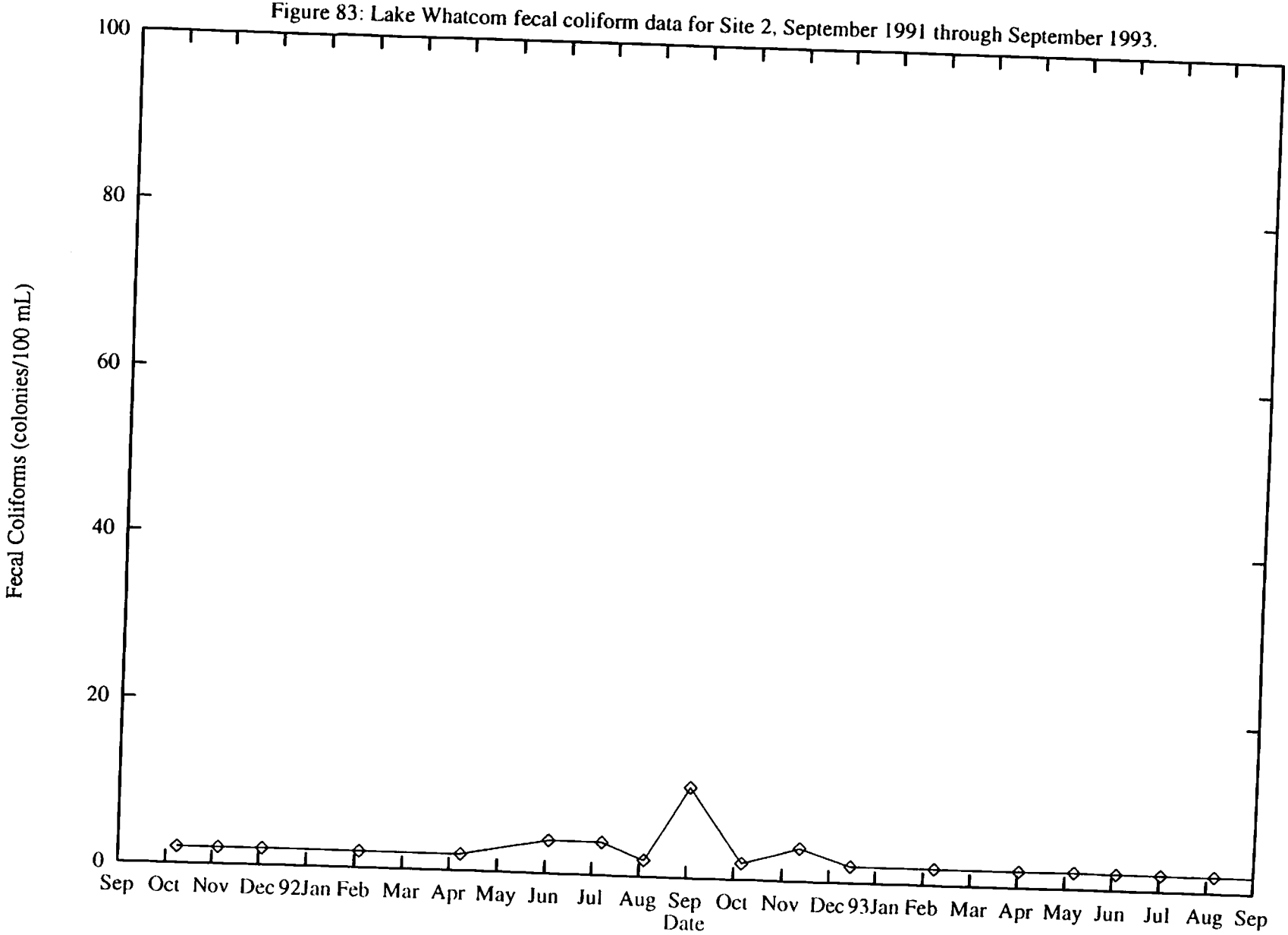


Figure 84: Lake Whatcom fecal coliform data for Intake site (basin 2), September 1991 through September 1993.

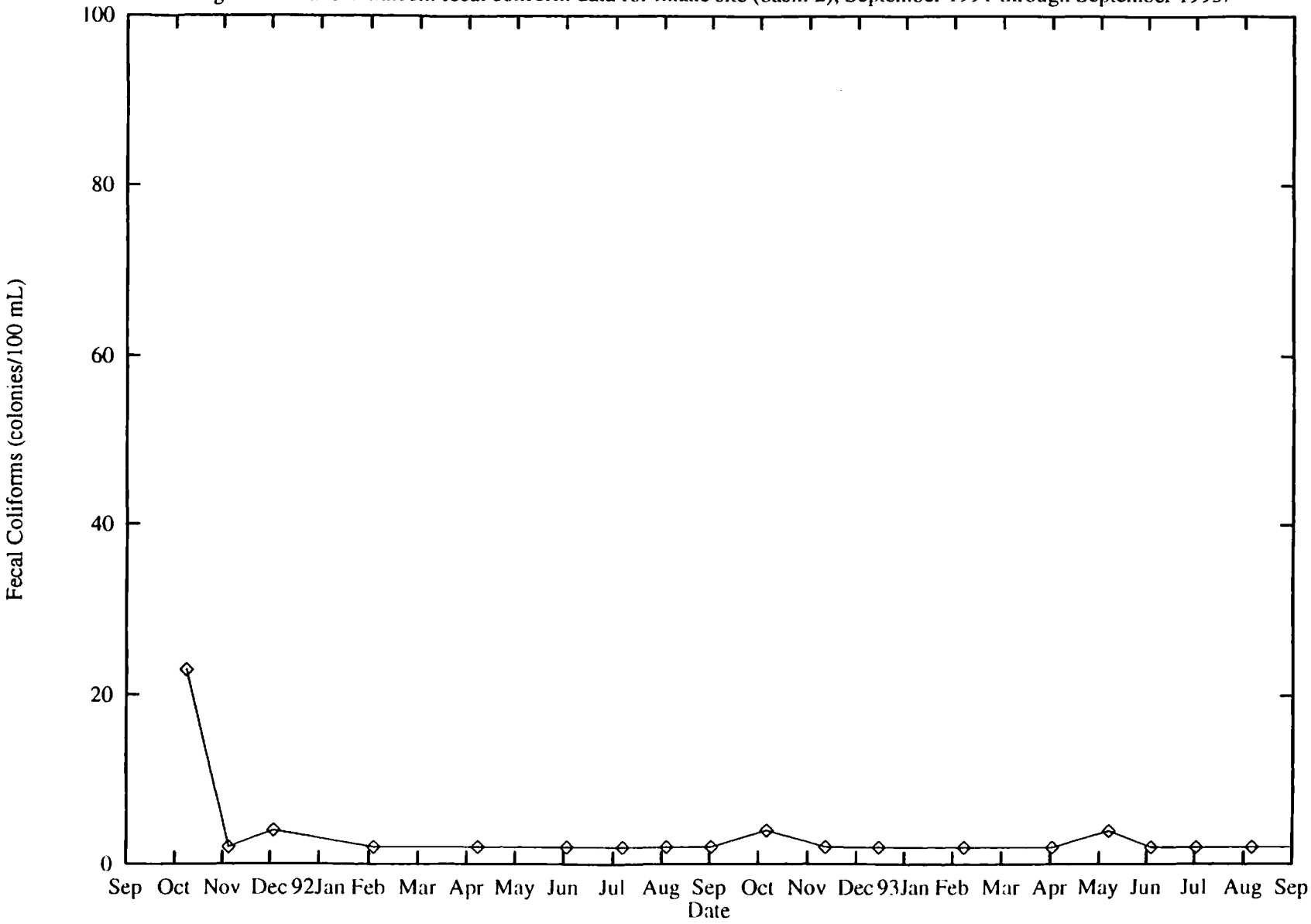


Figure 85: Lake Whatcom fecal coliform data for Site 3, September 1991 through September 1993.

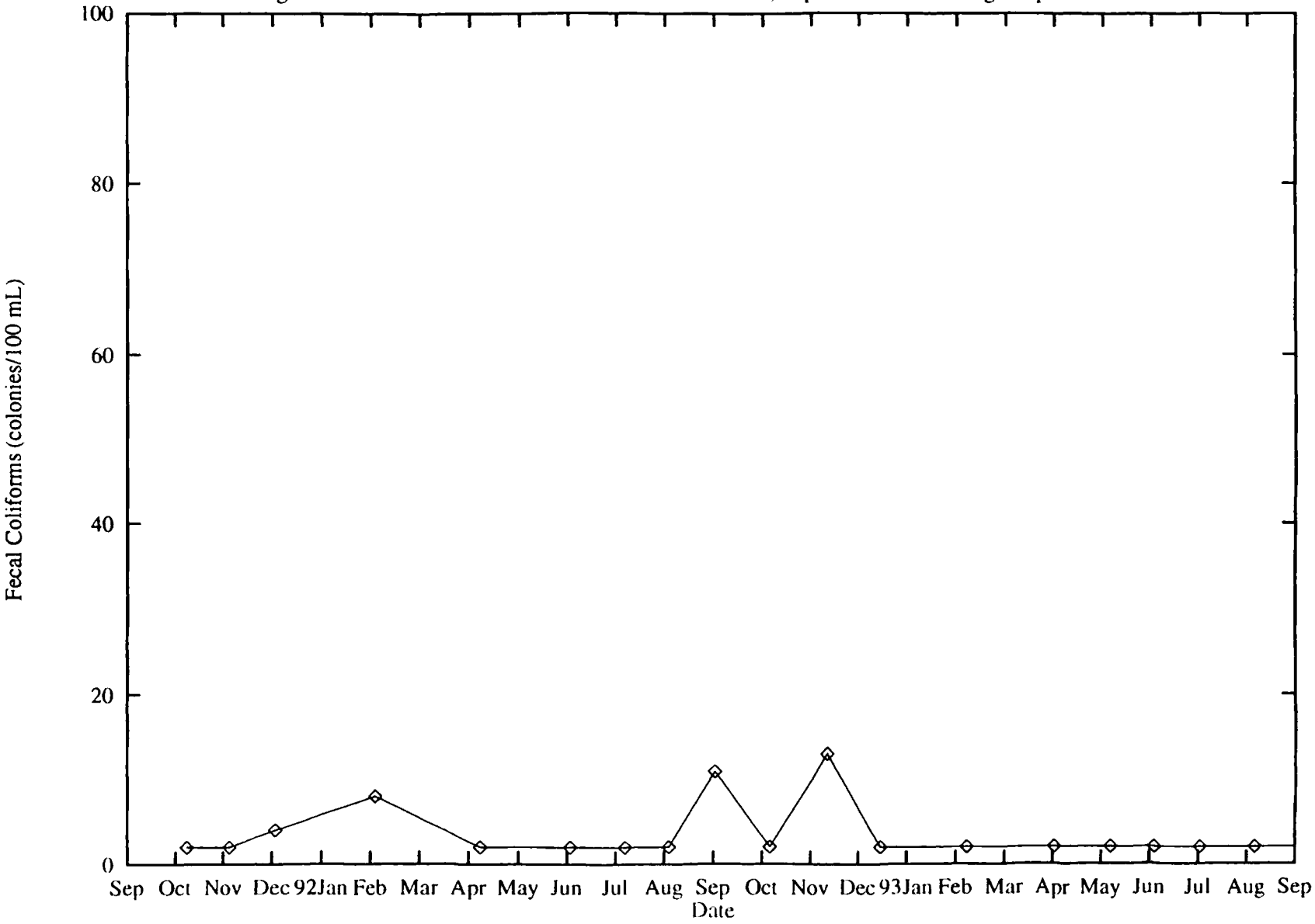


Figure 86: Lake Whatcom fecal coliform data for Site 4, September 1991 through September 1993.

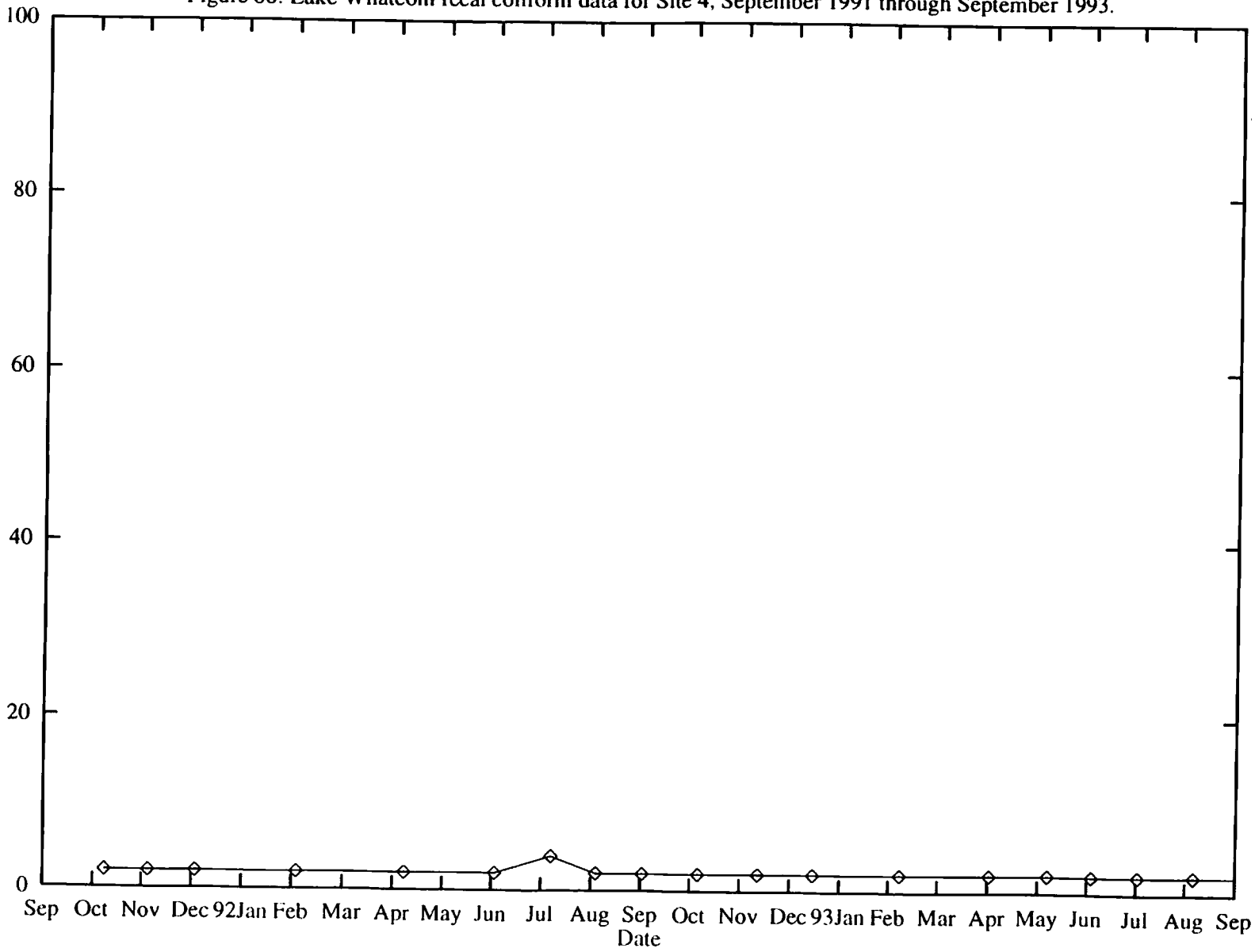


Figure 87: Lake Whatcom zooplankton data, September 1991 through September 1993.

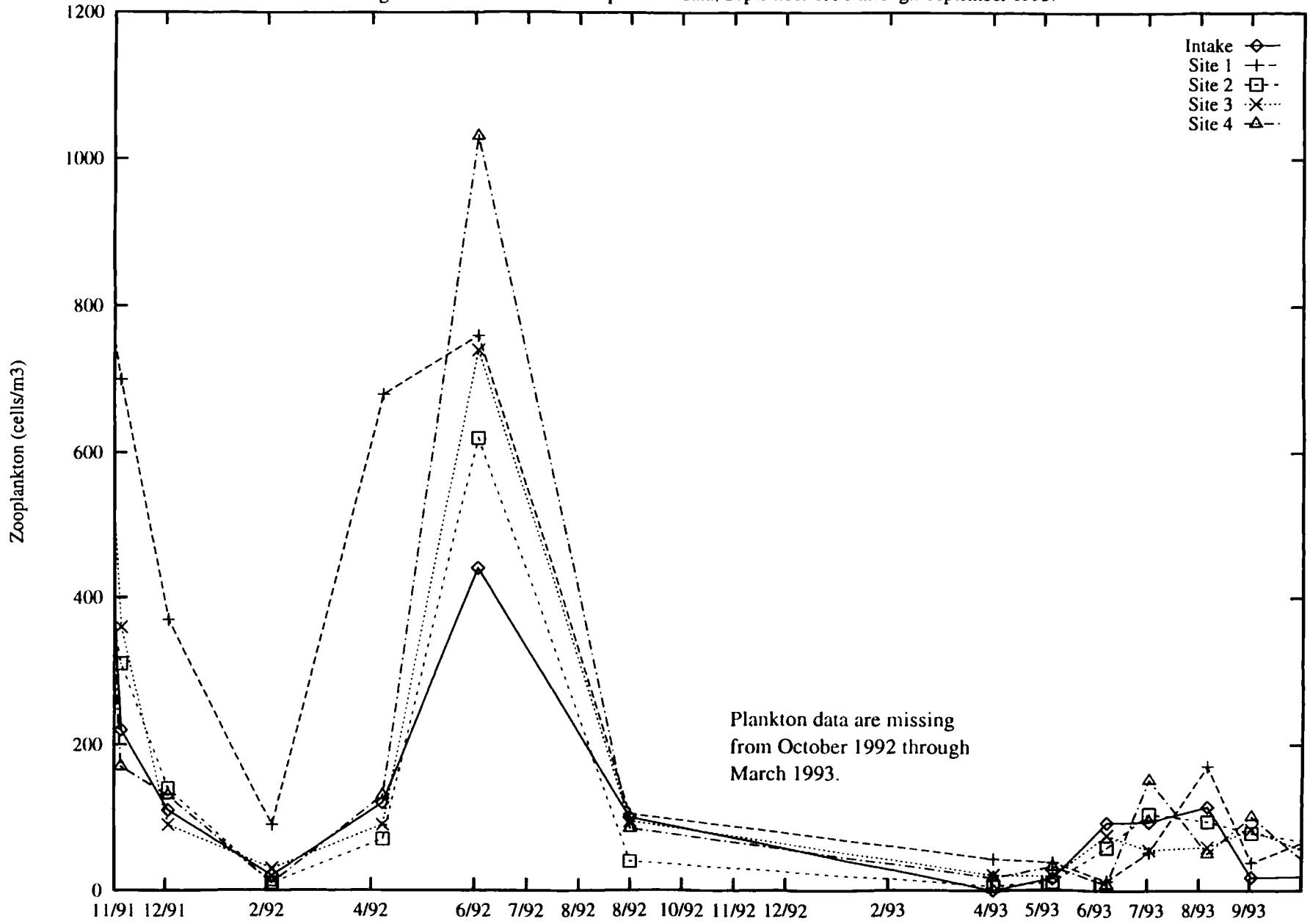


Figure 88: Lake Whatcom phytoplankton data (Chlorophyta), September 1991 through September 1993.

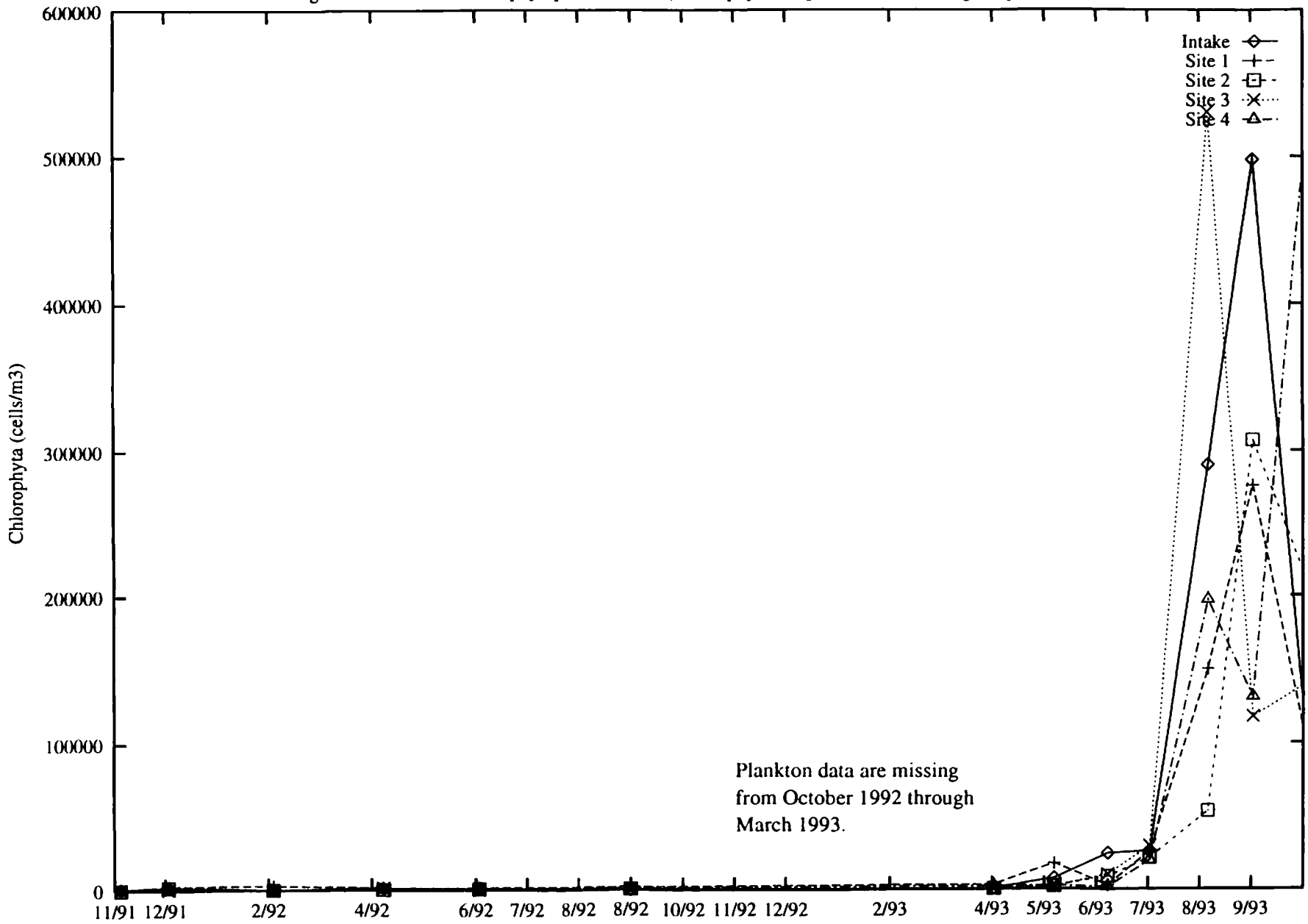


Figure 89: Lake Whatcom phytoplankton data (Chrysophyta), September 1991 through September 1993.

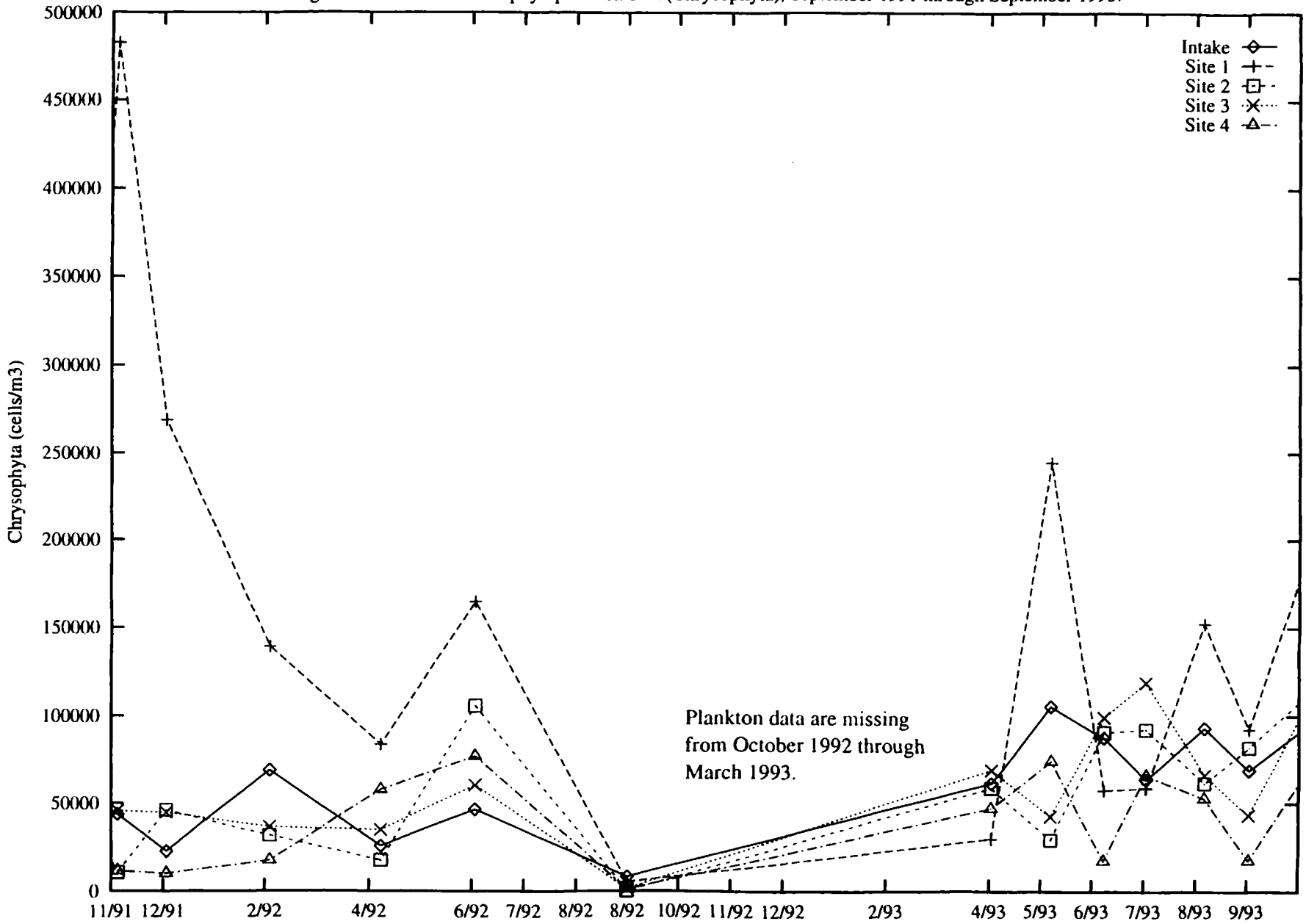


Figure 90: Lake Whatcom phytoplankton data (Cyanophyta), September 1991 through September 1993

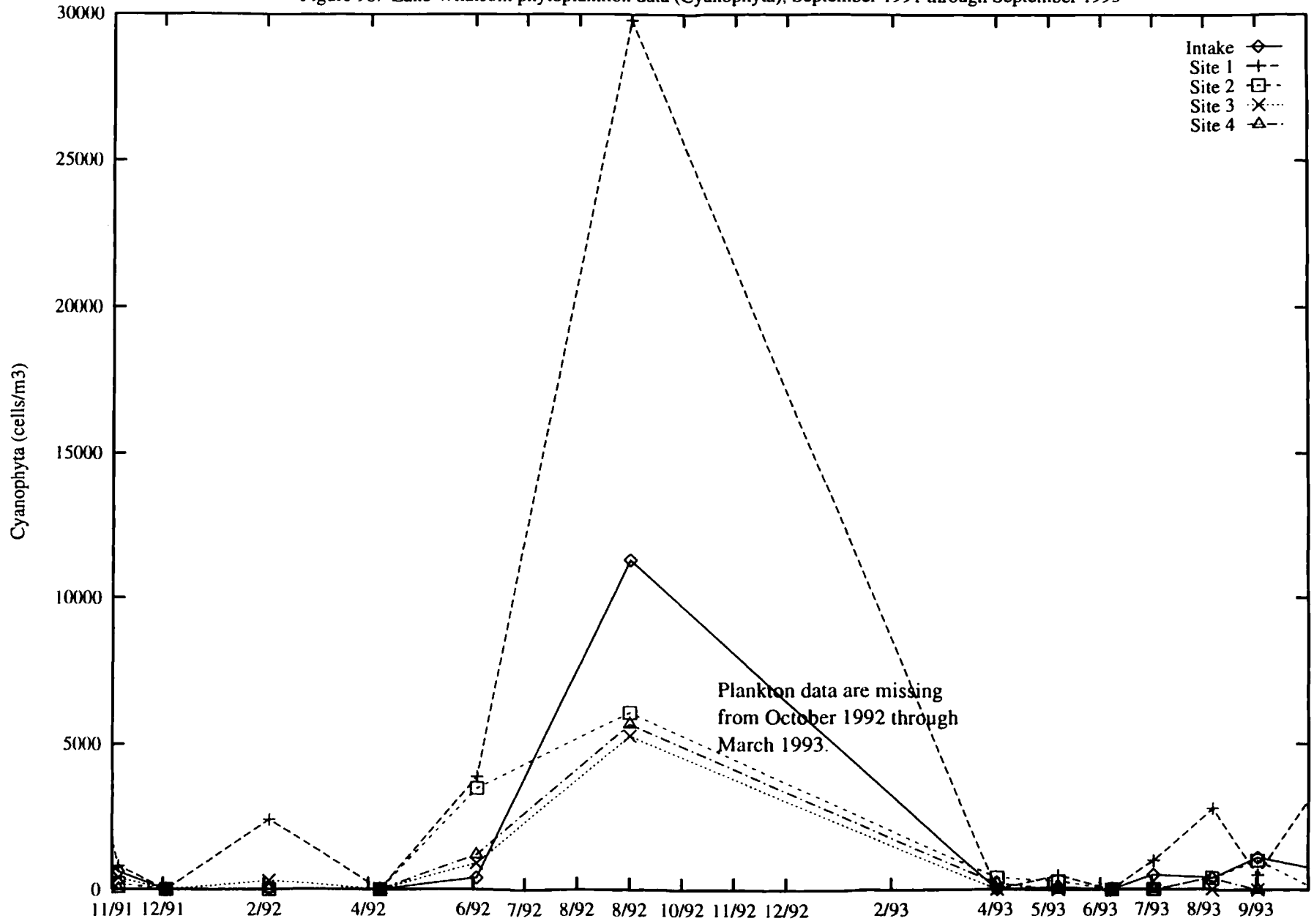


Figure 91: Lake Whatcom phytoplankton data (Pyrrophyta), September 1991 through September 1993.

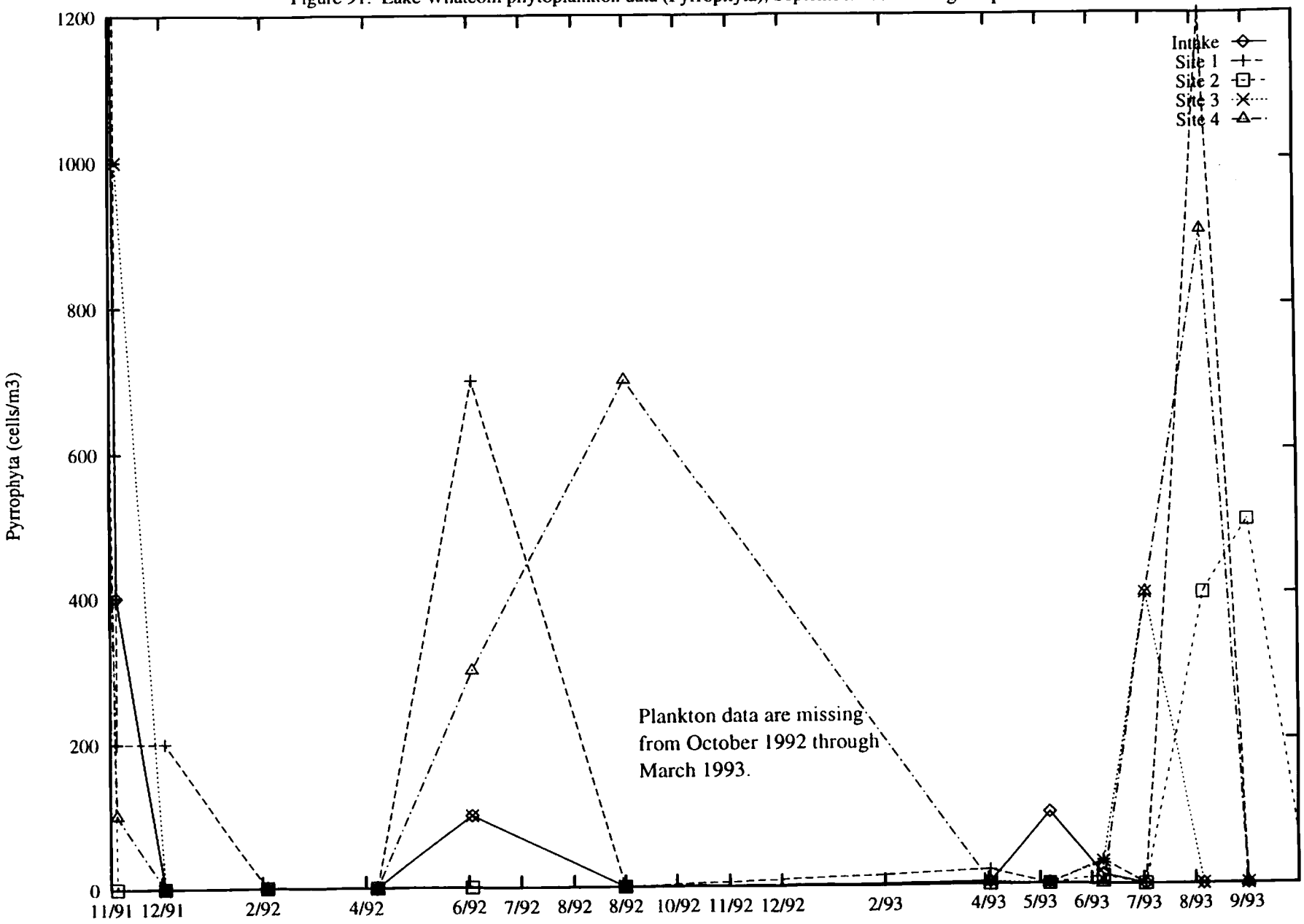


Figure 92: Lake Whatcom total bacteria data for Site 1, September 1991 through September 1993.

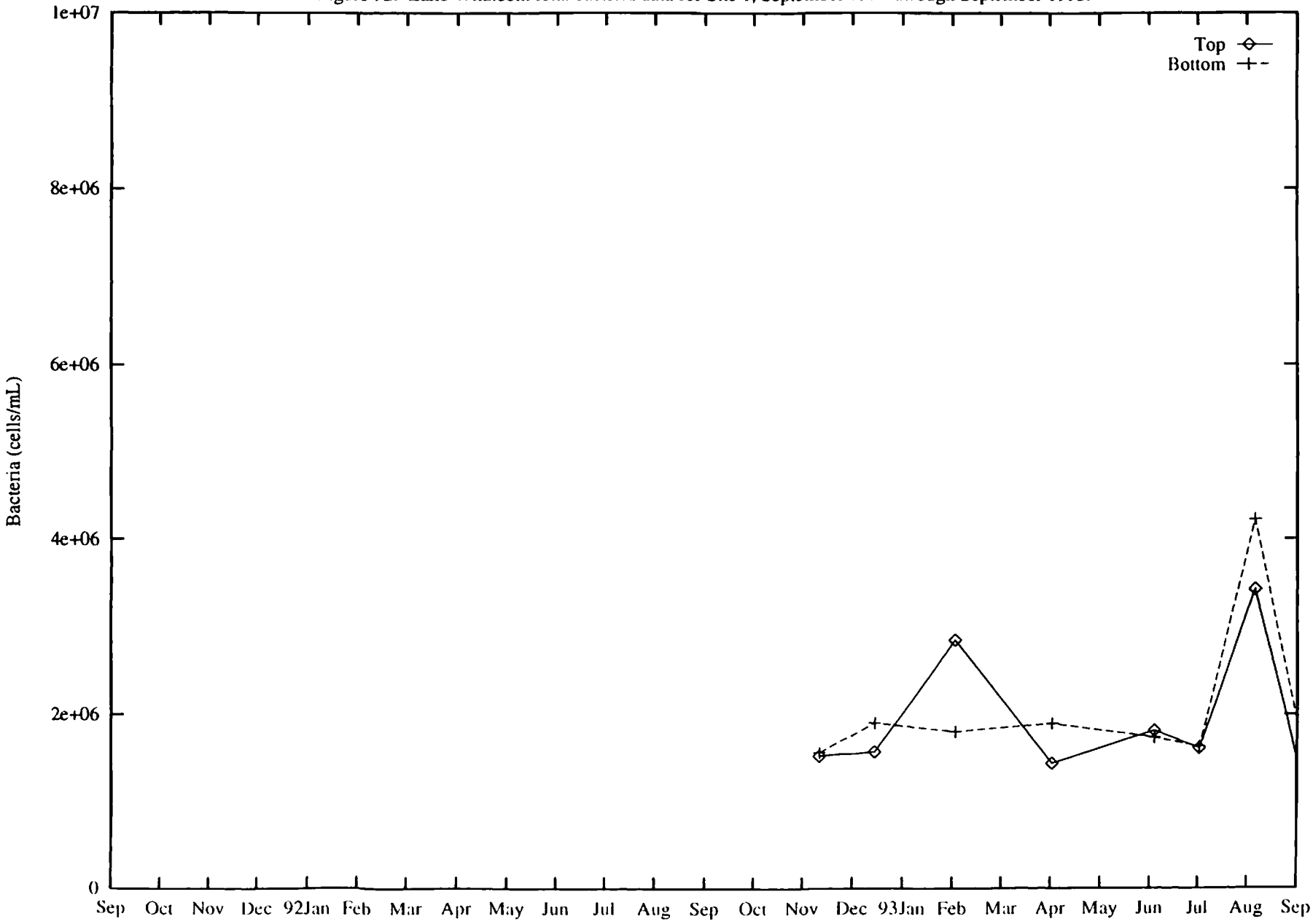


Figure 93: Lake Whatcom total bacteria data for Site 2, September 1991 through September 1993.

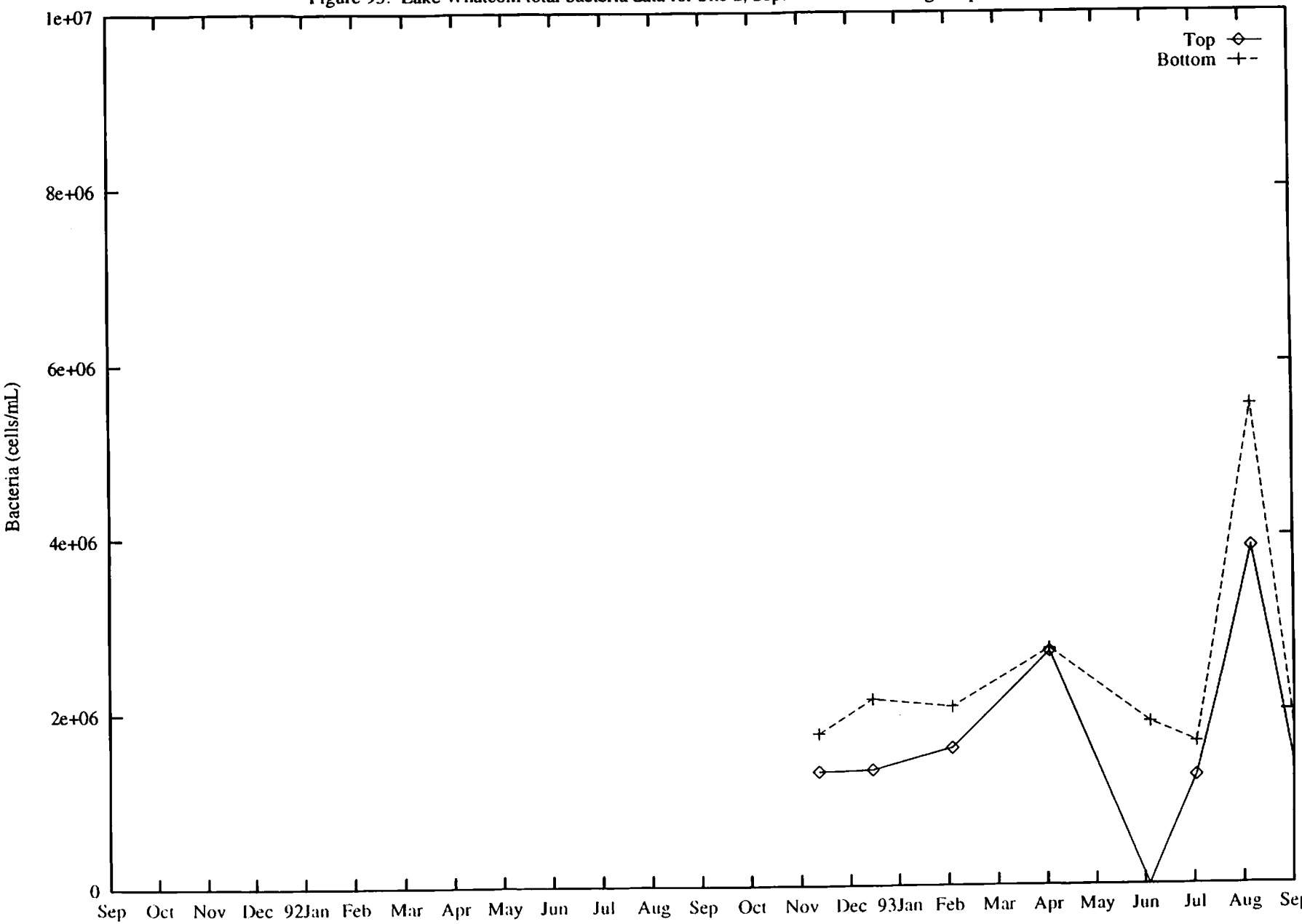


Figure 94: Lake Whatcom total bacteria data for Intake site (basin 2), September 1991 through September 1993.

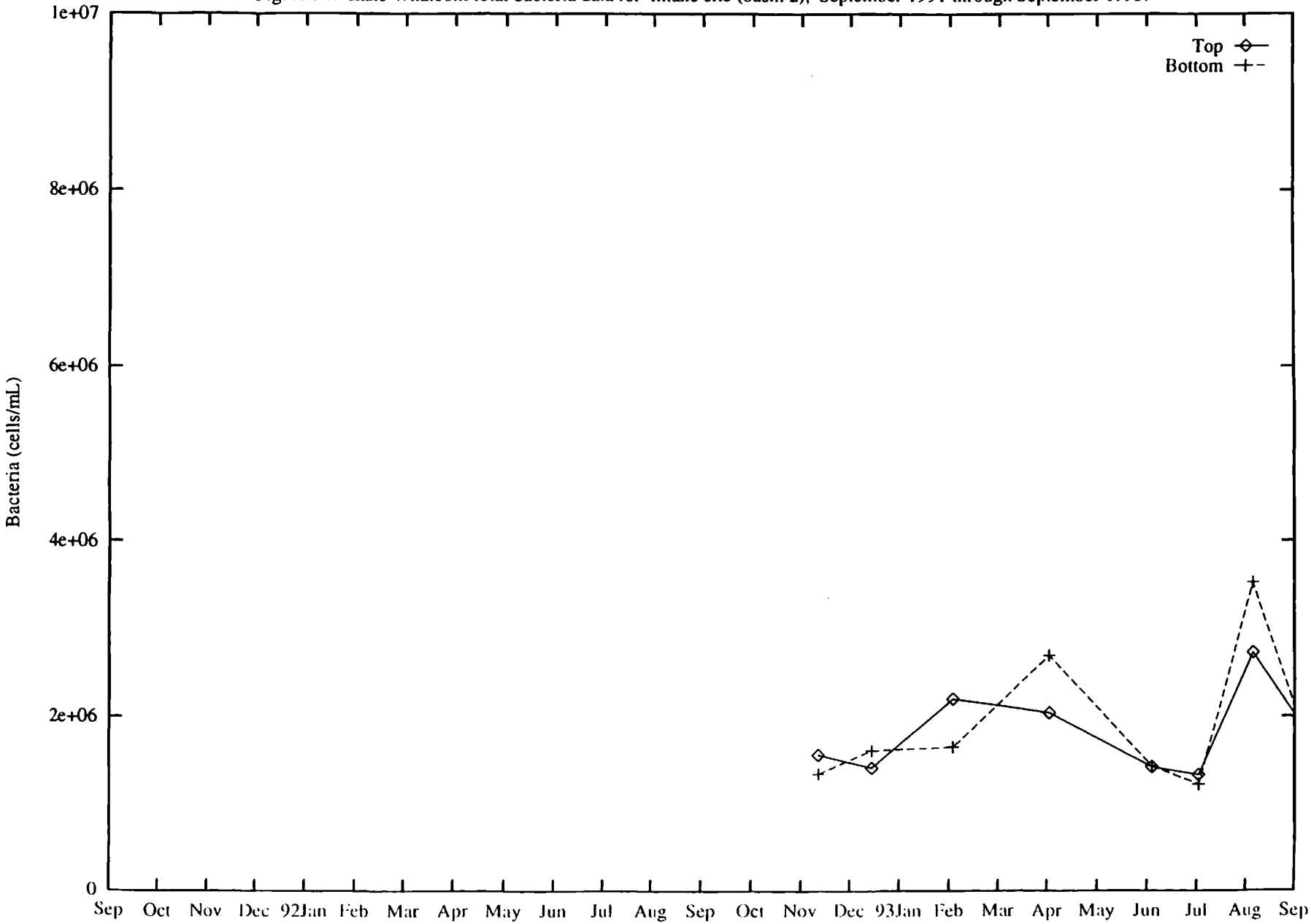


Figure 95: Lake Whatcom total bacteria data for Site 3, September 1991 through September 1993.

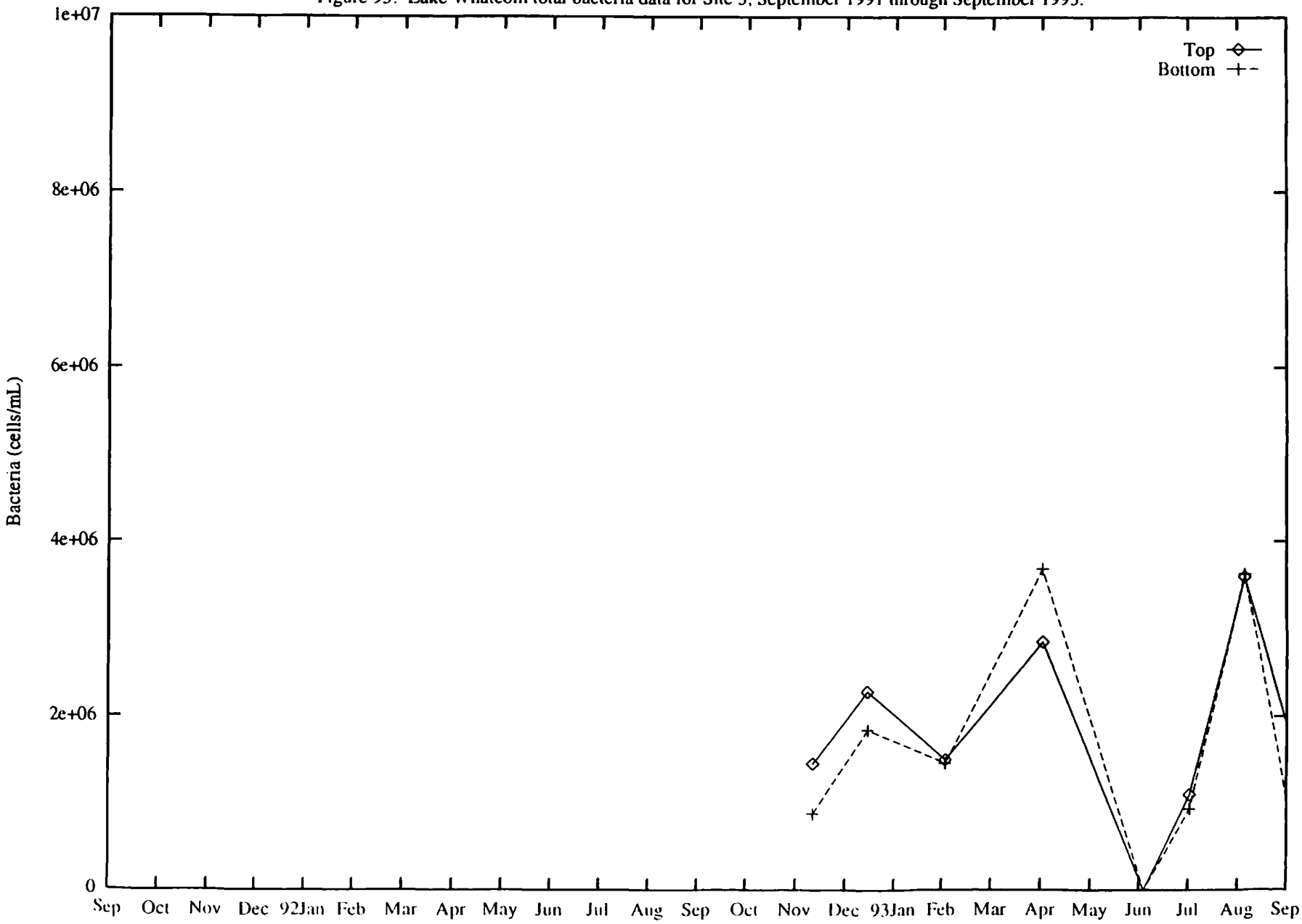


Figure 96: Lake Whatcom total bacteria data for Site 4, September 1991 through September 1993.

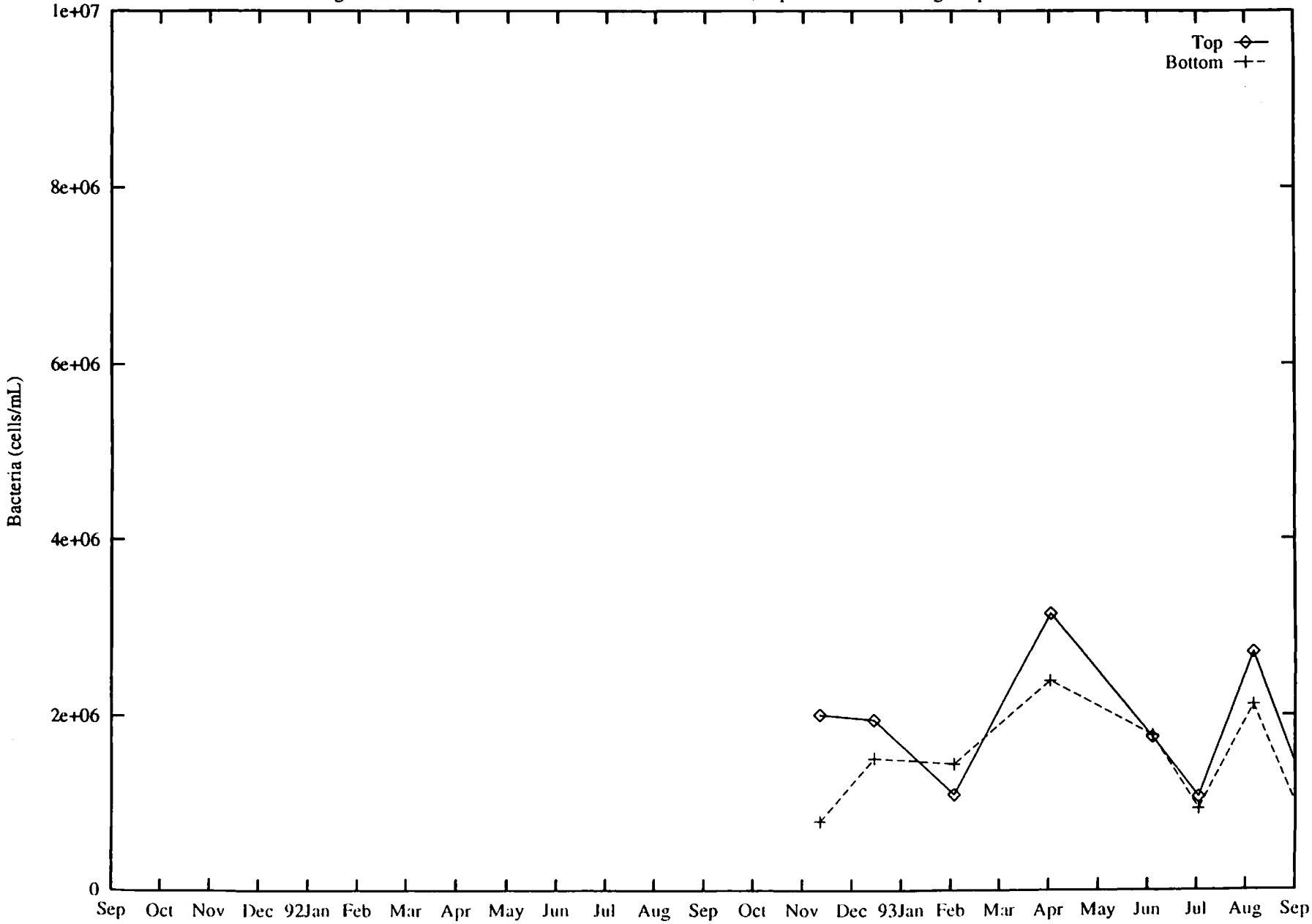


Figure 97: Lake Whatcom Secchi depths for Site 1, September 1991 through September 1993.

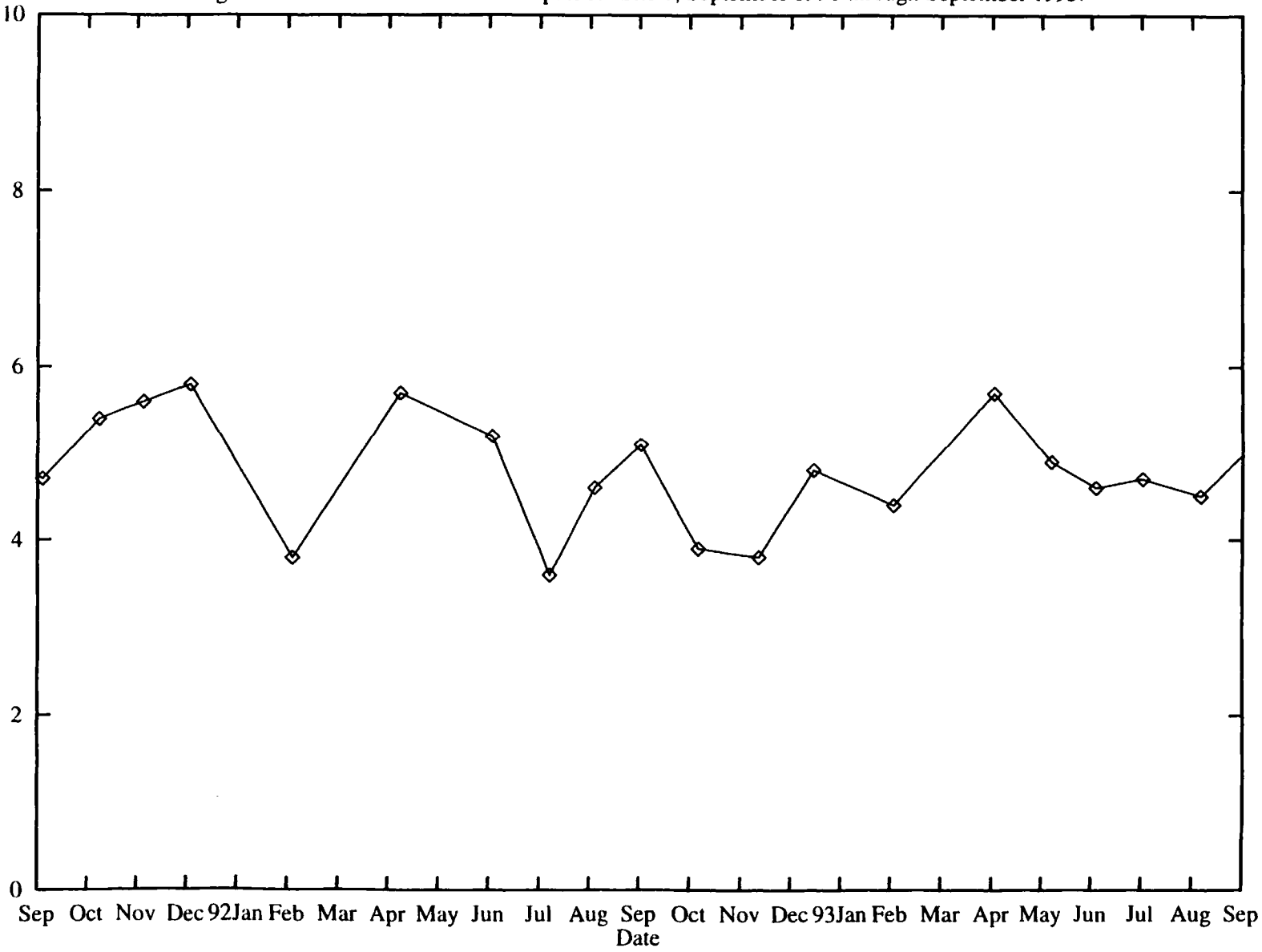


Figure 98: Lake Whatcom Secchi depths for Site 2, September 1991 through September 1993.

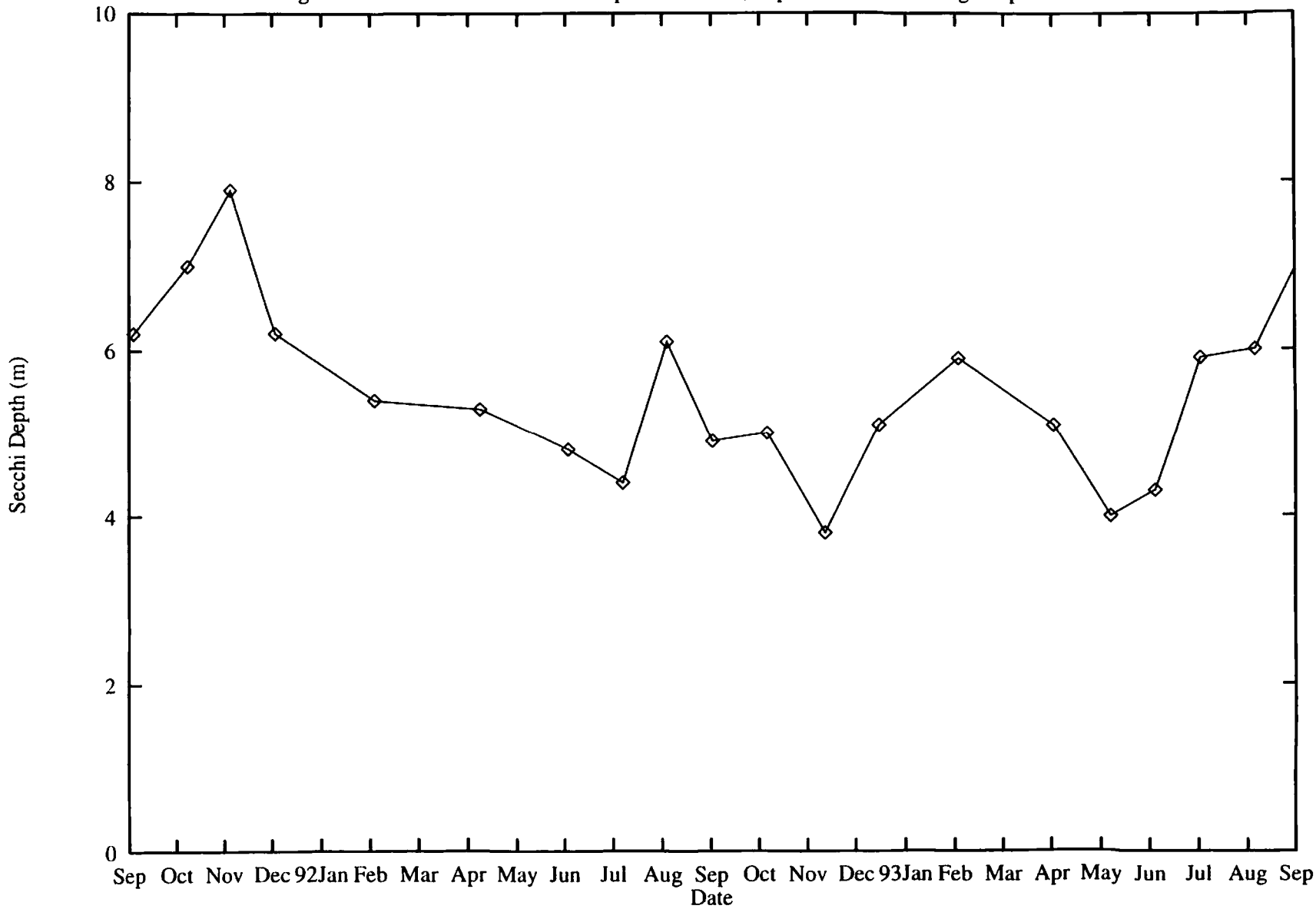


Figure 99: Lake Whatcom Secchi depths for Intake site (basin 2), September 1991 through September 1993.

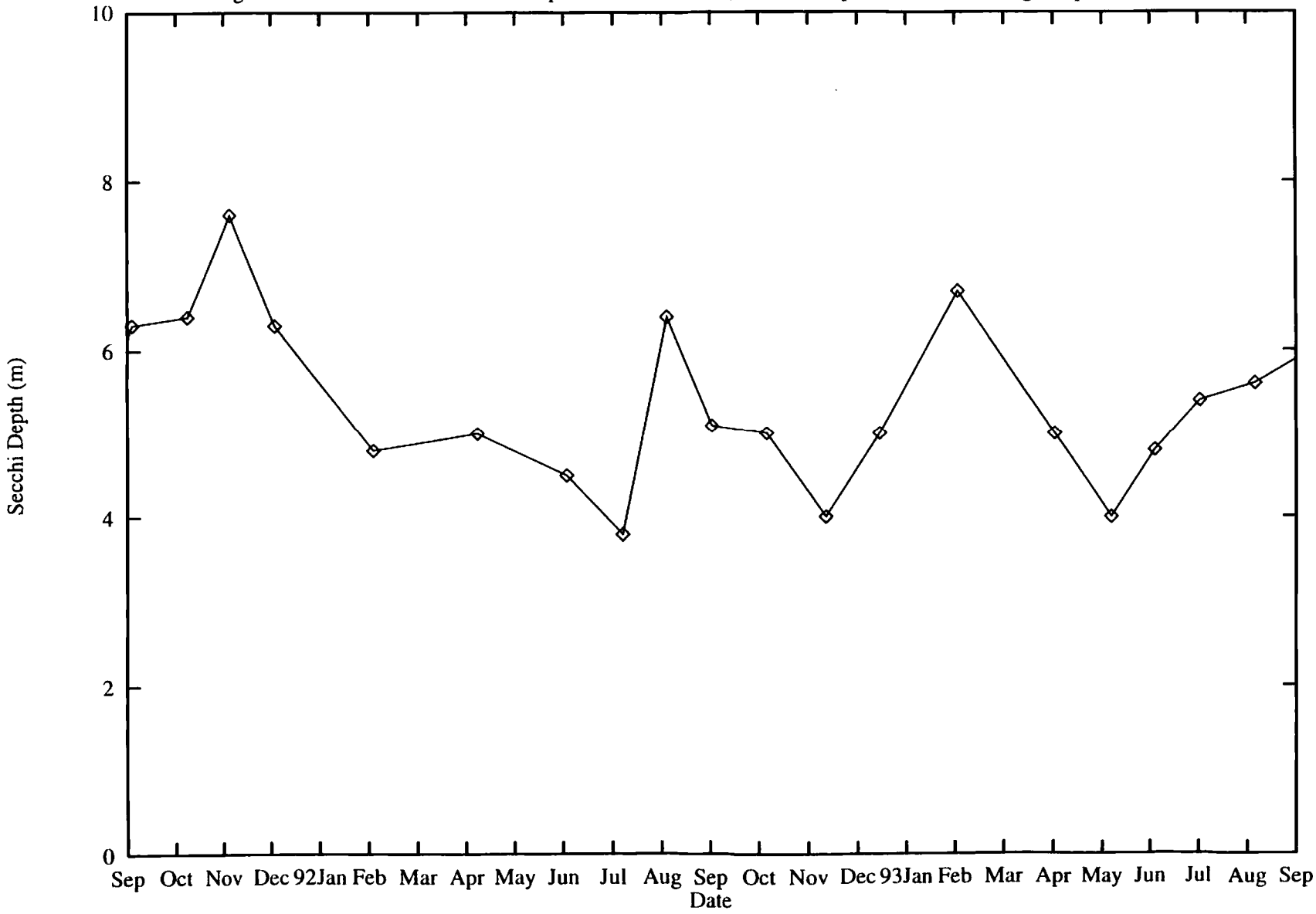


Figure 100: Lake Whatcom Secchi depths for Site 3, September 1991 through September 1993.

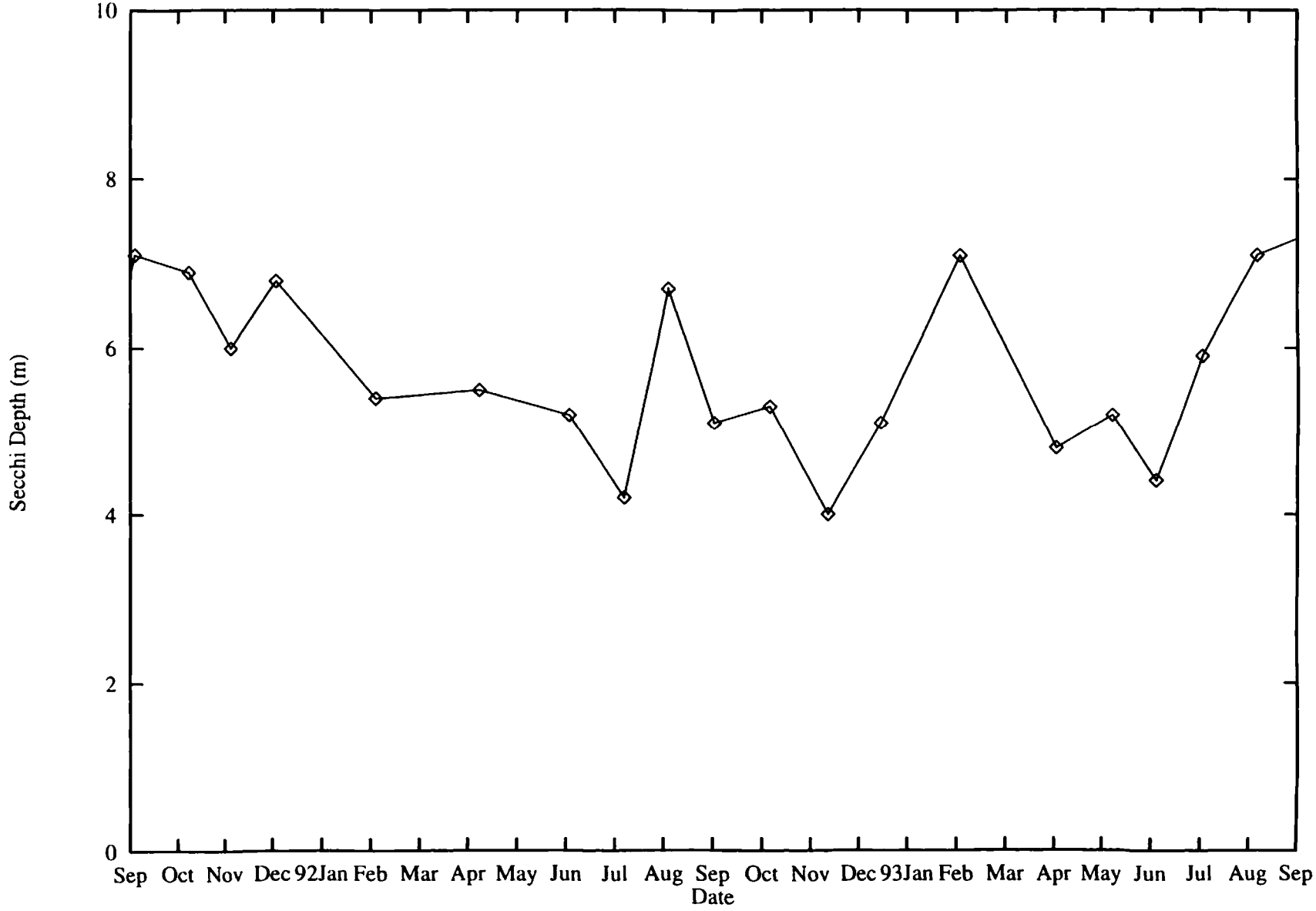
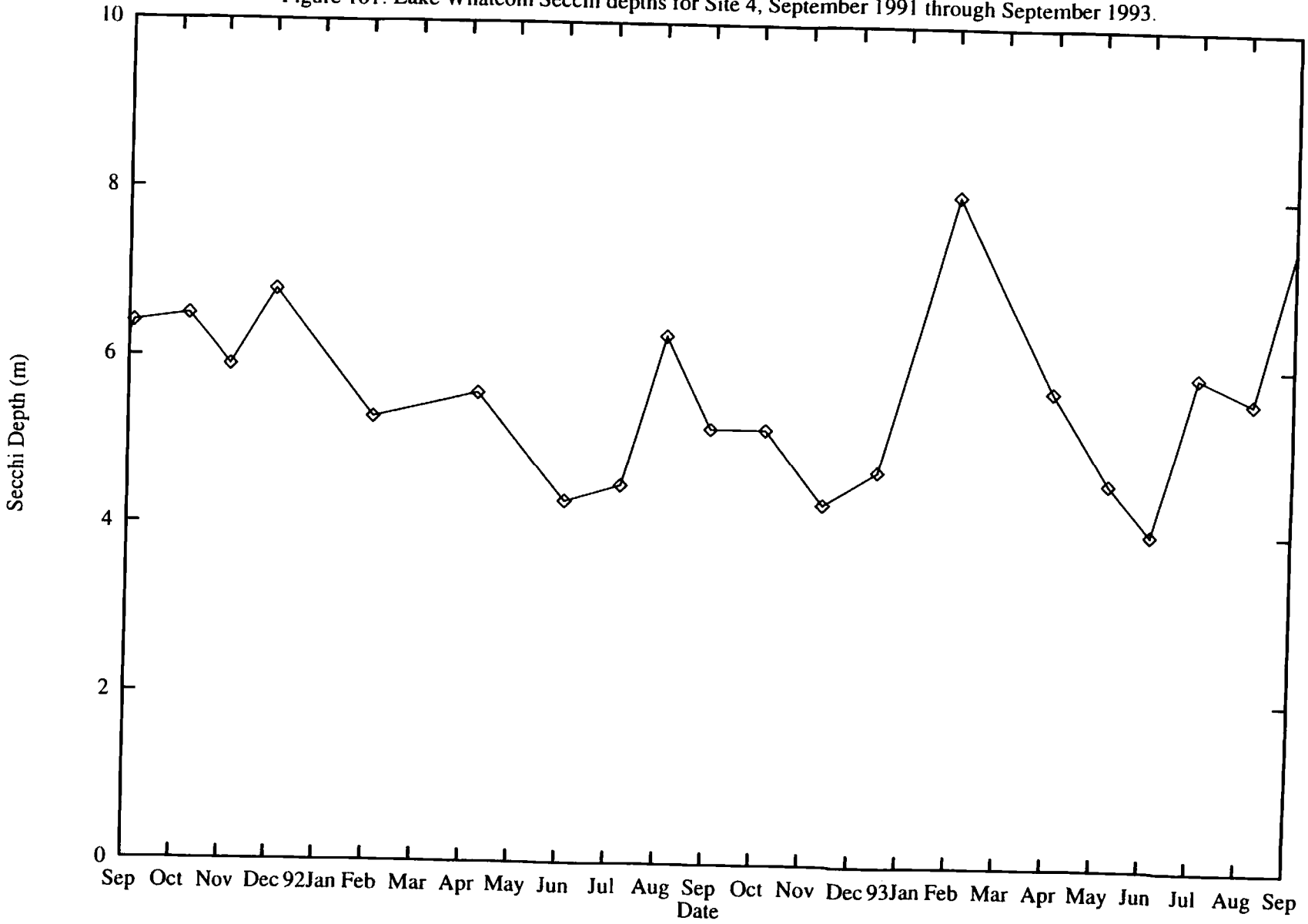


Figure 101: Lake Whatcom Secchi depths for Site 4, September 1991 through September 1993.



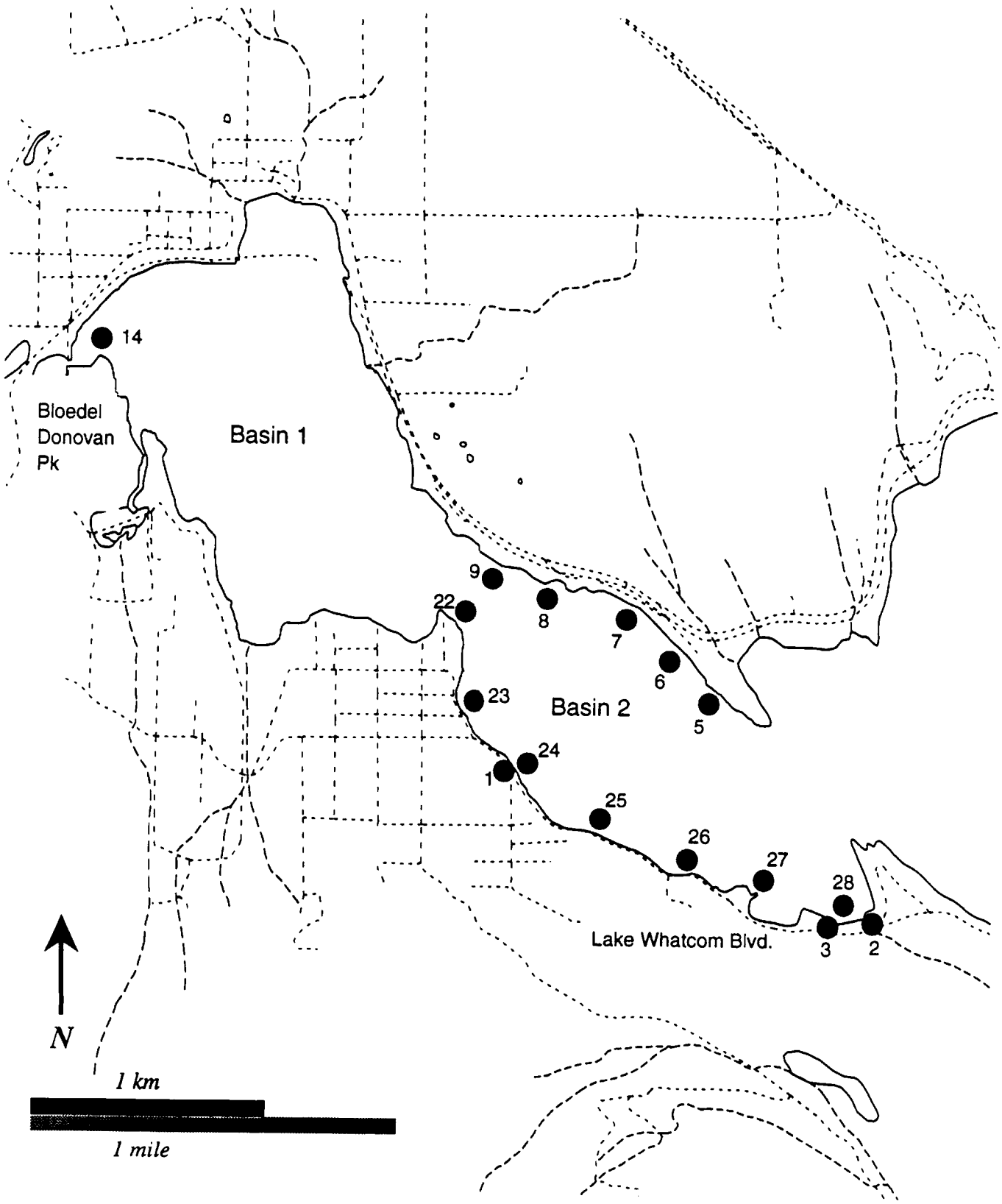


Figure 102: Near-shore sampling sites, August 11–12, 1993.
Refer to Appendix A for exact site locations.

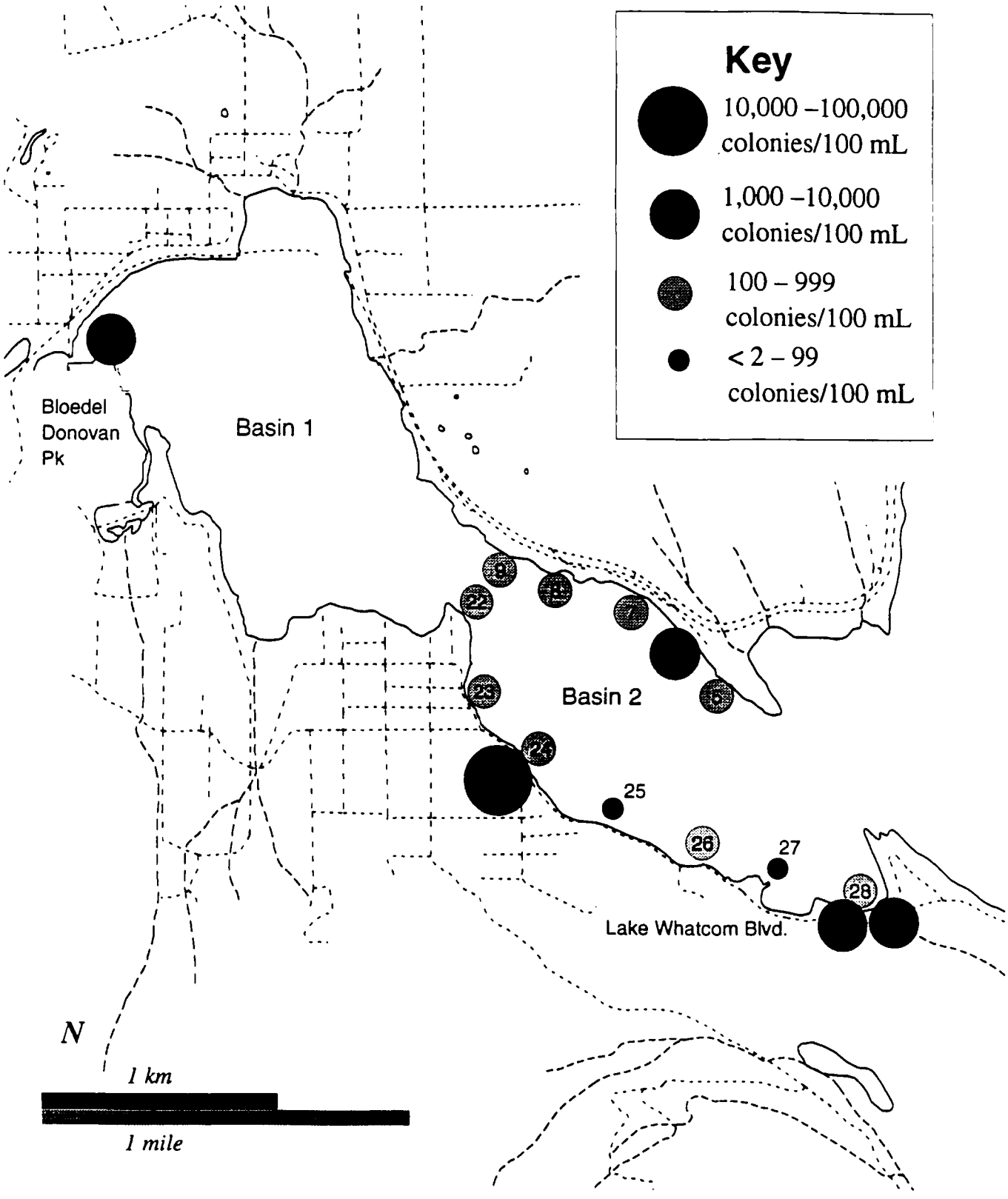


Figure 103: Near-shore total coliform counts, August 11–12, 1993.

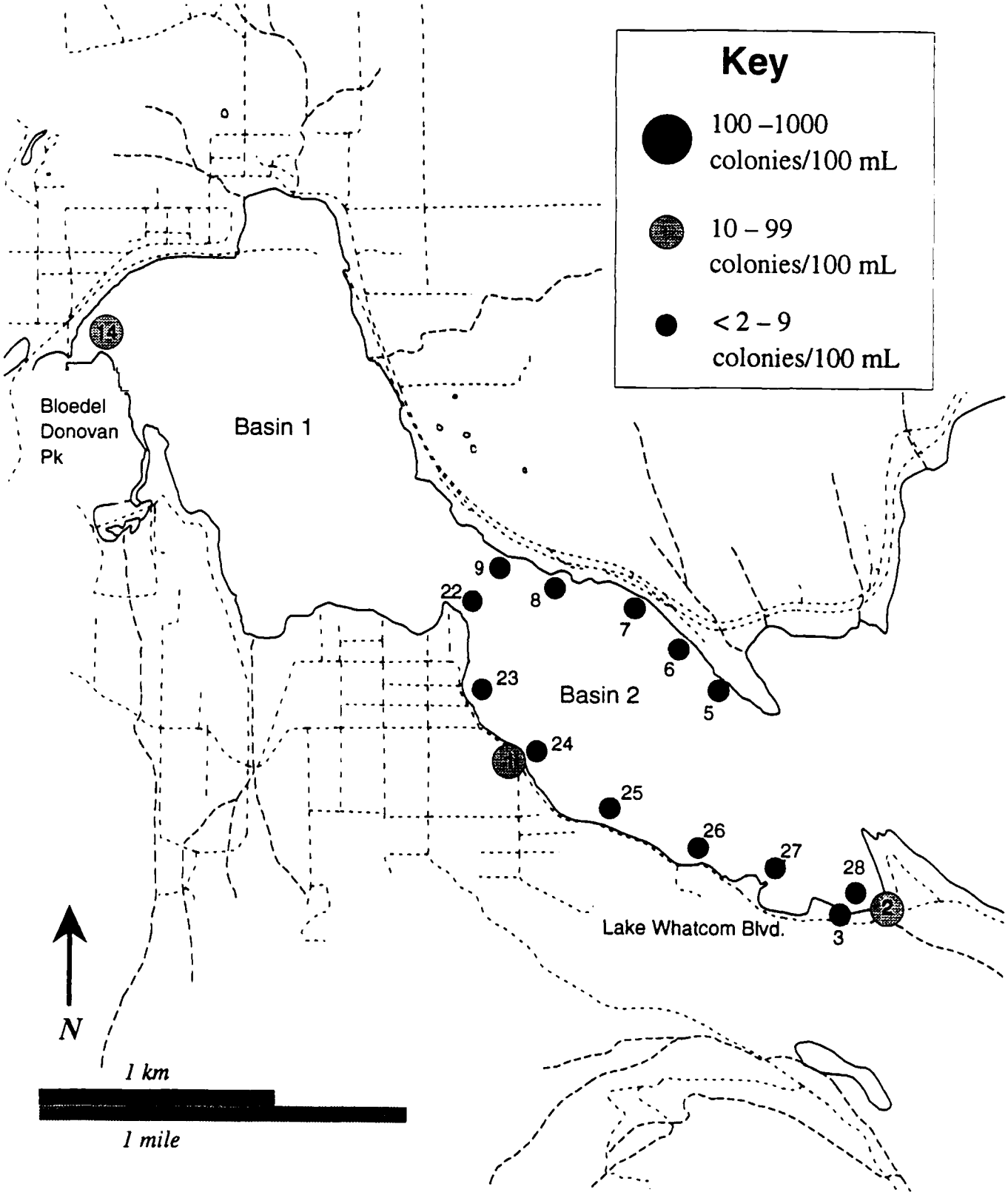


Figure 104: Near-shore fecal coliform counts, August 11–12, 1993.

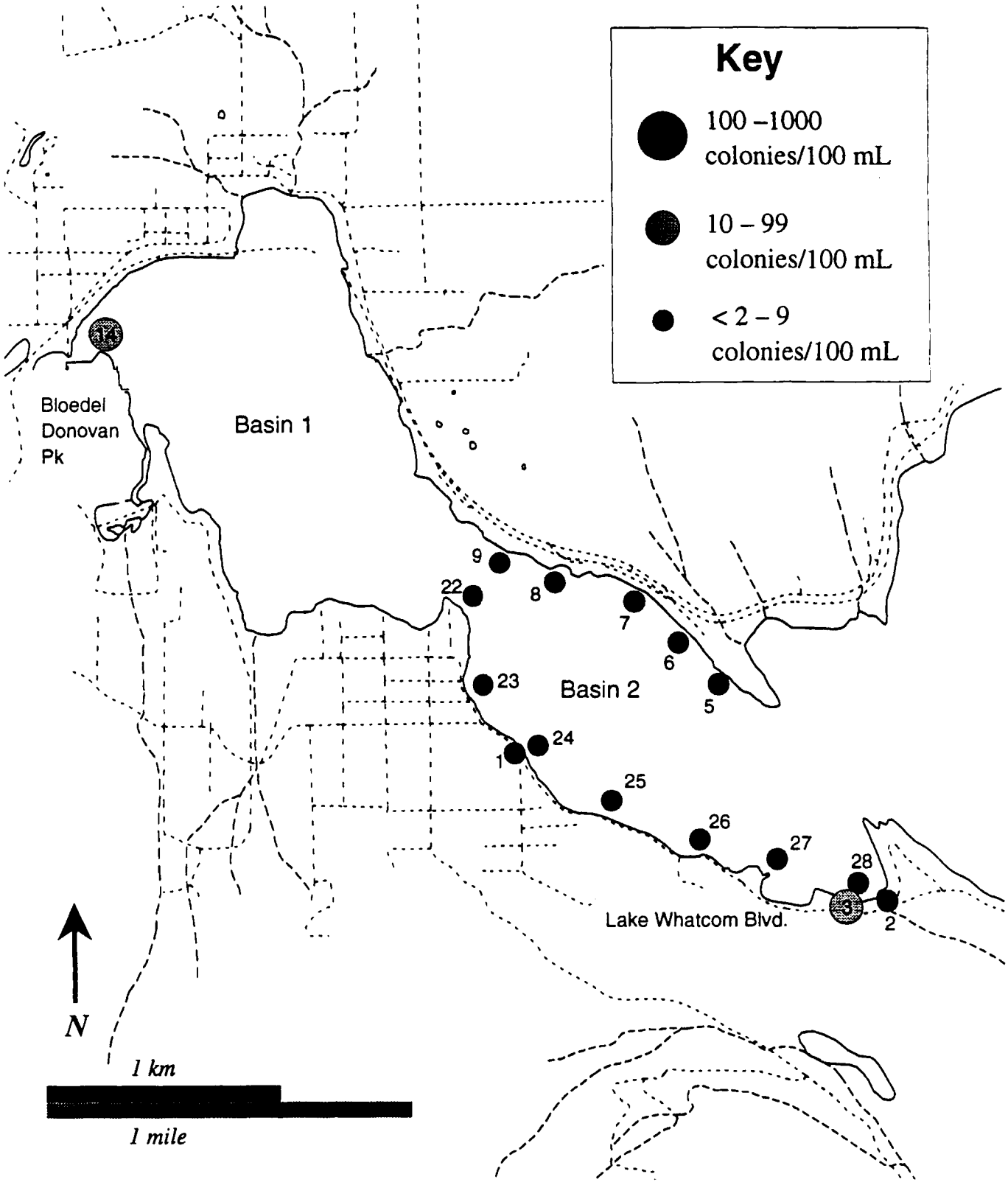


Figure 105: Near-shore fecal streptococcus counts, August 11–12, 1993.

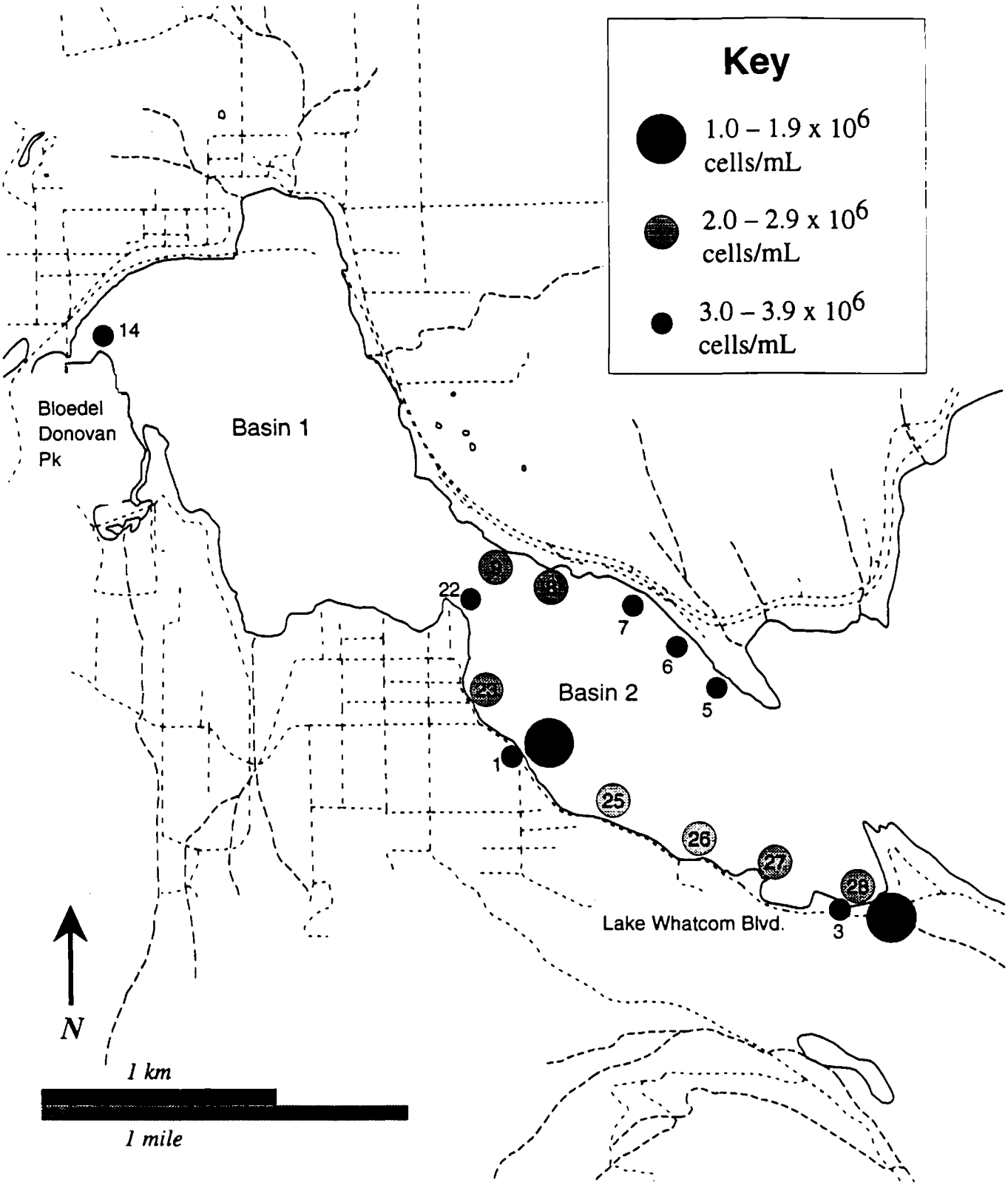


Figure 106: Near-shore total bacteria counts, August 11–12, 1993.

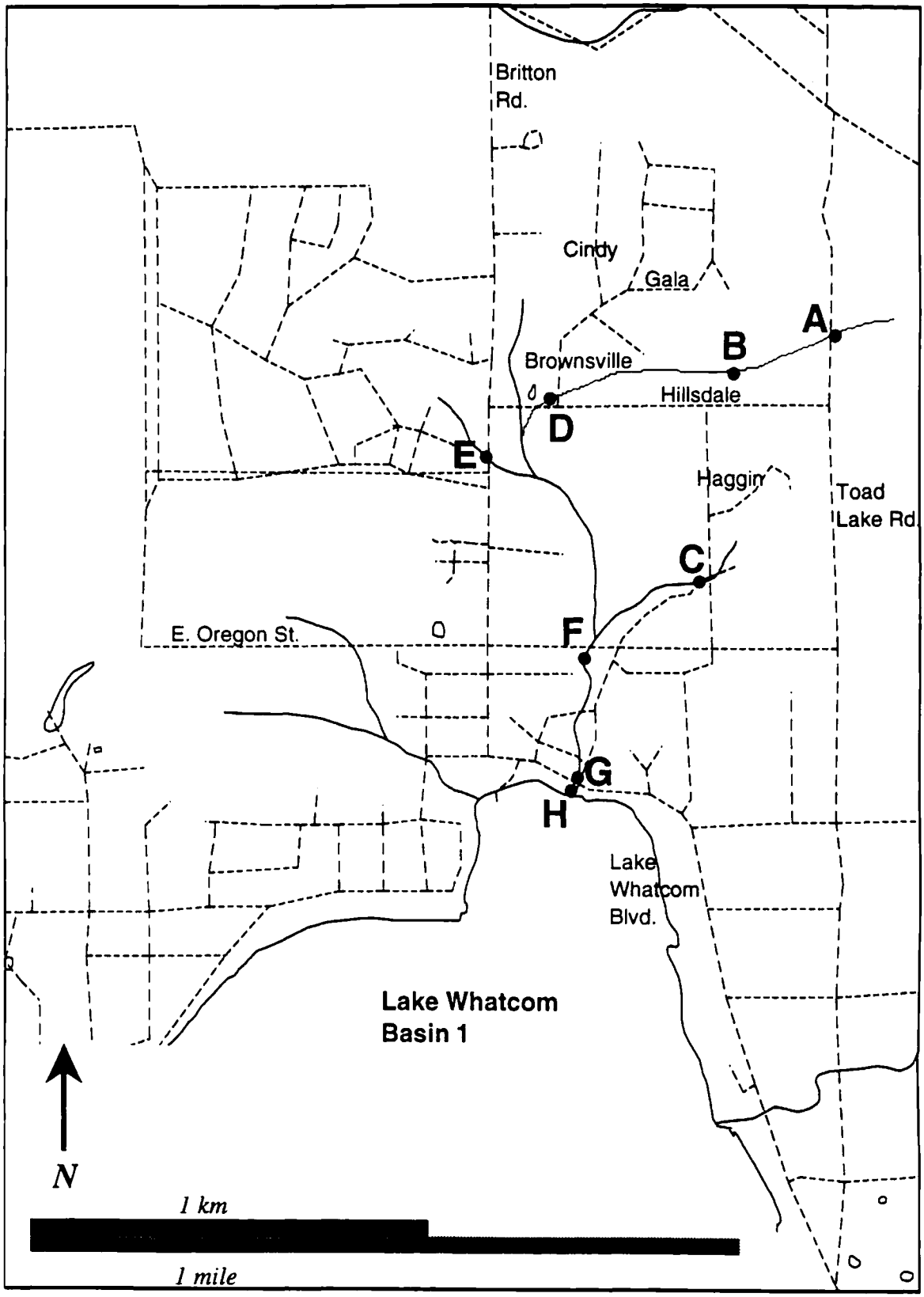


Figure 107: Silver Beach Creek sampling sites, June 7, 1993.

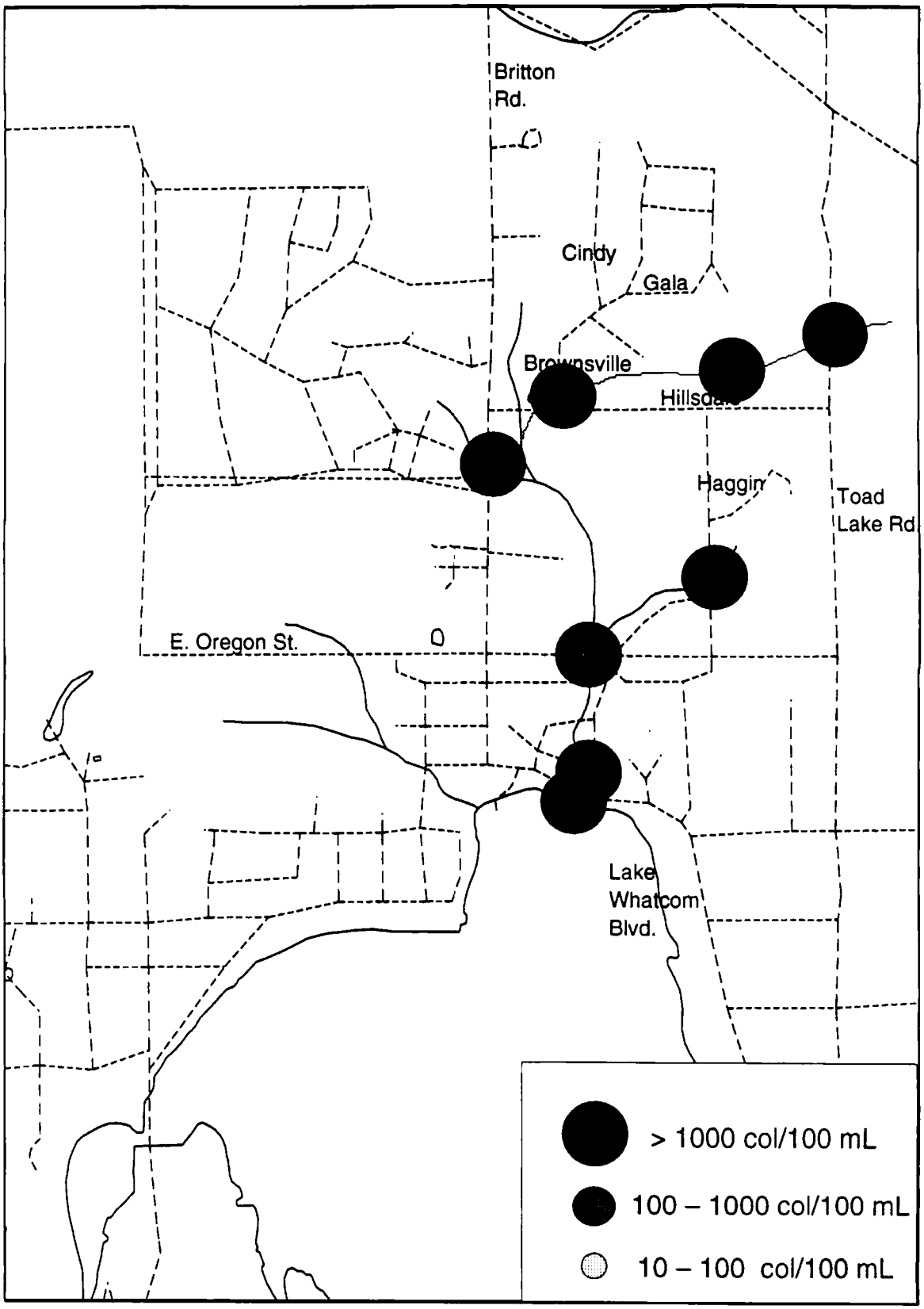


Figure 108: Silver Beach Creek total coliform counts (mpn), June 7, 1993.

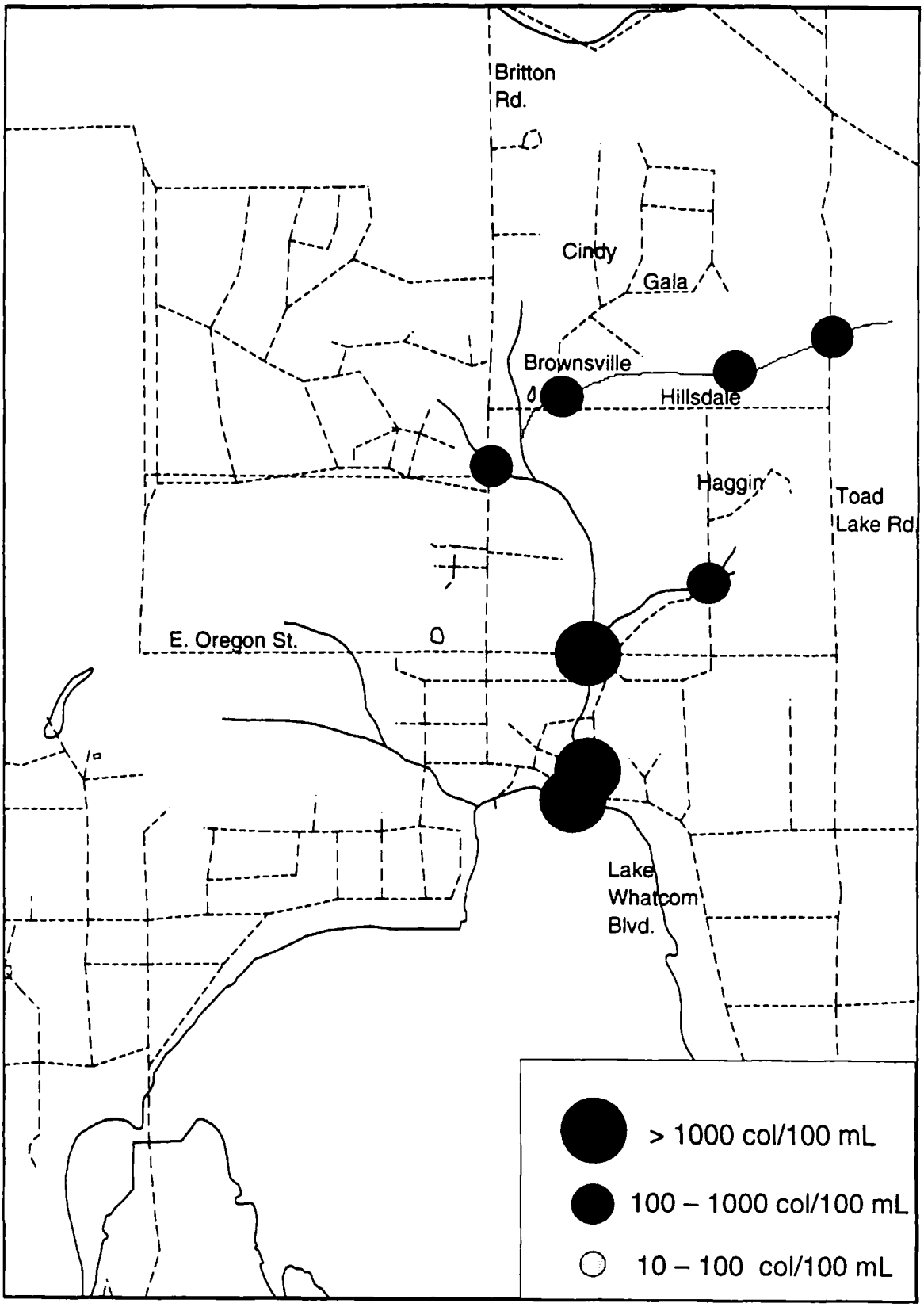


Figure 109: Silver Beach Creek fecal coliform counts (mpn), June 7, 1993.

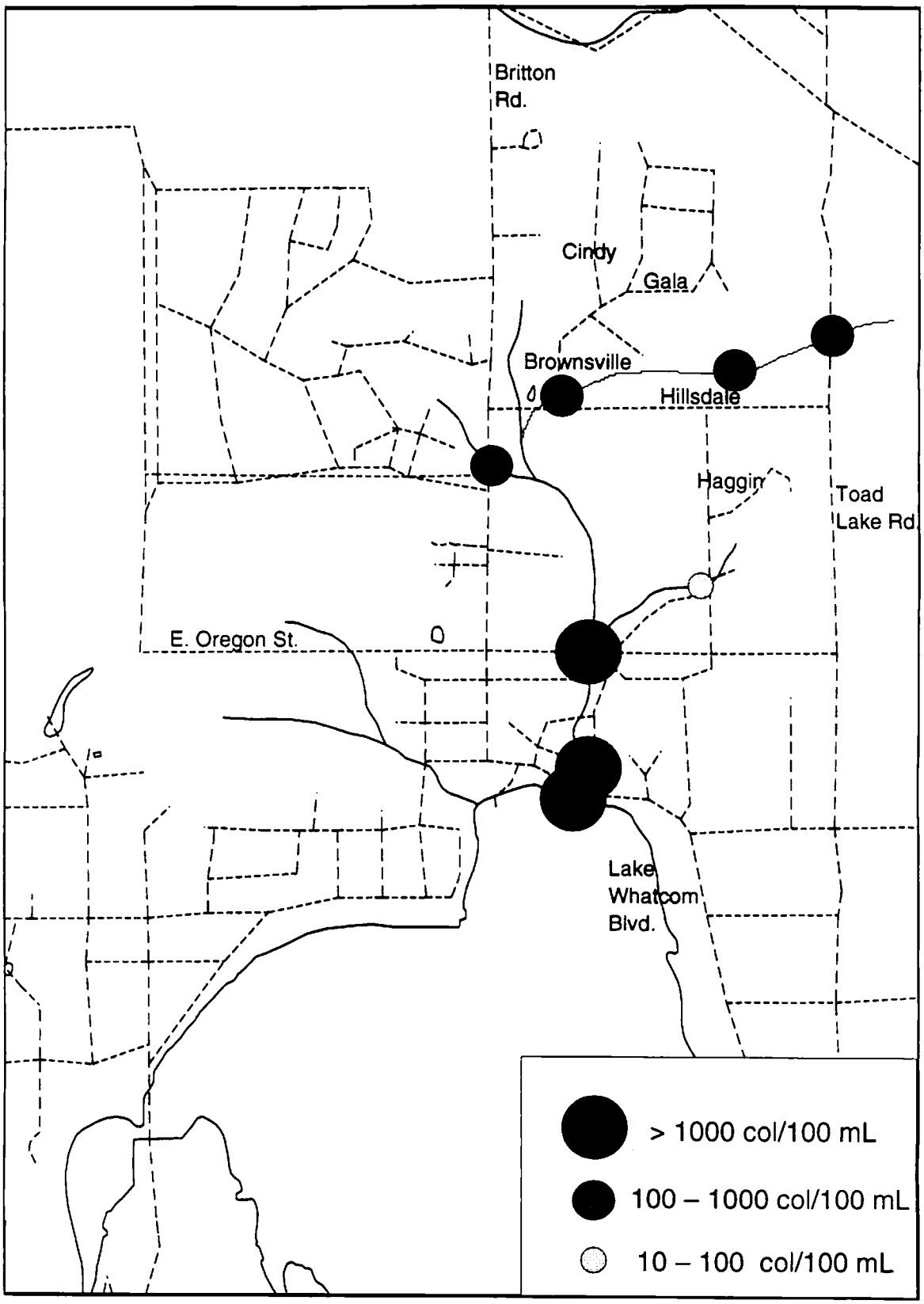


Figure 110: Silver Beach Creek fecal coliform counts (mf), June 7, 1993.

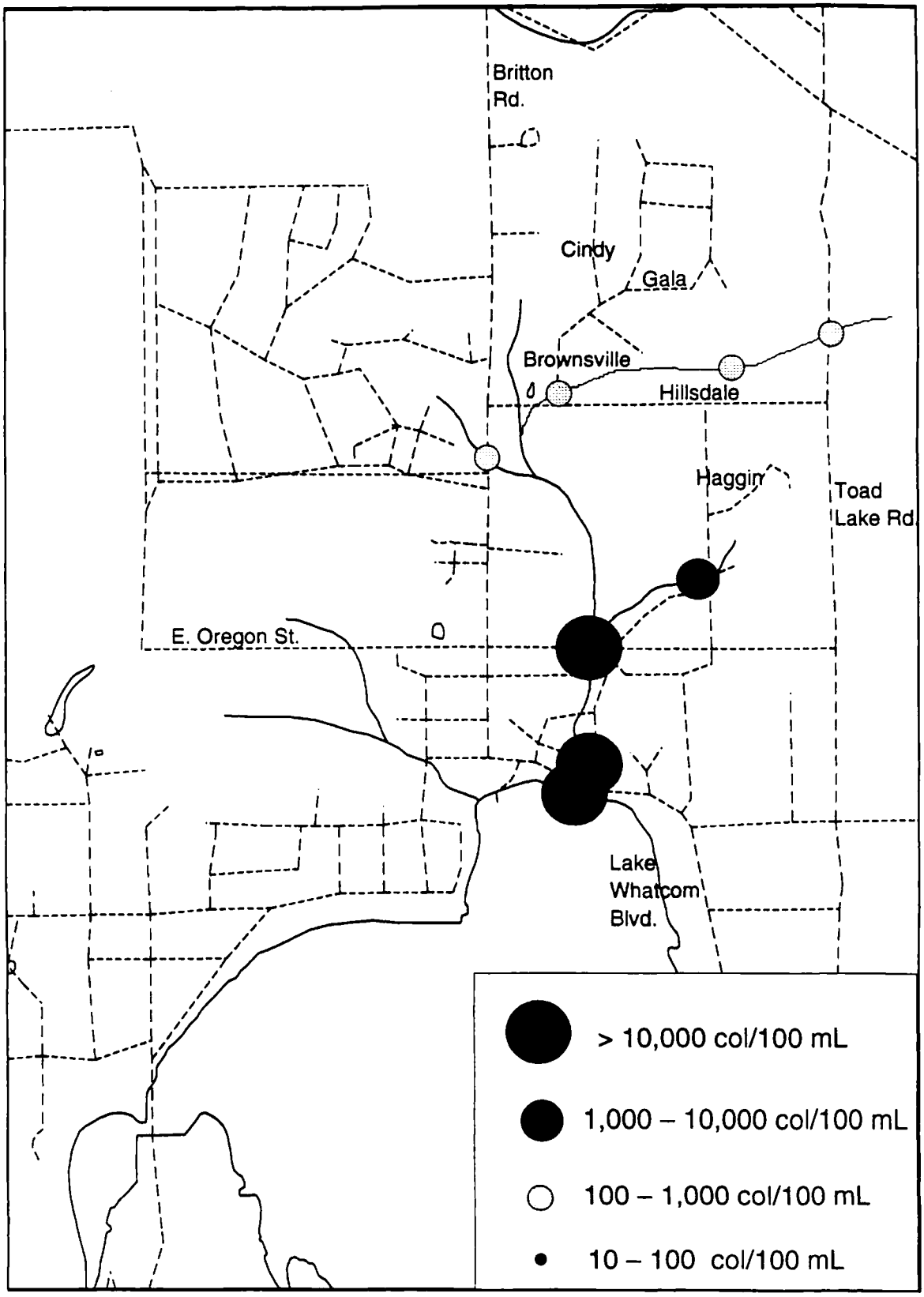


Figure 111: Silver Beach Creek fecal streptococcus counts (mf), June 7, 1993.

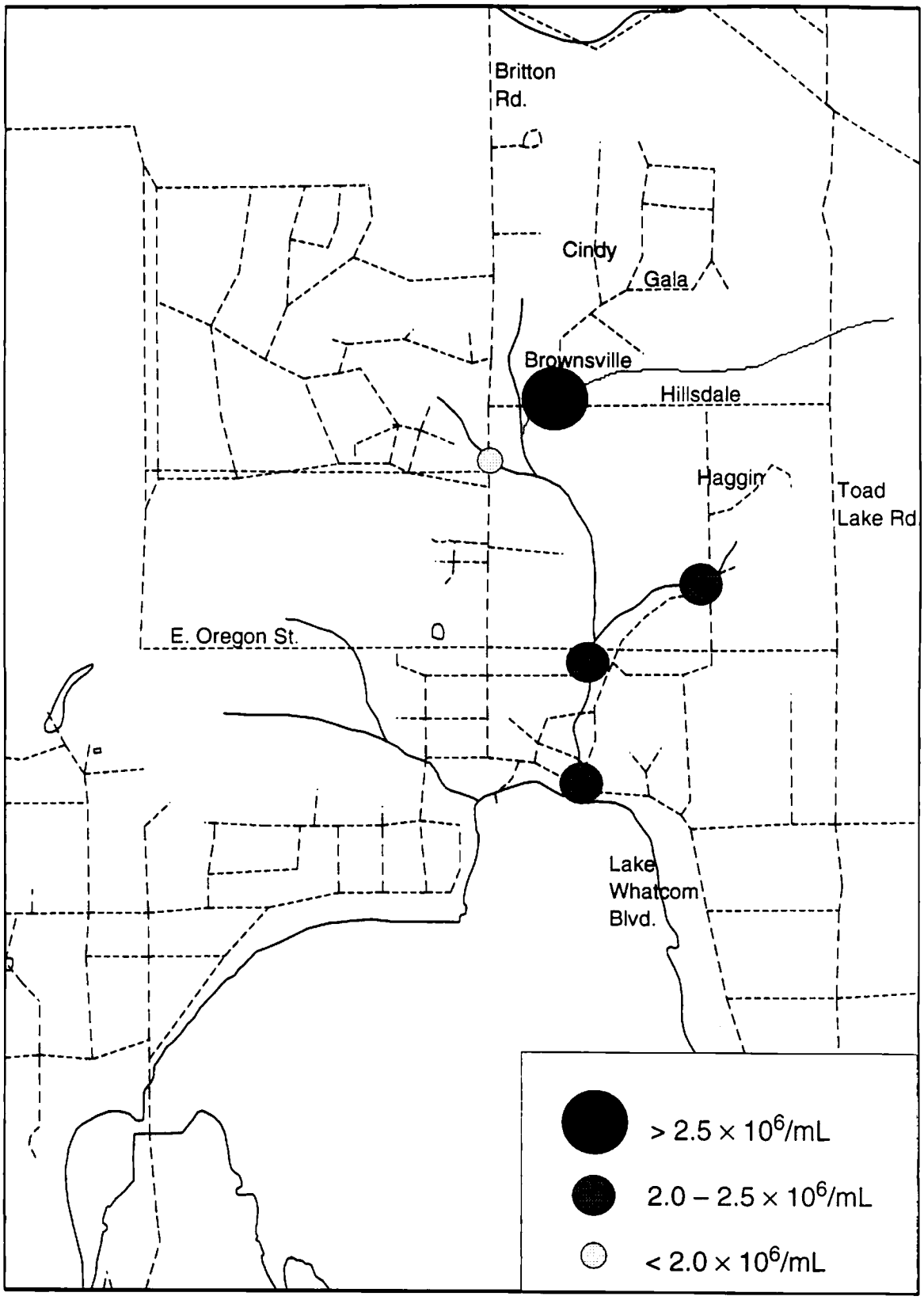


Figure 112: Silver Beach Creek total bacteria counts, June 7, 1993.

Figure 113:
Lake Whatcom Inputs
March - August 1993

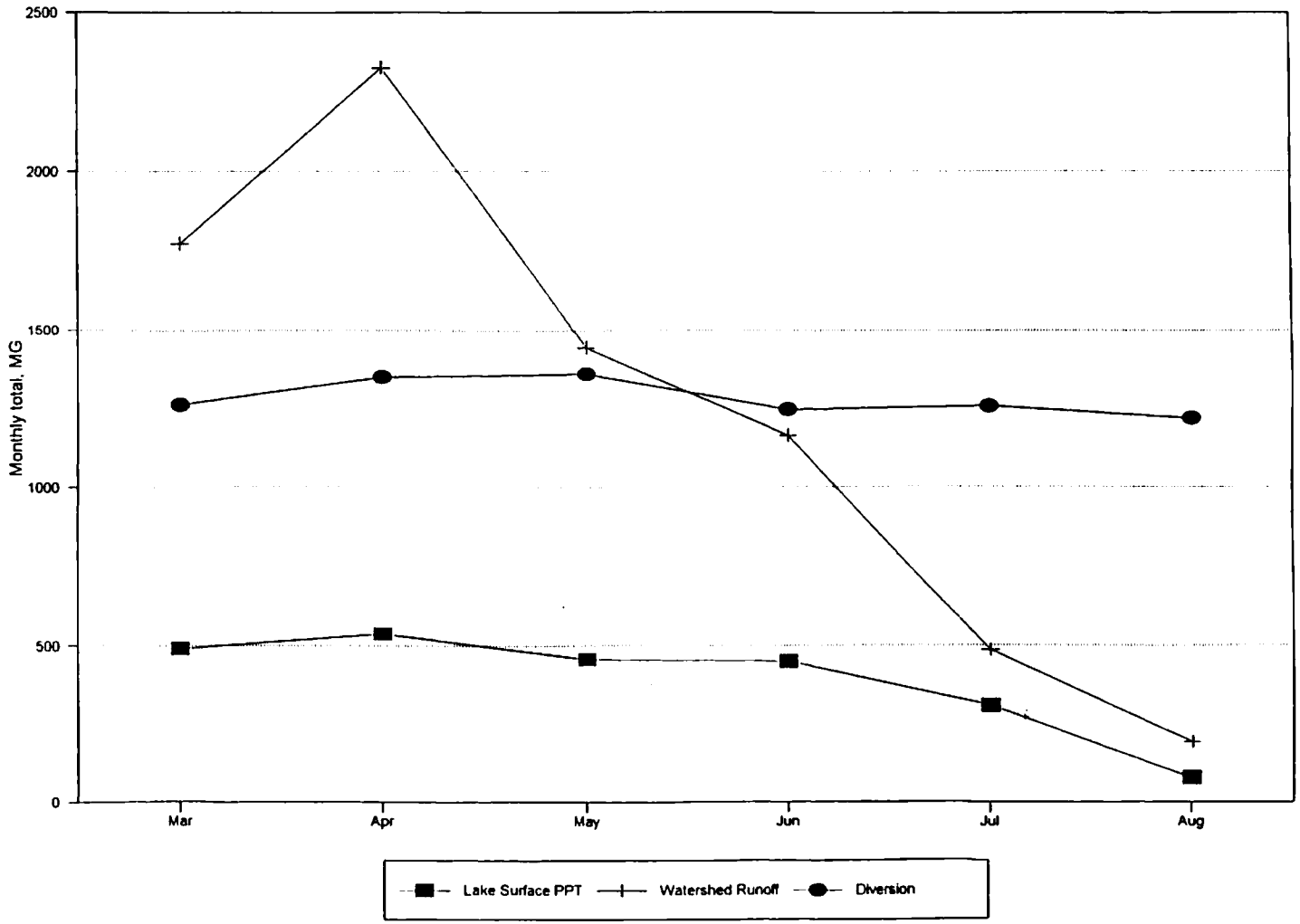


Figure 114:
Lake Whatcom Inputs
March - August 1993: Percentages

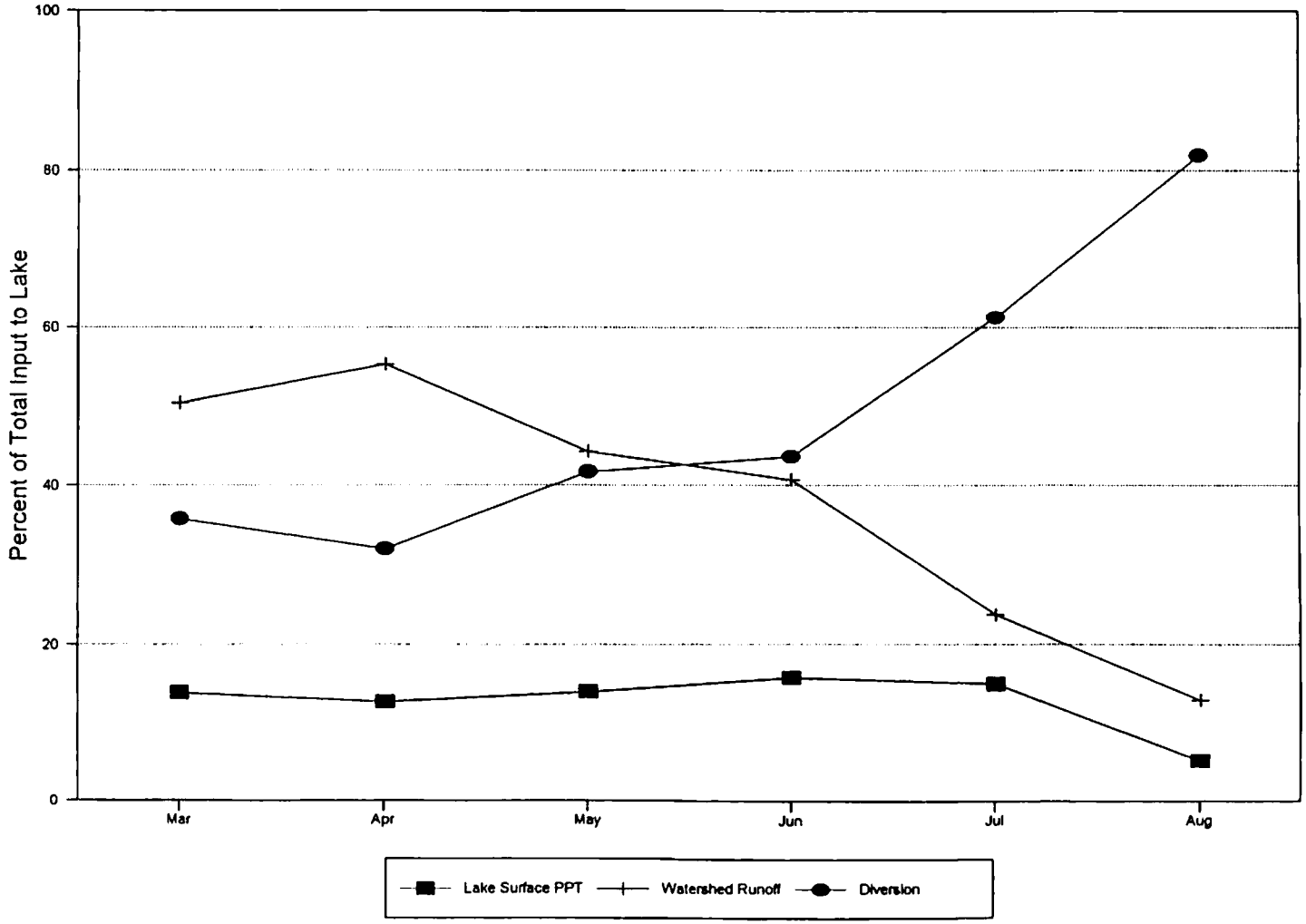


Figure 115:
Lake Whatcom Outputs
March - August 1993

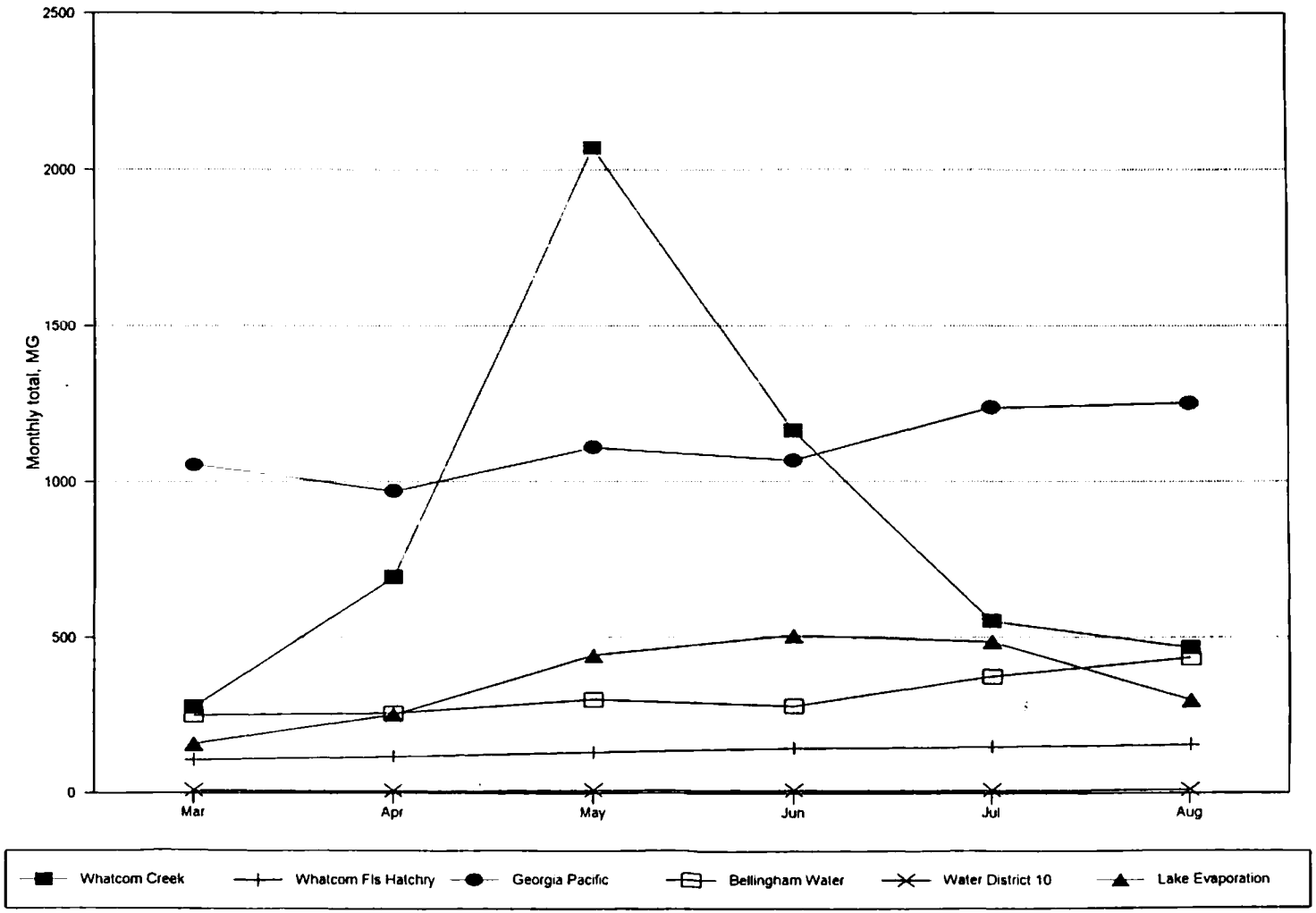


Figure 116:
Lake Whatcom Outputs
March - August 1993: Percentages

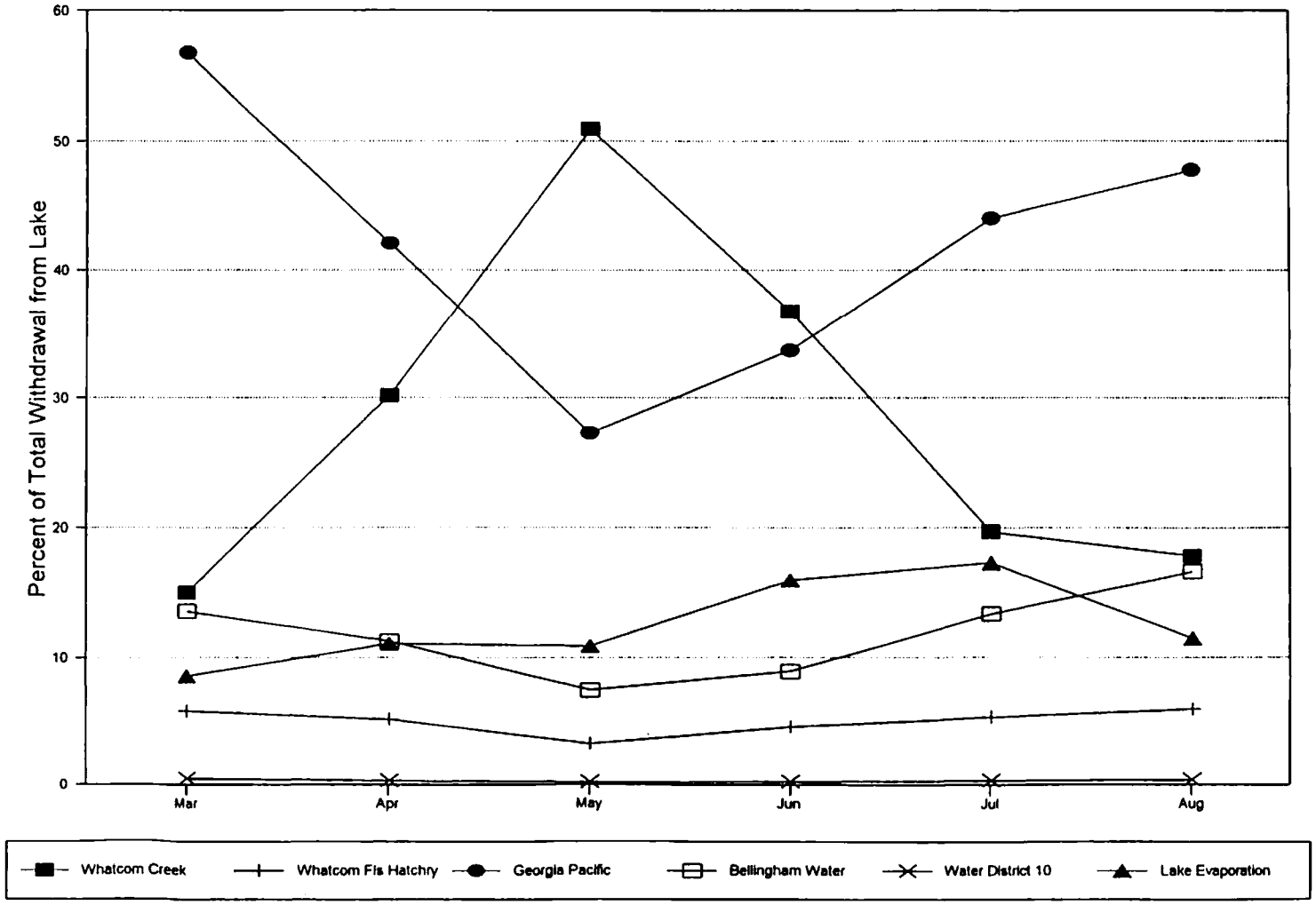


Figure 117:
Lake Whatcom Inputs
July 1990 - August 1993

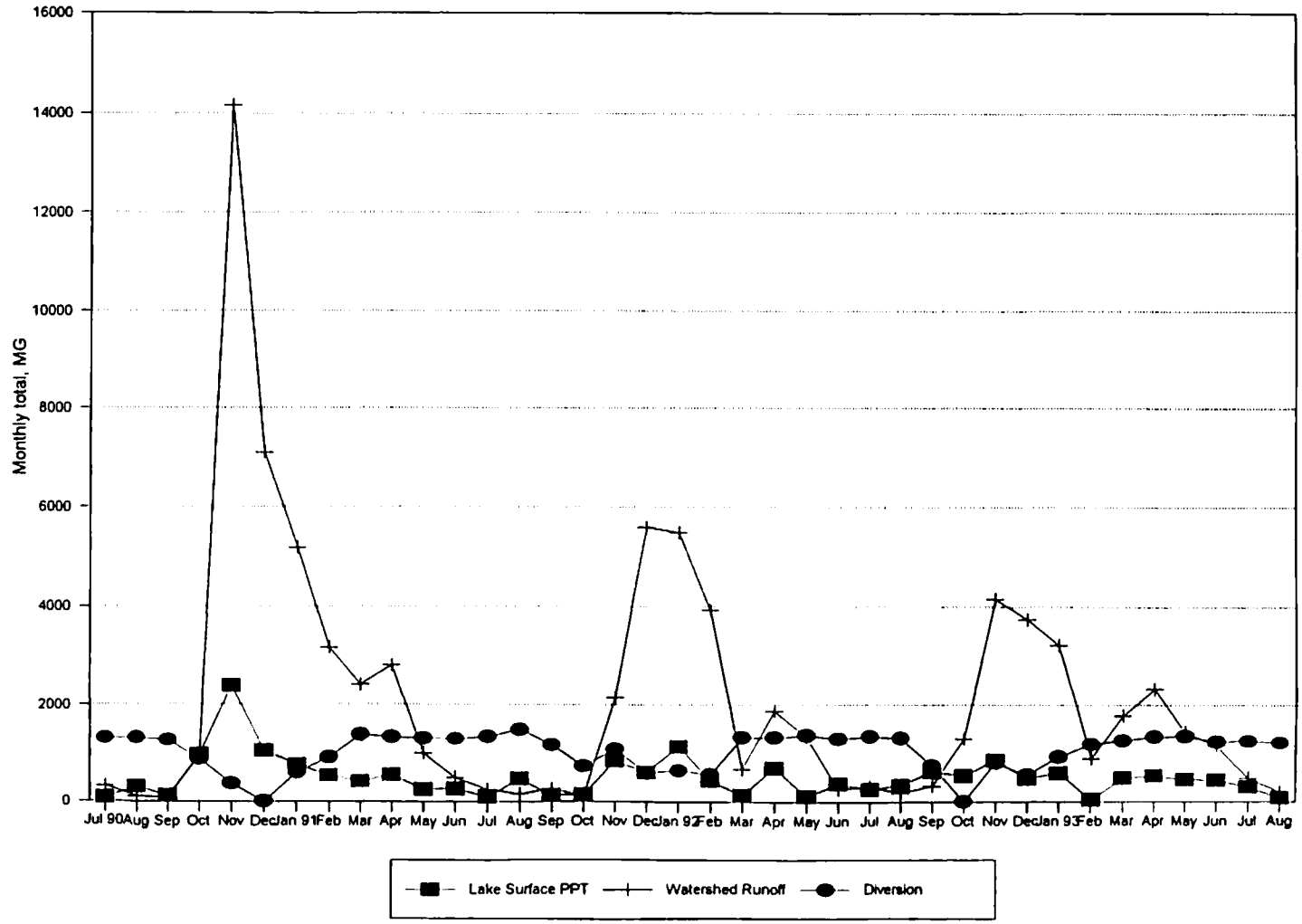


Figure 118:

Lake Whatcom Outputs

July 1990 - August 1993

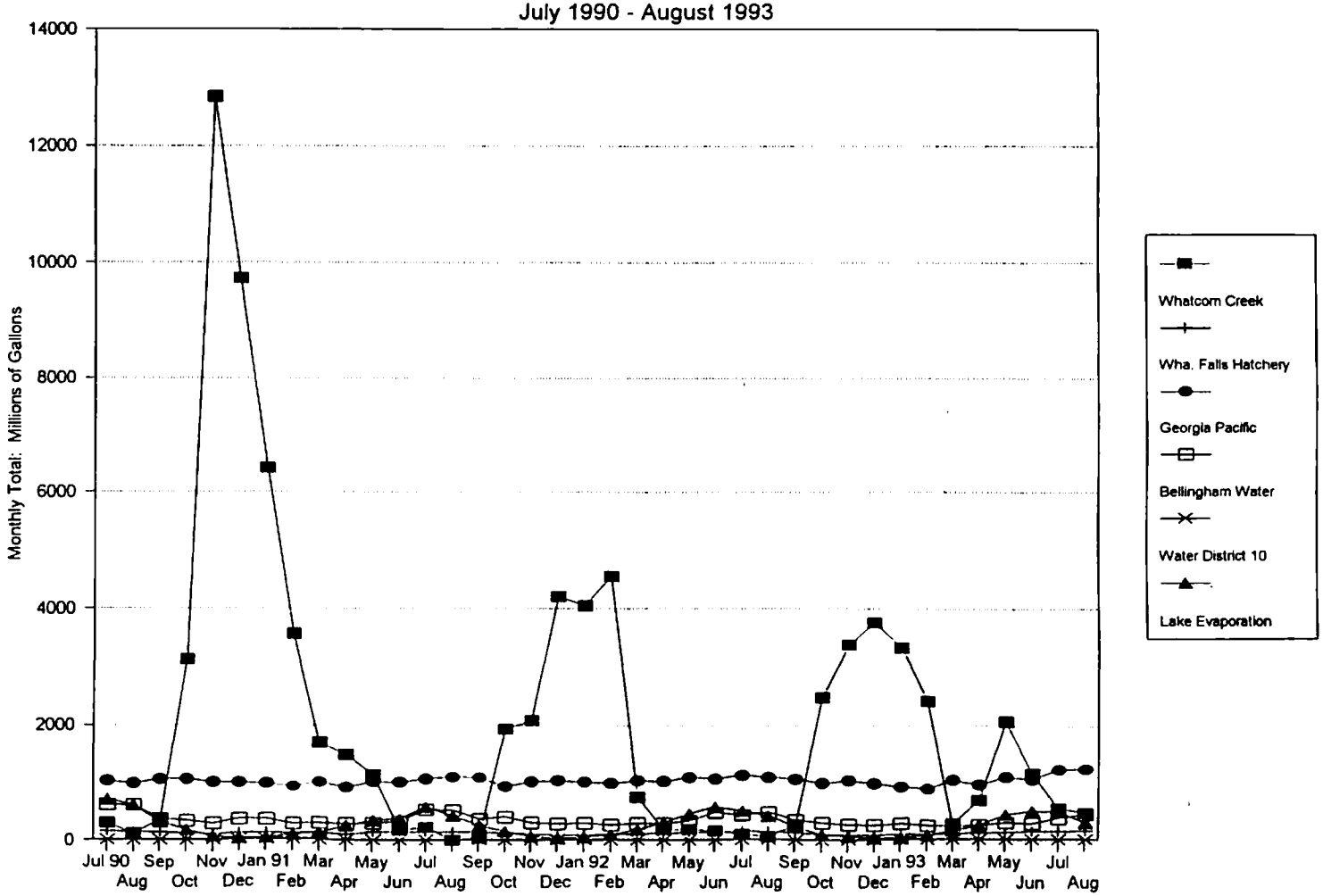


Figure 119:
Lake Whatcom Outputs
July 1990 - August 1993: Detail

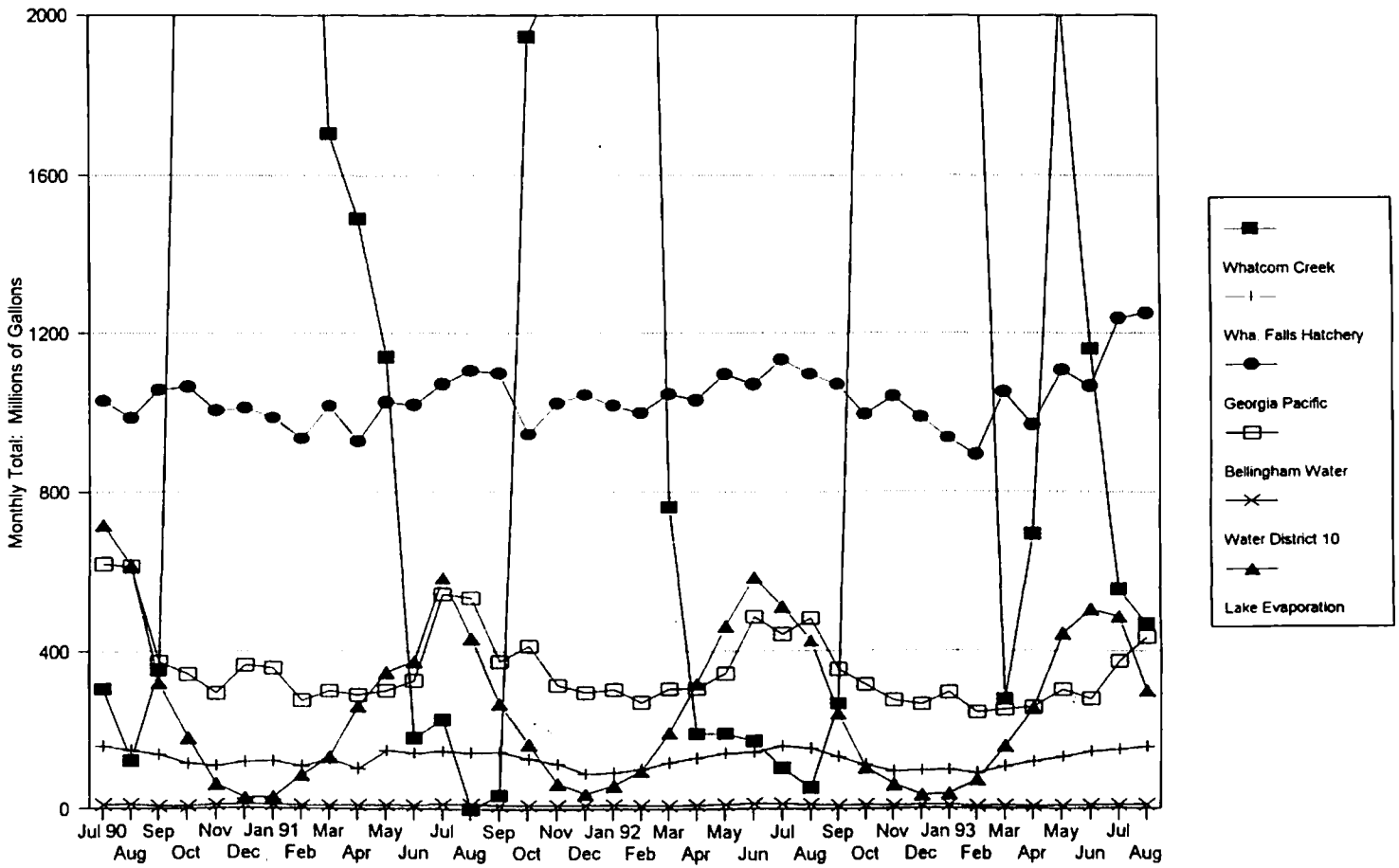


Figure 120:

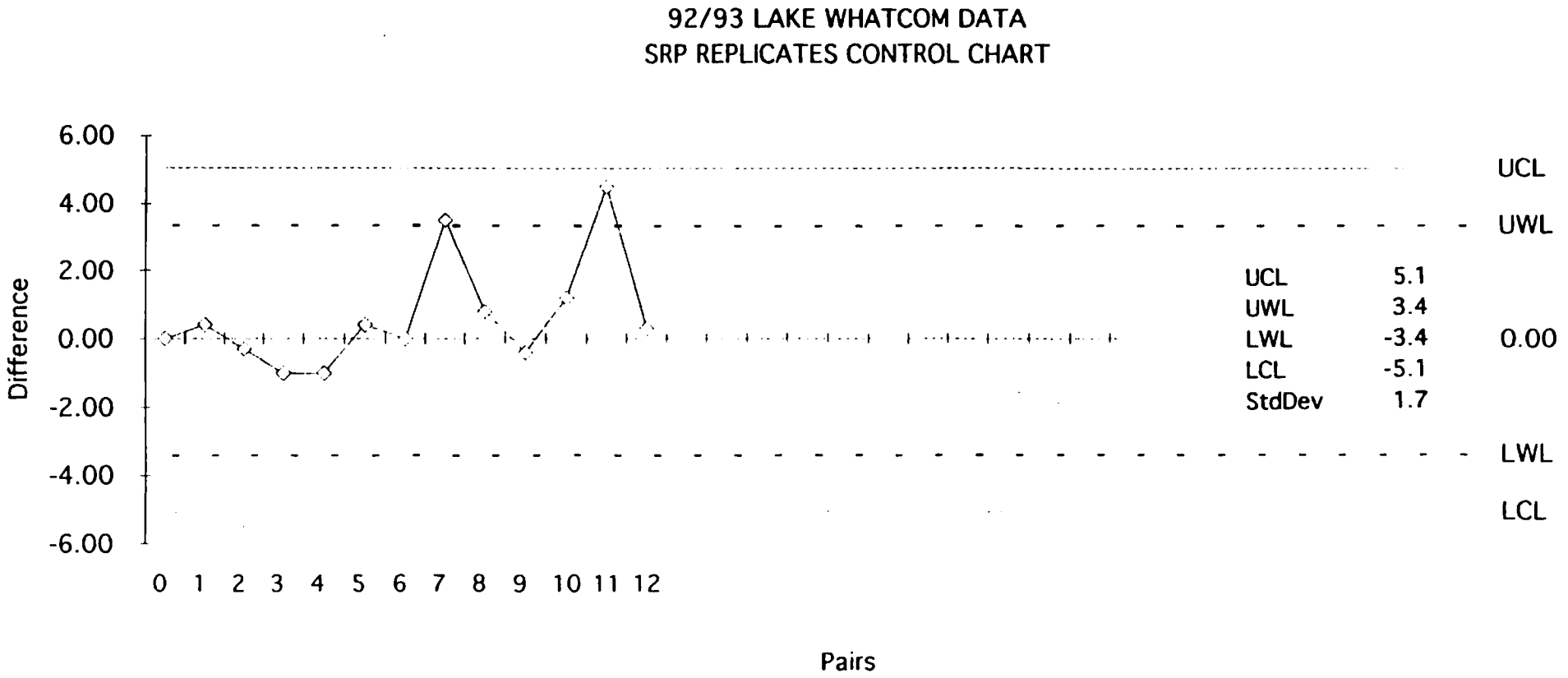

92/93 LAKE WHATCOM DATA
SRP REPLICATES CONTROL CHART
6.00
4.00
2.00
0.00
-2.00
-4.00
-6.00
Difference
0 1 2 3 4 5 6 7 8 9 10 11 12
Pairs
UCL
UWL
0.00
LWL
LCL
UCL 5.1
UWL 3.4
LWL -3.4
LCL -5.1
StdDev 1.7

Figure 121:

92/93 LAKE WHATCOM DATA
TP REPLICATES CONTROL CHART

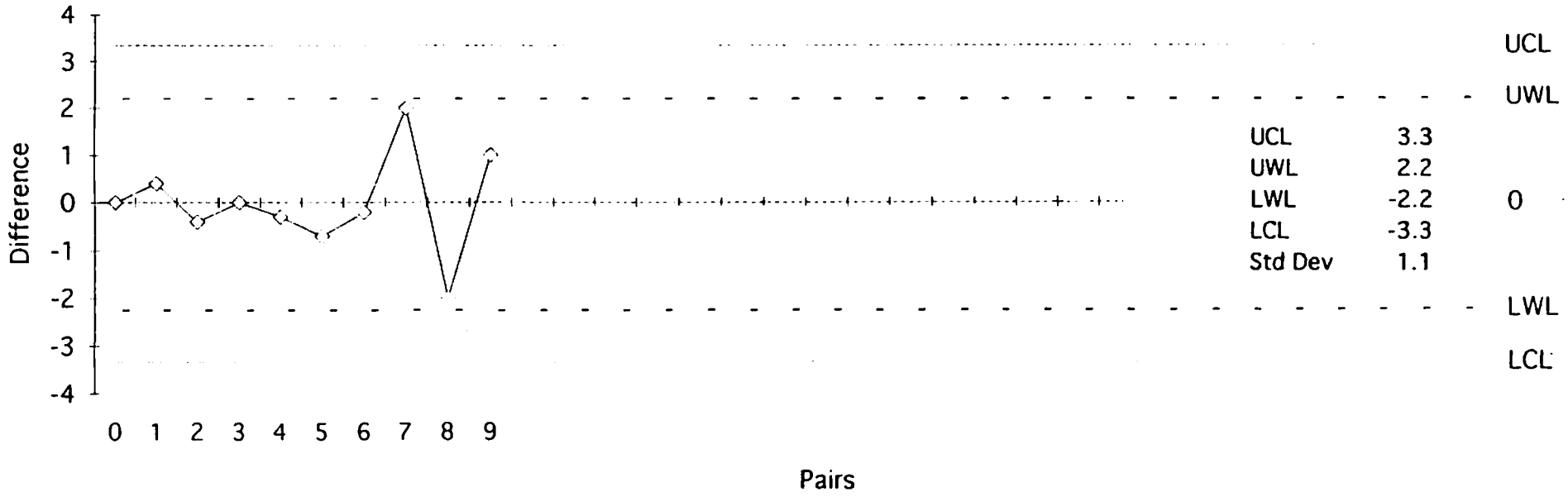


Figure 122:

92/93 LAKE WHATCOM DATA
DO REPLICATES CONTROL CHART

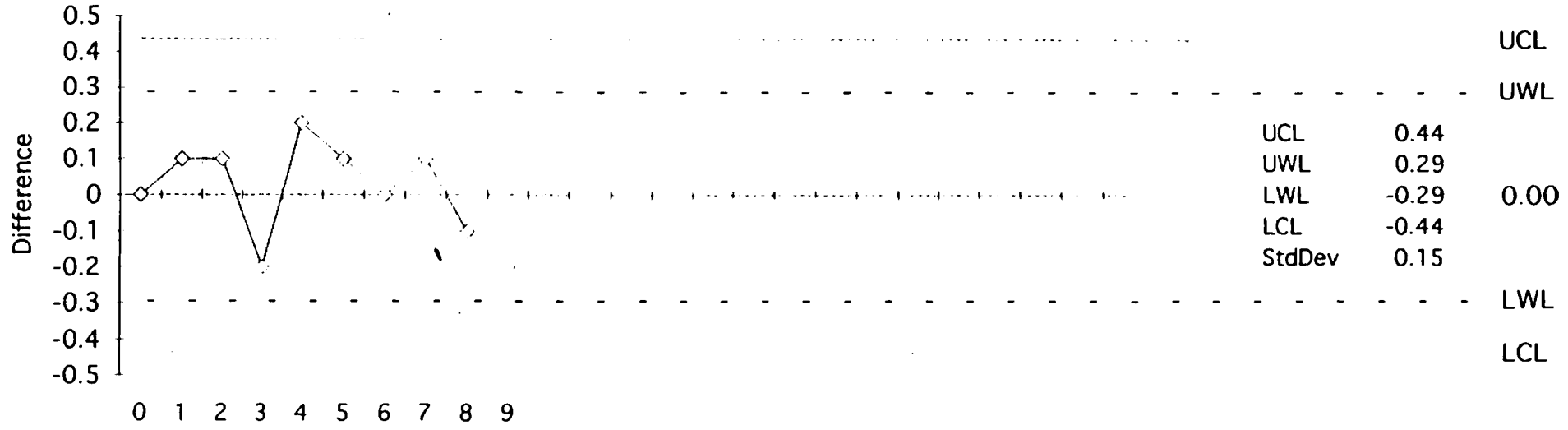


Figure 123:

92/93 LAKE WHATCOM DATA
NH3 REPLICATES CONTROL CHART

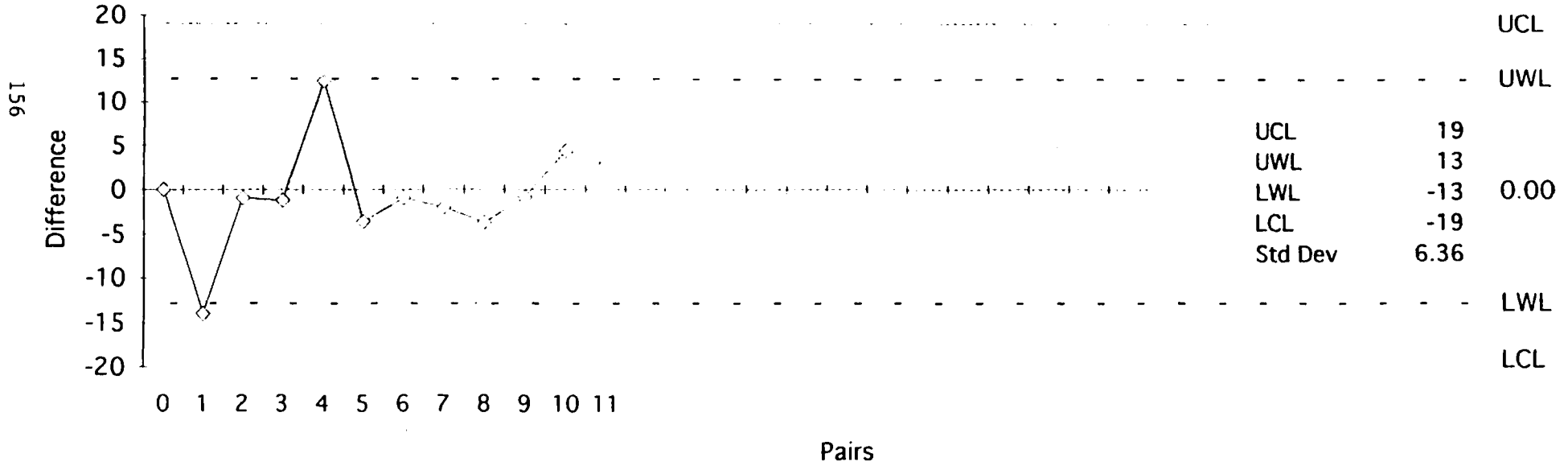
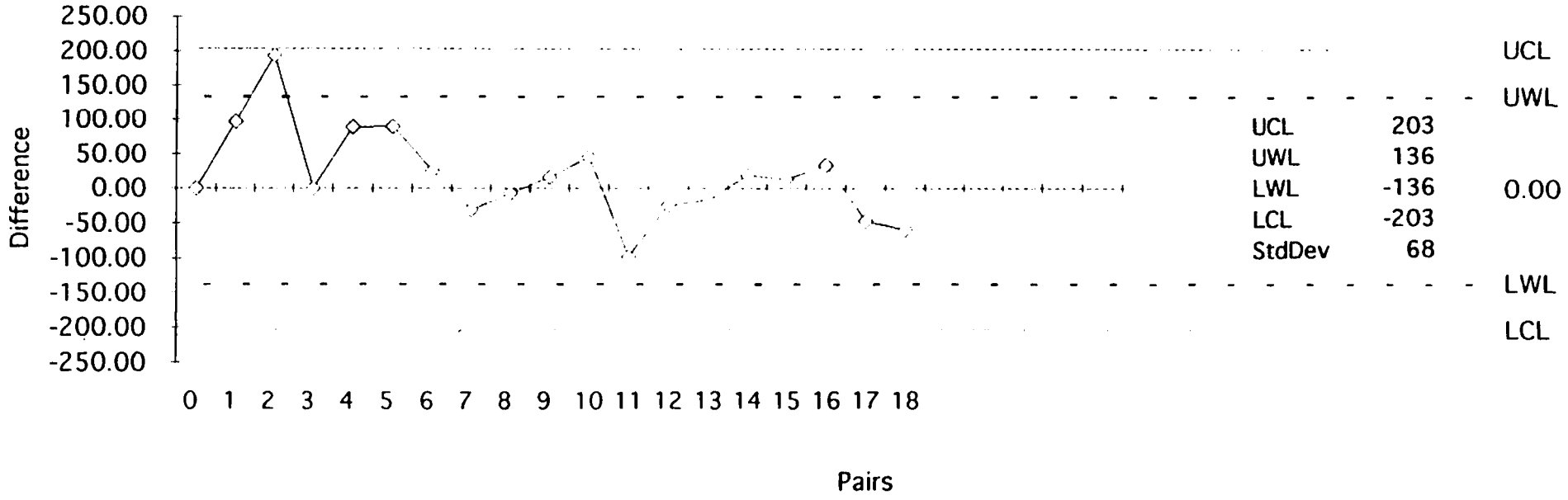


Figure 124:

92/93 LAKE WHATCOM DATA
NO2-NO3 REPLICATES CONTROL CHART



92 TN DATA G

Figure 125:

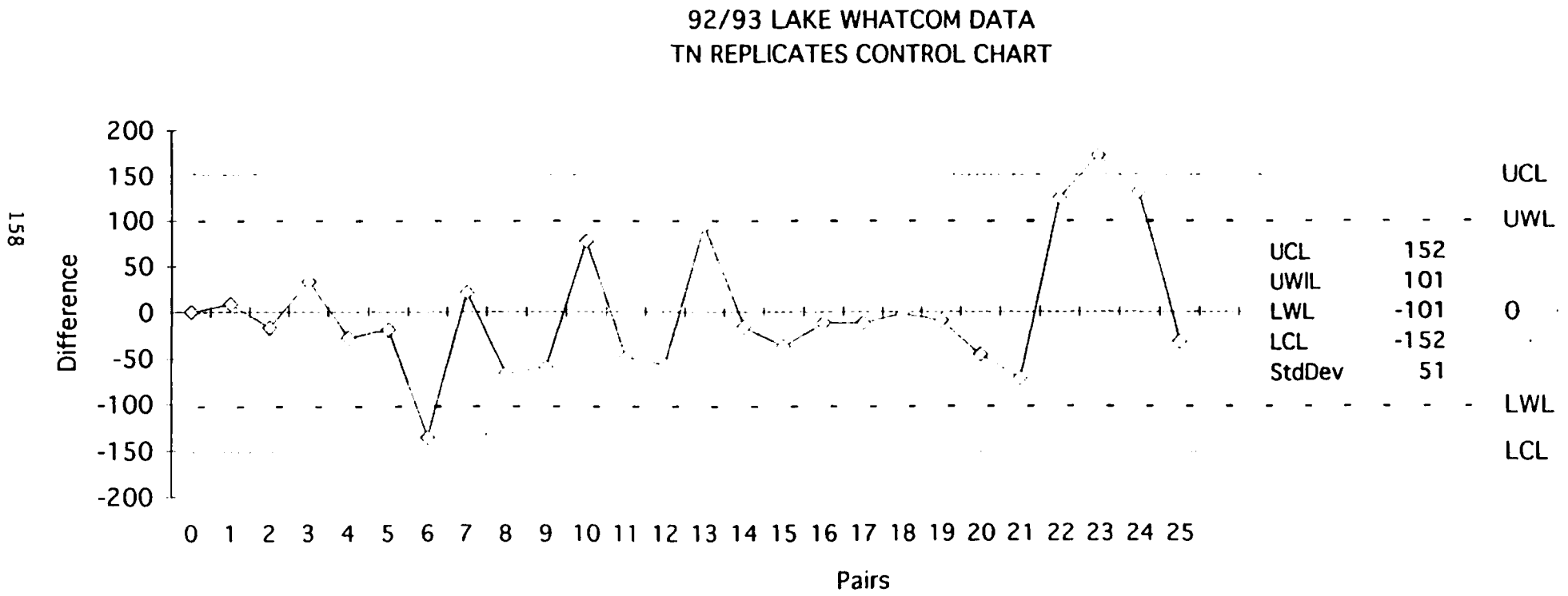


Figure 126:

92/92 LAKE WHATCOM DATA
pH REPLICATES CONTROL CHART

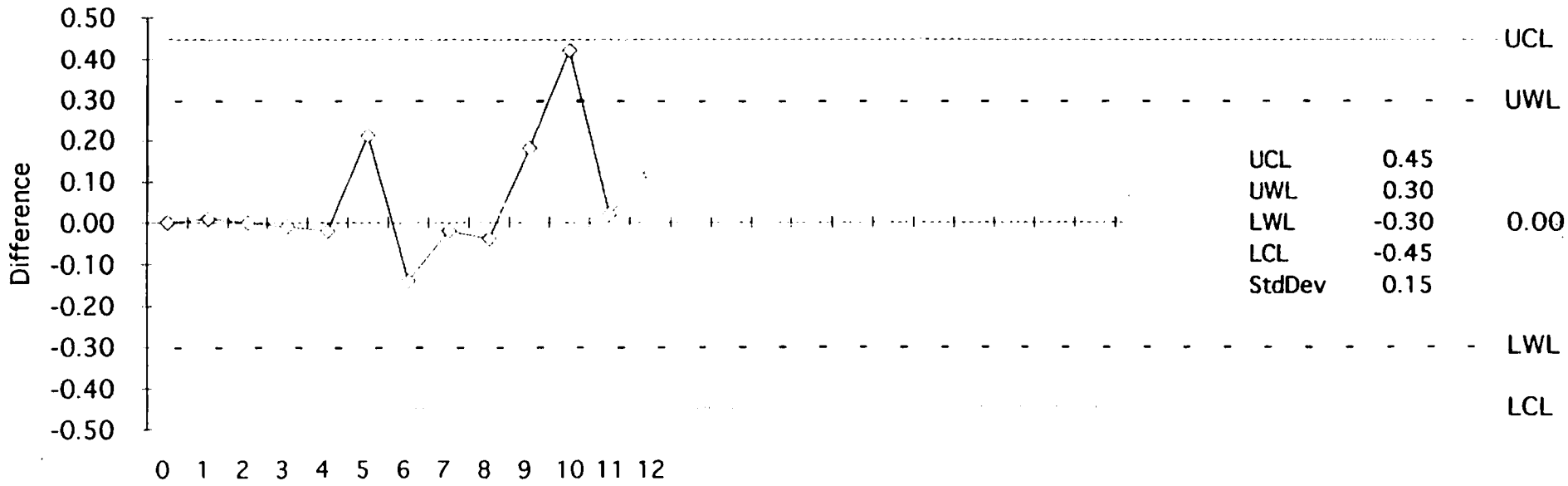
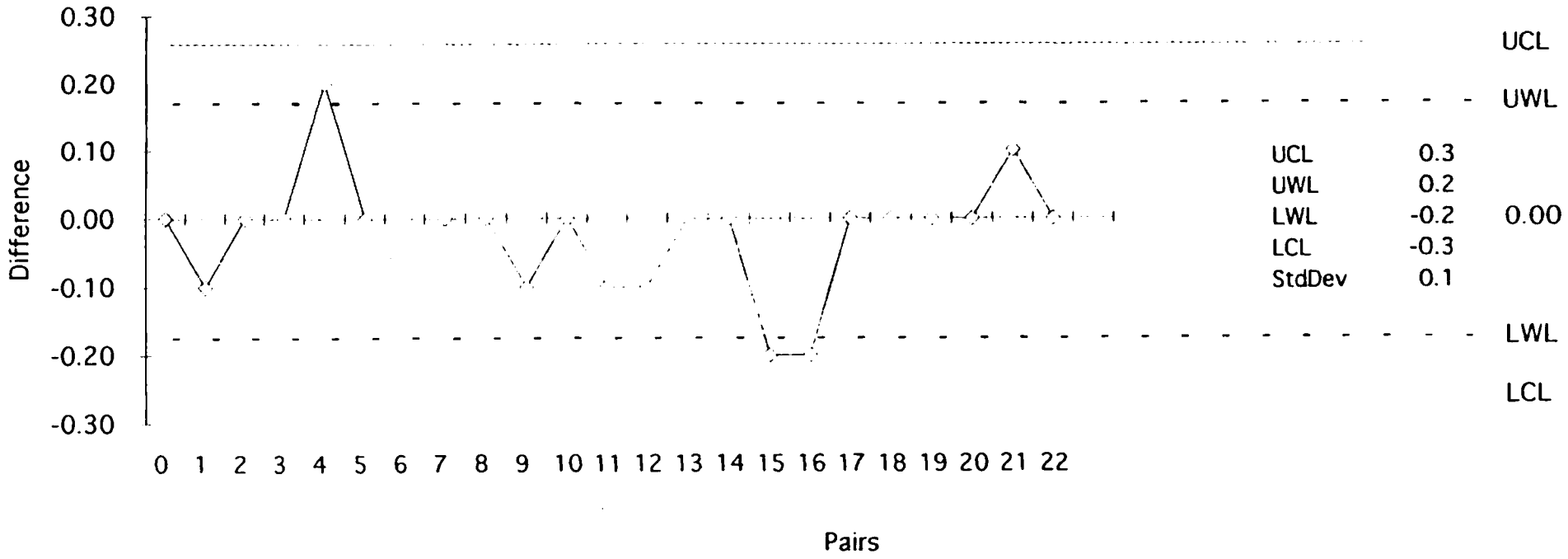


Figure 127:

92/93 LAKE WHATCOM DATA
TURBIDITY REPLICATES CONTROL CHART



A Sampling Site Descriptions

A.1 Lake Whatcom monitoring sites

Please refer to Figure 128 and Figure 129 for assistance with locating each site. In the field, each site should be marked with an orange buoy; however, stormy weather or vandalism may have resulted in the movement or loss of a marker buoy. The five major lake sampling sites have been used since the early 1960's. Table 15 shows a summary of the identification codes that have been used for these five sites over time.

During the August 5, 1993 lake sampling, geographical locations for each site were determined using a GPS locator. These coordinates are listed below, but should be used with the caution because site locations in Lake Whatcom have always been approximate.

Site 1 Site 1 is located in basin 1 along a straight line from the Bloedel Donovan boat launch to a square, white house with a dark grey roof that is located about half way up the hillside (171 E. North Shore Rd.) The sampling site is at a point perpendicular to the second group of condominiums in a cluster of four. The depth at Site 1 should be at least 20 m. The GPS coordinates for Site 1 on August 5, 1993 were: 48° 45.74 N, 122° 24.63 W.

Site 2 Site 2 is located in basin 2 just west of the intersection of a line between a boat house with a rust-colored roof (73 Strawberry Point) and the point of Geneva Sill, and a line between three aspen trees on Lake Whatcom Blvd. and a red house on the west side of Strawberry Sill (2170 Delestra Rd.). The depth at Site 2 should be at least 20 m. The GPS coordinates for Site 2 on August 5, 1993 were: 48° 44.55 N, 122° 22.81 W.

Intake Site The Intake site is located offshore from the City of Bellingham's raw water gatehouse. This site is one of the more difficult sites to locate because the marker buoy is frequently missing. The depth at the Intake site should be at least 13 m deep. The GPS coordinates for the Intake site on August 5, 1993 were: 48° 44.89 N, 122° 23.47 W.

Site 3 Site 3 is located mid-basin just north of a line between the old railroad bridge and Lakewood. The depth at Site 3 should be at least 80 m

deep. The GPS coordinates for Site 3 on August 5, 1993 were: 48° 44.27 N, 122° 20.25 W.

Site 4 Site 4 is located at the intersection of a line between two points of land and a line parallel to the north edge of an inlet (see Figure A2). The depth at Site 4 should be at least 90 m deep. The GPS coordinates for Site 4 on August 5, 1993 were: 48° 41.53 N, 122° 18.01 W.

Site Code	Years Used	Site Description
1	1985–present	Located at approximately the deepest
11	1987–present	point in basin 1
A	1982–1984	
14	1982	(14 is near Site 1)
7	1960's–1981	
2	1985–present	Located at approximately the deepest
22	1987–present	point in basin 2
B	1982–1984	
13	1982	
6	1960's–1981	
Intake	1980–present	Located at the intake in basin 2
21	1987–present	
3	1985–present	Located at approximately the deepest
31	1987–present	point in N. subbasin of basin 3
C	1982–1984	
5	1960's–1981	
4	1985–present	Located at approximately the deepest
32	1987–present	point in S. subbasin of basin 3
E	1982–1984	
10	1960's–1981	

Table 15: Summary of site codes for Lake Whatcom water quality sampling.

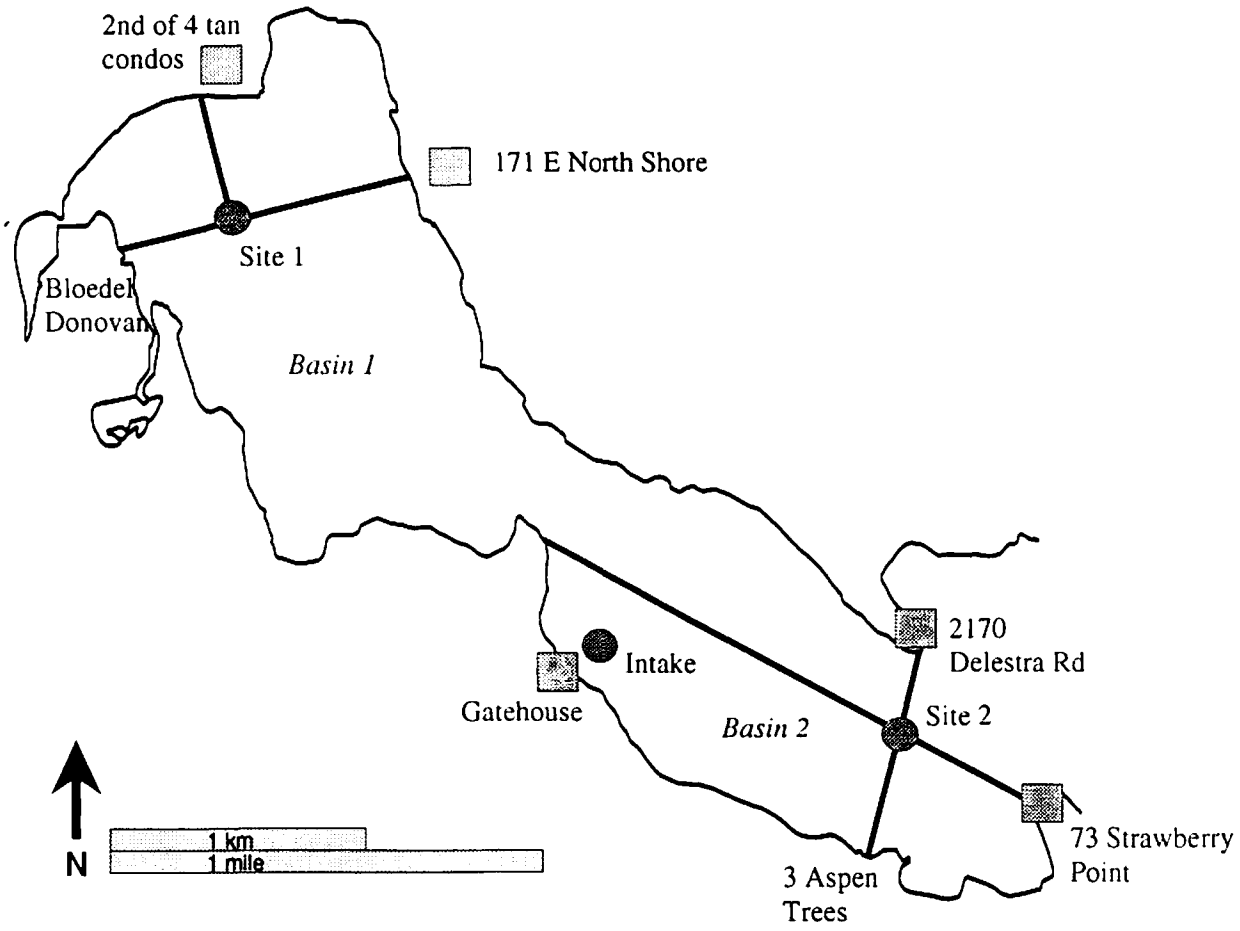


Figure 128: Basin 1 and 2 site locations. See text for descriptions of local landmarks. All distances and locations are approximate.

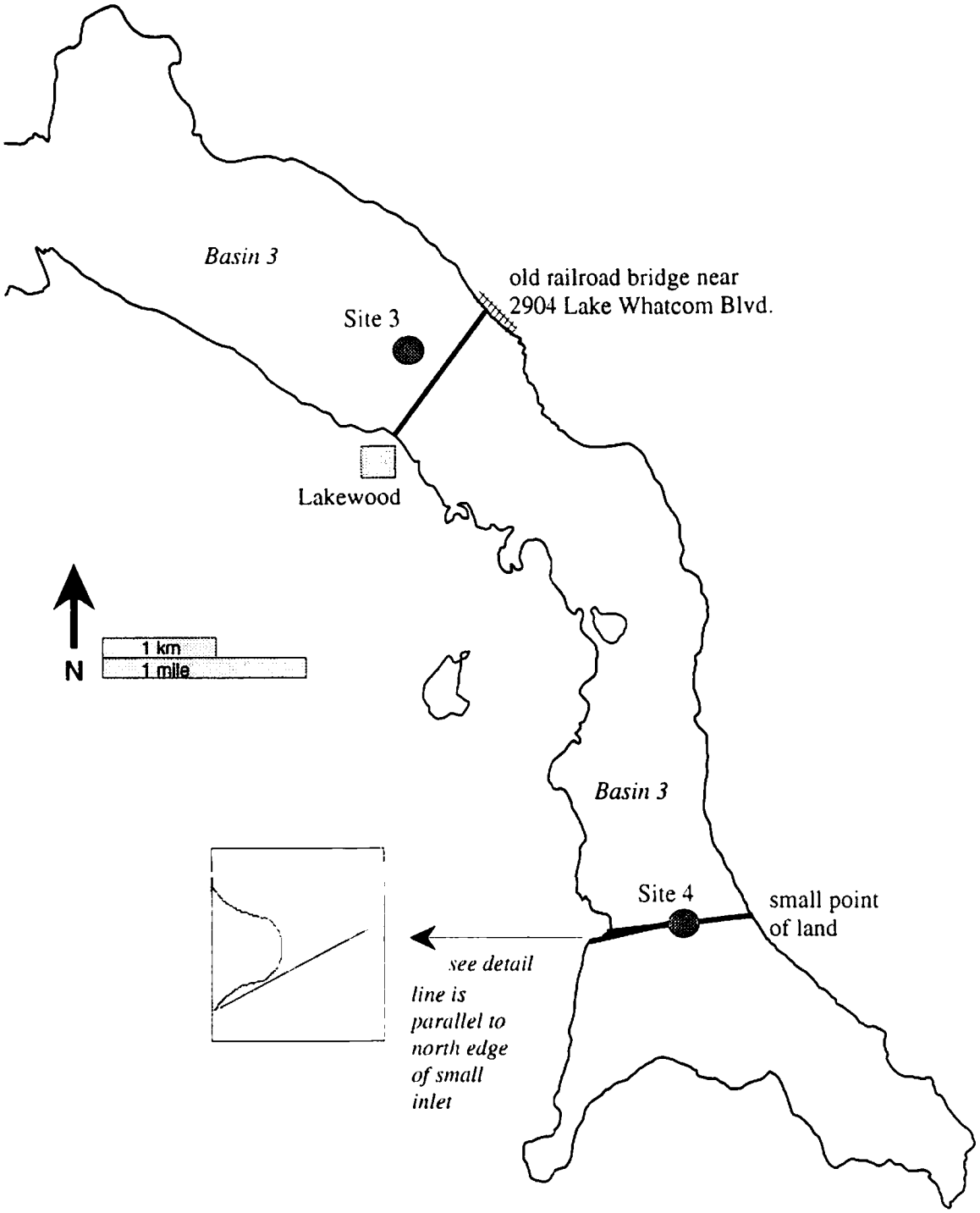


Figure 129: Basin 3 site locations. See text for descriptions of local landmarks. All distances and locations are approximate.

A.2 Lake Whatcom near-shore sampling sites

The approximate locations for the August 11–12, 1993 near-shore bacteria sampling are shown in Figure 102. These sites were chosen to overlap with the approximate positions of the 1985 URS coliform sampling in Lake Whatcom. All of the lake sites were approximately 100 m off-shore. The three stream sites (Sites 1–3) were the only accessible, flowing tributaries into basin 2.

During the near-shore sampling trip, geographical locations for the lake site were determined using a GPS locator. These coordinates are listed below, but should be used with the caution because site locations in Lake Whatcom have always been approximate.

Site #	Description	GPS Coordinates
1	Plastic culvert at Grand Blvd. and Whatcom Blvd.	na - stream site
2	Beneath dry culvert at Strawberry Pt. and Lake Whatcom Blvd.	na - stream site
3	Flowing drain just north of near-shore Site 2	na - stream site
5	North side of basin 2, approx. 100 m off shore	48° 44.82 N, 122° 22.70 W
6	North side of basin 2, approx. 100 m off shore	48° 44.88, 122° 22.83 W
7	North side of basin 2, approx. 100 m off shore	48° 45.08 N, 122° 23.10 W
8	North side of basin 2, approx. 100 m off shore	48° 45.11 N, 122° 23.35 W
9	North side of basin 2, approx. 100 m off shore	48° 45.17 N, 122° 23.68 W
22	South side of basin 2, approx. 100 m off shore	48° 45.07 N, 122° 23.65 W
23	South side of basin 2, approx. 100 m off shore	48° 44.89 N, 122° 23.63 W
24	South side of basin 2, approx. 100 m off shore	48° 44.77 N, 122° 23.47 W
25	South side of basin 2, approx. 100 m off shore	48° 44.57 N, 122° 23.06 W
26	South side of basin 2, approx. 100 m off shore	48° 44.49 N, 122° 22.87 W
27	South side of basin 2, approx. 100 m off shore	48° 44.44 N, 122° 22.63 W
28	South side of basin 2, approx. 100 m off shore	48° 44.35 N, 122° 22.30 W
14	Bloedel Donovan area of basin 1, approx. 100 m off shore	48° 45.76 N, 122° 25.02 W

A.3 Creek monitoring sites

The routine creek monitoring sites are described in detail by Walker, et al. (1992), and summarized below.

Smith Creek: Samples are collected approximately 100 yards upstream from Lake Whatcom.

Silver Beach Creek: All routine monitoring samples are collected immediately upstream from North Shore Road. The Silver Beach Creek watershed samples (coliforms, fecal streptococcus, and total bacteria) were collected at the sites shown in Figure 107

Park Place storm drain: Samples are collected inside the storm drain under Park Place (road off of North Shore Drive.) When the lake level is low enough, samples can be collected at the mouth of the outlet pipe flowing into the lake.

Austin Creek: The site is located at the Sudden Valley golf course approximately 1800 ft upstream from where the creek flows into Lake Whatcom.

Wildwood Creek: The site is located approximately 30 feet south of the entrance to the Wildwood Resort at the culvert where South Lake Whatcom Boulevard crosses the creek.

Blue Canyon Creek: This small creek is not shown on the USGS topographic map for the area. However, it is located just north of the two major Blue Canyon streams pictured on the USGS Lake Whatcom 7.5 min. quadrangle (Sect. 22, T 37N, R 4E).. Samples are collected upstream from the culvert crossing the Blue Canyon road.

B Lake Whatcom Water Quality Data

CAUTION! ⇒ Not all of the raw data contained in this Appendix have been edited to remove "bdl" data, negative values, outliers, or other extreme values. All bdl values are plotted at their detection limit in the report figures; outliers and questionable values are discussed in the text, if appropriate. Therefore, you are cautioned against using these raw data without including the necessary qualifiers.

The 1992–1993 Lake Whatcom water quality data, including data from respresentative creeks and special sampling projects, are included on the following pages. The detection limits for each parameter are shown below. The detection limits for each parameter were estimated based on recommended lower detection ranges (APHA, 1992; EPA 1983), instrument limitations, and analyst judgement on the lowest repeatable concentration for each test. Accordingly, the detection limits used in this report are a conservative estimate of the lowest concentration that we can measure with reasonable certainty.

Variable	Units	Detection Limit
Alkalinity	mg/L as $CaCO_3$	na
Carbon, total organic	mg-C/L	na
Chlorophyll *a*	mg/m^3	na
Coliforms, fecal	colonies/100 mL	< 2 col/100 mL
Coliforms, total	colonies/100 mL	< 2 col/100 mL
Conductivity, Hydrolab	μMHO/cm	$\sim$ 2 μMHO/cm
Conductivity, lab	μMHO/cm	2 μMHO/cm
Metals, total arsenic*	μg/L	30 μg/L
Metals, total cadmium*	μg/L	2 μg/L
Metals, total chromium*	μg/L	6 μg/L
Metals, total copper*	μg/L	2 μg/L
Metals, total iron*	μg/L	10 μg/L
Metals, total lead*	μg/L	1 μg/L
Metals, total mercury*	μg/L	10 μg/L
Metals, total nickel*	μg/L	10 μg/L
Metals, total zinc*	μg/L	2 μg/L
Nitrogen, ammonia	μg-N/L	5 μg/L
Nitrogen, nitrate/nitrite	μg-N/L	50 μg/L
Nitrogen, total nitrogen	μg-N/L	100 μg/L
Oxygen, Hydrolab	mg/L	$\sim$ 0.1 mg/L
Oxygen, Winkler	mg/L	0.1 μg/L
pH, Hydrolab	pH units	$\sim$ 0.1 pH unit
pH, lab	pH units	$\sim$ 0.1 pH unit
Phosphorus, soluble reactive	μg-P/L	5 μg/L
Phorphorus, total	μg-P/L	5 μg/L
Secchi depth	meters	na
Streptococcus, fecal	colonies/100 mL	< 2 col/100 mL
Temperature	°C	na
Total Suspended Solids	mg/L	2 mg/L
Turbidity	NTU	0.2 NTU

*The AmTest metals data report is included in Appendix C.

B.1 Lake Whatcom Hydrolab and laboratory water quality data

Lake Whatcom Monitoring Program

Prepared January 25, 1994 by the Environmental Research and Education Center,
Western Washington University, for the City of Bellingham, Department of Public Works.

*: missing. BDL: below detection limit.

Hydrolab and quality control data:

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 1	00	09	03	91	18.5	7.1	68	9.45	57.2	4.7
Site 1	01	09	03	91	18.5	7.1	68	9.38	*	*
Site 1	02	09	03	91	18.4	7.6	69	9.35	*	*
Site 1	03	09	03	91	18.4	7.5	69	9.34	*	*
Site 1	04	09	03	91	18.3	7.4	69	9.31	*	*
Site 1	05	09	03	91	18.2	7.3	70	9.18	57.4	*
Site 1	06	09	03	91	18.0	7.3	70	9.03	*	*
Site 1	07	09	03	91	17.8	7.2	70	8.69	*	*
Site 1	08	09	03	91	17.8	7.2	70	8.65	*	*
Site 1	09	09	03	91	17.5	7.0	71	8.32	*	*
Site 1	10	09	03	91	16.6	6.8	70	6.75	59.0	*
Site 1	11	09	03	91	15.7	6.7	72	5.36	*	*
Site 1	12	09	03	91	12.9	6.6	76	2.14	*	*
Site 1	13	09	03	91	11.6	6.6	75	1.08	*	*
Site 1	14	09	03	91	10.8	6.6	74	0.63	*	*
Site 1	15	09	03	91	10.8	6.6	75	0.63	62.1	*
Site 1	16	09	03	91	10.7	6.5	75	0.59	*	*
Site 1	17	09	03	91	10.7	6.6	75	0.56	*	*
Site 1	18	09	03	91	10.7	6.6	75	0.56	*	*
Site 1	19	09	03	91	10.7	6.6	76	0.56	*	*
Site 1	20	09	03	91	10.6	6.7	76	0.67	62.0	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Intake	00	09	03	91	19.5	8.4	67	9.24	55.6	6.3
Intake	01	09	03	91	19.3	8.4	68	9.21	*	*
Intake	02	09	03	91	18.8	8.4	69	9.29	*	*
Intake	03	09	03	91	18.6	8.4	69	9.18	*	*
Intake	04	09	03	91	18.5	8.3	70	9.18	*	*
Intake	05	09	03	91	18.4	8.3	70	9.13	54.9	*
Intake	06	09	03	91	18.1	8.3	70	9.13	*	*
Intake	07	09	03	91	17.9	8.2	70	9.00	*	*
Intake	08	09	03	91	17.8	8.1	70	8.98	*	*
Intake	09	09	03	91	17.7	8.1	70	8.90	*	*
Intake	10	09	03	91	17.6	8.0	70	8.88	54.3	*
Intake	11	09	03	91	17.4	8.0	71	8.78	*	*
Intake	12	09	03	91	17.2	8.1	71	8.68	*	*
Intake	13	09	03	91	17.4	8.2	70	8.56	*	*
Site 2	00	09	03	91	19.5	8.4	65	9.26	56.2	6.2
Site 2	01	09	03	91	19.4	8.4	65	9.23	*	*
Site 2	02	09	03	91	19.2	8.3	65	9.23	*	*
Site 2	03	09	03	91	18.9	8.3	66	9.22	*	*
Site 2	04	09	03	91	18.8	8.2	66	9.22	*	*
Site 2	05	09	03	91	18.7	8.2	67	9.17	55.7	*
Site 2	06	09	03	91	18.5	8.1	67	9.00	*	*
Site 2	07	09	03	91	18.2	8.1	67	9.07	*	*
Site 2	08	09	03	91	18.0	8.0	68	9.06	*	*
Site 2	09	09	03	91	18.0	8.0	68	9.06	*	*
Site 2	10	09	03	91	17.8	8.0	69	8.98	54.1	*
Site 2	11	09	03	91	17.6	7.9	69	8.96	*	*
Site 2	12	09	03	91	17.1	7.9	70	8.54	*	*
Site 2	13	09	03	91	16.9	7.8	70	8.62	*	*
Site 2	14	09	03	91	16.6	7.8	71	8.27	*	*
Site 2	15	09	03	91	13.9	7.6	72	5.47	55.7	*
Site 2	16	09	03	91	12.0	7.4	74	3.32	*	*
Site 2	17	09	03	91	11.7	7.3	74	2.98	*	*
Site 2	18	09	03	91	11.3	7.2	75	1.74	*	*
Site 2	19	09	03	91	11.1	7.1	75	1.28	*	*
Site 2	20	09	03	91	11.0	7.0	76	0.90	57.9	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 3	00	09	03	91	18.6	8.0	67	9.37	55.2	7.1
Site 3	01	09	03	91	18.6	7.9	66	9.37	*	*
Site 3	02	09	03	91	18.5	7.9	66	9.40	*	*
Site 3	03	09	03	91	18.4	7.9	66	9.36	*	*
Site 3	04	09	03	91	18.4	7.9	67	9.35	*	*
Site 3	05	09	03	91	18.4	7.9	67	9.36	56.3	*
Site 3	06	09	03	91	18.4	7.9	68	9.35	*	*
Site 3	07	09	03	91	18.4	7.9	68	9.34	*	*
Site 3	08	09	03	91	18.3	7.9	68	9.29	*	*
Site 3	09	09	03	91	18.3	7.8	69	9.21	*	*
Site 3	10	09	03	91	18.2	7.8	68	9.11	54.9	*
Site 3	11	09	03	91	17.8	7.8	70	9.07	*	*
Site 3	12	09	03	91	17.5	7.7	70	8.96	*	*
Site 3	13	09	03	91	16.1	7.6	71	8.99	*	*
Site 3	14	09	03	91	16.0	7.6	70	8.91	*	*
Site 3	15	09	03	91	15.9	7.5	71	8.94	*	*
Site 3	16	09	03	91	15.1	7.5	72	8.92	*	*
Site 3	17	09	03	91	14.2	7.4	72	8.95	*	*
Site 3	18	09	03	91	13.2	7.4	72	8.94	*	*
Site 3	19	09	03	91	12.3	7.4	73	8.97	*	*
Site 3	20	09	03	91	11.9	7.3	74	9.16	*	*
Site 3	25	09	03	91	8.8	7.3	73	9.67	*	*
Site 3	30	09	03	91	7.7	7.3	73	9.82	*	*
Site 3	35	09	03	91	7.1	7.3	74	10.01	*	*
Site 3	40	09	03	91	6.8	7.3	75	10.16	*	*
Site 3	45	09	03	91	6.7	7.3	73	10.12	*	*
Site 3	50	09	03	91	6.6	7.2	73	10.10	*	*
Site 3	55	09	03	91	6.5	7.2	73	10.01	*	*
Site 3	60	09	03	91	6.4	7.2	71	10.05	*	*
Site 3	65	09	03	91	6.4	7.2	72	9.82	*	*
Site 3	70	09	03	91	6.4	7.2	72	9.85	57.1	*
Site 3	75	09	03	91	6.3	7.2	71	9.66	*	*
Site 3	80	09	03	91	6.3	7.1	72	9.01	57.2	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 4	00	09	03	91	18.5	8.4	68	9.45	56.0	6.4
Site 4	01	09	03	91	18.5	8.4	68	9.43	*	*
Site 4	02	09	03	91	18.5	8.4	69	9.46	*	*
Site 4	03	09	03	91	18.4	8.4	69	9.48	*	*
Site 4	04	09	03	91	18.3	8.3	70	9.48	*	*
Site 4	05	09	03	91	18.2	8.3	71	9.48	55.3	*
Site 4	06	09	03	91	18.1	8.3	72	9.49	*	*
Site 4	07	09	03	91	18.1	8.3	73	9.48	*	*
Site 4	08	09	03	91	18.1	8.3	74	9.47	*	*
Site 4	09	09	03	91	18.0	8.2	74	9.46	*	*
Site 4	10	09	03	91	18.0	8.2	74	9.49	55.5	*
Site 4	11	09	03	91	17.9	8.1	74	9.43	*	*
Site 4	12	09	03	91	17.7	8.0	74	9.42	*	*
Site 4	13	09	03	91	17.5	8.0	73	9.39	*	*
Site 4	14	09	03	91	17.3	7.9	73	9.39	*	*
Site 4	15	09	03	91	17.1	7.8	72	9.43	*	*
Site 4	16	09	03	91	17.1	7.8	72	9.41	*	*
Site 4	17	09	03	91	15.2	7.6	72	9.06	*	*
Site 4	18	09	03	91	13.3	7.6	73	9.16	*	*
Site 4	19	09	03	91	12.1	7.6	74	9.19	*	*
Site 4	20	09	03	91	11.6	7.7	75	9.35	*	*
Site 4	25	09	03	91	8.4	7.6	75	9.84	*	*
Site 4	30	09	03	91	7.1	7.7	75	10.17	*	*
Site 4	35	09	03	91	6.7	7.8	74	10.38	*	*
Site 4	40	09	03	91	6.6	7.8	74	10.40	*	*
Site 4	45	09	03	91	6.5	7.7	73	10.39	*	*
Site 4	50	09	03	91	6.5	7.8	73	10.31	*	*
Site 4	55	09	03	91	6.5	7.8	72	10.20	*	*
Site 4	60	09	03	91	6.5	7.8	71	10.19	*	*
Site 4	65	09	03	91	6.5	7.7	71	10.22	*	*
Site 4	70	09	03	91	6.6	7.8	72	10.18	*	*
Site 4	75	09	03	91	6.7	7.9	72	10.16	*	*
Site 4	80	09	03	91	6.7	7.9	72	9.96	57.0	*
Site 4	85	09	03	91	6.8	8.0	70	9.87	*	*
Site 4	90	09	03	91	6.9	8.0	71	9.63	57.3	*
Gate	00	09	03	91	17.4	6.2	62	8.87	*	*

Laboratory data:

Site	Depth	Month	Day	Year	Alk	Turb	NH3	TKN	NO3	SRP	TP	ChlA
Site 1	00	09	03	91	18.9	0.9	8.5	170.4	150.5	BDL	11.5	7.07
Site 1	05	09	03	91	18.5	0.9	6.3	179.7	152.2	BDL	9.4	7.45
Site 1	10	09	03	91	18.8	1.1	14.8	179.8	166.7	BDL	10.2	6.90
Site 1	15	09	03	91	19.9	1.9	27.3	172.0	287.3	BDL	12.8	4.11
Site 1	20	09	03	91	20.0	2.2	17.3	141.5	293.3	BDL	12.5	3.35
Intake	00	09	03	91	17.9	0.6	6.9	130.8	202.3	BDL	13.6	4.67
Intake	05	09	03	91	17.4	0.7	7.4	124.5	244.2	BDL	9.2	5.96
Intake	10	09	03	91	17.4	0.9	12.6	106.0	275.8	BDL	8.9	5.37
Site 2	00	09	03	91	17.7	0.9	6.4	122.4	231.8	BDL	7.7	4.90
Site 2	05	09	03	91	17.6	0.7	6.5	127.4	234.1	BDL	7.9	5.96
Site 2	10	09	03	91	17.1	1.2	8.6	136.1	280.3	BDL	8.0	5.49
Site 2	15	09	03	91	17.3	0.9	15.6	148.9	304.6	BDL	9.2	4.58
Site 2	20	09	03	91	17.6	1.1	9.8	117.0	385.6	BDL	19.7	3.40
Site 3	00	09	03	91	17.3	0.5	9.6	BDL	252.5	BDL	7.9	4.34
Site 3	05	09	03	91	17.6	0.7	11.8	108.5	256.0	BDL	8.4	5.16
Site 3	10	09	03	91	17.3	0.6	6.9	102.2	263.2	BDL	7.1	6.13
Site 3	15	09	03	91	*	*	*	*	*	*	*	4.05
Site 3	20	09	03	91	16.7	0.7	8.0	132.1	214.3	BDL	8.0	2.73
Site 3	40	09	03	91	16.3	1.3	BDL	BDL	452.0	BDL	10.0	*
Site 3	60	09	03	91	16.6	1.1	BDL	BDL	462.3	BDL	10.8	*
Site 3	80	09	03	91	17.1	4.0	BDL	BDL	440.8	BDL	15.6	*
Site 4	00	09	03	91	17.3	0.5	BDL	136.7	377.9	BDL	6.8	5.40
Site 4	05	09	03	91	17.2	0.8	7.3	178.7	383.2	BDL	8.5	5.08
Site 4	10	09	03	91	17.3	1.0	6.0	121.1	377.0	BDL	8.2	5.40
Site 4	15	09	03	91	*	*	*	*	*	*	*	4.20
Site 4	20	09	03	91	16.7	1.3	7.3	122.6	408.0	BDL	7.1	2.76
Site 4	40	09	03	91	16.5	1.5	BDL	BDL	450.5	BDL	6.9	*
Site 4	60	09	03	91	16.5	0.9	BDL	BDL	461.4	BDL	8.3	*
Site 4	80	09	03	91	16.4	0.9	BDL	BDL	458.2	BDL	7.2	*
Site 4	90	09	03	91	16.8	1.6	9.3	287.0	449.5	BDL	8.6	*
Gate	00	09	03	91	17.2	*	15.7	281.4	285.6	BDL	6.4	*

Lake Whatcom Monitoring Program

Prepared January 25. 1994 by the Environmental Research and Education Center.
Western Washington University. for the City of Bellingham. Department of Public Works.
*: missing. BDL: below detection limit.

Hydrolab and quality control data:

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 1	00	10	07	91	17.2	7.8	65	9.75	66.6	5.4
Site 1	01	10	07	91	17.3	*	65	9.74	*	*
Site 1	02	10	07	91	17.3	*	65	9.69	*	*
Site 1	03	10	07	91	17.3	*	65	9.66	*	*
Site 1	04	10	07	91	17.3	*	65	9.63	*	*
Site 1	05	10	07	91	17.3	7.8	67	9.62	57.4	*
Site 1	06	10	07	91	17.3	*	69	9.58	*	*
Site 1	07	10	07	91	17.3	*	71	9.55	*	*
Site 1	08	10	07	91	17.3	*	72	9.47	*	*
Site 1	09	10	07	91	17.3	*	71	9.44	*	*
Site 1	10	10	07	91	16.8	7.7	73	7.07	59.7	*
Site 1	11	10	07	91	16.1	*	73	1.58	*	*
Site 1	12	10	07	91	13.6	*	79	0.53	*	*
Site 1	13	10	07	91	12.1	*	81	0.48	*	*
Site 1	14	10	07	91	11.3	*	81	0.46	*	*
Site 1	15	10	07	91	11.1	6.7	80	0.46	70.3	*
Site 1	16	10	07	91	10.9	*	80	0.43	*	*
Site 1	17	10	07	91	10.8	*	80	0.43	*	*
Site 1	18	10	07	91	10.8	*	80	0.43	*	*
Site 1	19	10	07	91	10.7	*	80	0.44	*	*
Site 1	20	10	07	91	10.6	6.7	81	0.40	64.9	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Intake	00	10	07	91	17.5	7.9	68	9.80	57.5	6.4
Intake	01	10	07	91	17.5	*	67	9.77	*	*
Intake	02	10	07	91	17.4	*	67	9.76	*	*
Intake	03	10	07	91	17.4	*	68	9.78	*	*
Intake	04	10	07	91	17.4	*	69	9.77	*	*
Intake	05	10	07	91	17.3	8.0	70	9.75	59.4	*
Intake	06	10	07	91	17.3	*	72	9.72	*	*
Intake	07	10	07	91	17.3	*	71	9.69	*	*
Intake	08	10	07	91	17.3	*	73	9.67	*	*
Intake	09	10	07	91	17.3	*	73	9.65	*	*
Intake	10	10	07	91	17.3	7.9	73	9.60	58.2	*
Intake	11	10	07	91	17.1	*	74	9.34	*	*
Intake	12	10	07	91	16.9	*	74	8.28	*	*
Intake	13	10	07	91	16.7	*	74	7.33	*	*
Site 2	00	10	07	91	17.4	7.9	68	9.66	58.8	7.0
Site 2	01	10	07	91	17.4	*	68	9.67	*	*
Site 2	02	10	07	91	17.4	*	69	9.67	*	*
Site 2	03	10	07	91	17.3	*	70	9.68	*	*
Site 2	04	10	07	91	17.3	*	72	9.65	*	*
Site 2	05	10	07	91	17.2	7.9	73	9.67	57.8	*
Site 2	06	10	07	91	17.2	*	73	9.66	*	*
Site 2	07	10	07	91	17.2	*	74	9.62	*	*
Site 2	08	10	07	91	17.1	*	75	9.63	*	*
Site 2	09	10	07	91	17.1	*	75	9.63	*	*
Site 2	10	10	07	91	17.1	7.9	75	9.65	57.7	*
Site 2	11	10	07	91	17.1	*	76	9.66	*	*
Site 2	12	10	07	91	17.1	*	75	9.63	*	*
Site 2	13	10	07	91	16.9	*	75	9.58	*	*
Site 2	14	10	07	91	16.1	*	76	5.84	*	*
Site 2	15	10	07	91	14.2	7.9	78	2.77	57.5	*
Site 2	16	10	07	91	12.6	*	79	0.39	*	*
Site 2	17	10	07	91	11.8	*	80	0.41	*	*
Site 2	18	10	07	91	11.3	*	80	0.42	*	*
Site 2	19	10	07	91	11.2	*	80	0.46	*	*
Site 2	20	10	07	91	11.4	7.9	80	0.46	58.5	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 3	00	10	07	91	17.4	7.8	69	9.64	57.9	6.9
Site 3	01	10	07	91	17.4	*	70	9.64	*	*
Site 3	02	10	07	91	17.4	*	70	9.66	*	*
Site 3	03	10	07	91	17.3	*	70	9.64	*	*
Site 3	04	10	07	91	17.3	*	71	9.65	*	*
Site 3	05	10	07	91	17.3	7.9	71	9.64	56.6	*
Site 3	06	10	07	91	17.3	*	72	9.62	*	*
Site 3	07	10	07	91	17.2	*	73	9.64	*	*
Site 3	08	10	07	91	17.2	*	73	9.65	*	*
Site 3	09	10	07	91	17.2	*	73	9.63	*	*
Site 3	10	10	07	91	17.2	7.9	73	9.64	58.3	*
Site 3	11	10	07	91	17.1	*	73	9.63	*	*
Site 3	12	10	07	91	17.1	*	73	9.65	*	*
Site 3	13	10	07	91	17.1	*	73	9.63	*	*
Site 3	14	10	07	91	17.1	*	73	9.63	*	*
Site 3	15	10	07	91	17.1	*	73	9.61	*	*
Site 3	16	10	07	91	17.0	*	73	9.58	*	*
Site 3	17	10	07	91	16.7	*	72	9.02	*	*
Site 3	18	10	07	91	15.0	*	72	8.32	*	*
Site 3	19	10	07	91	13.5	*	71	8.32	*	*
Site 3	20	10	07	91	11.8	7.1	73	8.57	57.4	*
Site 3	25	10	07	91	8.7	*	73	9.55	*	*
Site 3	30	10	07	91	7.1	*	72	9.94	*	*
Site 3	35	10	07	91	6.6	*	72	10.05	*	*
Site 3	40	10	07	91	6.5	7.2	71	10.11	58.0	*
Site 3	45	10	07	91	6.5	*	70	10.10	*	*
Site 3	50	10	07	91	6.5	*	70	10.11	*	*
Site 3	55	10	07	91	6.4	*	70	10.13	*	*
Site 3	60	10	07	91	6.4	7.1	70	9.97	57.8	*
Site 3	65	10	07	91	6.4	*	68	9.77	*	*
Site 3	70	10	07	91	6.4	*	68	9.62	*	*
Site 3	75	10	07	91	6.4	*	67	9.57	*	*
Site 3	80	10	07	91	6.5	7.2	70	7.47	58.6	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 4	00	10	07	91	17.4	7.7	68	9.66	57.0	6.5
Site 4	01	10	07	91	17.4	*	68	9.66	*	*
Site 4	02	10	07	91	17.4	*	68	9.69	*	*
Site 4	03	10	07	91	17.4	*	69	9.66	*	*
Site 4	04	10	07	91	17.4	*	70	9.64	*	*
Site 4	05	10	07	91	17.4	7.8	70	9.64	57.6	*
Site 4	06	10	07	91	17.4	*	71	9.64	*	*
Site 4	07	10	07	91	17.4	*	71	9.61	*	*
Site 4	08	10	07	91	17.4	*	72	9.60	*	*
Site 4	09	10	07	91	17.3	*	72	9.55	*	*
Site 4	10	10	07	91	17.3	7.8	72	9.41	57.2	*
Site 4	11	10	07	91	17.3	*	73	9.35	*	*
Site 4	12	10	07	91	17.2	*	73	9.33	*	*
Site 4	13	10	07	91	17.0	*	73	9.01	*	*
Site 4	14	10	07	91	16.8	*	74	8.93	*	*
Site 4	15	10	07	91	15.9	*	74	8.27	*	*
Site 4	16	10	07	91	15.3	*	74	8.28	*	*
Site 4	17	10	07	91	14.9	*	73	8.24	*	*
Site 4	18	10	07	91	14.0	*	74	8.37	*	*
Site 4	19	10	07	91	13.5	*	75	8.33	*	*
Site 4	20	10	07	91	12.6	7.2	75	8.43	58.0	*
Site 4	25	10	07	91	9.0	*	77	9.24	*	*
Site 4	30	10	07	91	7.3	*	76	9.82	*	*
Site 4	35	10	07	91	6.9	*	76	9.88	*	*
Site 4	40	10	07	91	6.7	7.2	75	10.11	57.3	*
Site 4	45	10	07	91	6.7	*	76	10.10	*	*
Site 4	50	10	07	91	6.6	*	74	10.09	*	*
Site 4	55	10	07	91	6.5	*	75	10.02	*	*
Site 4	60	10	07	91	6.5	7.2	73	9.99	57.0	*
Site 4	65	10	07	91	6.5	*	72	10.02	*	*
Site 4	70	10	07	91	6.4	*	72	9.98	*	*
Site 4	75	10	07	91	6.4	*	72	9.99	*	*
Site 4	80	10	07	91	6.4	7.2	71	9.95	57.1	*
Site 4	85	10	07	91	6.4	*	70	10.02	*	*
Site 4	90	10	07	91	6.3	7.2	71	9.62	59.2	*
Gate	00	10	07	91	17.3	7.7	65	9.52	57.9	-99æ

Laboratory data:

Site	Depth	Month	Day	Year	Alk	Turb	NH3	TKN	NO3	SRP	TP	ChlA
Site 1	00	10	07	91	18.9	0.7	28.9	198.7	105.3	BDL	11.6	8.93
Site 1	05	10	07	91	18.9	0.7	10.9	216.5	108.0	BDL	9.8	13.34
Site 1	10	10	07	91	19.2	0.7	13.7	212.5	109.5	BDL	8.7	3.42
Site 1	15	10	07	91	22.6	4.5	137.3	315.0	BDL	BDL	9.2	3.18
Site 1	20	10	07	91	21.8	6.0	96.8	260.8	58.5	BDL	11.9	1.95
Intake	00	10	07	91	17.5	0.5	9.1	180.8	218.9	BDL	5.2	4.86
Intake	05	10	07	91	17.6	0.5	12.0	189.1	229.5	BDL	5.5	6.67
Intake	10	10	07	91	18.2	0.5	11.3	169.4	219.4	BDL	6.5	6.14
Site 2	00	10	07	91	17.8	0.5	22.1	199.2	239.1	BDL	7.2	5.37
Site 2	05	10	07	91	18.2	0.5	13.8	229.7	238.8	BDL	5.1	6.88
Site 2	10	10	07	91	17.4	0.5	8.1	158.6	238.4	BDL	BDL	4.16
Site 2	15	10	07	91	17.9	0.5	7.7	159.1	238.1	BDL	BDL	5.08
Site 2	20	10	07	91	17.7	0.6	7.5	152.2	237.7	BDL	6.3	5.25
Site 3	00	10	07	91	17.8	0.5	7.8	147.5	248.9	BDL	BDL	3.56
Site 3	05	10	07	91	17.3	0.5	11.6	156.2	249.8	BDL	5.4	3.73
Site 3	10	10	07	91	17.2	0.5	7.8	214.5	250.1	BDL	8.0	4.96
Site 3	15	10	07	91	*	*	*	*	*	*	*	6.21
Site 3	20	10	07	91	16.4	0.4	6.0	BDL	416.5	BDL	7.5	3.20
Site 3	40	10	07	91	15.9	0.3	BDL	BDL	473.2	BDL	8.0	*
Site 3	60	10	07	91	16.5	0.4	6.3	BDL	468.6	BDL	9.3	*
Site 3	80	10	07	91	16.5	0.3	BDL	BDL	479.8	BDL	BDL	*
Site 4	00	10	07	91	17.2	0.5	6.2	139.8	252.6	BDL	BDL	4.74
Site 4	05	10	07	91	17.4	0.6	7.2	186.8	248.0	BDL	BDL	3.97
Site 4	10	10	07	91	17.3	0.6	7.6	178.4	247.7	BDL	BDL	3.66
Site 4	15	10	07	91	*	*	*	*	*	*	*	3.90
Site 4	20	10	07	91	16.6	0.4	6.3	131.7	405.7	BDL	BDL	2.12
Site 4	40	10	07	91	16.4	0.4	BDL	100.7	484.2	BDL	BDL	*
Site 4	60	10	07	91	16.5	0.4	5.1	107.2	479.0	BDL	BDL	*
Site 4	80	10	07	91	16.9	0.5	BDL	BDL	475.0	BDL	BDL	*
Site 4	90	10	07	91	17.0	0.5	BDL	BDL	472.2	BDL	BDL	*
Gate	00	10	07	91	17.7	0.6	10.0	150.8	221.2	BDL	BDL	*

Lake Whatcom Monitoring Program

Prepared January 25, 1994 by the Environmental Research and Education Center,
Western Washington University, for the City of Bellingham, Department of Public Works.
*: missing. BDL: below detection limit.

Hydrolab and quality control data:

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 1	00	11	04	91	11.2	7.5	71	8.97	59.5	5.6
Site 1	01	11	04	91	11.2	7.5	75	8.93	*	*
Site 1	02	11	04	91	11.2	7.4	77	8.90	*	*
Site 1	03	11	04	91	11.2	7.4	75	8.84	*	*
Site 1	04	11	04	91	11.2	7.4	73	8.80	*	*
Site 1	05	11	04	91	11.2	7.4	74	8.87	60.5	*
Site 1	06	11	04	91	11.2	7.4	75	8.87	*	*
Site 1	07	11	04	91	11.2	7.4	75	8.91	*	*
Site 1	08	11	04	91	11.2	7.4	74	8.91	*	*
Site 1	09	11	04	91	11.2	7.4	74	8.95	*	*
Site 1	10	11	04	91	11.2	7.4	75	8.94	60.4	*
Site 1	11	11	04	91	11.2	7.4	75	8.94	*	*
Site 1	12	11	04	91	11.2	7.4	75	8.99	*	*
Site 1	13	11	04	91	11.2	7.3	76	8.98	*	*
Site 1	14	11	04	91	11.2	7.3	75	8.98	*	*
Site 1	15	11	04	91	11.2	7.3	76	8.97	60.8	*
Site 1	16	11	04	91	11.2	7.2	77	8.93	*	*
Site 1	17	11	04	91	11.2	7.2	77	8.83	*	*
Site 1	18	11	04	91	11.2	7.1	78	8.42	*	*
Site 1	19	11	04	91	11.0	7.2	79	7.16	*	*
Site 1	20	11	04	91	10.9	7.1	81	6.34	65.0	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Intake	00	11	04	91	12.5	7.9	71	9.25	58.7	7.6
Intake	01	11	04	91	12.6	7.8	71	9.21	*	*
Intake	02	11	04	91	12.6	7.8	71	9.21	*	*
Intake	03	11	04	91	12.6	7.8	71	9.25	*	*
Intake	04	11	04	91	12.6	7.8	73	9.25	*	*
Intake	05	11	04	91	12.6	7.8	73	9.24	58.7	*
Intake	06	11	04	91	12.6	7.7	74	9.24	*	*
Intake	07	11	04	91	12.6	7.7	74	9.20	*	*
Intake	08	11	04	91	12.6	7.7	74	9.20	*	*
Intake	09	11	04	91	12.6	7.8	74	9.18	*	*
Intake	10	11	04	91	12.6	7.8	74	9.18	59.4	*
Intake	11	11	04	91	12.5	7.8	75	9.18	*	*
Intake	12	11	04	91	12.1	7.7	76	8.89	*	*
Site 2	00	11	04	91	12.7	7.9	70	9.27	59.0	7.9
Site 2	01	11	04	91	12.7	7.9	70	9.28	*	*
Site 2	02	11	04	91	12.7	7.8	70	9.25	*	*
Site 2	03	11	04	91	12.6	7.8	71	9.18	*	*
Site 2	04	11	04	91	12.5	7.7	71	9.19	*	*
Site 2	05	11	04	91	12.5	7.7	72	9.19	58.5	*
Site 2	06	11	04	91	12.5	7.7	73	9.19	*	*
Site 2	07	11	04	91	12.5	7.7	72	9.16	*	*
Site 2	08	11	04	91	12.5	7.7	74	9.16	*	*
Site 2	09	11	04	91	12.5	7.7	73	9.16	*	*
Site 2	10	11	04	91	12.5	7.7	74	9.16	58.0	*
Site 2	11	11	04	91	17.5	7.7	75	9.16	*	*
Site 2	12	11	04	91	17.5	7.7	75	9.13	*	*
Site 2	13	11	04	91	16.5	7.7	75	9.10	*	*
Site 2	14	11	04	91	16.4	7.7	76	8.56	*	*
Site 2	15	11	04	91	14.3	7.5	77	7.73	57.3	*
Site 2	16	11	04	91	12.1	7.4	78	6.98	*	*
Site 2	17	11	04	91	11.3	6.9	86	0.88	*	*
Site 2	18	11	04	91	10.9	6.9	90	0.88	*	*
Site 2	19	11	04	91	10.7	7.0	110	0.86	*	*
Site 2	20	11	04	91	10.6	7.0	111	0.86	69.8	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 3	00	11	04	91	12.8	7.9	69	9.38	56.6	6.0
Site 3	01	11	04	91	*	*	*	*	*	*
Site 3	02	11	04	91	*	*	*	*	*	*
Site 3	03	11	04	91	*	*	*	*	*	*
Site 3	04	11	04	91	12.8	7.9	70	9.32	*	*
Site 3	05	11	04	91	12.8	7.8	72	9.32	58.2	*
Site 3	06	11	04	91	12.8	7.8	72	9.32	*	*
Site 3	07	11	04	91	12.8	7.9	72	9.32	*	*
Site 3	08	11	04	91	12.8	7.8	72	9.32	*	*
Site 3	09	11	04	91	12.8	7.8	72	9.30	*	*
Site 3	10	11	04	91	12.8	7.8	73	9.30	58.8	*
Site 3	11	11	04	91	12.8	7.8	73	9.30	*	*
Site 3	12	11	04	91	12.8	7.8	73	9.35	*	*
Site 3	13	11	04	91	12.7	7.8	74	9.32	*	*
Site 3	14	11	04	91	12.7	7.8	75	9.33	*	*
Site 3	15	11	04	91	12.7	7.8	76	9.31	*	*
Site 3	16	11	04	91	12.7	7.8	75	9.32	*	*
Site 3	17	11	04	91	12.7	7.7	75	9.33	*	*
Site 3	18	11	04	91	12.6	7.7	75	9.35	*	*
Site 3	19	11	04	91	12.6	7.7	75	9.35	*	*
Site 3	20	11	04	91	12.6	7.6	76	9.30	59.2	*
Site 3	25	11	04	91	11.2	7.3	75	8.39	*	*
Site 3	30	11	04	91	7.9	7.3	74	9.02	*	*
Site 3	35	11	04	91	6.9	7.2	74	9.30	*	*
Site 3	40	11	04	91	6.6	7.2	76	9.44	59.5	*
Site 3	45	11	04	91	6.5	7.2	75	9.50	*	*
Site 3	50	11	04	91	6.4	7.2	77	9.38	*	*
Site 3	55	11	04	91	6.4	7.1	77	9.33	*	*
Site 3	60	11	04	91	6.4	7.2	77	9.25	59.6	*
Site 3	65	11	04	91	6.3	7.1	75	9.10	*	*
Site 3	70	11	04	91	6.3	7.1	74	8.80	*	*
Site 3	75	11	04	91	6.3	7.0	74	8.30	*	*
Site 3	80	11	04	91	6.4	7.0	73	8.81	62.8	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 4	00	11	04	91	12.8	8.0	72	9.34	59.8	5.9
Site 4	01	11	04	91	12.8	8.0	72	9.34	*	*
Site 4	02	11	04	91	12.8	8.0	74	9.35	*	*
Site 4	03	11	04	91	12.8	8.0	74	9.32	*	*
Site 4	04	11	04	91	12.7	8.0	74	9.35	*	*
Site 4	05	11	04	91	12.7	8.0	75	9.32	58.5	*
Site 4	06	11	04	91	12.7	8.0	74	9.33	*	*
Site 4	07	11	04	91	12.7	7.9	75	9.34	*	*
Site 4	08	11	04	91	12.7	8.0	75	9.35	*	*
Site 4	09	11	04	91	12.7	8.0	75	9.35	*	*
Site 4	10	11	04	91	12.7	7.9	75	9.36	59.4	*
Site 4	11	11	04	91	12.6	7.9	76	9.33	*	*
Site 4	12	11	04	91	12.6	7.9	76	9.36	*	*
Site 4	13	11	04	91	12.5	7.9	77	9.37	*	*
Site 4	14	11	04	91	12.5	7.8	76	9.38	*	*
Site 4	15	11	04	91	12.4	7.7	76	9.39	*	*
Site 4	16	11	04	91	11.9	7.5	78	9.25	*	*
Site 4	17	11	04	91	10.6	7.4	77	8.76	*	*
Site 4	18	11	04	91	9.6	7.3	75	8.40	*	*
Site 4	19	11	04	91	9.7	7.3	75	8.30	*	*
Site 4	20	11	04	91	8.0	7.4	77	8.80	59.5	*
Site 4	25	11	04	91	6.8	7.4	76	9.20	*	*
Site 4	30	11	04	91	6.6	7.4	76	9.38	*	*
Site 4	35	11	04	91	6.5	7.4	76	9.38	*	*
Site 4	40	11	04	91	6.4	7.4	76	9.42	59.0	*
Site 4	45	11	04	91	6.4	7.4	76	9.38	*	*
Site 4	50	11	04	91	6.4	7.4	75	9.44	*	*
Site 4	55	11	04	91	6.4	7.3	75	9.24	*	*
Site 4	60	11	04	91	6.4	7.3	74	9.29	60.5	*
Site 4	65	11	04	91	6.4	7.3	75	9.28	*	*
Site 4	70	11	04	91	6.4	7.3	75	9.43	*	*
Site 4	75	11	04	91	6.4	7.3	74	9.38	*	*
Site 4	80	11	04	91	6.4	7.3	74	9.22	58.8	*
Site 4	85	11	04	91	6.4	7.2	74	8.89	*	*
Site 4	90	11	04	91	6.5	7.1	75	7.66	58.7	*
Gate	00	11	04	91	12.7	7.9	65	9.89	*	*

Laboratory data:

Site	Depth	Month	Day	Year	Alk	Turb	NH3	TKN	NO3	SRP	TP	ChlA
Site 1	00	11	04	91	19.3	0.7	30.2	198.7	144.9	BDL	7.2	9.17
Site 1	05	11	04	91	19.3	0.7	38.6	202.6	134.6	BDL	8.8	8.76
Site 1	10	11	04	91	19.6	0.8	16.0	195.1	128.8	BDL	12.4	7.46
Site 1	15	11	04	91	19.1	0.7	14.7	180.5	123.0	BDL	8.9	9.07
Site 1	20	11	04	91	21.4	1.0	117.7	291.0	51.5	BDL	27.1	5.99
Intake	00	11	04	91	17.6	0.3	16.6	135.4	266.0	BDL	5.4	3.46
Intake	05	11	04	91	17.8	0.4	13.4	135.8	270.5	BDL	BDL	4.21
Intake	10	11	04	91	17.6	0.4	12.4	132.7	272.4	BDL	BDL	3.73
Site 2	00	11	04	91	18.2	0.3	15.4	133.1	280.1	BDL	BDL	2.53
Site 2	05	11	04	91	17.6	0.4	16.2	150.2	270.5	BDL	BDL	2.74
Site 2	10	11	04	91	17.8	0.4	13.6	130.2	258.9	BDL	BDL	2.63
Site 2	15	11	04	91	18.2	0.3	15.3	246.9	271.1	BDL	6.6	3.22
Site 2	20	11	04	91	23.6	1.3	250.0	402.4	*	BDL	8.6	0.58
Site 3	00	11	04	91	17.1	0.3	10.0	105.8	295.6	BDL	BDL	3.97
Site 3	05	11	04	91	16.9	0.3	11.1	131.7	301.4	BDL	BDL	3.76
Site 3	10	11	04	91	17.2	0.3	12.5	232.6	286.6	BDL	BDL	4.45
Site 3	15	11	04	91	*	*	*	*	*	*	*	3.63
Site 3	20	11	04	91	17.6	0.3	11.5	109.6	291.7	BDL	BDL	3.49
Site 3	40	11	04	91	16.4	0.3	10.7	131.1	502.3	BDL	BDL	*
Site 3	60	11	04	91	17.0	0.3	9.3	BDL	490.7	BDL	BDL	*
Site 3	80	11	04	91	19.2	1.3	32.2	149.5	404.4	BDL	BDL	*
Site 4	00	11	04	91	17.5	0.5	11.6	135.6	297.5	BDL	BDL	4.99
Site 4	05	11	04	91	17.4	0.5	10.9	121.0	296.2	BDL	BDL	4.58
Site 4	10	11	04	91	17.6	0.6	12.6	132.9	302.7	BDL	BDL	4.24
Site 4	15	11	04	91	*	*	*	*	*	*	*	4.14
Site 4	20	11	04	91	17.5	0.4	11.3	108.6	254.2	BDL	BDL	2.02
Site 4	40	11	04	91	16.8	0.4	10.1	BDL	489.4	BDL	BDL	*
Site 4	60	11	04	91	16.6	0.4	10.0	BDL	494.6	BDL	BDL	*
Site 4	80	11	04	91	17.2	0.5	11.1	BDL	468.2	BDL	BDL	*
Site 4	90	11	04	91	17.2	0.9	12.8	BDL	475.9	BDL	BDL	*
Gate	00	11	04	91	17.9	0.4	14.5	BDL	276.3	BDL	BDL	*

Lake Whatcom Monitoring Program

Prepared January 25, 1994 by the Environmental Research and Education Center,
Western Washington University, for the City of Bellingham, Department of Public Works.
*: missing. BDL: below detection limit.

Hydrolab and quality control data:

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 1	00	12	02	91	8.5	7.7	63	10.67	59.6	5.8
Site 1	01	12	02	91	8.5	7.7	63	10.66	*	*
Site 1	02	12	02	91	8.6	7.7	63	10.66	*	*
Site 1	03	12	02	91	8.5	7.7	64	10.66	*	*
Site 1	04	12	02	91	8.5	7.7	67	10.61	*	*
Site 1	05	12	02	91	8.5	7.7	67	10.61	58.1	*
Site 1	06	12	02	91	8.6	7.7	67	10.57	*	*
Site 1	07	12	02	91	8.5	7.7	69	10.54	*	*
Site 1	08	12	02	91	8.5	7.7	69	10.53	*	*
Site 1	09	12	02	91	8.5	7.7	70	10.53	*	*
Site 1	10	12	02	91	8.5	7.6	71	10.50	61.0	*
Site 1	11	12	02	91	8.5	7.6	72	10.46	*	*
Site 1	12	12	02	91	8.5	7.6	72	10.46	*	*
Site 1	13	12	02	91	8.5	7.6	72	10.46	*	*
Site 1	14	12	02	91	8.5	7.6	72	10.46	*	*
Site 1	15	12	02	91	8.5	7.6	72	10.46	59.4	*
Site 1	16	12	02	91	8.5	7.6	72	10.46	*	*
Site 1	17	12	02	91	8.5	7.6	72	10.46	*	*
Site 1	18	12	02	91	8.5	7.6	73	10.47	*	*
Site 1	19	12	02	91	8.5	7.6	73	10.47	*	*
Site 1	20	12	02	91	8.5	7.6	73	10.47	59.5	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Intake	00	12	02	91	9.2	7.7	61	10.53	58.6	6.3
Intake	01	12	02	91	9.2	7.6	63	10.47	*	*
Intake	02	12	02	91	9.2	7.8	62	10.47	*	*
Intake	03	12	02	91	9.2	7.6	63	10.43	*	*
Intake	04	12	02	91	9.2	7.6	65	10.43	*	*
Intake	05	12	02	91	9.2	7.6	65	10.39	56.3	*
Intake	06	12	02	91	9.2	7.6	66	10.39	*	*
Intake	07	12	02	91	9.2	7.6	67	10.35	*	*
Intake	08	12	02	91	9.2	7.6	67	10.35	*	*
Intake	09	12	02	91	9.2	7.6	68	10.31	*	*
Intake	10	12	02	91	9.2	7.6	69	10.31	56.6	*
Intake	11	12	02	91	9.2	7.6	69	10.27	*	*
Intake	12	12	02	91	9.2	7.6	69	10.33	*	*
Site 2	00	12	02	91	9.2	7.6	62	10.56	58.0	6.2
Site 2	01	12	02	91	9.2	7.5	62	10.50	*	*
Site 2	02	12	02	91	9.2	7.5	62	10.47	*	*
Site 2	03	12	02	91	9.2	7.5	64	10.47	*	*
Site 2	04	12	02	91	9.2	7.5	65	10.44	*	*
Site 2	05	12	02	91	9.2	7.5	65	10.44	55.6	*
Site 2	06	12	02	91	9.2	7.5	65	10.40	*	*
Site 2	07	12	02	91	9.2	7.5	68	10.40	*	*
Site 2	08	12	02	91	9.2	7.5	68	10.36	*	*
Site 2	09	12	02	91	9.2	7.6	68	10.37	*	*
Site 2	10	12	02	91	9.2	7.6	69	10.37	56.6	*
Site 2	11	12	02	91	9.2	7.6	69	10.37	*	*
Site 2	12	12	02	91	9.2	7.6	69	10.32	*	*
Site 2	13	12	02	91	9.2	7.6	69	10.32	*	*
Site 2	14	12	02	91	9.2	7.5	70	10.32	*	*
Site 2	15	12	02	91	9.2	7.6	70	10.32	57.0	*
Site 2	16	12	02	91	9.2	7.6	70	10.32	*	*
Site 2	17	12	02	91	9.2	7.6	71	10.32	*	*
Site 2	18	12	02	91	9.2	7.6	72	10.32	*	*
Site 2	19	12	02	91	9.2	7.6	71	10.29	*	*
Site 2	20	12	02	91	9.2	7.6	71	10.29	56.1	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 3	00	12	02	91	9.3	7.3	38	10.73	77.7	6.8
Site 3	01	12	02	91	9.3	7.3	62	10.59	*	*
Site 3	02	12	02	91	9.3	7.3	62	10.55	*	*
Site 3	03	12	02	91	9.3	7.3	62	10.55	*	*
Site 3	04	12	02	91	9.3	7.3	63	10.50	*	*
Site 3	05	12	02	91	9.3	7.3	64	10.50	57.0	*
Site 3	06	12	02	91	9.3	7.3	64	10.50	*	*
Site 3	07	12	02	91	9.3	7.3	64	10.50	*	*
Site 3	08	12	02	91	9.3	7.3	64	10.46	*	*
Site 3	09	12	02	91	9.3	7.3	64	10.46	*	*
Site 3	10	12	02	91	9.3	7.3	69	10.46	59.8	*
Site 3	11	12	02	91	9.3	7.3	69	10.42	*	*
Site 3	12	12	02	91	9.3	7.3	69	10.42	*	*
Site 3	13	12	02	91	9.3	7.3	70	10.37	*	*
Site 3	14	12	02	91	9.3	7.3	70	10.37	*	*
Site 3	15	12	02	91	9.3	7.3	70	10.37	*	*
Site 3	16	12	02	91	9.3	7.3	70	10.37	*	*
Site 3	17	12	02	91	9.3	7.3	69	10.37	*	*
Site 3	18	12	02	91	9.3	7.3	70	10.33	*	*
Site 3	19	12	02	91	9.3	7.3	69	10.38	*	*
Site 3	20	12	02	91	9.3	7.3	70	10.34	55.0	*
Site 3	25	12	02	91	9.3	7.3	69	10.34	*	*
Site 3	30	12	02	91	8.7	7.3	70	9.76	*	*
Site 3	35	12	02	91	7.8	7.2	70	9.50	*	*
Site 3	40	12	02	91	7.3	7.1	70	9.45	56.2	*
Site 3	45	12	02	91	6.9	7.1	70	9.35	*	*
Site 3	50	12	02	91	6.8	7.1	70	9.31	*	*
Site 3	55	12	02	91	6.7	7.0	70	9.23	*	*
Site 3	60	12	02	91	6.6	7.0	70	9.20	56.1	*
Site 3	65	12	02	91	6.6	7.1	68	9.08	*	*
Site 3	70	12	02	91	6.5	7.0	68	8.96	*	*
Site 3	75	12	02	91	6.5	7.0	68	8.91	*	*
Site 3	80	12	02	91	6.5	7.0	68	8.87	57.6	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 4	00	12	02	91	9.2	7.3	64	10.52	57.4	6.8
Site 4	01	12	02	91	9.2	7.3	62	10.43	*	*
Site 4	02	12	02	91	9.2	7.3	62	10.35	*	*
Site 4	03	12	02	91	9.2	7.3	64	10.31	*	*
Site 4	04	12	02	91	9.2	7.3	66	10.31	*	*
Site 4	05	12	02	91	9.2	7.3	66	10.26	53.4	*
Site 4	06	12	02	91	9.2	7.3	66	10.26	*	*
Site 4	07	12	02	91	9.2	7.3	68	10.26	*	*
Site 4	08	12	02	91	9.2	7.3	68	10.26	*	*
Site 4	09	12	02	91	9.2	7.3	68	10.25	*	*
Site 4	10	12	02	91	9.2	7.3	69	10.25	56.0	*
Site 4	11	12	02	91	9.2	7.3	69	10.21	*	*
Site 4	12	12	02	91	9.2	7.3	70	10.21	*	*
Site 4	13	12	02	91	9.2	7.3	70	10.21	*	*
Site 4	14	12	02	91	9.2	7.3	70	10.21	*	*
Site 4	15	12	02	91	9.2	7.4	70	10.17	*	*
Site 4	16	12	02	91	9.2	7.3	70	10.17	*	*
Site 4	17	12	02	91	9.2	7.4	70	10.17	*	*
Site 4	18	12	02	91	9.2	7.4	70	10.17	*	*
Site 4	19	12	02	91	9.2	7.4	70	10.17	*	*
Site 4	20	12	02	91	9.2	7.4	71	10.17	55.5	*
Site 4	25	12	02	91	9.2	7.4	71	10.13	*	*
Site 4	30	12	02	91	9.2	7.4	72	10.13	*	*
Site 4	35	12	02	91	8.3	7.3	72	9.42	*	*
Site 4	40	12	02	91	7.4	7.4	72	9.31	56.7	*
Site 4	45	12	02	91	7.0	7.2	72	9.31	*	*
Site 4	50	12	02	91	6.8	7.2	71	9.22	*	*
Site 4	55	12	02	91	6.7	7.1	71	9.23	*	*
Site 4	60	12	02	91	6.7	7.1	71	9.23	55.9	*
Site 4	65	12	02	91	6.6	7.1	70	9.21	*	*
Site 4	70	12	02	91	6.6	7.1	70	9.16	*	*
Site 4	75	12	02	91	6.5	7.1	70	9.23	*	*
Site 4	80	12	02	91	6.5	7.1	69	9.19	55.6	*
Site 4	85	12	02	91	6.5	7.1	70	9.07	*	*
Site 4	90	12	02	91	6.5	7.1	69	9.18	56.8	*
Gate	00	12	02	91	9.7	6.5	61	10.55	58.1	*

Laboratory data:

Site	Depth	Month	Day	Year	Alk	Turb	NH3	TKN	NO3	SRP	TP	ChlA
Site 1	00	12	02	91	18.4	0.9	16.4	177.1	204.6	5.3	6.0	8.72
Site 1	05	12	02	91	18.4	0.7	14.5	205.0	205.0	BDL	6.7	6.84
Site 1	10	12	02	91	17.9	0.9	14.5	276.5	206.0	BDL	6.3	8.55
Site 1	15	12	02	91	18.4	0.8	14.4	246.6	206.5	BDL	6.8	7.01
Site 1	20	12	02	91	18.0	1.0	15.0	175.5	210.5	BDL	9.7	3.18
Intake	00	12	02	91	18.5	0.8	17.4	182.3	298.2	BDL	5.2	0.44
Intake	05	12	02	91	17.2	1.4	16.6	172.7	301.6	BDL	BDL	4.04
Intake	10	12	02	91	17.3	1.0	10.3	154.6	294.2	BDL	BDL	3.32
Site 2	00	12	02	91	17.2	1.0	10.0	151.2	296.4	BDL	BDL	4.52
Site 2	05	12	02	91	17.2	1.4	14.9	137.0	296.3	BDL	BDL	3.47
Site 2	10	12	02	91	17.2	1.2	9.0	150.6	291.2	BDL	BDL	3.73
Site 2	15	12	02	91	17.4	1.4	10.5	136.4	301.4	BDL	5.2	3.92
Site 2	20	12	02	91	17.0	0.9	10.6	133.0	312.7	BDL	8.6	3.30
Site 3	00	12	02	91	*	1.1	7.7	142.2	348.2	BDL	6.2	1.95
Site 3	05	12	02	91	16.6	0.7	6.5	130.3	342.0	BDL	6.5	1.95
Site 3	10	12	02	91	16.9	0.9	5.9	112.1	363.0	BDL	BDL	3.93
Site 3	15	12	02	91	*	*	*	*	*	*	*	2.45
Site 3	20	12	02	91	16.7	0.8	BDL	101.8	367.7	BDL	BDL	1.97
Site 3	40	12	02	91	16.8	1.0	BDL	BDL	458.4	BDL	5.1	*
Site 3	60	12	02	91	16.8	1.0	BDL	111.5	475.8	BDL	BDL	*
Site 3	80	12	02	91	16.6	0.6	BDL	BDL	476.8	BDL	BDL	*
Site 4	00	12	02	91	16.7	0.6	5.9	134.2	361.6	BDL	BDL	1.61
Site 4	05	12	02	91	17.0	0.8	5.6	115.3	355.9	BDL	BDL	2.22
Site 4	10	12	02	91	16.9	0.6	BDL	127.5	378.8	BDL	5.9	3.78
Site 4	15	12	02	91	*	*	*	*	*	*	*	2.94
Site 4	20	12	02	91	16.7	1.2	BDL	100.1	468.8	BDL	BDL	2.02
Site 4	40	12	02	91	16.6	0.9	BDL	126.3	463.8	BDL	BDL	*
Site 4	60	12	02	91	16.5	0.7	BDL	126.1	476.4	BDL	12.3	*
Site 4	80	12	02	91	16.6	0.9	BDL	127.5	476.2	BDL	7.0	*
Site 4	90	12	02	91	16.2	1.1	BDL	159.9	475.4	BDL	6.8	*
Gate	00	12	02	91	17.4	0.8	7.2	127.7	317.7	BDL	5.3	*

Lake Whatcom Monitoring Program

Prepared January 25, 1994 by the Environmental Research and Education Center,
Western Washington University, for the City of Bellingham, Department of Public Works.

*: missing. BDL: below detection limit.

Hydrolab and quality control data:

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 1	00	02	03	92	7.4	7.5	63	12.35	60.7	3.8
Site 1	01	02	03	92	7.4	7.5	61	12.36	*	*
Site 1	02	02	03	92	7.4	7.5	62	12.27	*	*
Site 1	03	02	03	92	7.4	7.5	63	12.24	*	*
Site 1	04	02	03	92	7.4	7.5	63	12.24	*	*
Site 1	05	02	03	92	7.4	7.5	65	12.19	55.4	*
Site 1	06	02	03	92	7.4	7.5	65	12.19	*	*
Site 1	07	02	03	92	7.4	7.5	66	12.15	*	*
Site 1	08	02	03	92	7.4	7.5	66	12.15	*	*
Site 1	09	02	03	92	7.4	7.5	66	12.15	*	*
Site 1	10	02	03	92	7.4	7.5	67	12.15	58.8	*
Site 1	11	02	03	92	7.4	7.5	67	12.10	*	*
Site 1	12	02	03	92	7.3	7.6	67	12.11	*	*
Site 1	13	02	03	92	7.3	7.5	68	12.11	*	*
Site 1	14	02	03	92	7.3	7.6	68	12.11	*	*
Site 1	15	02	03	92	7.3	7.6	69	12.11	59.8	*
Site 1	16	02	03	92	7.3	7.6	68	12.11	*	*
Site 1	17	02	03	92	7.3	7.6	69	12.11	*	*
Site 1	18	02	03	92	7.3	7.6	68	12.06	*	*
Site 1	19	02	03	92	7.3	7.6	69	12.06	*	*
Site 1	20	02	03	92	7.3	7.6	68	12.06	60.0	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Intake	00	02	03	92	7.9	8.0	61	12.10	58.5	4.8
Intake	01	02	03	92	7.7	7.9	61	12.06	*	*
Intake	02	02	03	92	7.7	7.9	62	12.07	*	*
Intake	03	02	03	92	7.5	7.9	63	12.06	*	*
Intake	04	02	03	92	7.5	7.9	63	12.01	*	*
Intake	05	02	03	92	7.5	7.9	64	11.99	58.6	*
Intake	06	02	03	92	7.4	7.9	65	11.96	*	*
Intake	07	02	03	92	7.4	7.9	65	11.92	*	*
Intake	08	02	03	92	7.4	7.9	66	11.92	*	*
Intake	09	02	03	92	7.4	7.9	66	11.93	*	*
Intake	10	02	03	92	7.4	7.9	67	11.89	58.2	*
Intake	11	02	03	92	7.4	7.9	68	11.89	*	*
Intake	12	02	03	92	7.4	7.9	69	11.83	*	*
Intake	13	02	03	92	7.4	7.9	69	11.85	*	*
Site 2	00	02	03	92	7.8	7.8	61	12.18	56.9	5.4
Site 2	01	02	03	92	7.6	7.8	61	12.16	*	*
Site 2	02	02	03	92	7.5	7.8	62	12.14	*	*
Site 2	03	02	03	92	7.5	7.8	63	12.09	*	*
Site 2	04	02	03	92	7.5	7.8	63	12.05	*	*
Site 2	05	02	03	92	7.5	7.8	64	12.01	57.9	*
Site 2	06	02	03	92	7.5	7.8	65	11.97	*	*
Site 2	07	02	03	92	7.5	7.8	65	11.99	*	*
Site 2	08	02	03	92	7.4	7.8	66	11.94	*	*
Site 2	09	02	03	92	7.4	7.8	66	11.94	*	*
Site 2	10	02	03	92	7.4	7.8	66	11.94	58.3	*
Site 2	11	02	03	92	7.4	7.8	68	11.90	*	*
Site 2	12	02	03	92	7.4	7.8	68	11.90	*	*
Site 2	13	02	03	92	7.4	7.8	68	11.91	*	*
Site 2	14	02	03	92	7.4	7.8	68	11.91	*	*
Site 2	15	02	03	92	7.4	7.8	69	11.91	58.5	*
Site 2	16	02	03	92	7.4	7.8	68	11.92	*	*
Site 2	17	02	03	92	7.4	7.8	68	11.92	*	*
Site 2	18	02	03	92	7.4	7.8	69	11.86	*	*
Site 2	19	02	03	92	7.4	7.8	69	11.81	*	*
Site 2	20	02	03	92	7.4	7.8	69	11.81	58.4	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 3	00	02	03	92	7.3	7.6	62	11.92	57.8	5.4
Site 3	01	02	03	92	7.2	7.5	60	11.87	*	*
Site 3	02	02	03	92	7.2	7.5	61	11.82	*	*
Site 3	03	02	03	92	7.2	7.5	62	11.78	*	*
Site 3	04	02	03	92	7.2	7.5	63	11.73	*	*
Site 3	05	02	03	92	7.2	7.5	63	11.73	58.4	*
Site 3	06	02	03	92	7.2	7.5	65	11.69	*	*
Site 3	07	02	03	92	7.2	7.5	65	11.68	*	*
Site 3	08	02	03	92	7.2	7.5	65	11.70	*	*
Site 3	09	02	03	92	7.2	7.5	67	11.65	*	*
Site 3	10	02	03	92	7.2	7.5	67	11.64	58.6	*
Site 3	11	02	03	92	7.2	7.5	67	11.64	*	*
Site 3	12	02	03	92	7.2	7.5	67	11.65	*	*
Site 3	13	02	03	92	7.2	7.5	68	11.65	*	*
Site 3	14	02	03	92	7.2	7.5	68	11.65	*	*
Site 3	15	02	03	92	7.2	7.5	68	11.60	*	*
Site 3	16	02	03	92	7.2	7.5	68	11.60	*	*
Site 3	17	02	03	92	7.2	7.5	68	11.60	*	*
Site 3	18	02	03	92	7.2	7.5	68	11.60	*	*
Site 3	19	02	03	92	7.2	7.5	68	11.60	*	*
Site 3	20	02	03	92	7.2	7.5	69	11.61	58.7	*
Site 3	25	02	03	92	7.2	7.5	68	11.56	*	*
Site 3	30	02	03	92	7.2	7.5	68	11.56	*	*
Site 3	35	02	03	92	7.2	7.6	68	11.52	*	*
Site 3	40	02	03	92	7.1	7.6	66	11.47	58.6	*
Site 3	45	02	03	92	7.1	7.5	66	11.43	*	*
Site 3	50	02	03	92	7.1	7.5	66	11.40	*	*
Site 3	55	02	03	92	7.1	7.6	65	11.34	*	*
Site 3	60	02	03	92	7.1	7.5	66	11.35	58.9	*
Site 3	65	02	03	92	7.1	7.5	65	11.32	*	*
Site 3	70	02	03	92	7.1	7.5	64	11.23	*	*
Site 3	75	02	03	92	7.1	7.5	64	11.18	*	*
Site 3	80	02	03	92	7.1	7.5	64	11.14	58.7	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 4	00	02	03	92	7.2	7.6	62	11.65	58.9	5.3
Site 4	01	02	03	92	7.2	7.6	60	11.52	*	*
Site 4	02	02	03	92	7.1	7.5	61	11.45	*	*
Site 4	03	02	03	92	7.1	7.5	62	11.45	*	*
Site 4	04	02	03	92	7.1	7.5	63	11.40	*	*
Site 4	05	02	03	92	7.1	7.5	64	11.37	58.7	*
Site 4	06	02	03	92	7.1	7.5	64	11.37	*	*
Site 4	07	02	03	92	7.1	7.5	64	11	33	*
Site 4	08	02	03	92	7.1	7.5	64	11.33	*	*
Site 4	09	02	03	92	7.1	7.5	66	11.34	*	*
Site 4	10	02	03	92	7.1	7.5	66	11.29	58.9	*
Site 4	11	02	03	92	7.1	7.5	67	11.29	*	*
Site 4	12	02	03	92	7.1	7.5	67	11.29	*	*
Site 4	13	02	03	92	7.1	7.5	67	11.29	*	*
Site 4	14	02	03	92	7.1	7.5	67	11.30	*	*
Site 4	15	02	03	92	7.1	7.5	68	11.29	*	*
Site 4	16	02	03	92	7.1	7.5	68	11.25	*	*
Site 4	17	02	03	92	7.1	7.5	67	11.25	*	*
Site 4	18	02	03	92	7.1	7.5	69	11.25	*	*
Site 4	19	02	03	92	7.1	7.5	67	11.25	*	*
Site 4	20	02	03	92	7.1	7.5	69	11.25	58.9	*
Site 4	25	02	03	92	7.1	7.5	67	11.25	*	*
Site 4	30	02	03	92	7.1	7.5	68	11.20	*	*
Site 4	35	02	03	92	7.1	7.6	68	11.20	*	*
Site 4	40	02	03	92	7.1	7.6	69	11.20	57.9	*
Site 4	45	02	03	92	7.1	7.6	68	11.15	*	*
Site 4	50	02	03	92	7.0	7.6	67	11.15	*	*
Site 4	55	02	03	92	7.0	7.6	67	11.11	*	*
Site 4	60	02	03	92	7.0	7.5	67	11.06	58.4	*
Site 4	65	02	03	92	7.0	7.6	67	11.02	*	*
Site 4	70	02	03	92	7.0	7.6	65	10.97	*	*
Site 4	75	02	03	92	7.0	7.6	65	10.98	*	*
Site 4	80	02	03	92	7.0	7.6	66	10.93	59.1	*
Site 4	85	02	03	92	7.0	7.6	65	10.88	*	*
Site 4	90	02	03	92	7.0	7.6	64	10.66	58.8	*
Gate	00	02	03	92	7.9	6.6	61	12.17	*	*

Laboratory data:

Site	Depth	Month	Day	Year	Alk	Turb	NH3	TKN	NO3	SRP	TP	ChlA
Site 1	00	02	03	92	17.8	1.3	5.5	124.5	399.7	BDL	11.9	2.81
Site 1	05	02	03	92	17.5	1.4	5.8	118.3	404.4	BDL	6.8	4.21
Site 1	10	02	03	92	17.4	1.6	7.0	143.8	408.6	BDL	8.0	4.93
Site 1	15	02	03	92	17.7	1.4	6.1	112.6	403.8	BDL	7.9	4.04
Site 1	20	02	03	92	17.3	1.3	11.8	135.8	410.3	BDL	12.3	3.63
Intake	00	02	03	92	16.7	0.7	8.9	BDL	438.8	BDL	6.6	1.86
Intake	05	02	03	92	16.8	0.8	11.3	BDL	440.0	BDL	6.4	2.72
Intake	10	02	03	92	17.0	0.7	9.0	BDL	442.4	BDL	5.4	2.33
Site 2	00	02	03	92	17.2	0.7	9.0	119.1	448.9	BDL	6.2	2.53
Site 2	05	02	03	92	16.7	0.8	7.2	BDL	451.8	BDL	5.2	2.96
Site 2	10	02	03	92	16.9	1.1	BDL	BDL	448.9	BDL	5.5	2.39
Site 2	15	02	03	92	17.1	0.9	BDL	BDL	448.3	BDL	5.2	2.46
Site 2	20	02	03	92	16.9	0.7	BDL	BDL	445.9	BDL	6.6	2.60
Site 3	00	02	03	92	16.7	0.8	BDL	BDL	474.4	BDL	10.3	1.37
Site 3	05	02	03	92	16.9	0.7	BDL	BDL	479.7	BDL	5.3	1.52
Site 3	10	02	03	92	16.9	1.0	BDL	BDL	485.6	BDL	6.6	1.52
Site 3	15	02	03	92	*	*	*	*	*	*	*	0.92
Site 3	20	02	03	92	17.1	0.8	BDL	BDL	479.7	BDL	BDL	1.30
Site 3	40	02	03	92	16.7	0.9	8.3	BDL	479.7	BDL	BDL	*
Site 3	60	02	03	92	17.4	1.1	BDL	BDL	468.4	BDL	BDL	*
Site 3	80	02	03	92	17.2	1.5	6.3	BDL	463.7	BDL	5.9	*
Site 4	00	02	03	92	17.2	0.6	11.3	BDL	479.1	BDL	BDL	1.15
Site 4	05	02	03	92	17.1	0.8	BDL	155.1	456.6	BDL	6.1	0.96
Site 4	10	02	03	92	17.1	0.8	BDL	BDL	466.1	BDL	BDL	0.91
Site 4	15	02	03	92	*	*	*	*	*	*	*	0.84
Site 4	20	02	03	92	16.7	0.8	BDL	163.8	472.0	BDL	8.1	0.97
Site 4	40	02	03	92	16.7	0.8	BDL	BDL	469.0	BDL	6.8	*
Site 4	60	02	03	92	16.9	0.9	5.9	BDL	479.1	BDL	BDL	*
Site 4	80	02	03	92	17.1	0.9	BDL	BDL	480.9	BDL	BDL	*
Site 4	90	02	03	92	*	0.7	7.2	BDL	472.6	BDL	5.5	*
Gate	00	02	03	92	16.8	*	BDL	BDL	439.4	BDL	22.3	*

Lake Whatcom Monitoring Program

Prepared January 25, 1994 by the Environmental Research and Education Center,
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*: missing. BDL: below detection limit.

Hydrolab and quality control data:

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 1	00	04	07	92	10.8	7.2	60	11.20	61.9	5.7
Site 1	01	04	07	92	10.8	7.3	62	11.03	*	*
Site 1	02	04	07	92	10.8	7.4	63	11.05	*	*
Site 1	03	04	07	92	10.8	7.4	65	11.08	*	*
Site 1	04	04	07	92	10.8	7.5	67	11.08	*	*
Site 1	05	04	07	92	10.8	7.5	67	11.09	63.0	*
Site 1	06	04	07	92	10.7	7.5	68	11.13	*	*
Site 1	07	04	07	92	10.7	7.6	70	11.12	*	*
Site 1	08	04	07	92	10.3	7.5	70	10.96	*	*
Site 1	09	04	07	92	9.6	7.5	72	10.70	*	*
Site 1	10	04	07	92	9.3	7.4	72	10.47	63.5	*
Site 1	11	04	07	92	8.9	7.3	73	10.30	*	*
Site 1	12	04	07	92	8.7	7.3	73	10.06	*	*
Site 1	13	04	07	92	8.4	7.2	74	9.89	*	*
Site 1	14	04	07	92	8.3	7.2	74	9.72	*	*
Site 1	15	04	07	92	8.3	7.2	75	9.68	62.9	*
Site 1	16	04	07	92	8.2	7.2	75	9.69	*	*
Site 1	17	04	07	92	8.2	7.1	75	9.70	*	*
Site 1	18	04	07	92	8.2	7.1	75	9.66	*	*
Site 1	19	04	07	92	8.1	7.1	74	9.57	*	*
Site 1	20	04	07	92	8.1	7.1	75	9.52	62.6	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Intake	00	04	07	92	10.9	7.8	65	11.41	61.8	5.0
Intake	01	04	07	92	10.9	7.8	66	11.39	*	*
Intake	02	04	07	92	10.8	7.8	68	11.45	*	*
Intake	03	04	07	92	10.8	7.8	69	11.48	*	*
Intake	04	04	07	92	10.7	7.8	70	11.50	*	*
Intake	05	04	07	92	10.7	7.9	71	11.52	62.7	*
Intake	06	04	07	92	10.7	7.9	73	11.53	*	*
Intake	07	04	07	92	10.6	7.9	73	11.54	*	*
Intake	08	04	07	92	10.5	7.8	74	11.47	*	*
Intake	09	04	07	92	10.2	7.8	75	11.46	*	*
Intake	10	04	07	92	9.9	7.8	75	11.47	62.0	*
Intake	11	04	07	92	9.3	7.8	76	11.55	*	*
Intake	12	04	07	92	8.6	7.7	77	10.91	*	*
Site 2	00	04	07	92	10.8	7.8	65	11.47	62.0	5.3
Site 2	01	04	07	92	10.8	7.8	65	11.49	*	*
Site 2	02	04	07	92	10.8	7.8	66	11.51	*	*
Site 2	03	04	07	92	10.7	7.8	69	11.51	*	*
Site 2	04	04	07	92	10.7	7.9	70	11.53	*	*
Site 2	05	04	07	92	10.6	7.9	70	11.57	62.4	*
Site 2	06	04	07	92	10.6	7.9	71	11.56	*	*
Site 2	07	04	07	92	10.6	7.9	72	11.56	*	*
Site 2	08	04	07	92	10.5	7.9	73	11.49	*	*
Site 2	09	04	07	92	10.5	7.9	73	11.50	*	*
Site 2	10	04	07	92	10.5	7.9	75	11.64	62.8	*
Site 2	11	04	07	92	10.5	7.9	75	11.56	*	*
Site 2	12	04	07	92	10.2	7.9	75	11.51	*	*
Site 2	13	04	07	92	9.3	7.7	75	11.56	*	*
Site 2	14	04	07	92	8.9	7.7	76	11.34	*	*
Site 2	15	04	07	92	8.7	7.6	76	11.15	61.8	*
Site 2	16	04	07	92	8.5	7.5	77	11.11	*	*
Site 2	17	04	07	92	8.3	7.5	76	10.95	*	*
Site 2	18	04	07	92	8.2	7.4	77	10.74	*	*
Site 2	19	04	07	92	8.1	7.3	77	10.68	*	*
Site 2	20	04	07	92	8.1	7.3	77	10.58	62.1	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 3	00	04	07	92	10.4	7.5	64	11.51	62.1	5.5
Site 3	01	04	07	92	10.4	7.7	65	11.46	*	*
Site 3	02	04	07	92	10.4	7.7	67	11.52	*	*
Site 3	03	04	07	92	10.4	7.7	69	11.53	*	*
Site 3	04	04	07	92	10.3	7.8	69	11.54	*	*
Site 3	05	04	07	92	10.3	7.8	70	11.55	61.7	*
Site 3	06	04	07	92	10.3	7.8	71	11.57	*	*
Site 3	07	04	07	92	10.1	7.8	72	11.56	*	*
Site 3	08	04	07	92	10.1	7.8	72	11.58	*	*
Site 3	09	04	07	92	10.1	7.8	74	11.55	*	*
Site 3	10	04	07	92	10.0	7.8	73	11.52	61.8	*
Site 3	11	04	07	92	9.4	7.7	75	11.44	*	*
Site 3	12	04	07	92	9.2	7.6	74	11.44	*	*
Site 3	13	04	07	92	8.7	7.6	75	11.34	*	*
Site 3	14	04	07	92	8.5	7.5	74	11.35	*	*
Site 3	15	04	07	92	8.2	7.5	75	11.28	*	*
Site 3	16	04	07	92	8.1	7.5	76	11.30	*	*
Site 3	17	04	07	92	8.0	7.4	76	11.26	*	*
Site 3	18	04	07	92	7.9	7.4	76	11.25	*	*
Site 3	19	04	07	92	7.8	7.4	76	11.23	*	*
Site 3	20	04	07	92	7.6	7.4	76	11.21	61.8	*
Site 3	25	04	07	92	7.3	7.4	76	11.12	*	*
Site 3	30	04	07	92	7.3	7.4	76	11.12	*	*
Site 3	35	04	07	92	7.2	7.3	76	10.08	*	*
Site 3	40	04	07	92	7.2	7.3	76	11.04	61.8	*
Site 3	45	04	07	92	7.1	7.3	76	11.01	*	*
Site 3	50	04	07	92	7.1	7.3	75	10.92	*	*
Site 3	55	04	07	92	7.1	7.3	75	10.88	*	*
Site 3	60	04	07	92	7.1	7.3	75	10.75	61.9	*
Site 3	65	04	07	92	7.0	7.3	74	10.49	*	*
Site 3	70	04	07	92	7.0	7.2	73	10.40	*	*
Site 3	75	04	07	92	7.0	7.2	73	10.29	*	*
Site 3	80	04	07	92	7.0	7.2	72	10.24	62.5	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 4	00	04	07	92	9.8	7.6	63	11.53	62.1	5.6
Site 4	01	04	07	92	9.8	7.7	63	11.53	*	*
Site 4	02	04	07	92	9.7	7.7	65	11.52	*	*
Site 4	03	04	07	92	9.7	7.7	67	11.54	*	*
Site 4	04	04	07	92	9.5	7.7	67	11.59	*	*
Site 4	05	04	07	92	9.5	7.7	69	11.55	61.7	*
Site 4	06	04	07	92	9.5	7.7	71	11.55	*	*
Site 4	07	04	07	92	9.5	7.7	71	11.57	*	*
Site 4	08	04	07	92	9.4	7.7	72	11.59	*	*
Site 4	09	04	07	92	9.4	7.7	72	11.58	*	*
Site 4	10	04	07	92	9.4	7.7	73	11.56	61.6	*
Site 4	11	04	07	92	9.3	7.7	74	11.56	*	*
Site 4	12	04	07	92	9.3	7.7	74	11.53	*	*
Site 4	13	04	07	92	9.3	7.7	74	11.53	*	*
Site 4	14	04	07	92	9.1	7.6	75	11.42	*	*
Site 4	15	04	07	92	9.0	7.6	75	11.43	*	*
Site 4	16	04	07	92	8.9	7.6	75	11.37	*	*
Site 4	17	04	07	92	8.8	7.6	75	11.39	*	*
Site 4	18	04	07	92	8.7	7.5	75	11.36	*	*
Site 4	19	04	07	92	8.4	7.5	76	11.30	*	*
Site 4	20	04	07	92	8.3	7.5	76	11.28	61.8	*
Site 4	25	04	07	92	7.8	7.4	76	11.21	*	*
Site 4	30	04	07	92	7.2	7.3	72	11.12	*	*
Site 4	35	04	07	92	7.1	7.3	72	11.13	*	*
Site 4	40	04	07	92	7.1	7.3	71	11.10	59.4	*
Site 4	45	04	07	92	7.0	7.3	71	11.07	*	*
Site 4	50	04	07	92	7.0	7.3	71	11.02	*	*
Site 4	55	04	07	92	7.0	7.3	71	11.03	*	*
Site 4	60	04	07	92	7.0	7.3	70	10.98	61.8	*
Site 4	65	04	07	92	7.0	7.3	69	10.99	*	*
Site 4	70	04	07	92	7.0	7.3	69	10.94	*	*
Site 4	75	04	07	92	7.0	7.3	69	10.89	*	*
Site 4	80	04	07	92	7.0	7.2	69	10.79	62.1	*
Site 4	85	04	07	92	7.0	7.2	69	10.79	*	*
Site 4	90	04	07	92	7.0	7.2	71	10.48	63.3	*
Gate	00	04	07	92	10.5	7.0	59	11.02	62.0	*

Laboratory data:

Site	Depth	Month	Day	Year	Alk	Turb	NH3	TKN	NO3	SRP	TP	ChlA
Site 1	00	04	07	92	18.1	1.0	10.9	162.3	320.8	6.9	BDL	2.62
Site 1	05	04	07	92	17.8	1.0	12.8	123.0	319.2	5.2	BDL	2.58
Site 1	10	04	07	92	18.0	0.6	12.4	120.5	325.5	BDL	BDL	3.71
Site 1	15	04	07	92	17.1	1.0	6.1	143.3	341.9	BDL	5.2	2.79
Site 1	20	04	07	92	17.2	1.0	12.0	129.5	343.9	BDL	5.6	3.16
Intake	00	04	07	92	17.0	1.0	11.9	148.8	361.5	BDL	BDL	3.16
Intake	05	04	07	92	16.5	0.8	21.9	115.2	364.1	BDL	BDL	3.11
Intake	10	04	07	92	16.9	0.9	9.5	111.9	367.3	BDL	6.4	3.8
Site 2	00	04	07	92	17.5	1.1	BDL	BDL	363.3	BDL	BDL	3.15
Site 2	05	04	07	92	17.2	1.1	BDL	206.6	367.1	BDL	BDL	3.15
Site 2	10	04	07	92	17.2	0.9	BDL	110.2	363.7	BDL	BDL	3.2
Site 2	15	04	07	92	17.0	0.8	BDL	125.2	382.0	BDL	BDL	2.79
Site 2	20	04	07	92	16.6	1.5	12.2	124.8	399.6	BDL	BDL	1.88
Site 3	00	04	07	92	17.0	1.5	6.4	147.1	375.8	BDL	5.5	3.16
Site 3	05	04	07	92	16.6	0.5	BDL	BDL	194.5	BDL	BDL	3.27
Site 3	10	04	07	92	16.6	0.4	BDL	119.0	375.0	BDL	BDL	3.51
Site 3	15	04	07	92	*	*	BDL	*	*	*	*	*
Site 3	20	04	07	92	17.0	0.3	11.7	106.1	405.8	BDL	BDL	0.92
Site 3	40	04	07	92	16.6	0.3	BDL	BDL	443.3	BDL	BDL	*
Site 3	60	04	07	92	16.4	0.6	BDL	107.4	466.9	BDL	BDL	*
Site 3	70	04	07	92	*	*	*	*	*	*	*	*
Site 3	80	04	07	92	16.6	2.5	19.4	154.8	462.3	BDL	8.0	*
Site 4	00	04	07	92	16.6	0.4	19.5	144.5	401.2	BDL	BDL	2.72
Site 4	05	04	07	92	16.8	0.9	9.9	154.8	389.4	BDL	BDL	2.99
Site 4	10	04	07	92	17.0	0.5	5.1	133.4	394.4	BDL	BDL	2.96
Site 4	15	04	07	92	*	*	*	*	*	*	*	2.43
Site 4	20	04	07	92	16.4	0.4	BDL	BDL	431.3	BDL	BDL	2.94
Site 4	40	04	07	92	16.7	0.8	5.2	BDL	455.5	BDL	BDL	*
Site 4	60	04	07	92	16.7	0.3	BDL	103.3	444.3	BDL	BDL	*
Site 4	80	04	07	92	16.0	0.3	BDL	119.0	450.5	BDL	BDL	*
Site 4	90	04	07	92	16.7	0.6	11.4	136.3	439.9	BDL	BDL	*

Lake Whatcom Monitoring Program

Prepared January 25, 1994 by the Environmental Research and Education Center,
Western Washington University, for the City of Bellingham, Department of Public Works.
*: missing, BDL: below detection limit.

Hydrolab and quality control data:

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 1	00	06	02	92	19.5	8.3	64	10.02	60.1	5.2
Site 1	01	06	02	92	19.5	8.3	64	9.86	*	*
Site 1	02	06	02	92	19.1	8.3	65	9.86	*	*
Site 1	03	06	02	92	18.9	8.4	66	9.95	*	*
Site 1	04	06	02	92	17.9	8.5	67	10.35	*	*
Site 1	05	06	02	92	17.2	8.6	67	10.61	59.3	*
Site 1	06	06	02	92	16.6	8.6	67	10.80	*	*
Site 1	07	06	02	92	16.0	8.5	67	10.90	*	*
Site 1	08	06	02	92	15.1	8.4	69	10.83	*	*
Site 1	09	06	02	92	13.3	7.9	69	8.96	*	*
Site 1	10	06	02	92	12.6	7.7	70	8.40	59.3	*
Site 1	11	06	02	92	12.4	7.5	71	7.80	*	*
Site 1	12	06	02	92	11.5	7.2	72	6.82	*	*
Site 1	13	06	02	92	11.3	7.2	72	6.52	*	*
Site 1	14	06	02	92	11.0	7.1	73	6.28	*	*
Site 1	15	06	02	92	10.9	7.0	73	6.20	58.5	*
Site 1	16	06	02	92	10.7	6.9	73	6.08	*	*
Site 1	17	06	02	92	10.4	6.9	73	5.92	*	*
Site 1	18	06	02	92	10.3	6.8	73	5.82	*	*
Site 1	19	06	02	92	10.2	6.8	74	5.73	*	*
Site 1	20	06	02	92	10.2	6.8	73	5.71	61.3	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Intake	00	06	02	92	18.6	8.2	62	9.95	56.2	4.5
Intake	01	06	02	92	18.6	8.2	62	9.90	*	*
Intake	02	06	02	92	18.4	8.2	64	9.95	*	*
Intake	03	06	02	92	17.7	8.2	64	10.06	*	*
Intake	04	06	02	92	17.4	8.3	65	10.22	*	*
Intake	05	06	02	92	17.3	8.3	66	10.25	57.7	*
Intake	06	06	02	92	17.1	8.4	67	10.27	*	*
Intake	07	06	02	92	17.1	8.4	67	10.26	*	*
Intake	08	06	02	92	17.0	8.4	67	10.30	*	*
Intake	09	06	02	92	16.9	8.4	68	10.30	*	*
Intake	10	06	02	92	16.3	8.4	69	10.34	58.7	*
Intake	11	06	02	92	16.0	8.3	70	10.29	*	*
Intake	12	06	02	92	14.4	8.2	70	10.41	*	*
Site 2	00	06	02	92	18.1	8.2	62	9.94	59.2	4.8
Site 2	01	06	02	92	18.0	8.2	62	9.94	*	*
Site 2	02	06	02	92	18.0	8.2	63	9.94	*	*
Site 2	03	06	02	92	17.9	8.2	65	9.99	*	*
Site 2	04	06	02	92	17.9	8.2	65	10.00	*	*
Site 2	05	06	02	92	17.8	8.2	65	10.02	61.5	*
Site 2	06	06	02	92	17.8	8.2	66	10.03	*	*
Site 2	07	06	02	92	17.3	8.3	66	10.10	*	*
Site 2	08	06	02	92	17.2	8.3	67	10.11	*	*
Site 2	09	06	02	92	16.6	8.3	68	10.31	*	*
Site 2	10	06	02	92	15.7	8.2	68	10.44	59.6	*
Site 2	11	06	02	92	15.1	8.2	68	10.48	*	*
Site 2	12	06	02	92	13.8	8.0	68	10.48	*	*
Site 2	13	06	02	92	12.3	7.9	70	10.21	*	*
Site 2	14	06	02	92	11.8	7.7	70	10.09	*	*
Site 2	15	06	02	92	11.2	7.6	70	9.72	59.4	*
Site 2	16	06	02	92	10.9	7.6	71	9.41	*	*
Site 2	17	06	02	92	10.6	7.5	72	8.72	*	*
Site 2	18	06	02	92	10.4	7.3	72	8.58	*	*
Site 2	19	06	02	92	10.3	7.2	71	8.22	*	*
Site 2	20	06	02	92	10.1	7.2	72	7.63	59.4	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 3	00	06	02	92	17.3	8.2	63	10.08	58.0	5.2
Site 3	01	06	02	92	17.2	8.2	62	10.09	*	*
Site 3	02	06	02	92	17.1	8.2	62	10.10	*	*
Site 3	03	06	02	92	16.9	8.2	63	10.10	*	*
Site 3	04	06	02	92	16.8	8.2	64	10.17	*	*
Site 3	05	06	02	92	16.8	8.2	64	10.14	58.6	*
Site 3	06	06	02	92	16.7	8.2	65	10.14	*	*
Site 3	07	06	02	92	16.6	8.2	66	10.18	*	*
Site 3	08	06	02	92	16.5	8.2	66	10.18	*	*
Site 3	09	06	02	92	15.0	8.1	66	10.45	*	*
Site 3	10	06	02	92	14.1	8.0	67	10.53	58.6	*
Site 3	11	06	02	92	13.7	7.9	68	10.55	*	*
Site 3	12	06	02	92	12.6	7.9	68	10.54	*	*
Site 3	13	06	02	92	11.8	7.8	69	10.57	*	*
Site 3	14	06	02	92	11.1	7.7	69	10.57	*	*
Site 3	15	06	02	92	10.7	7.7	69	10.54	*	*
Site 3	16	06	02	92	10.4	7.6	70	10.52	*	*
Site 3	17	06	02	92	10.3	7.6	70	10.49	*	*
Site 3	18	06	02	92	10.2	7.5	70	10.47	*	*
Site 3	19	06	02	92	9.8	7.5	70	10.47	*	*
Site 3	20	06	02	92	9.7	7.5	70	10.47	59.0	*
Site 3	25	06	02	92	8.3	7.4	70	10.41	*	*
Site 3	30	06	02	92	7.9	7.4	71	10.36	*	*
Site 3	35	06	02	92	7.6	7.4	71	10.38	*	*
Site 3	40	06	02	92	7.5	7.3	70	10.38	59.2	*
Site 3	45	06	02	92	7.4	7.3	70	10.37	*	*
Site 3	50	06	02	92	7.3	7.3	69	10.30	*	*
Site 3	55	06	02	92	7.3	7.3	69	10.34	*	*
Site 3	60	06	02	92	7.3	7.3	68	10.26	59.7	*
Site 3	65	06	02	92	7.2	7.3	68	10.26	*	*
Site 3	70	06	02	92	7.2	7.3	68	10.15	*	*
Site 3	75	06	02	92	7.2	7.2	67	9.93	*	*
Site 3	80	06	02	92	7.2	7.2	67	9.39	59.1	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 4	00	06	02	92	16.8	8.2	61	10.27	58.6	4.3
Site 4	01	06	02	92	16.8	8.2	63	10.31	*	*
Site 4	02	06	02	92	16.7	8.2	63	10.33	*	*
Site 4	03	06	02	92	16.6	8.2	64	10.37	*	*
Site 4	04	06	02	92	16.3	8.2	64	10.43	*	*
Site 4	05	06	02	92	16.3	8.1	66	10.45	56.5	*
Site 4	06	06	02	92	16.1	8.1	66	10.47	*	*
Site 4	07	06	02	92	15.9	8.1	66	10.40	*	*
Site 4	08	06	02	92	15.2	8.0	67	10.59	*	*
Site 4	09	06	02	92	15.1	8.0	67	10.61	*	*
Site 4	10	06	02	92	15.1	7.9	67	10.62	58.3	*
Site 4	11	06	02	92	14.7	7.8	67	10.64	*	*
Site 4	12	06	02	92	14.2	7.7	68	10.69	*	*
Site 4	13	06	02	92	13.8	7.6	68	10.78	*	*
Site 4	14	06	02	92	12.9	7.6	68	10.75	*	*
Site 4	15	06	02	92	12.7	7.5	68	10.75	*	*
Site 4	16	06	02	92	12.6	7.5	68	10.73	*	*
Site 4	17	06	02	92	12.1	7.5	67	10.71	*	*
Site 4	18	06	02	92	11.6	7.4	68	10.81	*	*
Site 4	19	06	02	92	11.2	7.4	67	10.75	*	*
Site 4	20	06	02	92	10.7	7.3	67	10.69	59.4	*
Site 4	25	06	02	92	9.3	7.2	68	10.58	*	*
Site 4	30	06	02	92	8.1	7.2	68	10.58	*	*
Site 4	35	06	02	92	7.4	7.2	68	10.67	*	*
Site 4	40	06	02	92	7.3	7.2	66	10.62	59.7	*
Site 4	45	06	02	92	7.2	7.2	66	10.60	*	*
Site 4	50	06	02	92	7.2	7.2	65	10.74	*	*
Site 4	55	06	02	92	7.2	7.2	65	10.76	*	*
Site 4	60	06	02	92	7.2	7.2	66	10.66	58.5	*
Site 4	65	06	02	92	7.2	7.2	65	10.61	*	*
Site 4	70	06	02	92	7.2	7.2	64	10.60	*	*
Site 4	75	06	02	92	7.3	7.2	64	10.58	*	*
Site 4	80	06	02	92	7.3	7.2	63	10.53	57.6	*
Site 4	85	06	02	92	7.3	7.2	64	10.47	*	*
Site 4	90	06	02	92	7.3	7.2	64	10.55	57.0	*
Gate	00	06	02	92	15.2	7.5	63	10.31	60.6	*

Laboratory data:

Site	Depth	Month	Day	Year	Alk	Turb	NH3	TKN	NO3	SRP	TP	ChlA
Site 1	00	06	02	92	18.0	0.7	37.6	175.4	259.9	BDL	6.8	4.12
Site 1	05	06	02	92	17.8	1.0	37.7	212.8	279.8	BDL	7.7	3.80
Site 1	10	06	02	92	17.6	1.0	22.6	182.2	302.8	BDL	8.5	9.24
Site 1	15	06	02	92	17.4	0.7	60.8	196.5	318.8	BDL	7.6	4.22
Site 1	20	06	02	92	16.9	1.2	77.9	189.0	324.7	BDL	11.8	3.90
Intake	00	06	02	92	17.8	0.8	24.1	141.5	296.9	BDL	8.5	4.00
Intake	05	06	02	92	17.0	0.5	37.6	127.9	335.8	BDL	7.2	5.27
Intake	10	06	02	92	17.0	0.7	49.0	134.7	329.6	BDL	BDL	4.50
Site 2	00	06	02	92	17.4	0.8	22.7	165.2	323.4	BDL	5.5	4.82
Site 2	05	06	02	92	16.5	0.5	44.1	231.1	335.0	BDL	5.5	4.19
Site 2	10	06	02	92	*	0.4	26.3	170.0	337.0	BDL	5.7	5.08
Site 2	15	06	02	92	17.0	0.8	27.9	162.5	392.4	BDL	6.3	5.58
Site 2	20	06	02	92	16.9	0.7	56.3	163.9	401.5	BDL	6.4	4.43
Site 3	00	06	02	92	15.7	0.6	30.1	162.5	343.2	BDL	BDL	4.58
Site 3	05	06	02	92	17.4	0.6	24.2	170.0	337.0	BDL	8.3	5.10
Site 3	10	06	02	92	17.3	0.7	67.4	183.6	332.8	BDL	7.2	4.69
Site 3	15	06	02	92	*	*	*	*	*	*	*	4.07
Site 3	20	06	02	92	17.0	0.5	17.5	134.0	430.8	BDL	6.3	2.50
Site 3	40	06	02	92	34.4	0.5	13.5	132.7	460.1	BDL	6.5	*
Site 3	60	06	02	92	16.4	0.8	7.4	107.5	451.8	BDL	6.3	*
Site 3	80	06	02	92	16.8	0.6	11.3	121.1	433.3	BDL	BDL	*
Site 4	00	06	02	92	17.2	0.7	11.7	142.4	339.2	BDL	5.5	5.20
Site 4	05	06	02	92	16.8	0.7	13.2	145.0	336.6	BDL	6.2	5.22
Site 4	10	06	02	92	17.8	0.5	34.9	118.1	348.7	BDL	6.9	5.63
Site 4	15	06	02	92	*	*	*	*	*	*	*	5.95
Site 4	20	06	02	92	17.3	0.8	15.9	130.3	395.2	BDL	BDL	5.11
Site 4	40	06	02	92	16.7	0.4	17.4	BDL	458.2	BDL	5.3	*
Site 4	60	06	02	92	21.0	0.5	20.2	BDL	446.7	BDL	BDL	*
Site 4	80	06	02	92	16.8	1.3	16.2	124.6	452.4	BDL	BDL	*
Site 4	90	06	02	92	16.9	1.1	12.3	158.1	434.6	BDL	BDL	*
Gate	00	06	02	92	17.2	0.8	15.2	173.6	360.8	BDL	6.3	*

Lake Whatcom Monitoring Program

Prepared January 25, 1994 by the Environmental Research and Education Center,
Western Washington University, for the City of Bellingham, Department of Public Works.
*: missing, BDL: below detection limit.

Hydrolab and quality control data:

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 1	00	07	06	92	19.8	8.3	63	9.50	55.0	3.6
Site 1	01	07	06	92	19.8	8.3	63	9.50	*	*
Site 1	02	07	06	92	19.8	8.3	64	9.48	*	*
Site 1	03	07	06	92	19.8	8.3	64	9.58	*	*
Site 1	04	07	06	92	19.8	8.3	65	9.59	*	*
Site 1	05	07	06	92	19.8	8.3	66	9.62	55.0	*
Site 1	06	07	06	92	19.8	8.3	66	9.65	*	*
Site 1	07	07	06	92	19.0	8.2	67	10.53	*	*
Site 1	08	07	06	92	16.8	8.0	67	10.23	*	*
Site 1	09	07	06	92	15.3	7.7	68	9.59	*	*
Site 1	10	07	06	92	14.6	7.4	68	8.03	55.6	*
Site 1	11	07	06	92	12.9	7.1	70	6.60	*	*
Site 1	12	07	06	92	12.1	7.0	70	4.77	*	*
Site 1	13	07	06	92	11.5	6.8	72	4.20	*	*
Site 1	14	07	06	92	11.3	6.8	71	4.17	*	*
Site 1	15	07	06	92	11.0	6.8	71	4.01	57.9	*
Site 1	16	07	06	92	10.9	6.8	71	3.96	*	*
Site 1	17	07	06	92	10.8	6.7	72	4.03	*	*
Site 1	18	07	06	92	10.6	6.7	72	4.05	*	*
Site 1	19	07	06	92	10.6	6.7	71	4.10	*	*
Site 1	20	07	06	92	10.5	6.7	71	3.84	58.6	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Intake	00	07	06	92	19.6	8.1	61	9.02	55.1	3.8
Intake	01	07	06	92	19.6	8.1	62	9.02	*	*
Intake	02	07	06	92	19.6	8.1	63	9.04	*	*
Intake	03	07	06	92	19.6	8.1	65	9.03	*	*
Intake	04	07	06	92	19.6	8.1	66	9.01	*	*
Intake	05	07	06	92	19.6	8.1	66	9.01	51.9	*
Intake	06	07	06	92	19.6	8.1	67	8.99	*	*
Intake	07	07	06	92	19.6	8.1	67	9.00	*	*
Intake	08	07	06	92	19.6	8.1	68	8.97	*	*
Intake	09	07	06	92	19.6	8.1	68	8.93	*	*
Intake	10	07	06	92	19.6	8.1	68	8.94	55.5	*
Intake	11	07	06	92	19.1	8.0	69	8.65	*	*
Intake	12	07	06	92	15.7	7.8	70	8.83	*	*
Site 2	00	07	06	92	19.5	8.0	62	9.10	54.3	4.4
Site 2	01	07	06	92	19.6	8.0	62	9.05	*	*
Site 2	02	07	06	92	19.6	8.1	63	9.06	*	*
Site 2	03	07	06	92	19.5	8.1	65	9.08	*	*
Site 2	04	07	06	92	19.5	8.1	65	9.06	*	*
Site 2	05	07	06	92	19.5	8.1	66	9.04	56.3	*
Site 2	06	07	06	92	19.5	8.1	66	9.03	*	*
Site 2	07	07	06	92	19.5	8.1	67	9.00	*	*
Site 2	08	07	06	92	19.4	8.1	67	9.02	*	*
Site 2	09	07	06	92	19.4	8.0	67	9.00	*	*
Site 2	10	07	06	92	19.4	8.0	68	8.96	56.6	*
Site 2	11	07	06	92	18.5	8.0	68	9.18	*	*
Site 2	12	07	06	92	16.2	7.9	69	9.41	*	*
Site 2	13	07	06	92	14.2	7.7	69	9.02	*	*
Site 2	14	07	06	92	13.2	7.6	70	8.49	*	*
Site 2	15	07	06	92	12.4	7.4	70	7.25	55.3	*
Site 2	16	07	06	92	11.7	7.3	71	6.44	*	*
Site 2	17	07	06	22	11.1	7.0	72	5.39	*	*
Site 2	18	07	06	92	11.1	7.0	72	5.35	*	*
Site 2	19	07	06	92	10.8	7.0	73	4.18	*	*
Site 2	20	07	06	92	*	*	*	*	57.1	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 3	00	07	06	92	19.1	8.0	62	10.38	55.0	4.2
Site 3	01	07	06	92	19.1	8.0	62	10.13	*	*
Site 3	02	07	06	92	19.1	8.0	63	10.42	*	*
Site 3	03	07	06	92	19.1	8.1	63	10.23	*	*
Site 3	04	07	06	92	19.1	8.1	64	10.23	*	*
Site 3	05	07	06	92	19.1	8.1	65	10.40	54.7	*
Site 3	06	07	06	92	19.1	8.1	65	10.46	*	*
Site 3	07	07	06	92	19.1	8.1	66	10.47	*	*
Site 3	08	07	06	92	19.1	8.0	66	10.40	*	*
Site 3	09	07	06	92	19.1	8.0	66	10.25	*	*
Site 3	10	07	06	92	19.1	8.1	66	10.30	52.6	*
Site 3	11	07	06	92	19.1	8.0	67	10.17	*	*
Site 3	12	07	06	92	16.3	8.0	66	11.09	*	*
Site 3	13	07	06	92	15.6	7.9	68	11.09	*	*
Site 3	14	07	06	92	14.8	7.8	68	11.02	*	*
Site 3	15	07	06	92	14.3	7.8	68	11.28	*	*
Site 3	16	07	06	92	14.0	7.7	68	10.92	*	*
Site 3	17	07	06	92	13.3	7.7	68	11.05	*	*
Site 3	18	07	06	92	12.7	7.6	69	11.06	*	*
Site 3	19	07	06	92	12.2	7.6	68	11.22	*	*
Site 3	20	07	06	92	10.9	7.5	68	11.36	53.1	*
Site 3	25	07	06	92	9.0	7.5	69	11.41	*	*
Site 3	30	07	06	92	8.1	7.5	69	11.45	*	*
Site 3	35	07	06	92	7.8	7.4	67	11.03	*	*
Site 3	40	07	06	92	7.7	7.4	67	10.22	55.9	*
Site 3	45	07	06	92	7.5	7.4	65	10.40	*	*
Site 3	50	07	06	92	7.5	7.4	66	10.66	*	*
Site 3	55	07	06	92	7.4	7.3	66	10.95	*	*
Site 3	60	07	06	92	7.4	7.3	65	10.43	54.2	*
Site 3	65	07	06	92	7.3	7.3	65	9.52	*	*
Site 3	70	07	06	92	7.3	7.3	64	9.50	*	*
Site 3	75	07	06	92	7.3	7.2	64	9.23	*	*
Site 3	80	07	06	92	7.2	7.2	64	8.63	55.1	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 4	00	07	06	92	19.0	8.2	61	9.37	52.3	4.5
Site 4	01	07	06	92	19.1	8.2	61	9.34	*	*
Site 4	02	07	06	92	19.1	8.2	62	9.37	*	*
Site 4	03	07	06	92	19.1	8.2	63	9.34	*	*
Site 4	04	07	06	92	19.0	8.2	64	9.33	*	*
Site 4	05	07	06	92	19.0	8.1	65	9.33	53.1	*
Site 4	06	07	06	92	18.9	8.1	65	9.35	*	*
Site 4	07	07	06	92	18.7	8.1	66	9.36	*	*
Site 4	08	07	06	92	18.3	8.0	67	9.40	*	*
Site 4	09	07	06	92	17.7	7.9	67	9.56	*	*
Site 4	10	07	06	92	16.9	7.8	67	9.60	53.2	*
Site 4	11	07	06	92	16.6	7.8	68	9.60	*	*
Site 4	12	07	06	92	15.8	7.7	68	9.54	*	*
Site 4	13	07	06	92	15.4	7.7	69	9.57	*	*
Site 4	14	07	06	92	14.4	7.7	69	9.57	*	*
Site 4	15	07	06	92	13.6	7.6	69	9.47	*	*
Site 4	16	07	06	92	12.6	7.6	70	9.49	*	*
Site 4	17	07	06	92	11.7	7.5	70	9.51	*	*
Site 4	18	07	06	92	11.2	7.5	70	9.52	*	*
Site 4	19	07	06	92	10.7	7.5	70	9.50	*	*
Site 4	20	07	06	92	10.4	7.5	70	9.50	51.8	*
Site 4	25	07	06	92	8.6	7.4	70	9.54	*	*
Site 4	30	07	06	92	7.8	7.4	70	9.63	*	*
Site 4	35	07	06	92	7.7	7.4	70	9.59	*	*
Site 4	40	07	06	92	7.5	7.3	69	9.62	54.1	*
Site 4	45	07	06	92	7.5	7.3	69	9.62	*	*
Site 4	50	07	06	92	7.4	7.3	68	9.55	*	*
Site 4	55	07	06	92	7.4	7.3	68	9.54	*	*
Site 4	60	07	06	92	7.3	7.3	66	9.59	55.7	*
Site 4	65	07	06	92	7.3	7.3	66	9.57	*	*
Site 4	70	07	06	92	7.3	7.3	67	9.67	*	*
Site 4	75	07	06	92	7.3	7.3	65	9.68	*	*
Site 4	80	07	06	92	7.2	7.3	65	9.65	53.4	*
Site 4	85	07	06	92	7.2	7.3	65	9.63	*	*
Site 4	90	07	06	92	7.2	7.2	64	9.56	53.1	*
Gate	00	07	06	92	17.6	7.4	61	8.99	54.4	*

Laboratory data:

Site	Depth	Month	Day	Year	Alk	Turb	NH3	TKN	NO3	SRP	TP	ChlA
Site 1	00	07	06	92	18.3	0.8	10.8	189.3	163.7	BDL	9.8	5.82
Site 1	05	07	06	92	18.4	0.7	7.7	213.3	171.4	BDL	8.8	7.78
Site 1	10	07	06	92	18.1	1.0	10.5	287.5	181.7	BDL	12.3	12.49
Site 1	15	07	06	92	18.2	1.1	28.6	222.7	276.9	5.6	14.0	3.76
Site 1	20	07	06	92	19.1	1.2	48.3	155.9	188.6	BDL	9.6	2.09
Intake	00	07	06	92	18.0	0.6	23.5	189.9	276.0	BDL	6.8	4.89
Intake	05	07	06	92	17.9	0.8	16.6	185.9	300.9	*	*	4.38
Intake	10	07	06	92	17.8	0.6	10.6	159.0	252.9	6.7	6.3	5.13
Site 2	00	07	06	92	17.4	0.6	12.5	167.7	249.4	BDL	7.5	4.28
Site 2	05	07	06	92	17.7	0.7	15.0	808.5	241.7	BDL	7.4	5.27
Site 2	10	07	06	92	18.0	0.7	12.8	163.2	258.9	5.3	6.6	3.66
Site 2	15	07	06	92	18.3	0.5	16.0	173.2	258.9	7.2	7.0	6.26
Site 2	20	07	06	92	18.1	0.8	42.8	249.4	258.9	5.1	9.0	3.30
Site 3	00	07	06	92	17.8	0.8	19.2	162.2	326.6	BDL	7.2	5.58
Site 3	05	07	06	92	17.8	0.7	37.5	187.7	325.7	8.3	6.4	2.86
Site 3	10	07	06	92	17.4	0.7	12.6	162.4	265.7	7.7	6.2	5.86
Site 3	15	07	06	92	*	*	*	*	*	*	*	6.50
Site 3	20	07	06	92	17.3	0.4	11.1	159.7	265.7	5.1	7.0	3.28
Site 3	40	07	06	92	17.2	0.3	11.8	135.9	421.3	BDL	6.1	*
Site 3	60	07	06	92	17.0	0.3	10.7	119.1	422.0	BDL	5.3	*
Site 3	80	07	06	92	17.0	0.5	7.4	164.4	394.5	12.3	7.5	*
Site 4	00	07	06	92	17.7	0.8	8.3	269.0	271.9	5.7	7.3	4.14
Site 4	05	07	06	92	17.3	0.7	12.5	206.5	384.5	BDL	6.8	4.64
Site 4	10	07	06	92	17.4	0.8	8.3	279.2	260.4	BDL	7.7	5.42
Site 4	15	07	06	92	*	*	*	*	*	*	*	2.71
Site 4	20	07	06	92	16.9	0.4	8.4	189.8	291.1	BDL	8.9	2.47
Site 4	40	07	06	92	16.1	0.4	9.6	135.6	419.7	BDL	5.9	*
Site 4	60	07	06	92	16.6	0.4	7.7	128.0	421.3	BDL	BDL	*
Site 4	80	07	06	92	16.3	0.4	7.5	138.7	421.3	BDL	BDL	*
Site 4	90	07	06	92	16.8	0.6	BDL	149.5	417.4	BDL	7.3	*
Gate	00	07	06	92	17.8	0.6	7.6	199.4	264.2	BDL	6.6	*

Lake Whatcom Monitoring Program

Prepared January 25, 1994 by the Environmental Research and Education Center,
Western Washington University, for the City of Bellingham, Department of Public Works.
*: missing. BDL: below detection limit.

Hydrolab and quality control data:

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 1	00	08	03	92	22.3	7.4	64	9.68	51.5	4.6
Site 1	01	08	03	92	22.2	*	66	9.66	*	*
Site 1	02	08	03	92	22.0	*	66	9.76	*	*
Site 1	03	08	03	92	21.9	*	68	9.86	*	*
Site 1	04	08	03	92	21.8	*	70	9.84	*	*
Site 1	05	08	03	92	21.6	7.4	70	9.53	57.3	*
Site 1	06	08	03	92	20.6	*	70	9.72	*	*
Site 1	07	08	03	92	19.5	*	70	9.32	*	*
Site 1	08	08	03	92	18.1	*	72	8.83	*	*
Site 1	09	08	03	92	16.2	*	74	5.77	*	*
Site 1	10	08	03	92	14.2	7.3	76	3.73	57.8	*
Site 1	11	08	03	92	13.4	*	77	2.51	*	*
Site 1	12	08	03	92	12.2	*	77	1.75	*	*
Site 1	13	08	03	92	11.7	*	79	1.55	*	*
Site 1	14	08	03	92	11.5	*	80	1.47	*	*
Site 1	15	08	03	92	11.4	7.0	79	1.42	63.7	*
Site 1	16	08	03	92	11.2	*	80	1.40	*	*
Site 1	17	08	03	92	11.2	*	80	1.37	*	*
Site 1	18	08	03	92	11.1	*	80	1.35	*	*
Site 1	19	08	03	92	10.9	*	81	1.36	*	*
Site 1	20	08	03	92	10.7	7.0	81	1.34	65.3	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Intake	00	08	03	92	21.7	7.3	64	9.32	58.4	6.4
Intake	01	08	03	92	21.7	*	64	9.33	*	*
Intake	02	08	03	92	21.6	*	65	9.26	*	*
Intake	03	08	03	92	21.3	*	66	9.23	*	*
Intake	04	08	03	92	21.3	*	67	9.21	*	*
Intake	05	08	03	92	21.2	7.3	68	9.23	58.4	*
Intake	06	08	03	92	21.1	*	69	9.23	*	*
Intake	07	08	03	92	21.0	*	69	9.27	*	*
Intake	08	08	03	92	20.6	*	70	9.42	*	*
Intake	09	08	03	92	19.9	*	71	9.25	*	*
Intake	10	08	03	92	19.4	*	71	9.22	57.3	*
Intake	11	08	03	92	18.1	*	71	9.03	*	*
Intake	12	08	03	92	17.3	*	73	8.25	*	*
Site 2	00	08	03	92	21.7	8.2	64	9.22	58.4	6.1
Site 2	01	08	03	92	21.7	8.2	64	9.22	*	*
Site 2	02	08	03	92	21.6	8.2	65	9.21	*	*
Site 2	03	08	03	92	21.6	8.3	66	9.18	*	*
Site 2	04	08	03	92	21.4	8.3	68	9.21	*	*
Site 2	05	08	03	92	21.3	8.3	68	9.21	54.6	*
Site 2	06	08	03	92	21.2	8.3	68	9.19	*	*
Site 2	07	08	03	92	20.9	8.2	69	9.18	*	*
Site 2	08	08	03	92	20.7	8.2	70	9.18	*	*
Site 2	09	08	03	92	20.1	8.1	70	9.17	*	*
Site 2	10	08	03	92	19.6	8.1	71	9.25	54.6	*
Site 2	11	08	03	92	19.3	8.0	72	9.27	*	*
Site 2	12	08	03	92	16.9	7.9	71	8.86	*	*
Site 2	13	08	03	92	14.9	7.8	73	7.70	*	*
Site 2	14	08	03	92	14.2	7.7	74	6.89	*	*
Site 2	15	08	03	92	13.1	7.6	74	5.54	52.4	*
Site 2	16	08	03	92	12.7	7.4	75	4.24	*	*
Site 2	17	08	03	92	11.9	7.3	78	3.11	*	*
Site 2	18	08	03	92	11.4	7.2	78	2.04	*	*
Site 2	19	08	03	92	11.3	6.9	80	1.79	59.2	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 3	00	08	03	92	21.3	8.0	65	9.10	57.0	6.7
Site 3	01	08	03	92	21.3	8.0	66	9.15	*	*
Site 3	02	08	03	92	21.3	8.1	66	9.16	*	*
Site 3	03	08	03	92	21.2	8.1	67	9.16	*	*
Site 3	04	08	03	92	21.0	8.1	68	9.23	*	*
Site 3	05	08	03	92	21.0	8.1	69	9.25	52.0	*
Site 3	06	08	03	92	20.6	8.1	69	9.42	*	*
Site 3	07	08	03	92	20.1	8.1	70	9.42	*	*
Site 3	08	08	03	92	20.0	8.0	71	9.39	*	*
Site 3	09	08	03	92	19.6	8.0	71	9.40	*	*
Site 3	10	08	03	92	19.1	8.0	72	9.35	56.0	*
Site 3	11	08	03	92	18.3	7.9	72	9.37	*	*
Site 3	12	08	03	92	17.2	7.8	72	9.32	*	*
Site 3	13	08	03	92	16.4	7.7	74	9.28	*	*
Site 3	14	08	03	92	15.9	7.7	74	9.25	*	*
Site 3	15	08	03	92	14.9	7.6	75	9.16	*	*
Site 3	16	08	03	92	14.0	7.6	75	9.31	*	*
Site 3	17	08	03	92	13.6	7.5	75	9.26	*	*
Site 3	18	08	03	92	13.0	7.5	76	9.26	*	*
Site 3	19	08	03	92	12.2	7.4	76	9.31	*	*
Site 3	20	08	03	92	11.4	7.4	77	9.36	57.6	*
Site 3	25	08	03	92	9.3	7.4	78	9.39	*	*
Site 3	30	08	03	92	8.3	7.3	78	9.51	*	*
Site 3	35	08	03	92	7.9	7.3	77	9.61	*	*
Site 3	40	08	03	92	7.7	7.3	78	9.64	54.9	*
Site 3	45	08	03	92	7.6	7.3	78	9.67	*	*
Site 3	50	08	03	92	7.6	7.3	76	9.67	*	*
Site 3	55	08	03	92	7.5	7.3	75	9.59	*	*
Site 3	60	08	03	92	7.4	7.2	74	9.41	59.0	*
Site 3	65	08	03	92	7.4	7.2	76	9.16	*	*
Site 3	70	08	03	92	7.3	7.2	74	8.98	*	*
Site 3	75	08	03	92	7.3	7.1	75	8.18	*	*
Site 3	80	08	03	92	7.2	7.0	75	7.12	58.8	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 4	00	08	03	92	20.7	8.0	66	9.38	55.0	6.3
Site 4	01	08	03	92	20.6	8.0	67	9.40	*	*
Site 4	02	08	03	92	20.6	8.0	67	9.38	*	*
Site 4	03	08	03	92	20.5	8.0	68	9.52	*	*
Site 4	04	08	03	92	20.4	8.0	70	9.53	*	*
Site 4	05	08	03	92	20.4	8.0	70	9.49	56.4	*
Site 4	06	08	03	92	20.3	7.9	71	9.50	*	*
Site 4	07	08	03	92	20.1	7.9	71	9.53	*	*
Site 4	08	08	03	92	20.1	7.8	71	9.52	*	*
Site 4	09	08	03	92	20.1	7.7	72	9.52	*	*
Site 4	10	08	03	92	19.5	7.5	73	9.63	56.4	*
Site 4	11	08	03	92	18.7	7.5	73	9.68	*	*
Site 4	12	08	03	92	18.2	7.3	73	9.66	*	*
Site 4	13	08	03	92	17.4	7.3	73	9.57	*	*
Site 4	14	08	03	92	16.4	7.2	74	9.66	*	*
Site 4	15	08	03	92	14.9	7.2	74	9.50	*	*
Site 4	16	08	03	92	13.5	7.1	74	9.46	*	*
Site 4	17	08	03	92	12.3	7.1	75	9.47	*	*
Site 4	18	08	03	92	11.7	7.1	75	9.66	*	*
Site 4	19	08	03	92	11.1	7.1	74	9.64	*	*
Site 4	20	08	03	92	10.4	7.1	75	9.80	55.5	*
Site 4	25	08	03	92	8.7	7.1	75	9.87	*	*
Site 4	30	08	03	92	7.8	7.1	76	10.08	*	*
Site 4	35	08	03	92	7.6	7.1	75	10.00	*	*
Site 4	40	08	03	92	7.5	7.1	73	10.06	58.0	*
Site 4	45	08	03	92	7.5	7.1	74	10.09	*	*
Site 4	50	08	03	92	7.5	7.1	73	10.10	*	*
Site 4	55	08	03	92	7.5	7.1	74	9.92	*	*
Site 4	60	08	03	92	7.5	7.1	73	9.93	55.4	*
Site 4	65	08	03	92	7.5	7.1	70	9.90	*	*
Site 4	70	08	03	92	7.5	7.1	70	9.98	*	*
Site 4	75	08	03	92	7.5	7.1	70	9.96	*	*
Site 4	80	08	03	92	7.6	7.1	71	9.87	52.2	*
Site 4	85	08	03	92	7.6	7.1	71	9.66	*	*
Site 4	90	08	03	92	7.6	7.2	72	9.57	59.8	*
Gate	00	08	03	92	18.3	7.3	70	9.02	57.7	*

Laboratory data:

Site	Depth	Month	Day	Year	Alk	Turb	NH3	TKN	NO3	SRP	TP	ChlA
Site 1	00	08	03	92	18.8	0.8	10.6	*	72.6	6.2	8.9	8.86
Site 1	05	08	03	92	24.7	0.8	11.1	*	72.1	5.7	10.5	11.71
Site 1	10	08	03	92	19.4	1.4	12.9	*	104.0	5.3	13.9	15.31
Site 1	15	08	03	92	20.1	1.0	27.9	*	146.0	5.4	10.7	3.04
Site 1	20	08	03	92	20.9	5.3	31.6	*	128.7	BDL	10.0	2.22
Intake	00	08	03	92	18.3	0.7	15.8	*	164.1	BDL	6.5	5.35
Intake	05	08	03	92	17.9	0.9	14.5	*	194.2	BDL	6.0	5.17
Intake	10	08	03	92	17.9	0.8	14.7	*	219.4	BDL	BDL	5.99
Site 2	00	08	03	92	18.0	0.7	12.1	*	190.2	BDL	6.1	4.96
Site 2	05	08	03	92	17.5	0.8	11.3	*	196.3	9.7	5.7	4.45
Site 2	10	08	03	92	17.7	0.8	12.1	*	218.6	5.9	5.7	3.93
Site 2	15	08	03	92	17.5	0.8	18.5	*	308.4	BDL	6.9	4.75
Site 2	20	08	03	92	18.7	1.5	76.0	*	297.8	34.8	42.2	2.94
Site 3	00	08	03	92	17.7	0.6	12.7	*	220.7	5.8	BDL	3.22
Site 3	05	08	03	92	18.0	0.5	12.2	*	219.7	*	*	3.35
Site 3	10	08	03	92	17.7	0.7	11.0	*	243.1	BDL	6.9	4.82
Site 3	15	08	03	92	*	*	*	*	*	*	*	4.17
Site 3	20	08	03	92	16.7	0.5	12.3	*	387.4	*	*	2.89
Site 3	40	08	03	92	16.4	0.2	10.8	*	465.9	*	*	*
Site 3	60	08	03	92	16.3	0.5	10.7	*	447.5	BDL	BDL	*
Site 3	80	08	03	92	16.6	2.3	31.7	*	387.2	BDL	BDL	*
Site 4	00	08	03	92	17.0	0.9	13.8	*	225.8	BDL	BDL	5.30
Site 4	05	08	03	92	17.8	0.8	15.2	*	216.9	BDL	BDL	4.28
Site 4	10	08	03	92	17.7	0.7	12.5	*	220.0	5.5	BDL	4.14
Site 4	15	08	03	92	*	*	*	*	*	*	*	3.32
Site 4	20	08	03	92	16.7	0.7	11.4	*	417.0	BDL	BDL	1.90
Site 4	40	08	03	92	16.4	0.4	12.4	*	448.8	BDL	BDL	*
Site 4	60	08	03	92	16.3	0.4	9.9	*	429.8	BDL	BDL	*
Site 4	80	08	03	92	16.6	0.5	9.0	*	439.4	BDL	BDL	*
Site 4	90	08	03	92	17.0	0.4	20.3	*	418.0	BDL	BDL	*
Gate	00	08	03	92	17.3	1.6	18.8	*	251.2	BDL	6.6	*

Lake Whatcom Monitoring Program

Prepared January 25, 1994 by the Environmental Research and Education Center,
Western Washington University, for the City of Bellingham, Department of Public Works.

*: missing. BDL: below detection limit.

Hydrolab and quality control data:

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 1	00	08	31	92	20.9	8.6	59.9	9.15	59.9	5.1
Site 1	01	08	31	92	20.9	*	*	*	*	*
Site 1	02	08	31	92	20.9	*	*	*	*	*
Site 1	03	08	31	92	20.9	*	*	*	*	*
Site 1	04	08	31	92	20.9	*	*	*	*	*
Site 1	05	08	31	92	20.9	8.6	59.5	9.17	59.5	*
Site 1	06	08	31	92	20.9	*	*	*	*	*
Site 1	07	08	31	92	20.9	*	*	*	*	*
Site 1	08	08	31	92	19.4	*	*	*	*	*
Site 1	09	08	31	92	17.5	*	*	*	*	*
Site 1	10	08	31	92	15.9	7.3	61.8	5.17	61.8	*
Site 1	11	08	31	92	13.8	*	*	*	*	*
Site 1	12	08	31	92	12.3	*	*	*	*	*
Site 1	13	08	31	92	11.8	*	*	*	*	*
Site 1	14	08	31	92	11.8	*	*	*	*	*
Site 1	15	08	31	92	11.1	7.3	67.2	0.68	67.2	*
Site 1	16	08	31	92	10.9	*	*	*	*	*
Site 1	17	08	31	92	10.8	*	*	*	*	*
Site 1	18	08	31	92	10.7	*	*	*	*	*
Site 1	19	08	31	92	10.6	*	*	*	*	*
Site 1	20	08	31	92	10.5	6.7	67.0	1.05	67.0	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Intake	00	08	31	92	20.8	7.6	59.2	9.02	59.2	5.1
Intake	01	08	31	92	20.8	*	*	*	*	*
Intake	02	08	31	92	20.8	*	*	*	*	*
Intake	03	08	31	92	20.7	*	*	*	*	*
Intake	04	08	31	92	20.7	*	*	*	*	*
Intake	05	08	31	92	20.7	7.4	59.2	8.82	59.2	*
Intake	06	08	31	92	20.7	*	*	*	*	*
Intake	07	08	31	92	20.7	*	*	*	*	*
Intake	08	08	31	92	20.7	*	*	*	*	*
Intake	09	08	31	92	20.3	*	*	*	*	*
Intake	10	08	31	92	19.5	6.9	59.4	8.58	59.4	*
Intake	11	08	31	92	19.0	*	*	*	*	*
Site 2	00	08	31	92	21.8	8.0	59.4	8.72	59.4	4.9
Site 2	01	08	31	92	*	*	*	*	*	*
Site 2	02	08	31	92	*	*	*	*	*	*
Site 2	03	08	31	92	*	*	*	*	*	*
Site 2	04	08	31	92	*	*	*	*	*	*
Site 2	05	08	31	92	21.2	7.9	59.5	8.78	59.5	*
Site 2	06	08	31	92	*	*	*	*	*	*
Site 2	07	08	31	92	*	*	*	*	*	*
Site 2	08	08	31	92	*	*	*	*	*	*
Site 2	09	08	31	92	*	*	*	*	*	*
Site 2	10	08	31	92	18.0	7.9	59.5	8.78	59.5	*
Site 2	11	08	31	92	*	*	*	*	*	*
Site 2	12	08	31	92	*	*	*	*	*	*
Site 2	13	08	31	92	*	*	*	*	*	*
Site 2	14	08	31	92	*	*	*	*	*	*
Site 2	15	08	31	92	12.2	7.0	61.1	3.61	61.1	*
Site 2	16	08	31	92	*	*	*	*	*	*
Site 2	17	08	31	92	*	*	*	*	*	*
Site 2	18	08	31	92	*	*	*	*	*	*
Site 2	19	08	31	92	12.0	6.6	64.3	0.95	64.3	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 3	00	08	31	92	22.5	6.8	59.6	8.90	59.6	5.1
Site 3	01	08	31	92	*	*	*	*	*	*
Site 3	02	08	31	92	*	*	*	*	*	*
Site 3	03	08	31	92	*	*	*	*	*	*
Site 3	04	08	31	92	*	*	*	*	*	*
Site 3	05	08	31	92	22.5	6.7	59.7	8.80	59.7	*
Site 3	06	08	31	92	*	*	*	*	*	*
Site 3	07	08	31	92	*	*	*	*	*	*
Site 3	08	08	31	92	*	*	*	*	*	*
Site 3	09	08	31	92	*	*	*	*	*	*
Site 3	10	08	31	92	21.5	7.1	59.1	8.80	59.1	*
Site 3	11	08	31	92	*	*	*	*	*	*
Site 3	12	08	31	92	*	*	*	*	*	*
Site 3	13	08	31	92	*	*	*	*	*	*
Site 3	14	08	31	92	*	*	*	*	*	*
Site 3	15	08	31	92	*	*	*	*	*	*
Site 3	16	08	31	92	*	*	*	*	*	*
Site 3	17	08	31	92	*	*	*	*	*	*
Site 3	18	08	31	92	*	*	*	*	*	*
Site 3	19	08	31	92	*	*	*	*	*	*
Site 3	20	08	31	92	16.0	6.9	59.2	8.25	59.2	*
Site 3	25	08	31	92	*	*	*	*	*	*
Site 3	30	08	31	92	*	*	*	*	*	*
Site 3	35	08	31	92	*	*	*	*	*	*
Site 3	40	08	31	92	12.0	6.9	59.5	9.10	59.5	*
Site 3	45	08	31	92	*	*	*	*	*	*
Site 3	50	08	31	92	*	*	*	*	*	*
Site 3	55	08	31	92	*	*	*	*	*	*
Site 3	60	08	31	92	10.0	6.5	59.8	8.80	59.8	*
Site 3	65	08	31	92	*	*	*	*	*	*
Site 3	70	08	31	92	*	*	*	*	*	*
Site 3	75	08	31	92	*	*	*	*	*	*
Site 3	80	08	31	92	16.0	6.3	63.5	6.25	63.5	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 4	00	08	31	92	21.5	6.8	59.8	8.85	59.8	5.2
Site 4	01	08	31	92	*	*	*	*	*	*
Site 4	02	08	31	92	*	*	*	*	*	*
Site 4	03	08	31	92	*	*	*	*	*	*
Site 4	04	08	31	92	*	*	*	*	*	*
Site 4	05	08	31	92	20.0	7.0	59.3	8.80	59.3	*
Site 4	06	08	31	92	*	*	*	*	*	*
Site 4	07	08	31	92	*	*	*	*	*	*
Site 4	08	08	31	92	*	*	*	*	*	*
Site 4	09	08	31	92	*	*	*	*	*	*
Site 4	10	08	31	92	20.5	7.1	59.3	8.75	59.3	*
Site 4	11	08	31	92	*	*	*	*	*	*
Site 4	12	08	31	92	*	*	*	*	*	*
Site 4	13	08	31	92	*	*	*	*	*	*
Site 4	14	08	31	92	*	*	*	*	*	*
Site 4	15	08	31	92	18.0	6.2	*	*	*	*
Site 4	16	08	31	92	*	*	*	*	*	*
Site 4	17	08	31	92	*	*	*	*	*	*
Site 4	18	08	31	92	*	*	*	*	*	*
Site 4	19	08	31	92	*	*	*	*	*	*
Site 4	20	08	31	92	16.5	5.9	59.1	8.45	59.1	*
Site 4	25	08	31	92	*	*	*	*	*	*
Site 4	30	08	31	92	*	*	*	*	*	*
Site 4	35	08	31	92	*	*	*	*	*	*
Site 4	40	08	31	92	10.0	6.0	59.4	9.05	59.4	*
Site 4	45	08	31	92	*	*	*	*	*	*
Site 4	50	08	31	92	*	*	*	*	*	*
Site 4	55	08	31	92	*	*	*	*	*	*
Site 4	60	08	31	92	11.5	6.0	59.7	8.60	59.7	*
Site 4	65	08	31	92	*	*	*	*	*	*
Site 4	70	08	31	92	*	*	*	*	*	*
Site 4	75	08	31	92	*	*	*	*	*	*
Site 4	80	08	31	92	6.0	6.4	59.6	8.90	59.6	*
Site 4	85	08	31	92	*	*	*	*	*	*
Site 4	90	08	31	92	10.0	6.2	59.9	8.80	59.9	*
Gate	00	08	31	92	19.9	6.5	57.5	8.14	57.5	*

Laboratory data:

Site	Depth	Month	Day	Year	Alk	Turb	NH3	TKN	NO3	SRP	TP	ChlA
Site 1	00	08	31	92	20.9	0.8	14.8	153.4	64.2	BDL	6.8	6.26
Site 1	05	08	31	92	18.9	0.9	20.5	183.3	68.6	BDL	7.8	6.12
Site 1	10	08	31	92	20.1	1.4	67.7	377.5	83.7	BDL	15.6	13.44
Site 1	15	08	31	92	22.8	1.9	131.5	360.2	BDL	BDL	14.1	2.29
Site 1	20	08	31	92	23.0	1.7	131.2	283.8	BDL	BDL	23.1	1.33
Intake	00	08	31	92	18.6	0.7	16.4	BDL	138.5	BDL	7.7	3.97
Intake	05	08	31	92	17.3	0.7	14.6	BDL	157.4	BDL	7.5	6.02
Intake	10	08	31	92	18.2	0.7	13.9	BDL	156.1	BDL	5.9	3.63
Site 2	00	08	31	92	18.3	0.5	12.9	BDL	156.1	BDL	6.3	3.69
Site 2	05	08	31	92	18.1	0.7	16.6	BDL	162.4	BDL	6.4	3.83
Site 2	10	08	31	92	18.0	0.8	26.7	BDL	166.2	BDL	5.5	4.07
Site 2	15	08	31	92	18.6	1.0	70.5	292.6	283.9	BDL	7.8	2.09
Site 2	20	08	31	92	22.1	5.9	288.4	553.0	166.2	BDL	22.9	0.44
Site 3	00	08	31	92	18.0	0.6	14.6	BDL	176.3	BDL	6.6	2.94
Site 3	05	08	31	92	18.0	0.7	16.4	BDL	176.9	21.8	606.3	3.04
Site 3	10	08	31	92	17.8	0.6	16.2	BDL	196.4	BDL	17.0	4.45
Site 3	15	08	31	92	*	*	*	*	*	*	*	6.50
Site 3	20	08	31	92	17.3	0.7	18.7	BDL	357.6	6.2	BDL	3.01
Site 3	40	08	31	92	*	0.6	15.4	BDL	441.3	BDL	BDL	*
Site 3	60	08	31	92	16.8	0.3	16.4	BDL	445.1	BDL	BDL	*
Site 3	80	08	31	92	18.1	0.6	14.4	BDL	418.6	5.2	10.5	*
Site 4	00	08	31	92	18.0	0.7	12.5	BDL	209.0	BDL	5.3	2.39
Site 4	05	08	31	92	18.0	0.8	21.9	BDL	176.3	BDL	BDL	3.15
Site 4	10	08	31	92	17.8	0.7	17.2	BDL	175.0	BDL	BDL	3.15
Site 4	15	08	31	92	*	*	*	*	*	*	*	2.77
Site 4	20	08	31	92	16.2	0.7	16.8	BDL	424.3	BDL	6.8	1.54
Site 4	40	08	31	92	16.3	0.9	25.0	BDL	448.2	BDL	BDL	*
Site 4	60	08	31	92	16.5	0.5	15.5	BDL	447.0	BDL	BDL	*
Site 4	80	08	31	92	16.4	0.8	21.4	BDL	442.5	BDL	BDL	*
Site 4	90	08	31	92	16.8	1.8	15.8	184.0	448.8	BDL	BDL	*
Gate	00	08	31	92	17.8	0.9	30.6	BDL	193.9	BDL	BDL	*

Lake Whatcom Monitoring Program

Prepared January 25, 1994 by the Environmental Research and Education Center,
Western Washington University, for the City of Bellingham, Department of Public Works.

*: missing. BDL: below detection limit.

Hydrolab and quality control data:

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 1	00	10	05	92	15.7	7.5	*	8.83	59.0	3.9
Site 1	01	10	05	92	15.7	*	*	*	*	*
Site 1	02	10	05	92	15.7	*	*	*	*	*
Site 1	03	10	05	92	15.7	*	*	*	*	*
Site 1	04	10	05	92	15.6	*	*	*	*	*
Site 1	05	10	05	92	15.6	7.5	*	8.68	59.3	*
Site 1	06	10	05	92	15.6	*	*	*	*	*
Site 1	07	10	05	92	15.6	*	*	*	*	*
Site 1	08	10	05	92	15.5	*	*	*	*	*
Site 1	09	10	05	92	15.5	*	*	*	*	*
Site 1	10	10	05	92	15.4	7.4	*	8.73	59.0	*
Site 1	11	10	05	92	15.4	*	*	*	*	*
Site 1	12	10	05	92	15.1	*	*	*	*	*
Site 1	13	10	05	92	13.3	*	*	*	*	*
Site 1	14	10	05	92	11.8	*	*	*	*	*
Site 1	15	10	05	92	10.8	6.8	*	0.79	69.9	*
Site 1	16	10	05	92	10.5	*	*	*	*	*
Site 1	17	10	05	92	10.3	*	*	*	*	*
Site 1	18	10	05	92	10.2	*	*	*	*	*
Site 1	19	10	05	92	10.1	*	*	*	*	*
Site 1	20	10	05	92	10.1	6.8	*	0.21	71.3	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Intake	00	10	05	92	16.1	7.6	*	9.39	57.4	5.0
Intake	01	10	05	92	16.1	*	*	*	*	*
Intake	02	10	05	92	16.1	*	*	*	*	*
Intake	03	10	05	92	16.0	*	*	*	*	*
Intake	04	10	05	92	15.9	*	*	*	*	*
Intake	05	10	05	92	15.9	7.4	*	9.39	57.3	*
Intake	06	10	05	92	15.9	*	*	*	*	*
Intake	07	10	05	92	15.8	*	*	*	*	*
Intake	08	10	05	92	15.8	*	*	*	*	*
Intake	09	10	05	92	15.8	*	*	*	*	*
Intake	10	10	05	92	15.8	7.4	*	9.29	56.7	*
Intake	11	10	05	92	15.8	*	*	*	*	*
Intake	12	10	05	92	15.8	*	*	*	*	*
Site 2	00	10	05	92	16.2	7.6	*	9.24	58.0	5.0
Site 2	01	10	05	92	16.2	*	*	*	*	*
Site 2	02	10	05	92	16.2	*	*	*	*	*
Site 2	03	10	05	92	16.2	*	*	*	*	*
Site 2	04	10	05	92	16.2	*	*	*	*	*
Site 2	05	10	05	92	16.1	7.6	*	9.69	57.4	*
Site 2	06	10	05	92	16.1	*	*	*	*	*
Site 2	07	10	05	92	16.0	*	*	*	*	*
Site 2	08	10	05	92	16.0	*	*	*	*	*
Site 2	09	10	05	92	16.0	*	*	*	*	*
Site 2	10	10	05	92	16.0	7.5	*	9.19	58.5	*
Site 2	11	10	05	92	16.0	*	*	*	*	*
Site 2	12	10	05	92	16.0	*	*	*	*	*
Site 2	13	10	05	92	16.0	*	*	*	*	*
Site 2	14	10	05	92	15.9	*	*	*	*	*
Site 2	15	10	05	92	15.1	7.5	*	9.19	57.9	*
Site 2	16	10	05	92	12.8	*	*	*	*	*
Site 2	17	10	05	92	11.6	*	*	*	*	*
Site 2	18	10	05	92	10.9	*	*	*	*	*
Site 2	19	10	05	92	10.7	*	*	*	*	*
Site 2	20	10	05	92	10.6	6.8	*	1.53	68.6	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 3	00	10	05	92	16.0	7.6	*	9.31	57.6	5.3
Site 3	01	10	05	92	16.0	*	*	*	*	*
Site 3	02	10	05	92	16.0	*	*	*	*	*
Site 3	03	10	05	92	15.9	*	*	*	*	*
Site 3	04	10	05	92	15.8	*	*	*	*	*
Site 3	05	10	05	92	15.8	7.4	*	8.96	58.0	*
Site 3	06	10	05	92	15.9	*	*	*	*	*
Site 3	07	10	05	92	15.8	*	*	*	*	*
Site 3	08	10	05	92	15.8	*	*	*	*	*
Site 3	09	10	05	92	15.8	*	*	*	*	*
Site 3	10	10	05	92	15.8	7.6	*	9.23	57.9	*
Site 3	11	10	05	92	15.8	*	*	*	*	*
Site 3	12	10	05	92	15.8	*	*	*	*	*
Site 3	13	10	05	92	15.8	*	*	*	*	*
Site 3	14	10	05	92	15.8	*	*	*	*	*
Site 3	15	10	05	92	15.8	*	*	*	*	*
Site 3	16	10	05	92	15.7	*	*	*	*	*
Site 3	17	10	05	92	15.5	*	*	*	*	*
Site 3	18	10	05	92	13.0	*	*	*	*	*
Site 3	19	10	05	92	11.5	*	*	*	*	*
Site 3	20	10	05	92	11.0	7.2	*	8.19	58.1	*
Site 3	25	10	05	92	8.8	*	*	*	*	*
Site 3	30	10	05	92	7.6	*	*	*	*	*
Site 3	35	10	05	92	7.1	*	*	*	*	*
Site 3	40	10	05	92	6.9	7.1	*	8.47	57.9	*
Site 3	45	10	05	92	6.8	*	*	*	*	*
Site 3	50	10	05	92	6.7	*	*	*	*	*
Site 3	55	10	05	92	6.6	*	*	*	*	*
Site 3	60	10	05	92	6.5	7.0	*	8.17	58.6	*
Site 3	65	10	05	92	6.5	*	*	*	*	*
Site 3	70	10	05	92	6.4	*	*	*	*	*
Site 3	75	10	05	92	6.4	*	*	*	*	*
Site 3	80	10	05	92	6.4	6.8	*	3.56	67.2	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 4	00	10	05	92	15.7	7.5	*	9.28	57.5	5.2
Site 4	01	10	05	92	15.7	*	*	*	*	*
Site 4	02	10	05	92	15.7	*	*	*	*	*
Site 4	03	10	05	92	15.7	*	*	*	*	*
Site 4	04	10	05	92	15.7	*	*	*	*	*
Site 4	05	10	05	92	15.7	7.4	*	9.18	58.0	*
Site 4	06	10	05	92	15.7	*	*	*	*	*
Site 4	07	10	05	92	15.7	*	*	*	*	*
Site 4	08	10	05	92	15.7	*	*	*	*	*
Site 4	09	10	05	92	15.7	*	*	*	*	*
Site 4	10	10	05	92	15.6	7.2	*	9.27	57.6	*
Site 4	11	10	05	92	15.6	*	*	*	*	*
Site 4	12	10	05	92	15.6	*	*	*	*	*
Site 4	13	10	05	92	15.6	*	*	*	*	*
Site 4	14	10	05	92	15.6	*	*	*	*	*
Site 4	15	10	05	92	15.6	*	*	*	*	*
Site 4	16	10	05	92	15.4	*	*	*	*	*
Site 4	17	10	05	92	15.5	*	*	*	*	*
Site 4	18	10	05	92	15.2	*	*	*	*	*
Site 4	19	10	05	92	14.4	*	*	*	*	*
Site 4	20	10	05	92	12.5	7.0	*	8.17	57.6	*
Site 4	25	10	05	92	8.5	*	*	*	*	*
Site 4	30	10	05	92	7.3	*	*	*	*	*
Site 4	35	10	05	92	7.0	*	*	*	*	*
Site 4	40	10	05	92	6.8	7.1	*	8.91	56.8	*
Site 4	45	10	05	92	6.7	*	*	*	*	*
Site 4	50	10	05	92	6.6	*	*	*	*	*
Site 4	55	10	05	92	6.6	*	*	*	*	*
Site 4	60	10	05	92	6.6	7.0	*	8.80	57.9	*
Site 4	65	10	05	92	6.5	*	*	*	*	*
Site 4	70	10	05	92	6.5	*	*	*	*	*
Site 4	75	10	05	92	6.5	*	*	*	*	*
Site 4	80	10	05	92	6.5	7.1	*	9.19	57.2	*
Site 4	85	10	05	92	6.5	*	*	*	*	*
Site 4	90	10	05	92	6.5	7.1	*	8.95	58.2	*
Gate	00	10	05	92	16.5	7.8	67	8.29	57.7	*

Laboratory data:

Site	Depth	Month	Day	Year	Alk	Turb	NH3	TKN	NO3	SRP	TP	ChlA
Site 1	00	10	05	92	19.9	1.1	12.43	145.0	112.7	BDL	9.0	*
Site 1	05	10	05	92	20.3	1.1	18.73	BDL	108.4	BDL	10.8	*
Site 1	10	10	05	92	19.6	1.0	20.31	145.2	99.7	BDL	7.0	*
Site 1	15	10	05	92	26.4	3.8	154.50	267.6	76.0	BDL	7.0	*
Site 1	20	10	05	92	25.2	3.1	159.30	331.7	67.0	37.9	BDL	*
Intake	00	10	05	92	20.3	0.7	56.52	285.1	240.0	BDL	11.6	*
Intake	05	10	05	92	18.1	0.9	24.24	261.8	229.2	BDL	10.2	*
Intake	10	10	05	92	19.3	0.9	29.28	327.8	229.9	BDL	6.4	*
Site 2	00	10	05	92	18.2	0.8	31.96	380.3	218.4	BDL	BDL	*
Site 2	05	10	05	92	18.3	0.7	32.43	349.2	218.4	BDL	6.4	*
Site 2	10	10	05	92	18.5	0.7	32.91	250.1	203.3	*	7.5	*
Site 2	15	10	05	92	18.3	0.7	34.01	248.2	240.4	BDL	BDL	*
Site 2	20	10	05	92	25.3	1.4	170.10	304.5	457.8	7.5	10.5	*
Site 3	00	10	05	92	18.3	0.7	56.21	238.5	231.3	BDL	BDL	*
Site 3	05	10	05	92	16.8	0.8	51.17	310.3	227.0	BDL	5.8	*
Site 3	10	10	05	92	18.0	0.6	45.03	358.9	216.2	BDL	5.2	*
Site 3	20	10	05	92	17.3	0.3	35.90	302.6	658.5	BDL	BDL	*
Site 3	40	10	05	92	17.0	0.7	34.01	588.1	759.9	BDL	15.7	*
Site 3	60	10	05	92	17.1	0.0	33.38	463.8	764.2	BDL	BDL	*
Site 3	80	10	05	92	21.7	74.0	81.56	597.8	626.1	9.6	155.9	*
Site 4	00	10	05	92	15.9	0.6	34.48	287.0	*	BDL	BDL	*
Site 4	05	10	05	92	17.5	0.6	34.01	285.1	380.2	BDL	5.2	*
Site 4	10	10	05	92	18.0	0.9	32.43	292.5	328.4	BDL	BDL	*
Site 4	20	10	05	92	17.5	0.6	31.17	421.1	306.8	BDL	6.1	*
Site 4	40	10	05	92	16.6	0.2	26.76	508.5	721.0	BDL	BDL	*
Site 4	60	10	05	92	17.5	0.5	24.87	541.5	436.3	BDL	BDL	*
Site 4	80	10	05	92	17.6	0.5	184.90	560.9	423.3	BDL	6.7	*
Site 4	90	10	05	92	17.0	0.5	62.82	553.1	798.7	BDL	7.2	*
Gate	00	10	05	92	18.6	0.9	49.12	203.5	153.7	BDL	13.7	*

Lake Whatcom Monitoring Program

Prepared January 25, 1994 by the Environmental Research and Education Center,
Western Washington University, for the City of Bellingham, Department of Public Works.

*: missing. BDL: below detection limit.

Hydrolab and quality control data:

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 1	00	11	11	92	11.3	7.5	65	9.87	30	3.8
Site 1	01	11	11	92	11.3	7.5	65	9.84	*	*
Site 1	02	11	11	92	11.3	7.5	66	9.87	*	*
Site 1	03	11	11	92	11.2	7.5	68	9.87	*	*
Site 1	04	11	11	92	11.2	7.5	68	9.88	*	*
Site 1	05	11	11	92	11.3	7.5	68	9.88	38.0	*
Site 1	06	11	11	92	11.2	7.4	68	9.89	*	*
Site 1	07	11	11	92	11.2	7.4	68	9.85	*	*
Site 1	08	11	11	92	11.2	7.4	68	9.89	*	*
Site 1	09	11	11	92	11.2	7.4	68	9.89	*	*
Site 1	10	11	11	92	11.2	7.4	69	9.90	48.0	*
Site 1	11	11	11	92	11.2	7.4	69	9.90	*	*
Site 1	12	11	11	92	11.2	7.4	70	9.90	*	*
Site 1	13	11	11	92	11.2	7.4	69	9.90	*	*
Site 1	14	11	11	92	11.2	7.4	69	9.90	*	*
Site 1	15	11	11	92	11.2	7.4	69	9.91	47.1	*
Site 1	16	11	11	92	11.2	7.4	69	9.91	*	*
Site 1	17	11	11	92	11.2	7.4	69	9.91	*	*
Site 1	18	11	11	92	11.2	7.4	69	9.91	*	*
Site 1	19	11	11	92	11.2	7.4	69	9.91	*	*
Site 1	20	11	11	92	11.2	7.4	69	9.88	49.3	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Intake	00	11	11	92	11.8	7.5	64	10.35	48.5	4.0
Intake	01	11	11	92	11.8	7.5	64	10.29	*	*
Intake	02	11	11	92	11.8	7.5	65	10.29	*	*
Intake	03	11	11	92	11.8	7.5	66	10.25	*	*
Intake	04	11	11	92	11.8	7.5	66	10.25	*	*
Intake	05	11	11	92	11.8	7.5	67	10.26	47.2	*
Intake	06	11	11	92	11.8	7.5	67	10.23	*	*
Intake	07	11	11	92	11.8	7.5	67	10.20	*	*
Intake	08	11	11	92	11.8	7.5	67	10.22	*	*
Intake	09	11	11	92	11.8	7.5	67	10.22	*	*
Intake	10	11	11	92	11.8	7.5	68	10.22	48.2	*
Intake	11	11	11	92	11.7	7.5	68	10.19	*	*
Site 2	00	11	11	92	11.8	7.5	64	10.29	48.2	3.8
Site 2	01	11	11	92	11.8	7.5	64	10.25	*	*
Site 2	02	11	11	92	11.8	7.5	65	10.25	*	*
Site 2	03	11	11	92	11.8	7.5	66	10.25	*	*
Site 2	04	11	11	92	11.8	7.5	66	10.25	*	*
Site 2	05	11	11	92	11.8	7.5	67	10.25	49.0	*
Site 2	06	11	11	92	11.8	7.5	67	10.23	*	*
Site 2	07	11	11	92	11.8	7.5	67	10.26	*	*
Site 2	08	11	11	92	11.8	7.5	67	10.26	*	*
Site 2	09	11	11	92	11.8	7.5	68	10.23	*	*
Site 2	10	11	11	92	11.8	7.5	68	10.23	49.0	*
Site 2	11	11	11	92	11.8	7.5	68	10.20	*	*
Site 2	12	11	11	92	11.8	7.5	68	10.19	*	*
Site 2	13	11	11	92	11.8	7.5	68	10.19	*	*
Site 2	14	11	11	92	11.8	7.5	69	10.19	*	*
Site 2	15	11	11	92	11.8	7.5	69	10.19	49.0	*
Site 2	16	11	11	92	11.8	7.5	68	10.16	*	*
Site 2	17	11	11	92	11.8	7.5	68	10.15	*	*
Site 2	18	11	11	92	11.8	7.5	68	10.15	*	*
Site 2	19	11	11	92	11.8	7.5	68	10.12	*	*
Site 2	20	11	11	92	11.8	7.5	68	10.12	49.0	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 3	00	11	11	92	12.0	7.5	64	10.25	50.2	4.0
Site 3	01	11	11	92	12.1	7.5	64	10.24	*	*
Site 3	02	11	11	92	12.1	7.5	65	10.24	*	*
Site 3	03	11	11	92	12.1	7.5	66	10.24	*	*
Site 3	04	11	11	92	12.1	7.5	67	10.24	*	*
Site 3	05	11	11	92	12.1	7.5	67	10.20	49.0	*
Site 3	06	11	11	92	12.1	7.5	67	10.20	*	*
Site 3	07	11	11	92	12.1	7.5	68	10.17	*	*
Site 3	08	11	11	92	12.1	7.5	68	10.16	*	*
Site 3	09	11	11	92	12.1	7.5	68	10.15	*	*
Site 3	10	11	11	92	12.1	7.5	68	10.16	49.0	*
Site 3	11	11	11	92	12.1	7.5	68	10.12	*	*
Site 3	12	11	11	92	12.1	7.5	68	10.13	*	*
Site 3	13	11	11	92	12.1	7.5	68	10.12	*	*
Site 3	14	11	11	92	12.1	7.5	68	10.09	*	*
Site 3	15	11	11	92	12.2	7.5	68	10.08	*	*
Site 3	16	11	11	92	12.2	7.5	69	10.08	*	*
Site 3	17	11	11	92	12.1	7.5	68	10.09	*	*
Site 3	18	11	11	92	12.1	7.4	68	10.08	*	*
Site 3	19	11	11	92	12.2	7.4	68	10.05	*	*
Site 3	20	11	11	92	12.2	7.4	68	10.04	49.0	*
Site 3	25	11	11	92	9.4	7.0	68	8.40	*	*
Site 3	30	11	11	92	8.1	7.0	68	8.62	*	*
Site 3	35	11	11	92	7.8	6.9	66	8.59	*	*
Site 3	40	11	11	92	7.6	6.9	66	8.52	50.0	*
Site 3	45	11	11	92	7.5	6.9	66	7.87	*	*
Site 3	50	11	11	92	7.4	6.9	65	7.81	*	*
Site 3	55	11	11	92	7.4	6.9	64	7.76	*	*
Site 3	60	11	11	92	7.4	6.8	64	7.70	51.2	*
Site 3	65	11	11	92	7.3	6.8	63	7.51	*	*
Site 3	70	11	11	92	7.3	6.8	65	7.22	*	*
Site 3	75	11	11	92	7.2	6.7	64	6.94	*	*
Site 3	80	11	11	92	7.2	6.6	64	5.84	51.8	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 4	00	11	11	92	11.8	7.3	64	10.41	52.0	4.3
Site 4	01	11	11	92	11.8	7.3	64	10.42	*	*
Site 4	02	11	11	92	11.8	7.3	66	10.29	*	*
Site 4	03	11	11	92	11.8	7.3	66	10.13	*	*
Site 4	04	11	11	92	11.8	7.3	67	10.10	*	*
Site 4	05	11	11	92	11.9	7.3	67	10.06	52.0	*
Site 4	06	11	11	92	11.9	7.3	67	10.05	*	*
Site 4	07	11	11	92	11.9	7.3	67	10.05	*	*
Site 4	08	11	11	92	11.9	7.3	67	10.02	*	*
Site 4	09	11	11	92	11.9	7.4	69	10.02	*	*
Site 4	10	11	11	92	11.9	7.4	69	10.01	51.5	*
Site 4	11	11	11	92	11.9	7.4	69	10.01	*	*
Site 4	12	11	11	92	11.9	7.3	69	9.98	*	*
Site 4	13	11	11	92	11.9	7.3	69	9.98	*	*
Site 4	14	11	11	92	11.9	7.3	69	9.98	*	*
Site 4	15	11	11	92	11.9	7.3	69	9.98	*	*
Site 4	16	11	11	92	11.9	7.3	69	9.97	*	*
Site 4	17	11	11	92	11.9	7.3	69	9.95	*	*
Site 4	18	11	11	92	11.9	7.3	69	9.95	*	*
Site 4	19	11	11	92	11.9	7.3	69	9.95	*	*
Site 4	20	11	11	92	11.9	7.3	69	9.95	51.0	*
Site 4	25	11	11	92	11.7	7.3	69	9.81	*	*
Site 4	30	11	11	92	8.0	7.0	67	8.90	*	*
Site 4	35	11	11	92	7.7	7.0	69	8.68	*	*
Site 4	40	11	11	92	7.5	6.9	69	8.77	50.5	*
Site 4	45	11	11	92	7.5	6.9	69	8.76	*	*
Site 4	50	11	11	92	7.5	6.9	69	8.78	*	*
Site 4	55	11	11	92	7.4	6.9	68	8.67	*	*
Site 4	60	11	11	92	7.4	6.9	66	8.67	53.0	*
Site 4	65	11	11	92	7.4	6.8	65	8.65	*	*
Site 4	70	11	11	92	7.4	6.8	65	8.65	*	*
Site 4	75	11	11	92	7.3	6.8	64	8.71	*	*
Site 4	80	11	11	92	7.3	6.8	64	8.72	51.8	*
Site 4	85	11	11	92	7.3	6.8	65	8.70	*	*
Site 4	90	11	11	92	7.3	6.8	64	8.62	52.0	*
Gate	00	11	11	92	12.2	7.7	65	10.10	50.0	*

Laboratory data:

Site	Depth	Month	Day	Year	Alk	Turb	NH3	TKN	NO3	SRP	TP	ChlA
Site 1	00	11	11	92	18.5	0.7	90.5	261.8	121.7	BDL	11.9	*
Site 1	05	11	11	92	19.7	0.6	48.4	219.1	127.5	BDL	9.0	*
Site 1	10	11	11	92	18.3	0.8	43.2	215.2	156.7	BDL	9.3	*
Site 1	15	11	11	92	19.3	0.7	33.7	277.3	124.6	BDL	9.3	*
Site 1	20	11	11	92	18.7	0.7	38.7	324.0	124.6	BDL	8.1	*
Intake	00	11	11	92	18.0	0.4	19.5	327.8	142.1	BDL	BDL	*
Intake	05	11	11	92	17.0	0.4	6.6	345.3	121.7	BDL	BDL	*
Intake	10	11	11	92	17.9	0.4	BDL	325.9	276.5	BDL	BDL	*
Site 2	00	11	11	92	17.3	0.4	BDL	325.9	145.0	BDL	5.5	*
Site 2	05	11	11	92	17.3	0.4	BDL	335.6	139.2	BDL	BDL	*
Site 2	10	11	11	92	17.5	0.4	6.3	322.0	139.2	BDL	BDL	*
Site 2	15	11	11	92	17.7	0.4	BDL	287.0	165.5	BDL	BDL	*
Site 2	20	11	11	92	15.7	0.4	5.6	230.7	153.8	BDL	BDL	*
Site 3	00	11	11	92	17.4	0.4	BDL	294.8	159.7	BDL	6.4	*
Site 3	05	11	11	92	17.7	0.3	39.4	353.1	159.7	BDL	BDL	*
Site 3	10	11	11	92	18.0	0.3	18.0	308.4	145.0	BDL	BDL	*
Site 3	15	11	11	92	*	*	*	*	*	*	*	*
Site 3	20	11	11	92	17.6	0.3	8.4	327.8	156.7	BDL	BDL	*
Site 3	40	11	11	92	15.7	0.4	BDL	473.5	294.0	BDL	BDL	*
Site 3	60	11	11	92	17.3	0.6	BDL	465.7	291.1	BDL	BDL	*
Site 3	80	11	11	92	17.4	0.6	7.5	485.1	267.7	BDL	BDL	*
Site 4	00	11	11	92	16.3	0.4	14.5	376.4	153.8	BDL	BDL	*
Site 4	05	11	11	92	17.4	0.5	10.5	366.7	168.4	BDL	BDL	*
Site 4	10	11	11	92	17.9	0.5	19.1	368.6	162.6	BDL	BDL	*
Site 4	15	11	11	92	*	*	*	*	*	*	*	*
Site 4	20	11	11	92	11.3	0.5	14.7	372.5	168.4	BDL	BDL	*
Site 4	40	11	11	92	16.1	0.3	17.1	485.1	145.0	BDL	BDL	*
Site 4	60	11	11	92	17.4	0.4	14.2	569.4	381.7	BDL	BDL	*
Site 4	80	11	11	92	17.4	0.4	12.0	441.9	273.6	BDL	BDL	*
Site 4	90	11	11	92	16.4	0.4	6.4	468.9	495.6	BDL	BDL	*
Gate	00	11	11	92	16.0	0.5	BDL	358.8	285.3	BDL	6.6	*

Lake Whatcom Monitoring Program

Prepared January 25, 1994 by the Environmental Research and Education Center,
Western Washington University, for the City of Bellingham, Department of Public Works.
*: missing. BDL: below detection limit.

Hydrolab and quality control data:

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 1	00	12	14	92	6.8	7.4	66	11.95	37.0	4.8
Site 1	01	12	14	92	6.8	7.4	66	11.92	*	*
Site 1	02	12	14	92	6.8	7.5	66	11.88	*	*
Site 1	03	12	14	92	6.8	7.5	67	11.89	*	*
Site 1	04	12	14	92	6.8	7.5	68	11.86	*	*
Site 1	05	12	14	92	6.7	7.5	68	11.91	38.9	*
Site 1	06	12	14	92	6.7	7.5	68	11.86	*	*
Site 1	07	12	14	92	6.7	7.5	69	11.88	*	*
Site 1	08	12	14	92	6.7	7.4	69	11.88	*	*
Site 1	09	12	14	92	6.7	7.4	69	11.89	*	*
Site 1	10	12	14	92	6.7	7.5	69	11.88	38.0	*
Site 1	11	12	14	92	6.7	7.4	69	11.84	*	*
Site 1	12	12	14	92	6.7	7.5	70	11.85	*	*
Site 1	13	12	14	92	6.7	7.4	70	11.79	*	*
Site 1	14	12	14	92	6.7	7.5	70	11.80	*	*
Site 1	15	12	14	92	6.7	7.5	68	11.76	39.5	*
Site 1	16	12	14	92	6.7	7.5	70	11.71	*	*
Site 1	17	12	14	92	6.7	7.4	70	11.67	*	*
Site 1	18	12	14	92	6.7	7.5	70	11.67	*	*
Site 1	19	12	14	92	6.7	7.5	69	11.63	*	*
Site 1	20	12	14	92	6.7	7.5	69	11.63	37.0	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Intake	00	12	14	92	8.2	7.4	63	11.46	38.5	5.0
Intake	01	12	14	92	8.2	7.4	65	11.43	*	*
Intake	02	12	14	92	8.2	7.4	65	11.44	*	*
Intake	03	12	14	92	8.2	7.4	65	11.37	*	*
Intake	04	12	14	92	8.2	7.4	67	11.34	*	*
Intake	05	12	14	92	8.1	7.4	67	11.39	35.5	*
Intake	06	12	14	92	8.1	7.4	67	11.39	*	*
Intake	07	12	14	92	8.1	7.4	67	11.35	*	*
Intake	08	12	14	92	8.1	7.4	67	11.30	*	*
Intake	09	12	14	92	8.1	7.4	67	11.34	*	*
Intake	10	12	14	92	8.1	7.4	67	11.37	39.0	*
Intake	11	12	14	92	8.0	7.4	68	11.40	*	*
Site 2	00	12	14	92	8.2	7.3	62	11.54	42.0	5.1
Site 2	01	12	14	92	8.2	7.4	63	11.33	*	*
Site 2	02	12	14	92	8.2	7.4	63	11.37	*	*
Site 2	03	12	14	92	8.2	7.4	64	11.38	*	*
Site 2	04	12	14	92	8.2	7.4	65	11.38	*	*
Site 2	05	12	14	92	8.2	7.4	65	11.38	44.0	*
Site 2	06	12	14	92	8.1	7.4	65	11.39	*	*
Site 2	07	12	14	92	8.1	7.4	66	11.39	*	*
Site 2	08	12	14	92	8.1	7.4	65	11.39	*	*
Site 2	09	12	14	92	8.1	7.4	66	11.39	*	*
Site 2	10	12	14	92	8.1	7.4	67	11.40	40.0	*
Site 2	11	12	14	92	8.1	7.4	66	11.40	*	*
Site 2	12	12	14	92	8.1	7.4	67	11.31	*	*
Site 2	13	12	14	92	8.1	7.4	66	11.36	*	*
Site 2	14	12	14	92	8.1	7.4	66	11.37	*	*
Site 2	15	12	14	92	8.1	7.4	67	11.37	41.5	*
Site 2	16	12	14	92	8.1	7.4	66	11.37	*	*
Site 2	17	12	14	92	8.1	7.4	66	11.38	*	*
Site 2	18	12	14	92	8.1	7.4	67	11.38	*	*
Site 2	19	12	14	92	8.1	7.4	67	11.34	41.0	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 3	00	12	14	92	8.4	7.2	61	11.14	42.0	5.1
Site 3	01	12	14	92	8.4	7.2	63	11.09	*	*
Site 3	02	12	14	92	8.4	7.3	63	11.09	*	*
Site 3	03	12	14	92	8.4	7.3	63	11.09	*	*
Site 3	04	12	14	92	8.4	7.3	64	11.09	*	*
Site 3	05	12	14	92	8.4	7.3	64	11.09	41.0	*
Site 3	06	12	14	92	8.4	7.3	64	11.09	*	*
Site 3	07	12	14	92	8.4	7.3	65	11.05	*	*
Site 3	08	12	14	92	8.4	7.3	65	11.05	*	*
Site 3	09	12	14	92	8.4	7.3	65	11.02	*	*
Site 3	10	12	14	92	8.4	7.3	65	11.05	41.5	*
Site 3	11	12	14	92	8.4	7.3	65	11.01	*	*
Site 3	12	12	14	92	8.4	7.3	65	11.01	*	*
Site 3	13	12	14	92	8.4	7.3	65	11.02	*	*
Site 3	14	12	14	92	8.4	7.3	65	11.01	*	*
Site 3	15	12	14	92	8.4	7.3	65	11.01	*	*
Site 3	16	12	14	92	8.4	7.3	66	10.97	*	*
Site 3	17	12	14	92	8.4	7.3	66	10.96	*	*
Site 3	18	12	14	92	8.4	7.3	66	10.96	*	*
Site 3	19	12	14	92	8.4	7.3	66	10.96	*	*
Site 3	20	12	14	92	8.4	7.3	65	10.96	42.0	*
Site 3	25	12	14	92	8.4	7.3	66	10.80	*	*
Site 3	30	12	14	92	8.4	7.3	65	10.80	*	*
Site 3	35	12	14	92	8.4	7.3	65	10.67	*	*
Site 3	40	12	14	92	8.3	7.3	65	10.51	41.5	*
Site 3	45	12	14	92	7.8	7.0	64	9.06	*	*
Site 3	50	12	14	92	7.5	7.0	64	8.75	*	*
Site 3	55	12	14	92	7.4	6.9	63	8.54	*	*
Site 3	60	12	14	92	7.4	6.8	63	8.56	43.5	*
Site 3	65	12	14	92	7.4	6.8	64	8.53	*	*
Site 3	70	12	14	92	7.3	6.8	64	8.45	*	*
Site 3	75	12	14	92	7.3	6.8	64	8.23	*	*
Site 3	80	12	14	92	7.3	6.8	62	8.06	48.0	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 4	00	12	14	92	8.4	7.1	61	10.88	43.0	4.7
Site 4	01	12	14	92	8.4	7.2	61	10.87	*	*
Site 4	02	12	14	92	8.4	7.2	62	10.87	*	*
Site 4	03	12	14	92	8.4	7.2	63	10.87	*	*
Site 4	04	12	14	92	8.4	7.2	63	10.87	*	*
Site 4	05	12	14	92	8.4	7.2	63	10.83	42.0	*
Site 4	06	12	14	92	8.4	7.2	64	10.84	*	*
Site 4	07	12	14	92	8.4	7.2	65	10.84	*	*
Site 4	08	12	14	92	8.4	7.2	64	10.84	*	*
Site 4	09	12	14	92	8.4	7.2	64	10.84	*	*
Site 4	10	12	14	92	8.4	7.2	64	10.84	41.8	*
Site 4	11	12	14	92	8.4	7.3	65	10.84	*	*
Site 4	12	12	14	92	8.4	7.3	65	10.80	*	*
Site 4	13	12	14	92	8.4	7.3	65	10.80	*	*
Site 4	14	12	14	92	8.4	7.3	65	10.81	*	*
Site 4	15	12	14	92	8.4	7.3	65	10.81	*	*
Site 4	16	12	14	92	8.4	7.3	65	10.76	*	*
Site 4	17	12	14	92	8.4	7.3	65	10.72	*	*
Site 4	18	12	14	92	8.4	7.3	65	10.67	*	*
Site 4	19	12	14	92	8.4	7.3	65	10.64	*	*
Site 4	20	12	14	92	8.4	7.3	65	10.63	40.8	*
Site 4	25	12	14	92	8.4	7.3	64	10.55	*	*
Site 4	30	12	14	92	8.0	7.2	64	9.69	*	*
Site 4	35	12	14	92	7.6	7.0	63	8.96	*	*
Site 4	40	12	14	92	7.5	7.0	63	8.78	41.4	*
Site 4	45	12	14	92	7.4	7.0	63	8.64	*	*
Site 4	50	12	14	92	7.4	6.9	63	8.64	*	*
Site 4	55	12	14	92	7.4	6.9	61	8.66	*	*
Site 4	60	12	14	92	7.4	6.9	61	8.62	40.4	*
Site 4	65	12	14	92	7.3	6.9	60	8.58	*	*
Site 4	70	12	14	92	7.3	6.9	61	8.59	*	*
Site 4	75	12	14	92	7.3	6.9	61	8.59	*	*
Site 4	80	12	14	92	7.3	6.9	61	8.65	40.6	*
Site 4	85	12	14	92	7.3	6.9	61	8.71	*	*
Site 4	90	12	14	92	7.3	6.9	59	8.71	40.8	*
Gate	00	12	14	92	8.5	7.1	63	11.24	41.0	*

Laboratory data:

Site	Depth	Month	Day	Year	Alk	Turb	NH3	TKN	NO3	SRP	TP	ChlA
Site 1	00	12	14	92	18.1	0.4	BDL	337.2	261.0	BDL	10.9	*
Site 1	05	12	14	92	18.0	0.5	BDL	427.5	244.1	BDL	6.6	*
Site 1	10	12	14	92	18.8	0.5	BDL	337.2	253.4	BDL	6.6	*
Site 1	15	12	14	92	18.8	0.5	BDL	432.8	244.1	BDL	5.9	*
Site 1	20	12	14	92	18.2	0.5	BDL	349.6	239.6	BDL	6.2	*
Intake	00	12	14	92	17.9	0.3	BDL	638.3	320.8	BDL	BDL	*
Intake	05	12	14	92	17.9	0.3	BDL	516.1	323.1	BDL	BDL	*
Intake	10	12	14	92	17.6	0.3	BDL	367.3	338.8	BDL	BDL	*
Site 2	00	12	14	92	17.4	0.4	BDL	544.4	307.3	BDL	5.9	*
Site 2	05	12	14	92	17.7	0.4	BDL	468.3	283.6	BDL	5.2	*
Site 2	10	12	14	92	17.8	0.3	BDL	478.9	275.7	BDL	BDL	*
Site 2	15	12	14	92	17.8	0.4	BDL	411.6	315.2	BDL	BDL	*
Site 2	20	12	14	92	18.0	0.4	BDL	388.6	316.3	BDL	BDL	*
Site 3	00	12	14	92	18.0	0.3	BDL	553.3	337.7	BDL	BDL	*
Site 3	05	12	14	92	17.4	0.3	BDL	471.8	342.2	BDL	BDL	*
Site 3	10	12	14	92	17.2	0.3	BDL	501.9	310.6	BDL	BDL	*
Site 3	15	12	14	92	*	*	*	*	*	*	*	*
Site 3	20	12	14	92	17.2	0.2	BDL	581.6	324.2	BDL	BDL	*
Site 3	40	12	14	92	17.2	0.3	BDL	578.1	342.2	BDL	BDL	*
Site 3	60	12	14	92	16.6	0.3	BDL	668.4	423.4	BDL	BDL	*
Site 3	80	12	14	92	16.6	0.4	BDL	643.6	418.9	BDL	5.2	*
Site 4	00	12	14	92	16.8	0.2	BDL	595.8	361.4	BDL	BDL	*
Site 4	05	12	14	92	16.9	0.3	BDL	572.7	341.1	BDL	5.2	*
Site 4	10	12	14	92	17.9	0.3	BDL	629.4	355.8	BDL	BDL	*
Site 4	15	12	14	92	*	*	*	*	*	*	*	*
Site 4	20	12	14	92	17.0	0.3	14.5	576.3	308.4	BDL	5.9	*
Site 4	40	12	14	92	16.4	0.3	BDL	666.6	485.5	BDL	BDL	*
Site 4	60	12	14	92	16.6	0.3	BDL	562.1	484.4	BDL	BDL	*
Site 4	80	12	14	92	17.2	0.3	BDL	609.9	484.4	BDL	BDL	*
Site 4	90	12	14	92	16.9	0.3	BDL	666.6	452.8	6.0	BDL	*
Gate	00	12	14	92	17.5	0.3	BDL	625.9	329.8	BDL	5.9	*

Lake Whatcom Monitoring Program

Prepared January 25, 1994 by the Environmental Research and Education Center,
Western Washington University, for the City of Bellingham, Department of Public Works.

*: missing. BDL: below detection limit.

Hydrolab and quality control data:

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 1	00	02	02	93	5.4	7.0	65	12.56	*	4.4
Site 1	01	02	02	93	5.3	7.1	68	12.56	*	*
Site 1	02	02	02	93	5.3	7.2	68	12.62	*	*
Site 1	03	02	02	93	5.3	7.3	68	12.69	*	*
Site 1	04	02	02	93	5.3	7.3	68	12.71	*	*
Site 1	05	02	02	93	5.2	7.3	70	12.79	35.0	*
Site 1	06	02	02	93	5.2	7.3	70	12.81	*	*
Site 1	07	02	02	93	5.1	7.4	70	12.83	*	*
Site 1	08	02	02	93	5.0	7.4	71	12.77	*	*
Site 1	09	02	02	93	5.0	7.4	71	12.73	*	*
Site 1	10	02	02	93	5.0	7.4	71	12.74	33.9	*
Site 1	11	02	02	93	4.9	7.4	72	12.68	*	*
Site 1	12	02	02	93	4.9	7.5	72	12.65	*	*
Site 1	13	02	02	93	4.8	7.5	72	12.66	*	*
Site 1	14	02	02	93	4.8	7.4	72	12.62	*	*
Site 1	15	02	02	93	4.8	7.5	72	12.59	*	*
Site 1	16	02	02	93	4.8	7.5	72	12.55	*	*
Site 1	17	02	02	93	4.8	7.5	72	12.57	*	*
Site 1	18	02	02	93	4.7	7.5	72	12.55	*	*
Site 1	19	02	02	93	4.7	7.5	72	12.56	*	*
Site 1	20	02	02	93	4.7	7.5	71	12.55	35.0	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Intake	00	02	02	93	6.5	7.3	64	12.12	34.0	6.7
Intake	01	02	02	93	6.4	7.3	65	12.08	*	*
Intake	02	02	02	93	6.2	7.3	65	12.06	*	*
Intake	03	02	02	93	6.2	7.3	67	12.06	*	*
Intake	04	02	02	93	6.1	7.3	67	12.03	*	*
Intake	05	02	02	93	6.1	7.3	67	12.01	*	*
Intake	06	02	02	93	6.1	7.3	68	11.97	*	*
Intake	07	02	02	93	6.1	7.3	69	11.88	*	*
Intake	08	02	02	93	6.1	7.3	69	11.88	*	*
Intake	09	02	02	93	6.1	7.3	69	11.88	*	*
Intake	10	02	02	93	6.1	7.3	69	11.88	34.2	*
Intake	11	02	02	93	6.0	7.3	69	12.00	*	*
Site 2	00	02	02	93	6.8	7.3	64	11.91	*	5.9
Site 2	01	02	02	93	6.5	7.3	64	11.93	*	*
Site 2	02	02	02	93	6.2	7.3	65	12.05	*	*
Site 2	03	02	02	93	6.2	7.3	65	12.05	*	*
Site 2	04	02	02	93	6.2	7.3	66	12.06	*	*
Site 2	05	02	02	93	6.1	7.3	67	12.08	*	*
Site 2	06	02	02	93	6.1	7.4	67	12.08	*	*
Site 2	07	02	02	93	6.1	7.4	67	12.10	*	*
Site 2	08	02	02	93	6.1	7.4	68	12.06	*	*
Site 2	09	02	02	93	6.1	7.4	68	12.07	*	*
Site 2	10	02	02	93	6.0	7.4	69	12.05	*	*
Site 2	11	02	02	93	6.0	7.4	69	12.02	*	*
Site 2	12	02	02	93	6.0	7.4	68	12.00	*	*
Site 2	13	02	02	93	6.0	7.4	69	11.92	*	*
Site 2	14	02	02	93	5.9	7.4	69	11.94	*	*
Site 2	15	02	02	93	5.9	7.4	69	11.85	34.0	*
Site 2	16	02	02	93	5.9	7.3	70	11.80	*	*
Site 2	17	02	02	93	5.9	7.3	70	11.70	*	*
Site 2	18	02	02	93	5.9	7.3	70	11.66	*	*
Site 2	19	02	02	93	5.9	7.3	70	11.57	*	*
Site 2	20	02	02	93	5.9	7.3	70	11.53	34.5	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 3	00	02	02	93	6.4	7.1	64	11.48	*	7.1
Site 3	01	02	02	93	6.3	7.1	65	11.50	*	*
Site 3	02	02	02	93	6.3	7.2	65	11.55	*	*
Site 3	03	02	02	93	6.2	7.2	66	11.54	*	*
Site 3	04	02	02	93	6.2	7.2	66	11.58	*	*
Site 3	05	02	02	93	6.2	7.2	66	11.58	*	*
Site 3	06	02	02	93	6.1	7.3	67	11.60	*	*
Site 3	07	02	02	93	6.1	7.3	67	11.56	*	*
Site 3	08	02	02	93	6.1	7.3	68	11.56	*	*
Site 3	09	02	02	93	6.1	7.3	68	11.56	*	*
Site 3	10	02	02	93	6.1	7.3	68	11.57	33.5	*
Site 3	15	02	02	93	6.1	7.3	69	11.44	*	*
Site 3	20	02	02	93	6.1	7.3	70	11.32	*	*
Site 3	25	02	02	93	6.0	7.3	69	11.28	*	*
Site 3	30	02	02	93	6.0	7.3	70	11.24	*	*
Site 3	35	02	02	93	6.0	7.3	69	11.20	*	*
Site 3	40	02	02	93	6.0	7.3	69	11.15	*	*
Site 3	45	02	02	93	6.0	7.3	69	11.16	*	*
Site 3	50	02	02	93	6.0	7.3	67	11.12	*	*
Site 3	55	02	02	93	6.0	7.3	66	11.09	*	*
Site 3	60	02	02	93	6.0	7.3	68	11.09	*	*
Site 3	65	02	02	93	5.9	7.3	68	11.05	*	*
Site 3	70	02	02	93	6.0	7.3	67	11.05	*	*
Site 3	75	02	02	93	5.9	7.3	66	11.06	*	*
Site 3	80	02	02	93	5.9	7.3	67	11.00	*	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 4	00	02	02	93	6.2	6.9	65	11.52	*	8.0
Site 4	01	02	02	93	6.2	7.0	67	11.41	*	*
Site 4	02	02	02	93	6.2	7.1	67	11.43	*	*
Site 4	03	02	02	93	6.1	7.1	67	11.45	*	*
Site 4	04	02	02	93	6.1	7.2	67	11.46	*	*
Site 4	05	02	02	93	6.1	7.2	68	11.46	*	*
Site 4	06	02	02	93	6.1	7.2	68	11.47	*	*
Site 4	07	02	02	93	6.1	7.2	68	11.43	*	*
Site 4	08	02	02	93	6.1	7.2	69	11.40	*	*
Site 4	09	02	02	93	6.1	7.2	69	11.39	*	*
Site 4	10	02	02	93	6.1	7.2	70	11.35	33.5	*
Site 4	15	02	02	93	6.1	7.2	70	11.27	*	*
Site 4	20	02	02	93	6.0	7.2	70	11.13	34.4	*
Site 4	25	02	02	93	6.0	7.2	70	11.08	*	*
Site 4	30	02	02	93	6.0	7.2	70	11.08	*	*
Site 4	35	02	02	93	6.0	7.2	69	11.09	*	*
Site 4	40	02	02	93	6.0	7.2	69	11.04	*	*
Site 4	45	02	02	93	6.0	7.2	68	11.09	*	*
Site 4	50	02	02	93	6.0	7.2	67	11.05	*	*
Site 4	55	02	02	93	6.0	7.2	68	11.05	*	*
Site 4	60	02	02	93	6.0	7.2	67	11.05	33.9	*
Site 4	65	02	02	93	6.0	7.2	66	11.01	*	*
Site 4	70	02	02	93	6.0	7.2	66	10.96	*	*
Site 4	75	02	02	93	6.0	7.2	65	10.97	*	*
Site 4	80	02	02	93	6.0	7.2	65	10.97	*	*
Site 4	85	02	02	93	6.0	7.2	65	10.93	*	*
Site 4	90	02	02	93	6.0	7.2	64	10.93	*	*
Gate	00	02	02	93	6.5	7.1	66	11.74	*	*

Laboratory data:

Site	Depth	Month	Day	Year	Alk	Turb	NH3	TKN	NO3	SRP	TP	ChlA
Site 1	00	02	02	93	18.1	1.0	BDL	408.5	208.4	BDL	BDL	*
Site 1	05	02	02	93	17.1	1.2	BDL	405.1	341.2	BDL	5.2	*
Site 1	10	02	02	93	18.4	1.1	BDL	427.0	381.4	BDL	5.5	*
Site 1	15	02	02	93	18.1	1.0	BDL	371.5	324.8	BDL	5.5	*
Site 1	20	02	02	93	17.6	1.1	BDL	413.5	278.7	BDL	6.9	*
Intake	00	02	02	93	17.0	0.7	BDL	432.0	450.3	BDL	BDL	*
Intake	05	02	02	93	17.3	0.5	BDL	437.1	425.6	BDL	5.5	*
Intake	10	02	02	93	17.3	0.5	BDL	385.0	389.1	BDL	BDL	*
Site 2	00	02	02	93	17.0	0.5	BDL	378.2	403.3	BDL	BDL	*
Site 2	05	02	02	93	18.7	0.6	BDL	453.9	408.7	BDL	BDL	*
Site 2	10	02	02	93	17.3	0.5	BDL	418.6	525.6	BDL	BDL	*
Site 2	15	02	02	93	17.6	0.6	BDL	403.4	533.3	BDL	BDL	*
Site 2	20	02	02	93	16.7	0.7	BDL	385.0	294.6	BDL	BDL	*
Site 3	00	02	02	93	17.1	0.4	BDL	432.0	329.3	BDL	BDL	*
Site 3	05	02	02	93	16.5	0.5	6.6	490.8	201.6	BDL	BDL	*
Site 3	10	02	02	93	17.1	0.5	BDL	467.3	333.0	BDL	BDL	*
Site 3	20	02	02	93	17.2	0.4	BDL	432.0	446.6	BDL	BDL	*
Site 3	40	02	02	93	17.6	0.5	BDL	425.3	439.3	BDL	BDL	*
Site 3	60	02	02	93	16.8	0.5	BDL	416.9	444.3	BDL	BDL	*
Site 3	80	02	02	93	17.0	0.6	BDL	423.6	429.3	BDL	BDL	*
Site 4	00	02	02	93	17.4	0.5	BDL	490.8	444.8	BDL	BDL	*
Site 4	05	02	02	93	17.0	0.4	7.9	477.4	357.2	BDL	BDL	*
Site 4	10	02	02	93	17.6	0.4	BDL	509.3	475.4	BDL	BDL	*
Site 4	20	02	02	93	16.7	0.5	BDL	489.1	537.4	BDL	BDL	*
Site 4	40	02	02	93	16.9	0.6	5.4	462.3	499.5	BDL	BDL	*
Site 4	60	02	02	93	17.8	0.6	5.7	485.8	530.1	BDL	BDL	*
Site 4	80	02	02	93	16.6	0.9	BDL	529.5	550.2	BDL	6.9	*
Site 4	90	02	02	93	17.3	0.8	5.7	551.3	524.6	BDL	BDL	*
Gate	00	02	02	93	17.3	0.6	7.4	504.3	420.1	BDL	BDL	*

Lake Whatcom Monitoring Program

Prepared January 25, 1994 by the Environmental Research and Education Center,
Western Washington University, for the City of Bellingham, Department of Public Works.

*: missing. BDL: below detection limit.

Hydrolab and quality control data:

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 1	00	04	01	93	8.7	7.0	75	11.60	62.9	5.7
Site 1	01	04	01	93	8.6	7.1	75	11.61	*	*
Site 1	02	04	01	93	8.6	7.2	75	11.65	*	*
Site 1	03	04	01	93	8.6	7.2	77	11.69	*	*
Site 1	04	04	01	93	8.5	7.2	77	11.69	*	*
Site 1	05	04	01	93	8.4	7.3	78	11.70	62.9	*
Site 1	06	04	01	93	8.4	7.3	79	11.70	*	*
Site 1	07	04	01	93	8.3	7.3	79	11.69	*	*
Site 1	08	04	01	93	8.3	7.3	79	11.66	*	*
Site 1	09	04	01	93	8.2	7.3	80	11.61	*	*
Site 1	10	04	01	93	8.2	7.3	80	11.56	62.9	*
Site 1	11	04	01	93	8.2	7.3	80	11.55	*	*
Site 1	12	04	01	93	8.1	7.3	81	11.50	*	*
Site 1	13	04	01	93	8.0	7.3	81	11.50	*	*
Site 1	14	04	01	93	7.9	7.3	81	11.47	*	*
Site 1	15	04	01	93	7.9	7.3	81	11.45	62.6	*
Site 1	16	04	01	93	7.9	7.3	81	11.39	*	*
Site 1	17	04	01	93	7.8	7.3	81	11.29	*	*
Site 1	18	04	01	93	7.7	7.3	80	11.24	*	*
Site 1	19	04	01	93	7.7	7.3	80	11.19	*	*
Site 1	20	04	01	93	7.6	7.3	80	11.16	62.8	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Intake	00	04	01	93	8.3	7.1	71	12.07	61.4	5.0
Intake	01	04	01	93	8.1	7.2	70	12.07	*	*
Intake	02	04	01	93	8.0	7.3	71	12.14	*	*
Intake	03	04	01	93	8.0	7.3	73	12.11	*	*
Intake	04	04	01	93	7.7	7.4	73	12.17	*	*
Intake	05	04	01	93	7.6	7.4	74	12.14	61.1	*
Intake	06	04	01	93	7.5	7.4	74	12.16	*	*
Intake	07	04	01	93	7.5	7.4	74	12.16	*	*
Intake	08	04	01	93	7.5	7.4	75	12.15	*	*
Intake	09	04	01	93	7.5	7.4	75	12.16	*	*
Intake	10	04	01	93	7.5	7.4	76	12.13	61.2	*
Intake	11	04	01	93	7.4	7.5	76	12.08	*	*
Site 2	00	04	01	93	8.2	7.0	71	12.17	61.2	5.1
Site 2	01	04	01	93	8.0	7.2	70	12.20	*	*
Site 2	02	04	01	93	7.9	7.3	71	12.20	*	*
Site 2	03	04	01	93	7.9	7.3	72	12.18	*	*
Site 2	04	04	01	93	7.8	7.3	73	12.19	*	*
Site 2	05	04	01	93	7.6	7.4	73	12.17	61.2	*
Site 2	06	04	01	93	7.5	7.4	74	12.17	*	*
Site 2	07	04	01	93	7.4	7.4	74	12.13	*	*
Site 2	08	04	01	93	7.4	7.4	74	12.12	*	*
Site 2	09	04	01	93	7.1	7.4	75	11.97	*	*
Site 2	10	04	01	93	7.0	7.3	76	11.95	61.1	*
Site 2	11	04	01	93	7.0	7.3	76	11.91	*	*
Site 2	12	04	01	93	6.8	7.3	77	11.87	*	*
Site 2	13	04	01	93	6.7	7.3	76	11.83	*	*
Site 2	14	04	01	93	6.7	7.3	77	11.75	*	*
Site 2	15	04	01	93	6.6	7.3	76	11.71	61.2	*
Site 2	16	04	01	93	6.5	7.3	76	11.61	*	*
Site 2	17	04	01	93	6.5	7.3	77	11.42	*	*
Site 2	18	04	01	93	6.5	7.2	77	11.34	*	*
Site 2	19	04	01	93	6.5	7.2	77	11.30	*	*
Site 2	20	04	01	93	6.5	7.2	76	11.26	61.0	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 3	00	04	01	93	7.8	7.0	70	12.28	61.1	4.8
Site 3	01	04	01	93	7.7	7.2	70	12.22	*	*
Site 3	02	04	01	93	7.7	7.3	71	12.18	*	*
Site 3	03	04	01	93	7.6	7.3	72	12.25	*	*
Site 3	04	04	01	93	7.5	7.3	72	12.23	*	*
Site 3	05	04	01	93	7.5	7.3	73	12.22	61.0	*
Site 3	06	04	01	93	7.4	7.4	74	12.19	*	*
Site 3	07	04	01	93	7.3	7.4	74	12.18	*	*
Site 3	08	04	01	93	7.3	7.4	74	12.13	*	*
Site 3	09	04	01	93	7.2	7.3	75	12.10	*	*
Site 3	10	04	01	93	7.1	7.3	76	12.05	61.0	*
Site 3	15	04	01	93	6.7	7.3	76	11.89	*	*
Site 3	20	04	01	93	6.4	7.3	76	11.70	61.1	*
Site 3	25	04	01	93	6.3	7.3	76	11.59	*	*
Site 3	30	04	01	93	6.3	7.3	76	11.44	*	*
Site 3	35	04	01	93	6.2	7.2	75	11.38	*	*
Site 3	40	04	01	93	6.2	7.2	75	11.37	61.1	*
Site 3	45	04	01	93	6.1	7.2	75	11.31	*	*
Site 3	50	04	01	93	6.0	7.2	75	11.27	*	*
Site 3	55	04	01	93	6.0	7.2	75	11.17	*	*
Site 3	60	04	01	93	5.9	7.2	74	10.99	61.3	*
Site 3	65	04	01	93	5.8	7.2	74	10.97	*	*
Site 3	70	04	01	93	5.8	7.1	74	10.93	*	*
Site 3	75	04	01	93	5.8	7.1	74	10.90	*	*
Site 3	80	04	01	93	5.8	7.1	74	10.89	61.3	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 4	00	04	01	93	7.6	7.0	74	12.20	61.0	5.7
Site 4	01	04	01	93	7.5	7.2	73	12.05	*	*
Site 4	02	04	01	93	7.5	7.3	74	12.10	*	*
Site 4	03	04	01	93	7.5	7.3	75	12.08	*	*
Site 4	04	04	01	93	7.4	7.3	76	12.10	*	*
Site 4	05	04	01	93	7.4	7.3	76	12.11	61.0	*
Site 4	06	04	01	93	7.4	7.4	76	12.11	*	*
Site 4	07	04	01	93	7.4	7.4	77	12.12	*	*
Site 4	08	04	01	93	7.4	7.4	77	12.12	*	*
Site 4	09	04	01	93	7.4	7.4	78	12.13	*	*
Site 4	10	04	01	93	7.4	7.4	78	12.08	61.0	*
Site 4	15	04	01	93	7.1	7.4	78	11.97	*	*
Site 4	20	04	01	93	6.6	7.4	78	11.60	61.0	*
Site 4	25	04	01	93	6.4	7.3	77	11.46	*	*
Site 4	30	04	01	93	6.3	7.3	76	11.41	*	*
Site 4	35	04	01	93	6.1	7.3	76	11.26	*	*
Site 4	40	04	01	93	6.1	7.3	75	11.25	61.2	*
Site 4	45	04	01	93	6.0	7.3	73	11.22	*	*
Site 4	50	04	01	93	6.0	7.3	74	11.20	*	*
Site 4	55	04	01	93	6.0	7.2	73	11.17	*	*
Site 4	60	04	01	93	6.0	7.2	72	11.14	61.2	*
Site 4	65	04	01	93	5.9	7.2	73	11.12	*	*
Site 4	70	04	01	93	5.9	7.2	72	11.12	*	*
Site 4	75	04	01	93	5.9	7.2	72	11.09	*	*
Site 4	80	04	01	93	5.9	7.2	72	11.11	61.3	*
Site 4	85	04	01	93	5.9	7.2	72	11.06	*	*
Site 4	90	04	01	93	5.8	7.2	71	11.03	61.3	*
Gate	00	04	01	93	7.5	7.1	76	11.54	60.8	*

Laboratory data:

Site	Depth	Month	Day	Year	Alk	Turb	NH3	TKN	NO3	SRP	TP	ChlA
Site 1	00	04	01	93	18.0	0.7	BDL	430	348	BDL	BDL	1.3
Site 1	05	04	01	93	18.6	0.7	BDL	446	395	BDL	6.5	1.6
Site 1	10	04	01	93	*	0.8	BDL	423	409	BDL	BDL	1.5
Site 1	15	04	01	93	*	0.8	BDL	444	412	BDL	BDL	1.6
Site 1	20	04	01	93	16.5	0.8	BDL	391	385	BDL	BDL	1.6
Intake	00	04	01	93	19.0	0.6	BDL	484	325	BDL	BDL	2.2
Intake	05	04	01	93	17.5	0.5	BDL	493	422	BDL	BDL	3.5
Intake	10	04	01	93	17.0	0.5	BDL	498	338	BDL	BDL	2.8
Site 2	00	04	01	93	17.5	0.5	BDL	486	395	BDL	BDL	2.2
Site 2	05	04	01	93	17.5	0.5	5.6	474	372	BDL	BDL	2.7
Site 2	10	04	01	93	17.5	0.5	BDL	463	429	BDL	BDL	2.3
Site 2	15	04	01	93	16.5	0.5	BDL	482	409	BDL	BDL	1.3
Site 2	20	04	01	93	16.5	0.5	BDL	507	469	BDL	BDL	2.0
Site 3	00	04	01	93	16.7	0.5	BDL	498	422	BDL	BDL	4.0
Site 3	05	04	01	93	16.5	0.6	BDL	463	432	BDL	BDL	4.9
Site 3	10	04	01	93	17.1	0.6	BDL	486	369	BDL	BDL	2.0
Site 3	15	04	01	93	*	*	*	*	*	*	*	2.7
Site 3	20	04	01	93	16.4	0.4	BDL	514	399	BDL	BDL	0.9
Site 3	40	04	01	93	16.5	0.6	BDL	539	406	BDL	BDL	*
Site 3	60	04	01	93	17.1	0.5	BDL	540	335	BDL	BDL	*
Site 3	80	04	01	93	16.8	0.5	BDL	621	416	BDL	BDL	*
Site 4	00	04	01	93	16.7	0.7	BDL	251	429	BDL	BDL	2.6
Site 4	05	04	01	93	16.5	0.6	BDL	472	443	BDL	BDL	3.1
Site 4	10	04	01	93	17.1	0.5	BDL	719	469	BDL	BDL	4.0
Site 4	15	04	01	93	*	*	*	*	*	*	*	3.0
Site 4	20	04	01	93	16.3	0.5	BDL	521	486	BDL	BDL	1.4
Site 4	40	04	01	93	17.7	0.4	BDL	533	311	BDL	BDL	*
Site 4	60	04	01	93	16.3	0.5	BDL	502	496	BDL	BDL	*
Site 4	80	04	01	93	16.7	0.5	BDL	533	516	BDL	BDL	*
Site 4	90	04	01	93	16.7	0.5	BDL	270	550	BDL	BDL	*
Gate	00	04	01	93	18.6	0.6	BDL	524	392	BDL	BDL	*

Lake Whatcom Monitoring Program

Prepared January 25, 1994 by the Environmental Research and Education Center,
Western Washington University, for the City of Bellingham, Department of Public Works.

*: missing. BDL: below detection limit.

Hydrolab and quality control data:

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 1	00	05	06	93	12.5	7.0	69	10.88	64.5	4.9
Site 1	01	05	06	93	12.5	7.3	71	10.88	*	*
Site 1	02	05	06	93	12.5	7.5	72	10.88	*	*
Site 1	03	05	06	93	12.5	7.5	72	10.93	*	*
Site 1	04	05	06	93	12.4	7.6	72	10.92	*	*
Site 1	05	05	06	93	12.4	7.7	74	10.98	62.7	*
Site 1	06	05	06	93	11.8	7.7	75	10.90	*	*
Site 1	07	05	06	93	11.6	7.6	75	10.84	*	*
Site 1	08	05	06	93	11.5	7.7	77	10.85	*	*
Site 1	09	05	06	93	11.4	7.6	78	10.82	*	*
Site 1	10	05	06	93	11.3	7.6	78	10.77	62.6	*
Site 1	11	05	06	93	11.3	7.6	78	10.68	*	*
Site 1	12	05	06	93	11.2	7.6	78	10.47	*	*
Site 1	13	05	06	93	11.2	7.6	79	10.29	*	*
Site 1	14	05	06	93	11.1	7.6	78	10.28	*	*
Site 1	15	05	06	93	11.1	7.5	79	10.26	62.4	*
Site 1	16	05	06	93	11.1	7.5	78	10.14	*	*
Site 1	17	05	06	93	11.0	7.5	79	9.99	*	*
Site 1	18	05	06	93	11.0	7.5	78	9.97	*	*
Site 1	19	05	06	93	11.0	7.5	78	9.84	*	*
Site 1	20	05	06	93	10.9	7.5	79	9.80	62.6	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Intake	00	05	06	93	11.8	7.4	74	11.69	61.2	4.0
Intake	01	05	06	93	11.8	7.8	74	11.69	*	*
Intake	02	05	06	93	11.5	8.0	74	11.77	*	*
Intake	03	05	06	93	11.1	8.0	74	11.85	*	*
Intake	04	05	06	93	11.1	8.1	74	11.84	*	*
Intake	05	05	06	93	11.0	8.1	75	11.83	60.5	*
Intake	06	05	06	93	10.9	8.1	77	11.79	*	*
Intake	07	05	06	93	10.7	8.1	76	11.69	*	*
Intake	08	05	06	93	10.0	8.0	77	11.46	*	*
Intake	09	05	06	93	9.5	7.8	77	11.07	*	*
Intake	10	05	06	93	9.3	7.7	78	10.77	61.0	*
Intake	11	05	06	93	9.1	7.6	79	10.62	*	*
Site 2	00	05	06	93	11.8	7.7	74	11.52	61.1	4.0
Site 2	01	05	06	93	11.8	7.5	73	11.55	*	*
Site 2	02	05	06	93	11.6	7.8	73	11.57	*	*
Site 2	03	05	06	93	11.5	7.9	73	11.64	*	*
Site 2	04	05	06	93	11.1	8.0	75	11.70	*	*
Site 2	05	05	06	93	11.0	8.0	75	11.74	60.9	*
Site 2	06	05	06	93	10.8	8.0	76	11.75	*	*
Site 2	07	05	06	93	10.5	8.0	77	11.72	*	*
Site 2	08	05	06	93	10.5	8.0	76	11.74	*	*
Site 2	09	05	06	93	10.1	7.9	77	11.56	*	*
Site 2	10	05	06	93	9.9	7.9	77	11.29	60.9	*
Site 2	11	05	06	93	9.7	7.8	78	11.37	*	*
Site 2	12	05	06	93	9.5	7.8	78	11.39	*	*
Site 2	13	05	06	93	9.3	7.8	79	11.35	*	*
Site 2	14	05	06	93	9.3	7.7	80	11.35	*	*
Site 2	15	05	06	93	9.1	7.7	80	11.32	61.0	*
Site 2	16	05	06	93	9.0	7.7	80	11.21	*	*
Site 2	17	05	06	93	8.9	7.6	80	10.97	*	*
Site 2	18	05	06	93	8.7	7.6	81	10.93	*	*
Site 2	19	05	06	93	8.6	7.6	80	11.08	*	*
Site 2	20	05	06	93	8.5	7.6	80	11.09	61.3	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 3	00	05	06	93	10.6	7.2	76	11.59	60.8	5.2
Site 3	01	05	06	93	10.2	7.3	75	11.66	*	*
Site 3	02	05	06	93	10.1	7.4	75	11.70	*	*
Site 3	03	05	06	93	9.9	7.4	74	11.71	*	*
Site 3	04	05	06	93	10.0	7.5	75	11.71	*	*
Site 3	05	05	06	93	10.0	7.5	75	11.71	61.0	*
Site 3	06	05	06	93	10.0	7.6	76	11.72	*	*
Site 3	07	05	06	93	9.9	7.6	77	11.74	*	*
Site 3	08	05	06	93	9.9	7.6	77	11.74	*	*
Site 3	09	05	06	93	9.9	7.7	77	11.73	*	*
Site 3	10	05	06	93	9.9	7.7	77	11.74	60.9	*
Site 3	15	05	06	93	9.0	7.7	78	11.60	*	*
Site 3	20	05	06	93	8.3	7.6	79	11.47	61.0	*
Site 3	25	05	06	93	7.9	7.6	79	11.41	*	*
Site 3	30	05	06	93	7.3	7.5	78	11.26	*	*
Site 3	35	05	06	93	6.7	7.5	79	11.14	*	*
Site 3	40	05	06	93	6.4	7.5	78	10.98	61.3	*
Site 3	45	05	06	93	6.3	7.4	78	10.89	*	*
Site 3	50	05	06	93	6.2	7.4	78	10.88	*	*
Site 3	55	05	06	93	6.2	7.4	77	10.83	*	*
Site 3	60	05	06	93	6.1	7.4	77	10.76	61.3	*
Site 3	65	05	06	93	6.1	7.4	78	10.79	*	*
Site 3	70	05	06	93	6.1	7.4	77	10.76	*	*
Site 3	75	05	06	93	6.0	7.4	76	10.68	*	*
Site 3	80	05	06	93	6.0	7.4	75	10.47	61.4	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 4	00	05	06	93	10.5	7.2	74	11.83	60.6	4.6
Site 4	01	05	06	93	10.5	7.5	74	11.84	*	*
Site 4	02	05	06	93	10.4	7.7	73	11.89	*	*
Site 4	03	05	06	93	10.4	7.8	73	11.92	*	*
Site 4	04	05	06	93	10.4	7.8	73	11.93	*	*
Site 4	05	05	06	93	10.3	7.8	74	11.95	60.7	*
Site 4	06	05	06	93	10.1	7.8	74	11.96	*	*
Site 4	07	05	06	93	9.8	7.8	75	11.96	*	*
Site 4	08	05	06	93	9.3	7.8	77	11.83	*	*
Site 4	09	05	06	93	9.1	7.8	77	11.78	*	*
Site 4	10	05	06	93	8.9	7.7	77	11.72	60.8	*
Site 4	15	05	06	93	8.6	7.7	78	11.61	*	*
Site 4	20	05	06	93	8.0	7.7	78	11.49	60.9	*
Site 4	25	05	06	93	7.5	7.6	78	11.40	*	*
Site 4	30	05	06	93	6.8	7.6	77	11.18	*	*
Site 4	35	05	06	93	6.4	7.5	76	11.00	*	*
Site 4	40	05	06	93	6.3	7.5	75	10.93	61.3	*
Site 4	45	05	06	93	6.2	7.5	75	10.93	*	*
Site 4	50	05	06	93	6.2	7.5	74	10.93	*	*
Site 4	55	05	06	93	6.1	7.5	75	10.91	*	*
Site 4	60	05	06	93	6.1	7.5	74	10.89	61.3	*
Site 4	65	05	06	93	6.1	7.5	73	10.86	*	*
Site 4	70	05	06	93	6.0	7.5	72	10.88	*	*
Site 4	75	05	06	93	6.0	7.4	74	10.84	*	*
Site 4	80	05	06	93	6.0	7.4	75	10.86	61.4	*
Site 4	85	05	06	93	6.0	7.4	72	10.82	*	*
Site 4	90	05	06	93	6.0	7.4	73	10.73	61.4	*
Gate	00	05	06	93	9.9	7.2	67	10.69	61.0	*

Laboratory data:

Site	Depth	Month	Day	Year	Alk	Turb	NH3	TKN	NO3	SRP	TP	ChlA
Site 1	00	05	06	93	17.2	0.7	BDL	439	325	BDL	5.9	3.4
Site 1	05	05	06	93	17.1	0.7	BDL	405	276	BDL	7.6	2.6
Site 1	10	05	06	93	17.8	0.7	BDL	416	327	BDL	BDL	2.3
Site 1	15	05	06	93	17.5	0.6	BDL	497	312	BDL	BDL	1.4
Site 1	20	05	06	93	17.4	0.7	BDL	454	252	BDL	5.6	0.8
Intake	00	05	06	93	16.4	0.6	BDL	516	301	BDL	BDL	3.2
Intake	05	05	06	93	17.2	0.6	BDL	474	312	BDL	5.9	3.7
Intake	10	05	06	93	17.3	0.5	BDL	495	298	BDL	BDL	2.7
Site 2	00	05	06	93	17.2	0.5	BDL	467	292	BDL	BDL	3.3
Site 2	05	05	06	93	17.3	0.5	BDL	510	300	BDL	BDL	3.8
Site 2	10	05	06	93	18.1	0.5	BDL	497	349	BDL	BDL	4.2
Site 2	15	05	06	93	17.7	0.5	BDL	493	345	BDL	BDL	2.9
Site 2	20	05	06	93	16.7	0.4	BDL	508	296	BDL	BDL	1.7
Site 3	00	05	06	93	16.6	0.5	BDL	453	287	BDL	BDL	3.5
Site 3	05	05	06	93	17.5	0.6	BDL	496	329	BDL	BDL	3.7
Site 3	10	05	06	93	16.5	0.5	BDL	449	320	BDL	BDL	3.4
Site 3	15	05	06	93	*	*	*	*	*	*	*	3.8
Site 3	20	05	06	93	17.1	0.5	BDL	445	307	BDL	BDL	2.0
Site 3	40	05	06	93	16.7	0.4	BDL	439	349	BDL	BDL	*
Site 3	60	05	06	93	17.1	0.4	BDL	470	338	BDL	BDL	*
Site 3	80	05	06	93	16.9	0.4	BDL	458	300	BDL	BDL	*
Site 4	00	05	06	93	16.7	0.5	BDL	488	338	BDL	BDL	4.4
Site 4	05	05	06	93	17.6	0.5	BDL	445	374	BDL	BDL	4.0
Site 4	10	05	06	93	17.0	0.5	BDL	474	376	BDL	BDL	3.5
Site 4	15	05	06	93	*	*	*	*	*	*	*	2.4
Site 4	20	05	06	93	16.8	0.4	BDL	468	352	BDL	BDL	1.2
Site 4	40	05	06	93	17.0	0.5	BDL	429	336	BDL	BDL	*
Site 4	60	05	06	93	17.1	0.4	BDL	437	316	BDL	BDL	*
Site 4	80	05	06	93	17.1	0.5	BDL	399	406	BDL	BDL	*
Site 4	90	05	06	93	16.0	0.5	BDL	419	370	BDL	BDL	*
Gate	00	05	06	93	17.1	0.5	BDL	486	410	BDL	BDL	*

Lake Whatcom Monitoring Program

Prepared January 25, 1994 by the Environmental Research and Education Center,
Western Washington University, for the City of Bellingham, Department of Public Works.

*: missing. BDL: below detection limit.

Hydrolab and quality control data:

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 1	00	06	03	93	18.2	8.1	80	9.85	62.2	4.6
Site 1	01	06	03	93	18.3	8.1	80	9.79	*	*
Site 1	02	06	03	93	18.3	8.1	80	9.81	*	*
Site 1	03	06	03	93	18.3	8.2	80	9.79	*	*
Site 1	04	06	03	93	18.2	8.1	81	9.85	*	*
Site 1	05	06	03	93	17.6	8.2	82	10.35	62.0	*
Site 1	06	06	03	93	15.7	8.2	82	10.99	*	*
Site 1	07	06	03	93	14.7	8.2	84	11.01	*	*
Site 1	08	06	03	93	13.5	7.9	83	10.32	*	*
Site 1	09	06	03	93	12.9	7.8	81	9.85	*	*
Site 1	10	06	03	93	12.6	7.6	83	9.76	62.1	*
Site 1	11	06	03	93	12.3	7.5	83	9.19	*	*
Site 1	12	06	03	93	12.2	7.4	83	8.69	*	*
Site 1	13	06	03	93	12.0	7.3	83	8.12	*	*
Site 1	14	06	03	93	11.8	7.3	83	7.96	*	*
Site 1	15	06	03	93	11.7	7.2	82	7.73	61.5	*
Site 1	16	06	03	93	11.6	7.2	83	7.65	*	*
Site 1	17	06	03	93	11.6	7.1	82	7.55	*	*
Site 1	18	06	03	93	11.5	7.1	83	7.43	*	*
Site 1	19	06	03	93	11.4	7.1	82	7.31	*	*
Site 1	20	06	03	93	11.4	7.1	82	7.17	62.7	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Intake	00	06	03	93	17.7	8.1	76	10.20	61.0	4.8
Intake	01	06	03	93	17.7	8.2	76	10.19	*	*
Intake	02	06	03	93	17.8	8.2	77	10.21	*	*
Intake	03	06	03	93	17.8	8.2	78	10.21	*	*
Intake	04	06	03	93	17.7	8.2	79	10.21	*	*
Intake	05	06	03	93	17.7	8.2	80	10.22	61.0	*
Intake	06	06	03	93	17.6	8.2	80	10.23	*	*
Intake	07	06	03	93	17.6	8.2	80	10.21	*	*
Intake	08	06	03	93	17.5	8.1	80	10.21	*	*
Intake	09	06	03	93	15.7	8.0	80	10.57	*	*
Intake	10	06	03	93	13.9	7.9	81	11.00	61.1	*
Intake	11	06	03	93	12.9	7.8	82	11.00	*	*
Site 2	00	06	03	93	17.6	8.1	77	10.19	61.1	4.3
Site 2	01	06	03	93	17.7	8.1	77	10.18	*	*
Site 2	02	06	03	93	17.6	8.2	78	10.20	*	*
Site 2	03	06	03	93	17.6	8.2	78	10.24	*	*
Site 2	04	06	03	93	17.4	8.3	80	10.35	*	*
Site 2	05	06	03	93	17.3	8.2	80	10.36	60.9	*
Site 2	06	06	03	93	17.1	8.3	81	10.47	*	*
Site 2	07	06	03	93	17.0	8.3	80	10.45	*	*
Site 2	08	06	03	93	16.7	8.3	81	10.60	*	*
Site 2	09	06	03	93	15.7	8.2	81	10.72	*	*
Site 2	10	06	03	93	14.2	8.0	82	10.92	60.9	*
Site 2	11	06	03	93	12.0	7.9	83	10.94	*	*
Site 2	12	06	03	93	10.8	7.6	83	10.77	*	*
Site 2	13	06	03	93	10.4	7.5	83	10.69	*	*
Site 2	14	06	03	93	10.2	7.5	84	10.50	*	*
Site 2	15	06	03	93	10.1	7.4	83	10.59	61.0	*
Site 2	16	06	03	93	10.0	7.4	84	10.46	*	*
Site 2	17	06	03	93	9.8	7.3	83	10.19	*	*
Site 2	18	06	03	93	9.6	7.3	83	9.77	*	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 3	00	06	03	93	17.1	8.0	77	10.34	60.7	4.4
Site 3	01	06	03	93	17.1	8.2	76	10.35	*	*
Site 3	02	06	03	93	17.1	8.2	77	10.36	*	*
Site 3	03	06	03	93	17.1	8.2	78	10.38	*	*
Site 3	04	06	03	93	17.0	8.3	78	10.37	*	*
Site 3	05	06	03	93	16.9	8.2	79	10.41	60.7	*
Site 3	06	06	03	93	16.7	8.2	79	10.43	*	*
Site 3	07	06	03	93	16.6	8.2	79	10.42	*	*
Site 3	08	06	03	93	16.2	8.2	78	10.48	*	*
Site 3	09	06	03	93	15.1	8.1	80	10.88	*	*
Site 3	10	06	03	93	14.5	8.1	79	10.97	60.7	*
Site 3	15	06	03	93	11.2	7.8	81	11.11	*	*
Site 3	20	06	03	93	9.6	7.6	81	10.95	60.9	*
Site 3	25	06	03	93	8.3	7.5	81	10.84	*	*
Site 3	30	06	03	93	7.7	7.4	81	10.79	*	*
Site 3	35	06	03	93	7.1	7.4	81	10.68	*	*
Site 3	40	06	03	93	6.7	7.3	81	10.56	61.2	*
Site 3	45	06	03	93	6.6	7.3	80	10.47	*	*
Site 3	50	06	03	93	6.4	7.2	80	10.44	*	*
Site 3	55	06	03	93	6.3	7.2	80	10.42	*	*
Site 3	60	06	03	93	6.3	7.2	80	10.37	61.4	*
Site 3	65	06	03	93	6.2	7.2	79	10.36	*	*
Site 3	70	06	03	93	6.2	7.1	80	10.32	*	*
Site 3	75	06	03	93	6.2	7.1	78	10.11	*	*
Site 3	80	06	03	93	6.1	7.1	76	10.01	61.4	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 4	00	06	03	93	17.0	8.3	75	10.37	60.5	4.0
Site 4	01	06	03	93	16.9	8.3	76	10.38	*	*
Site 4	02	06	03	93	16.8	8.4	75	10.45	*	*
Site 4	03	06	03	93	16.7	8.4	76	10.49	*	*
Site 4	04	06	03	93	16.7	8.4	76	10.48	*	*
Site 4	05	06	03	93	16.5	8.4	78	10.50	60.5	*
Site 4	06	06	03	93	14.5	8.3	78	11.06	*	*
Site 4	07	06	03	93	14.2	8.2	77	11.02	*	*
Site 4	08	06	03	93	12.6	8.0	79	11.10	*	*
Site 4	09	06	03	93	11.9	7.9	80	11.14	*	*
Site 4	10	06	03	93	11.2	7.8	80	11.15	60.4	*
Site 4	15	06	03	93	9.3	7.6	80	10.99	*	*
Site 4	20	06	03	93	8.4	7.5	81	10.91	61.0	*
Site 4	25	06	03	93	7.3	7.5	81	10.84	*	*
Site 4	30	06	03	93	6.9	7.5	79	10.67	*	*
Site 4	35	06	03	93	6.7	7.4	79	10.61	*	*
Site 4	40	06	03	93	6.5	7.4	79	10.57	61.4	*
Site 4	45	06	03	93	6.4	7.4	78	10.53	*	*
Site 4	50	06	03	93	6.4	7.3	77	10.53	*	*
Site 4	55	06	03	93	6.3	7.3	78	10.61	*	*
Site 4	60	06	03	93	6.3	7.3	77	10.64	61.3	*
Site 4	65	06	03	93	6.2	7.3	77	10.63	*	*
Site 4	70	06	03	93	6.2	7.3	76	10.66	*	*
Site 4	75	06	03	93	6.1	7.3	77	10.64	*	*
Site 4	80	06	03	93	6.1	7.3	76	10.34	61.5	*
Site 4	85	06	03	93	6.1	7.2	77	10.51	*	*
Site 4	90	06	03	93	6.0	7.2	77	10.43	61.4	*
Gate	00	06	03	93	11.9	7.9	79	10.84	61.0	*

Laboratory data:

Site	Depth	Month	Day	Year	Alk	Turb	NH3	TKN	NO3	SRP	TP	ChlA
Site 1	00	06	03	93	17.9	0.7	BDL	434	279	BDL	BDL	3.5
Site 1	05	06	03	93	18.2	0.9	BDL	529	242	BDL	6.8	2.5
Site 1	10	06	03	93	18.5	0.6	BDL	555	235	BDL	BDL	3.7
Site 1	15	06	03	93	18.1	1.0	BDL	517	307	BDL	BDL	3.3
Site 1	20	06	03	93	18.5	1.2	BDL	452	311	BDL	5.6	1.7
Intake	00	06	03	93	18.0	0.6	BDL	507	244	BDL	BDL	2.8
Intake	05	06	03	93	18.2	0.7	BDL	427	227	BDL	BDL	2.6
Intake	10	06	03	93	18.2	0.7	BDL	443	242	BDL	BDL	3.5
Site 2	00	06	03	93	18.8	0.7	BDL	432	250	BDL	BDL	2.7
Site 2	05	06	03	93	18.2	0.6	BDL	*	261	BDL	BDL	3.8
Site 2	10	06	03	93	18.0	0.7	BDL	434	302	BDL	BDL	4.7
Site 2	15	06	03	93	17.4	0.6	BDL	414	423	BDL	BDL	4.0
Site 2	20	06	03	93	17.8	0.6	BDL	483	382	BDL	5.9	3.1
Site 3	00	06	03	93	17.8	0.6	BDL	391	253	BDL	BDL	4.9
Site 3	05	06	03	93	17.5	0.6	BDL	*	229	BDL	8.4	4.4
Site 3	10	06	03	93	18.2	0.6	BDL	394	309	BDL	BDL	6.3
Site 3	15	06	03	93	*	*	*	*	*	*	*	4.5
Site 3	20	06	03	93	17.4	0.4	BDL	402	352	BDL	BDL	3.0
Site 3	40	06	03	93	17.5	0.3	BDL	430	430	BDL	BDL	*
Site 3	60	06	03	93	17.5	0.5	BDL	509	393	BDL	BDL	*
Site 3	80	06	03	93	17.5	0.5	BDL	345	434	BDL	BDL	*
Site 4	00	06	03	93	18.0	0.5	BDL	391	270	BDL	BDL	4.6
Site 4	05	06	03	93	18.0	0.5	BDL	407	263	BDL	BDL	5.0
Site 4	10	06	03	93	18.0	0.7	BDL	407	266	BDL	BDL	4.4
Site 4	15	06	03	93	*	*	*	*	*	*	*	2.0
Site 4	20	06	03	93	17.2	0.3	BDL	378	432	BDL	BDL	0.9
Site 4	40	06	03	93	17.5	0.3	BDL	365	412	BDL	BDL	*
Site 4	60	06	03	93	17.5	0.4	BDL	455	397	BDL	6.8	*
Site 4	80	06	03	93	17.5	0.3	BDL	378	300	BDL	BDL	*
Site 4	90	06	03	93	17.8	0.3	BDL	455	432	BDL	BDL	*
Gate	00	06	03	93	17.8	0.5	BDL	342	302	BDL	BDL	*

Lake Whatcom Monitoring Program

Prepared January 25, 1994 by the Environmental Research and Education Center,
Western Washington University, for the City of Bellingham, Department of Public Works.
*: missing. BDL: below detection limit.

Hydrolab and quality control data:

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 1	00	07	01	93	18.9	8.3	75	9.86	61.9	4.7
Site 1	01	07	01	93	18.9	8.3	73	9.82	*	*
Site 1	02	07	01	93	18.9	8.2	72	9.83	*	*
Site 1	03	07	01	93	18.9	8.2	73	9.81	*	*
Site 1	04	07	01	93	18.9	8.2	74	9.81	*	*
Site 1	05	07	01	93	18.9	8.2	80	9.80	61.9	*
Site 1	06	07	01	93	18.4	8.1	79	9.84	*	*
Site 1	07	07	01	93	17.7	8.0	80	10.02	*	*
Site 1	08	07	01	93	16.7	7.9	80	9.98	*	*
Site 1	09	07	01	93	15.1	7.7	82	9.06	*	*
Site 1	10	07	01	93	13.7	7.5	82	8.43	62.1	*
Site 1	11	07	01	93	13.0	7.4	83	6.88	*	*
Site 1	12	07	01	93	12.4	7.3	84	5.64	*	*
Site 1	13	07	01	93	12.3	7.2	85	5.13	*	*
Site 1	14	07	01	93	11.9	7.1	85	4.74	*	*
Site 1	15	07	01	93	11.9	7.0	86	4.68	63.1	*
Site 1	16	07	01	93	11.8	7.0	86	4.59	*	*
Site 1	17	07	01	93	11.8	7.0	86	4.50	*	*
Site 1	18	07	01	93	11.8	6.9	86	4.44	*	*
Site 1	19	07	01	93	11.7	6.9	86	4.35	*	*
Site 1	20	07	01	93	11.7	6.9	86	4.19	63.6	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Intake	00	07	01	93	18.6	8.0	77	10.00	60.8	5.4
Intake	01	07	01	93	18.6	8.1	77	9.90	*	*
Intake	02	07	01	93	18.6	8.1	79	9.88	*	*
Intake	03	07	01	93	18.5	8.1	80	9.93	*	*
Intake	04	07	01	93	18.3	8.1	81	9.95	*	*
Intake	05	07	01	93	18.0	8.2	81	10.00	60.5	*
Intake	06	07	01	93	18.0	8.2	83	10.05	*	*
Intake	07	07	01	93	17.8	8.3	83	10.15	*	*
Intake	08	07	01	93	17.6	8.2	83	10.15	*	*
Intake	09	07	01	93	17.5	8.1	84	10.10	*	*
Intake	10	07	01	93	17.4	8.0	83	9.85	60.5	*
Intake	11	07	01	93	16.5	7.8	85	9.79	*	*
Site 2	00	07	01	93	18.2	8.1	77	10.06	60.7	5.9
Site 2	01	07	01	93	18.2	8.1	77	10.06	*	*
Site 2	02	07	01	93	18.1	8.1	79	10.07	*	*
Site 2	03	07	01	93	18.0	8.1	79	10.07	*	*
Site 2	04	07	01	93	17.7	8.1	80	10.15	*	*
Site 2	05	07	01	93	17.7	8.1	81	10.16	60.6	*
Site 2	06	07	01	93	17.6	8.1	82	10.22	*	*
Site 2	07	07	01	93	17.6	8.1	81	10.20	*	*
Site 2	08	07	01	93	17.3	8.0	82	10.24	*	*
Site 2	09	07	01	93	17.3	8.0	82	10.22	*	*
Site 2	10	07	01	93	17.1	7.9	84	10.20	60.5	*
Site 2	11	07	01	93	16.8	7.7	83	10.24	*	*
Site 2	12	07	01	93	15.6	7.4	83	10.17	*	*
Site 2	13	07	01	93	11.9	7.1	85	9.94	*	*
Site 2	14	07	01	93	11.3	7.0	84	9.52	*	*
Site 2	15	07	01	93	10.7	7.0	85	9.31	60.9	*
Site 2	16	07	01	93	10.6	7.0	84	8.88	*	*
Site 2	17	07	01	93	10.4	7.0	84	8.74	*	*
Site 2	18	07	01	93	10.3	7.0	85	8.67	*	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 3	00	07	01	93	18.1	8.0	80	10.05	60.5	5.9
Site 3	01	07	01	93	18.1	8.1	81	9.96	*	*
Site 3	02	07	01	93	18.0	8.1	80	9.98	*	*
Site 3	03	07	01	93	17.9	8.1	82	9.95	*	*
Site 3	04	07	01	93	17.7	8.1	82	10.04	*	*
Site 3	05	07	01	93	17.6	8.1	82	10.04	60.5	*
Site 3	06	07	01	93	17.5	8.1	83	10.05	*	*
Site 3	07	07	01	93	17.5	8.1	84	10.06	*	*
Site 3	08	07	01	93	17.4	8.1	83	10.08	*	*
Site 3	09	07	01	93	17.2	8.1	84	10.11	*	*
Site 3	10	07	01	93	16.7	8.0	84	10.18	60.5	*
Site 3	15	07	01	93	11.8	7.7	86	10.52	*	*
Site 3	20	07	01	93	10.0	7.5	87	10.66	61.1	*
Site 3	25	07	01	93	8.4	7.5	86	10.58	*	*
Site 3	30	07	01	93	7.5	7.4	86	10.58	*	*
Site 3	35	07	01	93	7.0	7.3	86	10.61	*	*
Site 3	40	07	01	93	6.7	7.3	85	10.50	61.4	*
Site 3	45	07	01	93	6.5	7.3	86	10.47	*	*
Site 3	50	07	01	93	6.5	7.2	84	10.43	*	*
Site 3	55	07	01	93	6.4	7.2	81	10.42	*	*
Site 3	60	07	01	93	6.3	7.2	82	10.31	61.4	*
Site 3	65	07	01	93	6.3	7.2	83	10.20	*	*
Site 3	70	07	01	93	6.3	7.1	82	10.17	*	*
Site 3	75	07	01	93	6.2	7.1	80	9.81	*	*
Site 3	80	07	01	93	6.2	7.0	80	9.38	61.7	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 4	00	07	01	93	17.2	8.1	82	10.38	60.4	5.9
Site 4	01	07	01	93	17.2	8.1	80	10.24	*	*
Site 4	02	07	01	93	17.1	8.2	80	10.26	*	*
Site 4	03	07	01	93	17.1	8.2	80	10.22	*	*
Site 4	04	07	01	93	17.0	8.2	82	10.25	*	*
Site 4	05	07	01	93	17.0	8.2	82	10.24	60.3	*
Site 4	06	07	01	93	17.0	8.2	82	10.25	*	*
Site 4	07	07	01	93	17.0	8.2	82	10.24	*	*
Site 4	08	07	01	93	16.8	8.1	82	10.25	*	*
Site 4	09	07	01	93	16.4	8.1	83	10.26	*	*
Site 4	10	07	01	93	15.8	8.0	83	10.44	60.2	*
Site 4	15	07	01	93	11.4	7.7	86	10.58	*	*
Site 4	20	07	01	93	8.8	7.6	86	10.55	61.1	*
Site 4	25	07	01	93	8.0	7.5	86	10.65	*	*
Site 4	30	07	01	93	7.4	7.5	84	10.61	*	*
Site 4	35	07	01	93	7.0	7.5	82	10.55	*	*
Site 4	40	07	01	93	6.8	7.4	81	10.59	61.4	*
Site 4	45	07	01	93	6.6	7.4	81	10.58	*	*
Site 4	50	07	01	93	6.5	7.3	80	10.58	*	*
Site 4	55	07	01	93	6.4	7.3	79	10.62	*	*
Site 4	60	07	01	93	6.4	7.3	78	10.61	61.4	*
Site 4	65	07	01	93	6.3	7.3	77	10.60	*	*
Site 4	70	07	01	93	6.3	7.2	78	10.68	*	*
Site 4	75	07	01	93	6.3	7.2	78	10.70	*	*
Site 4	80	07	01	93	6.2	7.2	77	10.72	61.5	*
Site 4	85	07	01	93	6.2	7.2	76	10.69	*	*
Site 4	90	07	01	93	6.2	7.2	76	10.47	61.5	*

Laboratory data:

Site	Depth	Month	Day	Year	Alk	Turb	NH3	TKN	NO3	SRP	TP	ChlA
Site 1	00	07	01	93	17.5	0.5	10	297	165	BDL	BDL	4.1
Site 1	05	07	01	93	17.8	0.6	BDL	283	204	BDL	5.1	3.6
Site 1	10	07	01	93	17.4	0.7	22	358	207	BDL	6.8	8.1
Site 1	15	07	01	93	17.5	0.6	31	354	275	BDL	BDL	3.9
Site 1	20	07	01	93	*	0.7	BDL	452	265	BDL	7.1	4.0
Intake	00	07	01	93	17.7	0.6	BDL	314	221	BDL	BDL	2.3
Intake	05	07	01	93	17.5	0.5	BDL	323	245	BDL	BDL	2.1
Intake	10	07	01	93	16.7	0.5	BDL	300	252	BDL	BDL	2.2
Site 2	00	07	01	93	17.3	0.5	BDL	305	265	BDL	BDL	1.8
Site 2	05	07	01	93	17.0	0.6	BDL	221	287	BDL	BDL	2.4
Site 2	10	07	01	93	17.1	0.9	BDL	380	238	BDL	BDL	2.5
Site 2	15	07	01	93	16.9	0.5	BDL	421	326	BDL	BDL	4.6
Site 2	20	07	01	93	16.7	0.8	BDL	398	343	BDL	BDL	3.8
Site 3	00	07	01	93	16.9	0.9	BDL	334	270	BDL	BDL	1.8
Site 3	05	07	01	93	17.2	0.6	BDL	308	224	BDL	BDL	2.4
Site 3	10	07	01	93	17.1	0.5	BDL	361	246	BDL	BDL	1.9
Site 3	15	07	01	93	*	*	*	*	*	*	*	3.4
Site 3	20	07	01	93	16.4	0.4	BDL	456	399	BDL	BDL	1.9
Site 3	40	07	01	93	16.4	0.5	BDL	459	411	BDL	BDL	*
Site 3	60	07	01	93	16.4	0.5	BDL	409	452	BDL	BDL	*
Site 3	80	07	01	93	16.6	0.7	BDL	444	399	BDL	BDL	*
Site 4	00	07	01	93	17.0	0.7	BDL	407	299	BDL	BDL	2.8
Site 4	05	07	01	93	17.4	0.9	BDL	447	318	BDL	BDL	2.2
Site 4	10	07	01	93	17.2	0.7	BDL	363	319	BDL	BDL	3.7
Site 4	15	07	01	93	*	*	*	*	*	BDL	*	0
Site 4	20	07	01	93	16.4	0.4	BDL	380	345	BDL	BDL	1.9
Site 4	40	07	01	93	16.6	0.3	BDL	487	404	BDL	BDL	*
Site 4	60	07	01	93	16.6	0.4	BDL	488	493	BDL	BDL	*
Site 4	80	07	01	93	16.4	0.6	BDL	485	321	BDL	BDL	*
Site 4	90	07	01	93	16.5	0.4	BDL	456	360	BDL	BDL	*
Gate	00	07	01	93	*	*	*	*	*	*	*	*

Lake Whatcom Monitoring Program

Prepared January 25, 1994 by the Environmental Research and Education Center,
Western Washington University, for the City of Bellingham, Department of Public Works.

*: missing. BDL: below detection limit.

Hydrolab and quality control data:

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 1	00	08	05	93	22.4	8.2	77	9.67	63.2	4.5
Site 1	01	08	05	93	22.2	8.3	76	9.76	*	*
Site 1	02	08	05	93	22.1	8.3	77	9.75	*	*
Site 1	03	08	05	93	20.3	8.6	78	10.41	*	*
Site 1	04	08	05	93	19.6	8.7	78	10.61	*	*
Site 1	05	08	05	93	19.2	8.6	79	10.56	63.1	*
Site 1	06	08	05	93	18.9	8.6	80	10.39	*	*
Site 1	07	08	05	93	18.5	8.2	82	9.72	*	*
Site 1	08	08	05	93	17.7	7.6	84	8.59	*	*
Site 1	09	08	05	93	16.4	7.4	85	6.90	*	*
Site 1	10	08	05	93	14.5	7.2	87	4.65	63.0	*
Site 1	11	08	05	93	13.3	7.0	88	3.70	*	*
Site 1	12	08	05	93	12.6	6.8	90	2.48	*	*
Site 1	13	08	05	93	12.4	6.7	92	2.10	*	*
Site 1	14	08	05	93	12.2	6.7	92	2.01	*	*
Site 1	15	08	05	93	12.0	6.6	93	1.96	66.8	*
Site 1	16	08	05	93	11.9	6.6	94	1.90	*	*
Site 1	17	08	05	93	11.8	6.5	93	1.91	*	*
Site 1	18	08	05	93	11.8	6.5	93	1.84	*	*
Site 1	19	08	05	93	11.8	6.5	94	1.85	*	*
Site 1	20	08	05	93	11.7	6.5	94	1.81	67.0	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Intake	00	08	05	93	23.0	7.9	76	9.87	62.6	5.6
Intake	01	08	05	93	22.5	7.9	76	9.91	*	*
Intake	02	08	05	93	20.9	8.1	78	10.40	*	*
Intake	03	08	05	93	20.2	8.3	79	10.52	*	*
Intake	04	08	05	93	19.7	8.4	80	10.64	*	*
Intake	05	08	05	93	19.4	8.3	81	10.63	61.8	*
Intake	06	08	05	93	19.2	8.4	82	10.65	*	*
Intake	07	08	05	93	19.0	8.4	83	10.65	*	*
Intake	08	08	05	93	18.8	8.4	83	10.65	*	*
Intake	09	08	05	93	18.5	8.3	84	10.58	*	*
Intake	10	08	05	93	18.2	8.3	84	10.57	61.7	*
Intake	11	08	05	93	17.6	8.0	85	10.12	*	*
Intake	12	08	05	93	16.4	7.7	86	9.72	*	*
Site 2	00	08	05	93	22.7	7.9	75	9.87	62.9	6.0
Site 2	01	08	05	93	22.6	7.9	76	9.89	*	*
Site 2	02	08	05	93	21.2	8.1	78	10.24	*	*
Site 2	03	08	05	93	20.8	8.1	78	10.32	*	*
Site 2	04	08	05	93	20.4	8.2	78	10.46	*	*
Site 2	05	08	05	93	20.0	8.2	79	10.50	62.1	*
Site 2	06	08	05	93	19.5	8.3	81	10.62	*	*
Site 2	07	08	05	93	19.3	8.3	82	10.66	*	*
Site 2	08	08	05	93	18.7	8.3	83	10.66	*	*
Site 2	09	08	05	93	18.3	8.3	83	10.58	*	*
Site 2	10	08	05	93	18.1	8.2	83	10.51	61.8	*
Site 2	11	08	05	93	17.7	8.0	84	10.27	*	*
Site 2	12	08	05	93	16.7	7.8	85	10.04	*	*
Site 2	13	08	05	93	15.4	7.6	85	9.85	*	*
Site 2	14	08	05	93	12.4	7.3	87	8.10	*	*
Site 2	15	08	05	93	11.8	7.2	88	7.45	61.7	*
Site 2	16	08	05	93	11.3	7.0	90	8.88	*	*
Site 2	17	08	05	93	10.9	6.9	90	5.63	*	*
Site 2	18	08	05	93	10.7	6.9	91	5.00	*	*
Site 2	19	08	05	93	10.6	6.8	91	4.65	*	*
Site 2	20	08	05	93	10.5	6.7	91	4.36	66.4	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 3	00	08	05	93	22.8	7.8	75	9.83	61.5	7.1
Site 3	01	08	05	93	22.5	8.0	75	9.86	*	*
Site 3	02	08	05	93	21.9	8.1	75	9.93	*	*
Site 3	03	08	05	93	21.5	8.1	77	10.06	*	*
Site 3	04	08	05	93	21.3	8.1	77	10.06	*	*
Site 3	05	08	05	93	19.8	8.3	77	10.44	61.8	*
Site 3	06	08	05	93	18.9	8.4	79	10.60	*	*
Site 3	07	08	05	93	18.6	8.3	80	10.62	*	*
Site 3	08	08	05	93	18.3	8.3	80	10.54	*	*
Site 3	09	08	05	93	18.1	8.2	81	10.47	*	*
Site 3	10	08	05	93	17.9	8.1	81	10.36	62.7	*
Site 3	15	08	05	93	15.3	7.7	85	10.13	*	*
Site 3	20	08	05	93	9.6	7.5	87	10.50	63.5	*
Site 3	25	08	05	93	8.3	7.5	87	10.69	*	*
Site 3	30	08	05	93	7.6	7.4	86	10.73	*	*
Site 3	35	08	05	93	7.0	7.3	87	10.79	*	*
Site 3	40	08	05	93	6.8	7.2	87	10.84	62.1	*
Site 3	45	08	05	93	6.6	7.2	85	10.79	*	*
Site 3	50	08	05	93	6.6	7.2	86	10.69	*	*
Site 3	55	08	05	93	6.5	7.1	85	10.69	*	*
Site 3	60	08	05	93	6.4	7.1	84	10.61	62.5	*
Site 3	65	08	05	93	6.4	7.1	84	10.56	*	*
Site 3	70	08	05	93	6.3	7.0	85	10.03	*	*
Site 3	75	08	05	93	6.3	7.0	82	9.60	*	*
Site 3	80	08	05	93	6.3	6.9	82	8.92	64.0	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 4	00	08	05	93	22.0	8.0	75	9.91	62.2	5.6
Site 4	01	08	05	93	22.0	8.0	74	9.76	*	*
Site 4	02	08	05	93	21.8	8.0	75	9.81	*	*
Site 4	03	08	05	93	21.6	8.0	77	9.88	*	*
Site 4	04	08	05	93	21.3	8.0	78	9.95	*	*
Site 4	05	08	05	93	20.8	8.1	79	10.04	62.5	*
Site 4	06	08	05	93	20.1	8.1	79	10.25	*	*
Site 4	07	08	05	93	18.9	8.0	79	10.29	*	*
Site 4	08	08	05	93	18.2	8.0	81	10.44	*	*
Site 4	09	08	05	93	18.1	8.0	82	10.41	*	*
Site 4	10	08	05	93	17.8	8.0	82	10.34	61.9	*
Site 4	15	08	05	93	14.6	7.7	86	10.07	*	*
Site 4	20	08	05	93	10.0	7.6	87	10.33	61.5	*
Site 4	25	08	05	93	8.5	7.5	87	10.47	*	*
Site 4	30	08	05	93	7.7	7.4	87	10.58	*	*
Site 4	35	08	05	93	7.2	7.3	87	10.68	*	*
Site 4	40	08	05	93	6.9	7.3	86	10.68	62.9	*
Site 4	45	08	05	93	6.8	7.3	86	10.68	*	*
Site 4	50	08	05	93	6.7	7.2	85	10.71	*	*
Site 4	55	08	05	93	6.6	7.2	85	10.82	*	*
Site 4	60	08	05	93	6.5	7.2	83	10.75	63.5	*
Site 4	65	08	05	93	6.4	7.1	83	10.86	*	*
Site 4	70	08	05	93	6.4	7.1	83	10.87	*	*
Site 4	75	08	05	93	6.3	7.1	83	10.82	*	*
Site 4	80	08	05	93	6.3	7.1	80	10.89	62.4	*
Site 4	85	08	05	93	6.3	7.1	81	10.87	*	*
Site 4	90	08	05	93	6.3	7.1	80	10.58	62.6	*
Gate	00	08	05	93	17.4	7.9	79	9.69	62.1	*

Laboratory data:

Site	Depth	Month	Day	Year	Alk	Turb	NH3	TKN	NO3	SRP	TP	ChlA
Site 1	00	08	05	93	18.3	0.9	BDL	326	81	BDL	BDL	1.7
Site 1	05	08	05	93	18.1	0.7	BDL	341	104	BDL	BDL	1.8
Site 1	10	08	05	93	18.6	0.8	8	403	100	BDL	BDL	6.0
Site 1	15	08	05	93	19.1	1.0	11	462	204	BDL	BDL	1.8
Site 1	20	08	05	93	19.1	1.1	BDL	420	161	BDL	BDL	1.2
Intake	00	08	05	93	19.2	0.7	BDL	426	96	BDL	BDL	1.4
Intake	05	08	05	93	18.0	0.4	BDL	286	147	BDL	BDL	1.9
Intake	10	08	05	93	18.6	0.4	BDL	399	149	BDL	BDL	3.0
Site 2	00	08	05	93	18.2	0.5	BDL	343	110	BDL	BDL	1.2
Site 2	05	08	05	93	18.2	0.4	BDL	374	211	BDL	BDL	3.2
Site 2	10	08	05	93	17.5	0.5	6	407	170	BDL	BDL	3.0
Site 2	15	08	05	93	17.0	0.5	11	372	219	BDL	BDL	4.3
Site 2	20	08	05	93	19.0	0.8	139	485	276	BDL	BDL	1.0
Site 3	00	08	05	93	17.8	0.3	BDL	314	163	BDL	BDL	1.5
Site 3	05	08	05	93	17.7	0.4	6	391	182	BDL	BDL	1.7
Site 3	10	08	05	93	17.8	0.4	7	391	159	BDL	BDL	2.4
Site 3	15	08	05	93	*	*	*	*	*	*	*	2.2
Site 3	20	08	05	93	16.8	0.4	14	516	*	BDL	BDL	1.0
Site 3	40	08	05	93	16.6	0.3	BDL	487	377	BDL	BDL	*
Site 3	60	08	05	93	16.7	0.4	BDL	583	403	BDL	BDL	*
Site 3	80	08	05	93	17.2	0.4	16	510	387	BDL	BDL	*
Site 4	00	08	05	93	17.3	0.4	6	353	137	BDL	BDL	1.6
Site 4	05	08	05	93	17.7	0.4	7	457	170	BDL	BDL	4.4
Site 4	10	08	05	93	17.6	0.5	BDL	353	194	BDL	BDL	1.9
Site 4	15	08	05	93	*	*	*	*	*	*	*	1.8
Site 4	20	08	05	93	16.7	0.4	6	501	338	BDL	BDL	0.7
Site 4	40	08	05	93	16.7	0.3	BDL	560	414	BDL	BDL	*
Site 4	60	08	05	93	17.1	0.3	BDL	506	276	BDL	BDL	*
Site 4	80	08	05	93	15.7	0.3	BDL	462	301	BDL	BDL	*
Site 4	90	08	05	93	16.9	0.3	BDL	487	412	BDL	BDL	*
Gate	00	08	05	93	17.2	0.4	BDL	432	213	BDL	BDL	*

Lake Whatcom Monitoring Program

Prepared January 25, 1994 by the Environmental Research and Education Center,
Western Washington University, for the City of Bellingham, Department of Public Works.

*: missing. BDL: below detection limit.

Hydrolab and quality control data:

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 1	00	09	01	93	20.2	8.4	79	9.74	*	5.0
Site 1	01	09	01	93	20.1	8.5	78	10.10	*	*
Site 1	02	09	01	93	20.1	8.4	77	10.03	*	*
Site 1	03	09	01	93	20.1	8.4	78	9.91	*	*
Site 1	04	09	01	93	20.0	8.4	78	9.87	*	*
Site 1	05	09	01	93	19.9	8.4	78	9.79	*	*
Site 1	06	09	01	93	19.7	8.3	79	9.74	*	*
Site 1	07	09	01	93	19.6	8.1	79	9.56	*	*
Site 1	08	09	01	93	19.4	8.0	78	9.34	*	*
Site 1	09	09	01	93	17.1	7.5	83	4.93	*	*
Site 1	10	09	01	93	16.0	7.3	83	3.43	*	*
Site 1	11	09	01	93	14.5	7.2	84	1.72	*	*
Site 1	12	09	01	93	12.9	7.1	87	1.74	*	*
Site 1	13	09	01	93	12.6	7.0	87	1.72	*	*
Site 1	14	09	01	93	12.4	7.0	87	1.71	*	*
Site 1	15	09	01	93	12.3	7.0	87	1.69	*	*
Site 1	16	09	01	93	12.2	6.9	87	1.66	*	*
Site 1	17	09	01	93	12.1	6.9	87	1.67	*	*
Site 1	18	09	01	93	12.0	6.9	88	1.64	*	*
Site 1	19	09	01	93	11.9	6.8	88	1.62	*	*
Site 1	20	09	01	93	11.9	6.8	87	1.62	*	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Intake	00	09	01	93	20.0	8.2	72	9.84	*	5.9
Intake	01	09	01	93	19.9	8.2	72	9.86	*	*
Intake	02	09	01	93	19.7	8.2	73	9.91	*	*
Intake	03	09	01	93	18.9	8.1	74	9.87	*	*
Intake	04	09	01	93	18.9	8.1	73	9.86	*	*
Intake	05	09	01	93	18.7	8.0	75	9.76	*	*
Intake	06	09	01	93	18.6	7.9	75	9.68	*	*
Intake	07	09	01	93	18.5	7.9	75	9.71	*	*
Intake	08	09	01	93	18.4	7.8	76	9.64	*	*
Intake	09	09	01	93	18.4	7.8	76	9.59	*	*
Intake	10	09	01	93	18.1	7.7	77	9.45	*	*
Site 2	00	09	01	93	19.5	8.0	71	9.92	*	7.0
Site 2	01	09	01	93	19.6	8.0	71	9.83	*	*
Site 2	02	09	01	93	19.5	8.1	73	9.84	*	*
Site 2	03	09	01	93	19.5	8.1	73	9.84	*	*
Site 2	04	09	01	93	19.5	8.1	73	9.83	*	*
Site 2	05	09	01	93	19.5	8.1	75	9.83	*	*
Site 2	06	09	01	93	19.5	8.1	75	9.83	*	*
Site 2	07	09	01	93	19.0	8.0	76	9.77	*	*
Site 2	08	09	01	93	18.8	8.0	76	9.72	*	*
Site 2	09	09	01	93	18.7	7.9	76	9.67	*	*
Site 2	10	09	01	93	18.6	7.8	77	9.77	*	*
Site 2	11	09	01	93	17.9	7.8	77	9.32	*	*
Site 2	12	09	01	93	16.8	7.6	77	8.92	*	*
Site 2	13	09	01	93	15.5	7.5	79	8.20	*	*
Site 2	14	09	01	93	14.1	7.4	79	6.09	*	*
Site 2	15	09	01	93	12.4	7.2	82	4.34	*	*
Site 2	16	09	01	93	11.8	7.1	83	3.47	*	*
Site 2	17	09	01	93	11.5	7.0	83	2.58	*	*
Site 2	18	09	01	93	11.1	7.0	84	2.20	*	*
Site 2	19	09	01	93	11.0	6.9	85	2.04	*	*
Site 2	20	09	01	93	10.8	6.9	85	1.95	*	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 3	00	09	01	93	19.8	8.1	73	9.74	*	7.3
Site 3	01	09	01	93	19.7	8.1	72	9.76	*	*
Site 3	02	09	01	93	19.6	8.1	73	9.76	*	*
Site 3	03	09	01	93	19.6	8.1	74	9.78	*	*
Site 3	04	09	01	93	19.4	8.1	74	9.80	*	*
Site 3	05	09	01	93	19.2	8.1	74	9.85	*	*
Site 3	06	09	01	93	19.1	8.0	74	9.79	*	*
Site 3	07	09	01	93	19.1	8.0	74	9.80	*	*
Site 3	08	09	01	93	19.1	8.0	75	9.76	*	*
Site 3	09	09	01	93	19.0	8.0	75	9.74	*	*
Site 3	10	09	01	93	18.4	7.8	76	9.55	*	*
Site 3	15	09	01	93	14.3	7.7	78	9.37	*	*
Site 3	20	09	01	93	9.8	7.7	80	9.83	*	*
Site 3	25	09	01	93	8.1	7.6	80	10.14	*	*
Site 3	30	09	01	93	7.4	7.6	80	10.30	*	*
Site 3	35	09	01	93	7.1	7.5	80	10.29	*	*
Site 3	40	09	01	93	6.9	7.5	80	10.34	*	*
Site 3	45	09	01	93	6.7	7.4	80	10.34	*	*
Site 3	50	09	01	93	6.6	7.4	78	10.28	*	*
Site 3	55	09	01	93	6.6	7.4	79	10.14	*	*
Site 3	60	09	01	93	6.5	7.3	79	10.07	*	*
Site 3	65	09	01	93	6.4	7.3	79	9.63	*	*
Site 3	70	09	01	93	6.4	7.3	77	9.69	*	*
Site 3	75	09	01	93	6.3	7.2	76	9.23	*	*
Site 3	77	09	01	93	6.3	7.1	78	7.48	*	*

Hydrolab and quality control data (continued):

Site	Depth	Month	Day	Year	Temp	pH	Cond	DO	Lab Cond	Secchi
Site 4	00	09	01	93	19.9	8.3	78	9.66	*	7.5
Site 4	01	09	01	93	19.6	8.2	76	9.63	*	*
Site 4	02	09	01	93	19.6	8.2	76	9.64	*	*
Site 4	03	09	01	93	19.5	8.2	76	9.64	*	*
Site 4	04	09	01	93	19.4	8.1	75	9.65	*	*
Site 4	05	09	01	93	19.3	8.1	76	9.68	*	*
Site 4	06	09	01	93	19.3	8.1	76	9.68	*	*
Site 4	07	09	01	93	19.2	8.1	76	9.65	*	*
Site 4	08	09	01	93	19.2	8.0	76	9.65	*	*
Site 4	09	09	01	93	19.1	8.0	78	9.64	*	*
Site 4	10	09	01	93	19.1	7.9	77	9.63	*	*
Site 4	15	09	01	93	15.8	7.8	79	9.27	*	*
Site 4	20	09	01	93	10.8	7.8	81	9.59	*	*
Site 4	25	09	01	93	8.4	7.7	81	9.94	*	*
Site 4	30	09	01	93	7.5	7.7	80	10.15	*	*
Site 4	35	09	01	93	7.1	7.6	79	10.24	*	*
Site 4	40	09	01	93	6.8	7.6	79	10.27	*	*
Site 4	45	09	01	93	6.7	7.5	79	10.35	*	*
Site 4	50	09	01	93	6.7	7.5	78	10.29	*	*
Site 4	55	09	01	93	6.6	7.5	77	10.39	*	*
Site 4	60	09	01	93	6.5	7.4	78	10.44	*	*
Site 4	65	09	01	93	6.5	7.4	78	10.44	*	*
Site 4	70	09	01	93	6.4	7.3	78	10.33	*	*
Site 4	75	09	01	93	6.3	7.3	75	10.32	*	*
Site 4	80	09	01	93	6.3	7.3	75	10.13	*	*
Site 4	85	09	01	93	6.3	7.3	76	10.14	*	*
Site 4	90	09	01	93	6.3	7.2	76	9.65	*	*
Gate	00	09	01	93	17.9	8.4	83	9.01	*	*

Laboratory data:

Site	Depth	Month	Day	Year	Alk	Turb	NH3	TKN	NO3	SRP	TP	ChlA
Site 1	00	09	01	93	18.7	0.5	*	357	135	BDL	BDL	2.6
Site 1	05	09	01	93	18.8	1.0	*	311	144	BDL	7	4.0
Site 1	10	09	01	93	18.6	0.7	*	414	138	BDL	9	6.8
Site 1	15	09	01	93	21.0	2.3	*	327	165	BDL	8	1.4
Site 1	20	09	01	93	21.2	4.3	*	371	154	BDL	12	0.7
Intake	00	09	01	93	18.1	0.4	*	379	193	BDL	BDL	2.3
Intake	05	09	01	93	17.7	0.4	*	338	179	BDL	BDL	2.5
Intake	10	09	01	93	19.7	0.4	*	459	184	BDL	BDL	2.0
Site 2	00	09	01	93	18.1	0.4	*	348	172	BDL	BDL	1.8
Site 2	05	09	01	93	17.8	0.4	*	371	184	BDL	BDL	2.3
Site 2	10	09	01	93	*	0.4	*	375	166	BDL	BDL	2.8
Site 2	15	09	01	93	18.4	0.5	*	502	218	BDL	BDL	2.0
Site 2	20	09	01	93	22.3	1.4	*	539	374	BDL	11	0.9
Site 3	00	09	01	93	18.3	0.4	*	377	198	BDL	BDL	1.1
Site 3	05	09	01	93	18.5	0.4	*	459	225	BDL	BDL	1.2
Site 3	10	09	01	93	18.6	0.4	*	309	181	BDL	BDL	1.7
Site 3	15	09	01	93	*	*	*	*	*	*	*	2.0
Site 3	20	09	01	93	17.9	0.4	*	520	314	BDL	BDL	1.0
Site 3	40	09	01	93	17.6	0.4	*	507	348	BDL	BDL	*
Site 3	60	09	01	93	17.7	0.4	*	507	381	BDL	BDL	*
Site 3	80	09	01	93	17.8	0.6	*	562	343	BDL	BDL	*
Site 4	00	09	01	93	19.3	0.3	*	348	210	BDL	BDL	0.8
Site 4	05	09	01	93	18.7	0.4	*	363	179	BDL	BDL	1.7
Site 4	10	09	01	93	18.7	0.4	*	437	191	BDL	BDL	1.3
Site 4	15	09	01	93	*	*	*	*	*	*	*	0.9
Site 4	20	09	01	93	18.2	0.5	*	536	358	BDL	BDL	1.1
Site 4	40	09	01	93	17.6	0.4	*	555	404	BDL	BDL	*
Site 4	60	09	01	93	17.6	0.4	*	468	364	BDL	BDL	*
Site 4	80	09	01	93	17.9	0.5	*	605	357	BDL	BDL	*
Site 4	90	09	01	93	17.7	0.4	*	541	388	BDL	BDL	*
Gate	00	09	01	93	18.4	0.6	*	479	232	BDL	BDL	*

B.2 Lake Whatcom plankton and bacteria data

Lake Whatcom total bacteria counts, 1992--1993

site	depth	month	day	year	cells per mL
1	0.3	2	2	92	2.85E+06
1	20	2	2	92	1.80E+06
1	20	4	1	92	2.19E+06
1	20	4	1	92	1.59E+06
1	0.3	4	1	92	1.10E+06
1	0.3	4	1	92	1.76E+06
1	0.3	6	3	93	1.81E+06
1	20	6	3	93	1.73E+06
1	0.3	7	1	93	1.60E+06
1	0.3	7	1	93	1.62E+06
1	20	7	1	93	1.54E+06
1	20	7	1	93	1.72E+06
1	0.3	8	5	93	3.70E+06
1	0.3	8	5	93	3.16E+06
1	20	8	5	93	3.69E+06
1	20	8	5	93	4.75E+06
1	0.3	9	1	93	1.31E+06
1	0.3	9	1	93	1.54E+06
1	20	9	1	93	1.89E+06
1	20	9	1	93	1.77E+06
1	0.3	11	11	92	1.51E+06
1	20	11	11	92	1.55E+06
1	0.3	12	14	92	1.57E+06
1	20	12	14	92	1.90E+06

Lake Whatcom total bacteria counts, 1992--1993

site	depth	month	day	year	cells per mL
2	0.3	2	2	92	1.58E+06
2	20	2	2	92	2.06E+06
2	20	4	1	92	2.86E+06
2	20	4	1	92	2.58E+06
2	0.3	4	1	92	2.79E+06
2	0.3	4	1	92	2.59E+06
2	0.3	6	3	93	-99
2	20	6	3	93	1.87E+06
2	0.3	7	1	93	1.28E+06
2	0.3	7	1	93	1.22E+06
2	20	7	1	93	1.75E+06
2	20	7	1	93	1.53E+06
2	0.3	8	5	93	3.32E+06
2	0.3	8	5	93	4.42E+06
2	20	8	5	93	6.24E+06
2	20	8	5	93	4.77E+06
2	0.3	9	1	93	1.24E+06
2	0.3	9	1	93	1.38E+06
2	20	9	1	93	1.66E+06
2	20	9	1	93	1.66E+06
2	0.3	11	11	92	1.31E+06
2	20	11	11	92	1.75E+06
2	0.3	12	14	92	1.33E+06
2	20	12	14	92	2.15E+06

Lake Whatcom total bacteria counts, 1992--1993

site	depth	month	day	year	cells per mL
Intake	0.3	2	2	92	2.20E+06
Intake	10	2	2	92	1.65E+06
Intake	11	4	1	92	2.71E+06
Intake	11	4	1	92	2.69E+06
Intake	0.3	4	1	92	2.81E+06
Intake	0.3	4	1	92	1.28E+06
Intake	0.3	6	3	93	1.42E+06
Intake	10	6	3	93	1.43E+06
Intake	0.3	7	1	93	1.45E+06
Intake	0.3	7	1	93	1.21E+06
Intake	10	7	1	93	1.26E+06
Intake	10	7	1	93	1.19E+06
Intake	0.3	8	5	93	2.73E+06
Intake	10	8	5	93	3.53E+06
Intake	0.3	9	1	93	1.95E+06
Intake	0.3	9	1	93	2.04E+06
Intake	10	9	1	93	2.10E+06
Intake	10	9	1	93	2.04E+06
Intake	0.3	11	11	92	1.56E+06
Intake	10	11	11	92	1.34E+06
Intake	0.3	12	14	92	1.40E+06
Intake	10	12	14	92	1.60E+06
Intake (FD)	0.3	2	2	92	1.95E+06
Intake (FD)	11	4	1	92	2.45E+06
Intake (FD)	11	4	1	92	1.68E+06
Intake (FD)	0.3	9	1	93	1.53E+06
Intake (FD)	0.3	9	1	93	1.55E+06

Lake Whatcom total bacteria counts, 1992--1993

site	depth	month	day	year	cells per mL
3	0.3	2	2	92	1.50E+06
3	80	2	2	92	1.46E+06
3	80	4	1	92	4.44E+06
3	80	4	1	92	2.93E+06
3	0.3	4	1	92	3.08E+06
3	0.3	4	1	92	2.63E+06
3	0.3	6	3	93	-99
3	80	6	3	93	-99
3	0.3	7	1	93	1.05E+06
3	0.3	7	1	93	1.15E+06
3	80	7	1	93	9.45E+05
3	80	7	1	93	9.28E+05
3	0.3	8	5	93	3.99E+06
3	0.3	8	5	93	3.20E+06
3	80	8	5	93	3.94E+06
3	80	8	5	93	3.31E+06
3	0.3	9	1	93	1.87E+06
3	0.3	9	1	93	1.82E+06
3	80	9	1	93	8.24E+05
3	80	9	1	93	1.11E+06
3	0.3	11	11	92	1.45E+06
3	80	11	11	92	8.68E+05
3	0.3	12	14	92	2.28E+06
3	80	12	14	92	1.84E+06

Lake Whatcom total bacteria counts, 1992--1993

site	depth	month	day	year	cells per mL
4	0.3	2	2	92	1.09E+06
4	90	2	2	92	1.44E+06
4	90	4	1	92	2.16E+06
4	90	4	1	92	2.63E+06
4	0.3	4	1	92	3.67E+06
4	0.3	4	1	92	2.65E+06
4	0.3	6	3	93	1.75E+06
4	90	6	3	93	1.77E+06
4	0.3	7	1	93	1.01E+06
4	0.3	7	1	93	1.13E+06
4	90	7	1	93	9.01E+05
4	90	7	1	93	9.69E+05
4	0.3	8	5	93	2.55E+06
4	0.3	8	5	93	2.89E+06
4	90	8	5	93	2.87E+06
4	90	8	5	93	1.37E+06
4	0.3	9	1	93	1.75E+06
4	0.3	9	1	93	1.05E+06
4	90	9	1	93	8.92E+05
4	90	9	1	93	1.01E+06
4	0.3	11	11	92	2.00E+06
4	90	11	11	92	7.87E+05
4	0.3	12	14	92	1.94E+06
4	90	12	14	92	1.50E+06

Total and respiring bacteria counts for the near-shore sampling in Lake Whatcom.

site	depth	month	day	year	Total bacteria cells per mL	Respiring bacteria cells per mL	Percent respiring bacteria
NS-28	0.3	8	11	93	2.61E+06	7.58E+05	23
NS-28	0.3	8	11	93	1.96E+06	*	*
NS-28	12	8	11	93	2.77E+06	*	*
NS-28	12	8	11	93	1.66E+06	*	*
NS-27	0.3	8	11	93	2.71E+06	6.00E+05	22
NS-27	0.3	8	11	93	2.51E+06	*	*
NS-27	12	8	11	93	2.73E+06	*	*
NS-27	12	8	11	93	2.21E+06	*	*
NS-26	0.3	8	11	93	1.84E+06	3.96E+05	22
NS-26	0.3	8	11	93	2.33E+06	*	*
NS-26	13.4	8	11	93	3.12E+06	*	*
NS-26	13.4	8	11	93	2.96E+06	*	*
NS-25	0.3	8	11	93	2.51E+06	5.72E+05	23
NS-25	0.3	8	11	93	2.93E+06	*	*
NS-25	-99	8	11	93	2.91E+06	*	*
NS-25	-99	8	11	93	3.57E+06	*	*
NS-24	0.3	8	11	93	3.19E+06	7.55E+05	24
NS-24	0.3	8	11	93	2.62E+06	*	*
NS-24	9.2	8	11	93	3.03E+06	*	*
NS-24	9.2	8	11	93	3.17E+06	*	*
NS-23	0.3	8	11	93	2.58E+06	5.41E+05	21
NS-23	0.3	8	11	93	1.75E+06	*	*
NS-23	6.3	8	11	93	2.38E+06	*	*
NS-22	0.3	8	11	93	2.49E+06	4.84E+05	20
NS-22	0.3	8	11	93	2.40E+06	*	*
NS-22	3.6	8	11	93	1.76E+06	*	*
NS-22	3.6	8	11	93	1.28E+06	*	*
NS-09	0.3	8	11	93	2.20E+06	6.76E+05	31
NS-09	0.3	8	11	93	2.06E+06	*	*
NS-09	2	8	11	93	2.08E+06	*	*
NS-09	2	8	11	93	2.14E+06	*	*
NS-08	0.3	8	11	93	2.35E+06	5.18E+05	22
NS-08	0.3	8	11	93	2.16E+06	*	*
NS-08	5.4	8	11	93	1.83E+06	*	*
NS-08	5.4	8	11	93	1.86E+06	*	*
NS-07	0.3	8	11	93	1.18E+06	3.27E+05	28
NS-07	0.3	8	11	93	1.54E+06	*	*
NS-07	7.4	8	11	93	1.37E+06	*	*
NS-07	7.4	8	11	93	1.46E+06	*	*
NS-06	0.3	8	11	93	1.65E+06	2.75E+05	17
NS-06	0.3	8	11	93	1.41E+06	*	*
NS-06	8.6	8	11	93	1.75E+06	*	*
NS-06	8.6	8	11	93	1.62E+06	*	*

Total and respiring bacteria counts for the near-shore sampling in Lake Whatcom.

site	depth	month	day	year	Total bacteria cells per mL	Respiring bacteria cells per mL	Percent respiring bacteria
NS-05	0.3	8	11	93	1.61E+06	3.15E+05	20
NS-05	0.3	8	11	93	1.38E+06	*	*
NS-05	8	8	11	93	2.22E+06	*	*
NS-05	8	8	11	93	1.77E+06	*	*
Bloedel	0.3	8	11	93	1.77E+06	3.26E+05	18
Bloedel	0.3	8	11	93	1.86E+06	*	*
Bloedel	4	8	11	93	2.34E+06	*	*
Bloedel	4	8	11	93	1.94E+06	*	*
NS-01	0.3	8	12	93	1.53E+06	3.36E+05	22
NS-01	0.3	8	12	93	1.52E+06	*	*
NS-02	0.3	8	12	93	3.16E+06	8.84E+05	28
NS-02	0.3	8	12	93	3.16E+06	*	*
NS-03	0.3	8	12	93	1.33E+06	2.34E+05	18
NS-03	0.3	8	12	93	1.13E+06	*	*
FD1-NS-05	0.3	8	11	93	1.46E+06	*	*
FD1-NS-05	0.3	8	11	93	1.38E+06	*	*

Lake Whatcom 1992–1993 plankton data.

site	depth (m)	month	day	year	zooplankton (cells/L)	chrysophyta (cells/L)	cyanophyta (cells/L)	chlorophyta (cells/L)	pyrrophyta (cells/L)
21	5	4	1	93	0	61500	0	600	3
11	5	4	1	93	43	29800	0	3200	20
22	5	4	1	93	6	58700	400	400	0
31	5	4	1	93	21	69200	0	200	3
32	5	4	1	93	17	47200	200	2200	2
QC-	1	4	1	93	-99	-99	-99	-99	-99
21	5	5	6	93	16	105600	100	7400	100
11	5	5	6	93	38	244800	500	17500	0
22	5	5	6	93	11	29200	300	2200	0
31	5	5	6	93	19	42600	0	1800	0
32	5	5	6	93	32	74500	0	2400	0
QC-22	5	5	6	93	28	271500	300	18000	200
21	5	6	7	93	92	87700	0	24400	13
11	5	6	7	93	13	57800	0	2500	33
22	5	6	7	93	58	90900	0	8600	11
31	5	6	7	93	75	99300	0	10100	31
32	5	6	7	93	8	17400	0	1400	0
QC-21	5	6	7	93	101	118300	0	14100	26
21	5	7	1	93	93	63800	500	26100	0
11	5	7	1	93	52	58900	1000	26000	0
22	5	7	1	93	104	92300	0	21300	0
31	5	7	1	93	55	119000	0	29300	400
32	5	7	1	93	151	66100	0	19600	400
QC-31	5	7	1	93	51	99300	0	10500	0
21	5	8	5	93	114	93200	400	290100	0
11	5	8	5	93	170	152300	2800	150300	1200
22	5	8	5	93	94	61700	400	53100	400
31	5	8	5	93	59	66300	0	529800	0
32	5	8	5	93	50	52800	400	197000	900
QC-11	5	8	5	93	140	106200	0	262600	0
21	5	9	1	93	18	69100	1100	497600	0
11	5	9	1	93	38	92400	500	275800	0
22	5	9	1	93	78	82200	1000	307100	500
31	5	9	1	93	83	43500	0	118000	0
32	5	9	1	93	101	17600	0	131200	0
QC-32	5	9	1	93	83	10200	0	126200	600

Total bacteria counts for selected creeks in the Lake Whatcom watershed.

site	depth	month	day	year	cells per mL
Smith	-99	7	12	93	5.51E+05
Smith	-99	7	12	93	6.23E+05
Silver B	-99	7	12	93	3.06E+06
Silver B	-99	7	12	93	2.98E+06
Park Pl	-99	7	12	93	4.75E+06
Park Pl	-99	7	12	93	5.28E+06
Blue Can	-99	7	12	93	9.79E+05
Blue Can	-99	7	12	93	1.18E+06
Wildwood	-99	7	12	93	9.14E+05
Wildwood	-99	7	12	93	8.97E+05
Austin	-99	7	12	93	1.73E+06
Austin	-99	7	12	93	1.30E+06
FD1-Austin	-99	7	12	93	1.70E+06
FD1-Austin	-99	7	12	93	1.24E+06

Total bacteria, respiring bacteria, coliform and fecal streptococcus counts from Silver Beach Creek (June 7, 1993).

Site	Month	Day	Year	MPN-TC (col/100 mL)	MPN-FC (col/100 mL)	MF-FC (col/100 mL)	MF-FS (col/100 mL)	FC/FS	Total bacteria, (cells/mL)	Respiring bacteria (cells/mL)	Percent respiring bacteria
A	6	7	93	>1600	300	255	158	1.61	-99	-99	-99
B	6	7	93	>1600	300	376	442	0.85	-99	-99	-99
C	6	7	93	>1600	500	67	1030	0.07	2.20E+06	4.84E+05	23
D	6	7	93	>1600	300	255	333	0.77	2.51E+06	7.04E+05	29
E	6	7	93	>1600	300	212	303	0.70	1.96E+06	3.72E+05	21
F	6	7	93	>1600	>1600	3800	61800	0.06	2.08E+06	6.46E+05	31
G	6	7	93	>1600	>1600	2585	37400	0.07	2.36E+06	5.43E+05	23
H	6	7	93	>1600	>1600	2754	17600	0.16	-99	-99	-99

MPN-TC = Total coliform counts, MPN method
MPN-FC = Fecal coliform counts, MPN method
MF-FC = Fecal coliform counts, membrane filter method
MF-FS = Fecal streptococcus counts, membrane filter method
FC/FS = Fecal coliform/fecal strep ration, using membrane filter counts

All sites are identified in Appendix A.

C AmTest data report for metals analyses

AMTEST

AmTest Inc.

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14603 N.E. 87th St.
Redmond, WA
98052

Fax: 206 883 3495

Tel: 206 885 1664

9/29/93

Huxley College
Western Washington University
Bellingham, WA 98225
Attention: Michael Hilles

Dear Michael Hilles:

Enclosed please find the analytical data for your Lake Whatcom Monitor project.

The following is a cross correlation of client and laboratory identification for your convenience.

CLIENT ID	MATRIX	AM TEST ID	TEST
Intake-O	water	93-A014297	MET,
Intake-B	water	93-A014298	MET,
Site 1-O	water	93-A014299	MET,
Site 1-B	water	93-A014300	MET,
Site 2-O	water	93-A014301	MET,
Site 2-B	water	93-A014302	MET,
Site 3-O	water	93-A014303	MET,
Site 3-B	water	93-A014304	MET,
Site 4-O	water	93-A014305	MET,
Site 4-B	water	93-A014306	MET,
FD 1	water	93-A014307	MET,

Your eleven (11) samples were received at AM TEST on 9/10/93.

At the time of receipt, the samples were logged in and properly maintained prior to subsequent analyses.

The analytical procedures used in the laboratory are well documented and are typically derived from the protocols of the EPA, USDA, FDA or the Army Corps of Engineers.

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Fax: 206 883 3495

Tel: 206 885 1664

Huxley College
Michael Hilles

If you should have any questions pertaining to the data package, please feel free to contact me.

Sincerely,

Kathy Fugiel
Director of Inorganic Laboratory

BACT = Bacteriological
CONV = Conventionals
MET = Metals
ORG = Organics

OCT 4 1993

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INVOICE 67267
Page 1

WESTERN WASH. UNIVERSITY

ACCOUNTS PAYABLE
ROOM 330 OLD MAIN
BELLINGHAM, WA 98225

September 30, 1993

Customer: 381400
P.O. #: BT 20560
Project Name:
LAKE WHATCOM MONITORING

TERMS: NET 30 DAYS PAST DUE ACCOUNTS 1½ PERCENT INTEREST PER MONTH

SAMPLE ANALYSIS: WATER CHEMISTRY

ICP METALS	11 @	50.00	550.00
LEAD BY GFAA	11 @	12.00	132.00

TOTAL AMOUNT DUE 682.00

SAMPLE NUMBERS: 93-A014297 THROUGH 14307

cc: Lewis/Huxley — Michael Hiles

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Redmond, WA
98052

Fax: 206 883 3495

Tel: 206 885 1664

ANALYSIS REPORT

Huxley College
Western Washington University
Bellingham, WA 98225
Attention: Michael Hilles

Date Received: 9/10/93
Date Reported: 9/30/93

Project Name: Lake Whatcom Monitor
Date Sampled: 9/ 1/93

PARAMETER	UNITS	RESULT
93-A014297		
Client ID: Intake-O		
METALS		
Arsenic	mg/l	< 0.03
Cadmium	mg/l	< 0.002
Chromium	mg/l	< 0.006
Copper	mg/l	< 0.002
Iron	mg/l	0.04
Mercury	mg/l	< 0.01
Nickel	mg/l	< 0.01
Lead	mg/l	< 0.001
Zinc	mg/l	0.018
93-A014298		
Client ID: Intake-B		
METALS		
Arsenic	mg/l	0.03
Cadmium	mg/l	< 0.002
Chromium	mg/l	< 0.006
Copper	mg/l	< 0.002
Iron	mg/l	0.03
Mercury	mg/l	< 0.01
Nickel	mg/l	< 0.01
Lead	mg/l	< 0.001
Zinc	mg/l	0.008
93-A014299		
Client ID: Site 1-O		
METALS		
Arsenic	mg/l	< 0.03
Cadmium	mg/l	< 0.002
Chromium	mg/l	< 0.006
Copper	mg/l	< 0.002
Iron	mg/l	0.04
Mercury	mg/l	< 0.01
Nickel	mg/l	< 0.01
Lead	mg/l	< 0.001
Zinc	mg/l	0.012

AMTEST

ANALYSIS REPORT

Huxley College

Attention: Michael Hilles

Date Received: 9/10/93
Date Reported: 9/30/93

PARAMETER	UNITS	RESULT
93-A014300		
Client ID: Site 1-B		
METALS		
Arsenic	mg/l	< 0.03
Cadmium	mg/l	< 0.002
Chromium	mg/l	< 0.006
Copper	mg/l	0.003
Iron	mg/l	0.55
Mercury	mg/l	< 0.01
Nickel	mg/l	< 0.01
Lead	mg/l	0.006
Zinc	mg/l	0.021
93-A014301		
Client ID: Site 2-O		
METALS		
Arsenic	mg/l	< 0.03
Cadmium	mg/l	< 0.002
Chromium	mg/l	< 0.006
Copper	mg/l	< 0.002
Iron	mg/l	0.03
Mercury	mg/l	< 0.01
Nickel	mg/l	< 0.01
Lead	mg/l	0.002
Zinc	mg/l	0.013
93-A014302		
Client ID: Site 2-B		
METALS		
Arsenic	mg/l	< 0.03
Cadmium	mg/l	< 0.002
Chromium	mg/l	< 0.006
Copper	mg/l	< 0.002
Iron	mg/l	0.22
Mercury	mg/l	< 0.01
Nickel	mg/l	0.02
Lead	mg/l	< 0.001
Zinc	mg/l	0.015

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ANALYSIS REPORT

Huxley College

Attention: Michael Hilles

Date Received: 9/10/93
Date Reported: 9/30/93

PARAMETER	UNITS	RESULT
93-A014303		
Client ID: Site 3-O		
METALS		
Arsenic	mg/l	< 0.03
Cadmium	mg/l	< 0.002
Chromium	mg/l	< 0.006
Copper	mg/l	< 0.002
Iron	mg/l	0.03
Mercury	mg/l	< 0.01
Nickel	mg/l	< 0.01
Lead	mg/l	< 0.001
Zinc	mg/l	0.010
93-A014304		
Client ID: Site 3-B		
METALS		
Arsenic	mg/l	< 0.03
Cadmium	mg/l	< 0.002
Chromium	mg/l	< 0.006
Copper	mg/l	< 0.002
Iron	mg/l	0.04
Mercury	mg/l	< 0.01
Nickel	mg/l	< 0.01
Lead	mg/l	< 0.001
Zinc	mg/l	0.014
93-A014305		
Client ID: Site 4-O		
METALS		
Arsenic	mg/l	< 0.03
Cadmium	mg/l	< 0.002
Chromium	mg/l	< 0.006
Copper	mg/l	< 0.002
Iron	mg/l	0.03
Mercury	mg/l	< 0.01
Nickel	mg/l	< 0.01
Lead	mg/l	0.001
Zinc	mg/l	0.020

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ANALYSIS REPORT

Huxley College

Attention: Michael Hilles

Date Received: 9/10/93
Date Reported: 9/30/93

PARAMETER	UNITS	RESULT
93-A014306		
Client ID: Site 4-B		
METALS		
Arsenic	mg/l	< 0.03
Cadmium	mg/l	< 0.002
Chromium	mg/l	< 0.006
Copper	mg/l	< 0.002
Iron	mg/l	0.04
Mercury	mg/l	< 0.01
Nickel	mg/l	< 0.01
Lead	mg/l	0.001
Zinc	mg/l	0.014
93-A014307		
Client ID: FD 1		
METALS		
Arsenic	mg/l	< 0.03
Cadmium	mg/l	< 0.002
Chromium	mg/l	< 0.006
Copper	mg/l	< 0.002
Iron	mg/l	0.04
Mercury	mg/l	< 0.01
Nickel	mg/l	< 0.01
Lead	mg/l	0.004
Zinc	mg/l	0.022

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Fax: 206 883 3495

Tel: 206 885 1664

METHODOLOGY REPORT

AM TEST ID 93-A014297
CLIENT ID Intake-O

ANALYTE	UNITS	METHOD	METHOD REFERENCE	DETECTION LIMIT	DATE ANALYZED
Arsenic	mg/l	200.7	EPA	0.03	9/21/93
Cadmium	mg/l	200.7	EPA	0.002	9/21/93
Chromium	mg/l	200.7	EPA	0.006	9/21/93
Copper	mg/l	200.7	EPA	0.002	9/21/93
Iron	mg/l	200.7	EPA	0.01	9/21/93
Mercury	mg/l	200.7	EPA	0.01	9/21/93
Nickel	mg/l	200.7	EPA	0.01	9/21/93
Lead	mg/l	239.2	EPA	0.001	9/24/93
Zinc	mg/l	200.7	EPA	0.002	9/21/93
Acid Dig. (Tot Metals)		3010	EPA		9/13/93

ANALYSIS REPORT AMTEST

Huxley College
Western Washington University
Michael Hilles

Date Received: 09/10/93
Date Reported: 09/30/93
Project Name: Lake Whatcom Monitor

QUALITY CONTROL - BLANK

AM TEST Sample Number	BLANK
Client Identification	-----

ANALYTES	RESULTS (mg/l)	DETECTION LIMIT (mg/l)
Arsenic	ND	0.03
Cadmium	ND	0.002
Chromium	ND	0.006
Copper	ND	0.002
Iron	ND	0.01
Mercury	ND	0.010
Nickel	ND	0.01
Lead	ND	0.001
Zinc	0.006	0.002

ND = Not Detected

ANALYSIS REPORT AMTEST

Huxley College
Western Washington University
Michael Hilles

Date Received: 09/10/93
Date Reported: 09/30/93
Project Name: Lake Whatcom Monitor

QUALITY CONTROL - DUPLICATE ANALYSIS

AM TEST Sample Number: 93-A014297
Client Identification: Intake-O

ANALYTES	SAMPLE VALUE (mg/l)	DUPLICATE VALUE (mg/l)	RELATIVE PERCENT DIFFERENCE (%)
Arsenic	<0.03	<0.03	-
Cadmium	<0.002	<0.002	-
Chromium	<0.006	<0.006	-
Copper	<0.002	<0.002	-
Iron	0.04	0.04	0.
Mercury	<0.01	<0.01	-
Nickel	<0.01	<0.01	-
Lead	<0.001	<0.001	-
Zinc	0.018	0.014	28.

< = less than

ANALYSIS REPORT AMTEST

Huxley College
Western Washington University
Michael Hilles

Date Received: 09/10/93
Date Reported: 09/30/93
Project Name: Lake Whatcom Monitor

QUALITY CONTROL - SPIKE RECOVERIES

AM TEST Sample Number: 93-A014298
Client Identification: Intake-B

ANALYTES	SAMPLE VALUE (mg/l)	SAMPLE + SPIKE (mg/l)	SPIKE CONCENTRATION (mg/l)	RECOVERY (%)
Arsenic	0.03	0.48	0.50	88.
Cadmium	<0.002	0.52	0.50	104.
Chromium	<0.006	1.1	1.1	100.
Copper	<0.002	1.0	1.0	100.
Iron	0.03	1.08	1.0	105.
Nickel	<0.01	1.0	1.0	100.
Lead	<0.001	0.027	0.025	108.
Zinc	0.008	1.03	1.1	93.

< = less than

REPORTED BY Kathy Fugiel

KF/pb