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Water Quality in British Columbia

Objectives Attainment in 2000 and 2001

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SUMMARY

The setting of water quality objectives in priority basins in British Columbia began in 1982. By the end of 2001, the Ministry of Water, Land and Air Protection had set water quality objectives in 48 bodies of water, both fresh and marine, throughout the Province. Annual monitoring to check the attainment of objectives started in 1987. This report presents the results of monitoring done to check the attainment of objectives in 16 basins in 2000 and 15 basins in 2001. Due to budgetary restraints, the program has been considerably reduced as compared to previous years. This trend was reversed in 2002 and those data will be reported in a future report.

The results are summarized in a series of tables. For all Ministry Regions the objectives were met 82 percent of the time in 2000 and 89 percent of the time in 2001. The findings in 2000 and 2001 are slightly higher than the 1998 and 1999 figures (81% and 77%, respectively), and similar to previous years when attainment ranged from 94 percent in 1987 to 83 percent in 1995.

There was not 100 percent attainment because objectives are set in areas where water quality problems may occur. Monitoring results therefore reflect the state of water quality in areas affected by human activity rather than in the Province as a whole.

Variables for which objectives were sometimes not met in three or more basins in each of the 2000 and 2001 sampling programs included fecal coliforms, *E. coli*, suspended solids, chlorophyll-*a* (a measure of algal growth in lakes and streams), total phosphorus in lakes, and dissolved oxygen.

ACKNOWLEDGEMENTS

The regional Environmental Protection staff carried out most of the monitoring, either directly or by using co-op students and contractors. The Environment Canada Pacific Environmental Science Centre analyzed the samples for most variables except for microbiological indicators measured by Cantest Labs and biological communities measured by Fraser Environmental Services.

Additional data found in this report were also obtained from regional offices of B.C Ministry of Water, Land and Air Protection, , the federal Department of Fisheries and Oceans (DFO), and the Greater Vancouver Regional District.

INTRODUCTION

In 1981, the Auditor General recommended that the Ministry develop a method of measuring its performance in safeguarding water quality. To fulfil this recommendation, the Ministry undertook the setting of water quality objectives for fresh and marine surface waters of British Columbia.

Water quality objectives are safe conditions or threshold levels of a substance that will protect the most sensitive water use of a specific body of water. They establish a reference against which the state of water quality at a specific site is checked, as recommended by the Auditor General. They are also used to prepare Waste Management Permits or Plans and to measure their effectiveness. Water quality objectives are thus a basic tool for use in maintaining a healthy aquatic environment.

We began work on water quality objectives in 1982. The Ministry has now published objectives on bodies of water in 49 areas or basins and updated them in two. In addition, objective-setting and updating is proceeding in a number of other basins. In each basin considered, we expected some type of water quality problem due to human activity. We set objectives for lakes, rivers, creeks, and marine areas covering all seven Environment Regions of the Ministry.

This report for 2000 and 2001 is the twelfth in a series of reports that began in 1986. Since 1987, the Ministry has been monitoring ambient water specifically to check the attainment of objectives. As a result, we have obtained an annual picture of how well objectives are being met since 1987. Each report is a condensation of monitoring data for use by managers of the water resource. It indicates where conditions are acceptable and provides a warning of where further evaluation may be needed to solve water quality problems. In order to reduce publication costs and increase convenience of data management, the 2000 and 2001 attainment reports are included in one document. To keep this report to a reasonable length, we assume some reader familiarity with the detailed background reports on water quality

objectives for each basin. Copies of these background reports may be obtained from the Water, Air and Climate Change Branch of the Ministry in Victoria.

We usually choose the basins for setting water quality objectives on the basis of perceived water quality problems. Thus, results presented here indicate conditions in likely problem areas, but do not reflect the state of water quality in the Province as a whole. There are many bodies of water where water quality is relatively unaffected by humans and likely to remain so for the foreseeable future. Thus, reports in this series are a measure of the state of water quality in areas of British Columbia influenced by human activity.

To help the public and resource managers interpret the large amount of attainment data presented in this type of report, we developed a water quality index in 1995. This is a system of ranking which assigns a number and grade to a body of water to indicate its quality. The B.C. index is based on factors that measure the success of meeting water quality objectives. It thus compresses large quantities of data into a statement on the quality of water and its uses. A brochure describing this index is available from the Ministry, as is a more detailed report explaining how to calculate the index from the monitoring data on objectives attainment.

In 1995 the index was applied in 33 water basins plus five groundwater aquifers in the Province to produce a *B.C. Water Quality Status Report*. This report, the first of its kind, is intended to show the public in non-technical terms how suitable the water is, in specific areas, for a variety of uses. The *Status Report*, which is based on objectives attainment data collected between 1987 and 1993, was released in April 1996, and is available from the Ministry.

METHODS OF PRESENTING AND INTERPRETING THE DATA

Reports on Objectives

At the present time, the Ministry of Water, Land and Air Protection has completed 49 reports on water quality objectives. The complexity and size of the reports varies considerably, depending upon the body of water considered. These reports are distributed among the Environmental Regions of the Ministry as follows:

Vancouver Island	7
Skeena	5
Omineca-Peace	9
Cariboo	2
Southern Interior	13
Kootenay	5
Lower Mainland	8
Total	<u>49</u>

Work is in progress on a number of other water basins where objectives are either being set or updated.

Tables of Results

Tables 1 to 17 summarize the data collected in 2000, and Tables 18 to 32 summarize 2001 data, with a separate table for each of the water basins monitored. Due to funding limitations, fewer basins were monitored than in previous years (see figure below); however, this trend has been reversed in 2002 and these data will be provided in a separate report.

In each table we list all the objectives that have been set, as they appear in the summary table of each report on objectives. We have updated a few of the objectives to reflect new water quality guidelines and procedures. For example, we are now using chlorophyll *a* instead of periphyton biomass and total ammonia-N instead of un-ionized ammonia-N. The 90th percentile of 400/100 mL for fecal coliform values is used when high fecal coliform values were recorded at bathing beaches. In some cases, such as Kitimat Arm, we have

added some generalized water quality guidelines to allow for the fact that threats to water quality have changed or are better understood since publication of the objectives reports.

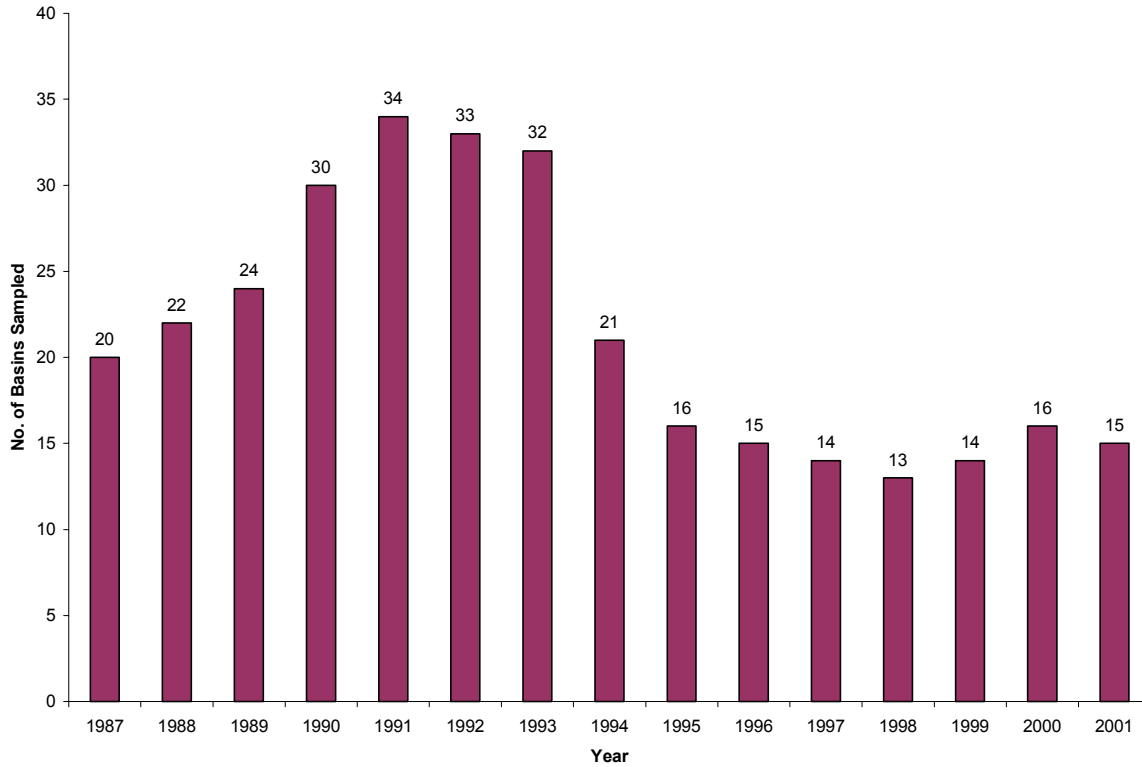


Figure 1. Summary of the number of basins sampled annually between 1987 and 2001.

Four different concluding statements are used in the data assessment: objective met, objective not met, indefinite result, and omitted 2000 or 2001. We consider the objective to have been met if the monitoring result equaled or was within the objective limit. We report the result as indefinite if there were insufficient data to check the objective (a minimum of five samples collected within a 30-day period are necessary to calculate an average, median or ninetieth percentile value), the data were suspect, or the minimum detectable concentration was too high. We report the objective as omitted if, for some reason, planned data collection did not take place or was excluded because of low priority, taking into account past results. These tables are the most important part of this report since they summarize where, when, and by how much objectives were met or exceeded in 2000 and 2001.

Text

In the next section, the text briefly explains the quality assurance program and its status in the 2000 and 2001 monitoring years. We then give a provincial overview of the monitoring results. Finally, we describe briefly the tabulated data for each body of water, by Region, mentioning the highlights and sometimes drawing some general conclusions. At this stage, we avoid qualifying statements such as: "...the objectives were nearly met, slightly exceeded or probably met...". We consider these types of statements to be too speculative without the support of further evidence to explain them. Thus objectives not met by a wide margin are categorized equally with apparently borderline cases. Although a more detailed interpretation is desirable, this is not done here because it would require the presentation of much more data, beyond the scope of this attainment report.

For the same reason, we do not attempt to explain what may have caused the results or to comment on the effect of objectives not being met. Such assessments would entail consideration of river flows, effluent discharges, whether objectives are long-term or short-term, the degree to which objectives are exceeded, quality assurance, and other factors.

In addition to a brief description of the tabulated data, we present the 2000 and 2001 water quality index and rank for the bodies of water in each basin - when there are sufficient data to do so. The calculation of the index and rank for 2000 and 2001 helps highlight those variables that had a detrimental effect on water quality in a particular water body. The index formulation has been modified from the original index and now follows the index format endorsed by the Canadian Council of Ministers of the Environment (CCME).

The 2000 and 2001 Attainment Report guides those involved in managing water quality by focusing on areas of concern where further assessment or inspection may be needed. Since monitoring to check water quality objectives covers only a short time span, usually at most 30 days, we believe that any instance when objectives were not met could be significant and is worth a more detailed look. Further study could show whether objectives were not met because of natural phenomena or because there is a human cause to the problem.

Figures

A location map in Figure 2 shows the 49 basins where objectives have been set. Separate maps, Figures 3 to 18, illustrate the 16 water basins monitored in 2000/2001 and show the sampling sites referred to in the tables.

Guide to Ranking Future Monitoring

Due to limited funds, we cannot monitor all basins where objectives have been set each year. We have therefore proposed the following scheme to rank monitoring:

- **1st priority:** any basin with less than three years of complete monitoring or any basin the Ministry considers provincially or internationally significant. Examples of significant basins are the Fraser River due to fisheries, the Okanagan Valley lakes due to recreation, the lower Columbia River due to trans-boundary effects, and Burrard Inlet due to a federal-provincial plan.

- **2nd priority:** any basin in which, after at least three years monitoring, a number of objectives are not regularly attained and there is either a local expression of concern or a plan for short-term action.

- **3rd priority:** any basin as for the 2nd priority above, but where there is no known concern or plan of action.

- **4th priority:** any basin in which, after at least three years monitoring, most objectives are either being met or the situation is fairly well documented with no change in status expected in the short term.

QUALITY ASSURANCE PROGRAM

Due to fiscal restraints, the Quality Assurance Program was suspended in 1996. Prior to this, the Quality Assurance Program ran over a five-year period from 1991 to 1995. This program described the accuracy and precision of the test results to assess the reliability of the results, and was specific to the variable and levels measured for objectives attainment. In its place the Ministry conducts a more general quality assurance program to ensure that contract laboratories are producing results that meet Ministry data quality standards.

PROVINCIAL OVERVIEW OF RESULTS

Presentation of Results

In the tables summarizing the monitoring data, there are four kinds of concluding statement. These are: objective met, objective not met, omitted 2000 or 2001, and indefinite result.

To get an overview of performance for the Province, we totaled the number of occurrences of each conclusion for each water basin from the summary tables. In compiling these totals, we counted each instance of a maximum (or minimum) objective being met or not met plus all average and percentile values being met or not met.

Table 1 shows the results of this compilation in 2000, and Table 18 presents its 2001 equivalent. For each Region we give the sum of occurrences for each kind of conclusion and then total them for the whole Province. We also express the occurrences as a percent of the total of all occurrences, both by Region and for the Province as a whole.

Discussion of Results

Although the results apply to specific occurrences, we assume for this analysis that they are representative of the whole year. This simplification is a conservative approach to describing the state of water quality since we usually attempt to collect data during worst-case conditions.

- 2000 -

Table 1 shows that the objectives were met 73% of the time in the Province as a whole in 2000. This result varied according to Region from 0% to 91%. Objectives were not met from between 4% to 22% of the time, with an overall average of 16%.

The occurrence of objectives omitted and indefinite results in 2000 averaged 4% and 7%, respectively. If we subtract these instances from the total, the objectives were met 82% of the time and objectives not met 18% of the time. By subtracting the instances of no results, we speculate that if all objectives had yielded results, then the above trend would continue.

We can therefore generalize that, in the Province as a whole, the objectives were met about 82% of the time in 2000.

- 2001 -

Table 18 indicates that the objectives were met 80% of the time in the Province as a whole in 2001. This result varied according to Region from 0% to 93%. The objectives were not met from between 3% to 36% of the time, with an overall average of 10%.

The occurrence of objectives omitted and indefinite results in 2001 averaged 4% and 6%, respectively. If we subtract these instances from the total, the objectives were met 89.2% of the time and objectives not met 10.8% of the time.

We can again generalize that, in the Province as a whole, the objectives were met about 89% of the time in 2001.

This is an approximate general statement at the best of times, but is especially so for 2000 and 2001 because of the reduced monitoring in those years. Factors which can affect the overall outcome include the frequency at which particular objectives in any region are monitored, the completeness of monitoring in a basin, and the inclusion or omission of water basins with either serious or minor water quality problems.

When comparing the data from past years, a continuation in a previous downward trend in percent of objectives met is evident in 2000 and 2001 (as seen in the table below), reversing the high numbers seen in 1998 and 1999. Additionally, it is speculated that this downward trend could continue, because new basins with known problems will be added and, as monitoring costs increase, there will be a tendency to cease monitoring in areas where objectives are being met to free-up funding for areas that have persistent water quality concerns.

A comparison of objectives attainment (note: only attainment and exceedences were considered in calculations – data that was omitted or indefinite was not included).

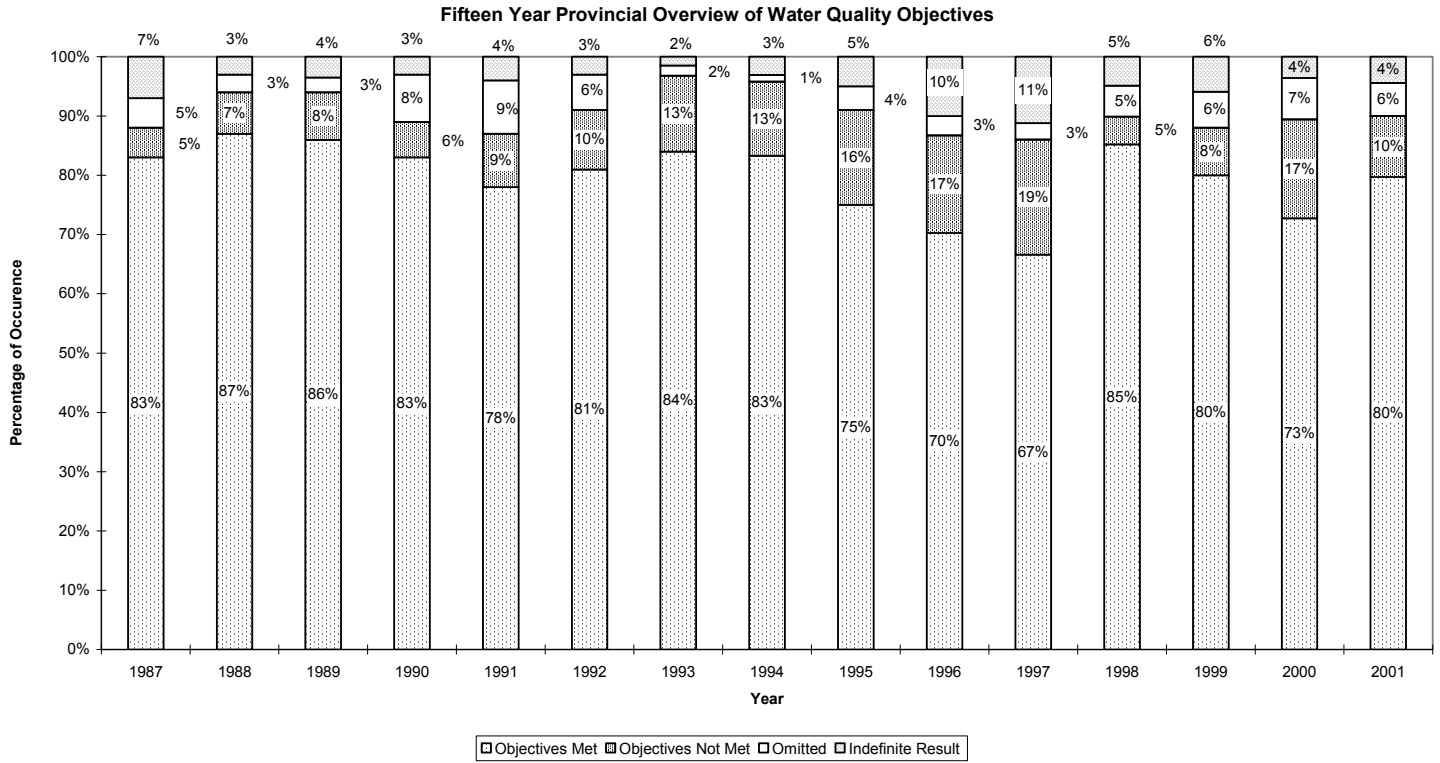
	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
% of the Time Objectives Were Met	94%	93%	92%	93%	90%	89%	87%	87%	83%	81%
Number of Basins Sampled	20	22	24	30	34	33	32	21	16	15

	1997	1998	1999	2000	2001
% of the Time Objectives Were Met	77%	95%	91%	82%	89%
Number of Basins Sampled	14	12	13	16	15

If we wish to use objectives attainment data to describe the general state of water quality in developed areas, we will need to maintain monitoring in all areas where objectives have been set. If monitoring resources are scarce, we will need to concentrate on areas where the worst water quality problems occur. This will produce an increasingly negative general result, although we would expect the situation to improve in subsequent years as corrective action is taken. The goal, of course, is for water quality objectives to be met 100% of the time in all areas. Monitoring in future years, followed by corrective action where required, will show how close we can get to this ideal situation.

Fifteen-Year Water Quality Attainment Overview

This report marks the fifteenth year of the *Water Quality Objectives Attainment Report* series. Included below is a graph representing the findings from the past fifteen years of attainment reporting: this graph shows trends in each of the four concluding statements (objectives met, objectives not met, omitted, and indefinite results).



VANCOUVER ISLAND REGION

Cowichan-Koksilah Rivers

The Cowichan River is the most important river on Vancouver Island for recreational and commercial fisheries. The Koksilah River is a major tributary of the Cowichan River near its mouth. Possible sources of contamination include treated municipal sewage, agriculture, urban development, and effluents from a fish hatchery and abandoned metal mines.

Objectives were not checked from 1994 to 1997. Monitoring carried out from 1988 to 1993 gave fairly consistent results, with water quality ratings of fair for both rivers (Cowichan River index = 30; Koksilah River index = 36). It showed that objectives were not met for microbiological contaminants in both rivers and for algal growth in the lower part of the Cowichan River.

Table 2 lists results for 2000 and Table 19 presents results in 2001. The CCME index values calculated for 2000 were 78 for the Cowichan River and 49 for the Koksilah River which equate to ranks of fair and poor, respectively, while in 2001 the index values were 60 for the Cowichan River and 32 for the Koksilah River, equating to ranks of fair and marginal, respectively.

- 2000 -

In 2000, objectives were met 91% of the time when sufficient data was collected to evaluate compliance. Fecal coliform and suspended solids concentrations both exceeded objectives on occasion.

- 2001 -

In 2001, objectives were met 72% of the time when sufficient data was collected to evaluate compliance. Objectives that were exceeded occasionally included fecal coliforms and *E. coli*, turbidity, suspended solids, and dissolved oxygen.

Middle Quinsam Lake, and Quinsam River Basin

Middle Quinsam Lake drains via the Quinsam River into the Campbell River just upstream from the Campbell River estuary (Figure 2[A,B]). The Middle Quinsam Lake sub-basin is a valuable habitat for trout and salmon, but could be impacted by an open-pit coal mine operating in the area. It was noted as having excellent water quality (index = 3) based on measurements between 1989 and 1993 while the Quinsam River had good water quality (index = 8).

A few samples were collected for objectives monitoring in both 2000 and 2001. However, sampling frequencies for parameters such as metals were insufficient to determine average concentrations in most instances (a minimum of five samples are required within a 30-day period to determine average compliance). Figure 2[A,B] shows site locations.

Table 3 shows results for 2000, while Table 20 shows the results of the 2001 sampling year. The CCME index values calculated for Long Lake, No Name Lake, Quinsam River and Middle Quinsam Lake were identical for all sites in both years, with a value of 100, which translates to a ranking of Excellent for these waterbodies for both years.

- 2000 -

Objectives were met in all samples collected in 2000 for which an assessment could be made.

- 2001 -

Objectives were met in all samples collected in 2001 for which an assessment could be made.

Oyster River

The Oyster River flows from the Forbidden Plateau area into the Strait of Georgia, south from Campbell River. The river and its tributaries are important habitat for several species of trout and salmon. The main threats to water quality are logging, agriculture, and mine exploration. We expect the latter to lead to active mining in the future, especially for coal.

Between 1990 and 1993, the objectives were usually always met, with a water quality rating of good (index = 16). Since the situation is stable, we did not monitor from 1994 to 1997. No samples were collected in 2000, and a few were collected in 2001. These results are presented in Table 21. The CCME index value for 2001 was 86.4, which equates to a ranking of Good.

- 2001 -

In 2001, objectives were met in 94% of instances when there was sufficient data to evaluate compliance. Exceedences occurred for fecal coliforms and suspended solids concentrations.

Elk and Beaver Lakes

Located near Victoria, these are the most important recreational fisheries lakes on southern Vancouver Island. Water-contact recreation is also very important in the lakes. Residential and agricultural development and the release of phosphorus from lake sediments are responsible for the present eutrophic state of the lakes.

Prior to this report, Elk and Beaver Lakes were monitored from 1993 to 1995. During the 1993 to 1995 study period, objectives for dissolved oxygen, chlorophyll-*a*, and the phytoplankton community were consistently not met, reflecting the eutrophic nature of the lakes. The water quality ratings were borderline, (index =54), for Elk Lake and poor, (index =72), for Beaver Lake.

Monitoring in the future will be a lower priority until action is taken to improve water quality conditions.

Tsolum River

The Tsolum River flows from Mount Washington to the Puntledge River at Comox on Georgia Strait (Figure 3). Acid-mine drainage from a closed copper mine in the headwaters creates high copper levels which are deleterious to fish. The river has the potential to support significant populations of salmonids.

Table 4 lists results in 2000, Table 22 presents results in 2001, and Figure 3 shows site locations. The Tsolum River had a CCME index value of 33.4 for 2000 and 24.4 for 2001, both of which equate to rankings of Marginal.

Objectives for the Tsolum River were checked for the first time in 1994 in the river just downstream from the mine site. Since then, the objectives for dissolved copper were often not met.

- 2000 -

Dissolved copper concentrations continued to exceed objectives for both mean and average concentrations in 2000, indicating a continued potential threat to fish. The objective for percent steelhead survival will not be checked until water quality conditions improve substantially.

- 2001 -

The objective for dissolved copper was frequently not met again in 2001. The percent steelhead survival objective will not be checked until there are further water quality improvements.

We recommend continued objectives monitoring to track the progress of reclamation work at the mine.

Holland Creek and Stocking Lake

The Holland Creek and Stocking Lake watersheds, located near Ladysmith, are used mainly as a source of drinking water with some use for recreation and fisheries. Water quality objectives were prepared and approved recently as part of a watershed management plan for the area. Logging and road building are the main influences on water quality.

Monitoring to check the attainment of water quality objectives has not yet been carried out.

Quatse Lake

Quatse Lake is located on the north-eastern end of Vancouver Island, approximately three kilometres north from Coal Harbour. In addition to a source of drinking water for Coal Harbour, Quatse Lake is also an important aquatic habitat for both fish and wildlife. A substantial portion of the watershed has been logged, which in turn has raised concerns that water quality may be affected.

Monitoring to check the attainment of water quality objectives has not yet been carried out, and is not planned in the immediate future.

SKEENA REGION

Bulkley River

The Bulkley River is a major tributary to the Skeena River. It is an important river for fisheries and has some drinking water use. The main influences on water quality are treated municipal effluent from Houston and Smithers, agriculture, urban runoff, and possible contamination in the headwaters from mining.

We have monitored the attainment of objectives from 1988 to 1992 and obtained consistent data, with a water quality rating of good, (index = 15). Given these results, we consider objectives checking to be a relatively low priority at this time and have not monitored the Bulkley River since 1992.

Kathlyn, Seymour, Round, and Tyhee Lakes

These four small lakes, in the Smithers area, are used for recreation, domestic water supply, and irrigation. The main influences on water quality are agriculture and residential development around the lakes.

Monitoring between 1987 and 1993 showed objectives for turbidity, colour, and phosphorus not being met due to the eutrophic nature of the lakes. Routine monitoring to check objectives ended after 1993 while plans to rehabilitate lake water quality were being prepared. Once corrective action starts, more complete monitoring for objectives attainment should resume to document progress. Water quality was reported as fair for Kathlyn, (index = 34), and Tyhee, (index = 21), lakes.

Lower Kitimat River and Arm

The river and arm are an important migration route for salmonids, and the water is also used for recreation and for industrial and municipal supplies. A kraft pulp mill and a municipal treatment plant discharge to the river and an aluminum smelter and methanol plant discharge at the head of the arm. The existing water quality objectives are being updated.

We recommend continued monitoring as the Ministry works with dischargers to upgrade effluent treatment facilities.

Lakelse Lake

Lakelse Lake drains into the Skeena River and is important for salmon spawning and rearing and for recreation. It is also used as a domestic water supply. The only threats to water quality are septic tanks around the shoreline, agriculture, and logging in watersheds that drain into the lake.

The objectives were last checked in 1992 and all were met, with a water quality rating of good (index = 9). We have not monitored since then as we presently consider such monitoring to be a low priority.

Yakoun River

The Yakoun River is on Graham Island in the Queen Charlotte Islands. It flows north from the Queen Charlotte Ranges into Masset Inlet. An open pit gold mine within the drainage has been proposed and water quality objectives have been set accordingly. The river has valuable fish resources, contributing all five species of salmon. It is also important for wildlife and recreation.

The development of the gold mine is on hold. We recommend monitoring to check the attainment of water quality objectives when the project proceeds.

OMINECA-PEACE REGION

Charlie Lake

Charlie Lake is used as a backup drinking water supply for the city of Fort St. John (the Peace River is the primary source) and for recreation. Agriculture, residential development around the lake, and nutrients from lake sediments are factors affecting water quality.

Monitoring from 1987 to 1993 showed the main problem to be high phosphorus levels causing eutrophic conditions, with a water quality rating of borderline (index = 46). Studies are underway to determine how to reduce nutrient input. The Charlie Lake Technical Advisory Committee is currently overseeing a watershed land-use/impact source survey to identify potential mitigation sites. Routine monitoring to check objectives should resume when corrective measures are undertaken.

Bullmoose Creek

Bullmoose Creek and its tributaries (West and South Bullmoose creeks) are important recreational fish habitat. The creeks are adjacent to an open pit coal mine.

The attainment of water quality objectives was documented by monitoring between 1987 and 1993 and there were no serious impacts, with a water quality ratings of fair for both Bullmoose Creek (index = 22), and West Bullmoose Creek (index = 23), and good for South Bullmoose Creek (index = 10). Further monitoring is a low priority at this time.

Nechako River

The Nechako River, a major tributary to the Fraser River at Prince George, has its flow controlled by dams for power generation for the Alcan aluminum smelting plant (Figure 4). The river is an important route for migrating salmon. Water quality can be affected by treated municipal sewage and diffuse sources such as forestry and agriculture. Water temperature is influenced by the flow of water released from the dams and by the manner in which it is released.

In past years, the fecal coliform objectives were met in the Nechako River except immediately downstream from Vanderhoof. The temperature objectives immediately downstream from Cheslatta Falls were often not met in the summer. We have obtained similar results since 1987. For the period, 1987 to 1993, water quality was considered as fair (index = 22). Temperature objectives might be met if a cold-water release structure, proposed for the Kenney Dam upstream from Cheslatta Falls, is installed. The attainment of the temperature objectives further downstream on the Nechako at Vanderhoof and upstream from the Stuart River has improved due to water temperature management by the Nechako Fisheries Conservation Program.

The only parameters measured in the Nechako River in both 2000 and 2001 for which objectives have been established were dissolved oxygen and pH. Table 5 lists results in 2000, Table 23 presents results in 2001, and Figure 4 shows site locations. The Nechako River had a CCME index value of 100 for both 2000 and 2001, which equates to a ranking of excellent.

- 2000 –

Both dissolved oxygen concentrations and pH consistently met their respective objectives in 2000. Temperatures likely did not consistently meet objectives, but reliable temperature data are not available to confirm this.

- 2001 -

Both dissolved oxygen concentrations and pH consistently met their respective objectives in 2001. Temperatures likely did not consistently meet objectives, but reliable temperature data are not available to confirm this.

The Nechako Watershed Council and the Village of Vanderhoof have been advised of concerns associated with exceedence of coliform objectives downstream of Vanderhoof. Potential solutions include further treatment of the discharge or rerouting of the discharge to irrigation or wetlands to reduce nutrient concentrations. Alcan continues to monitor Nechako River water quality. Until action is taken by the Village of Vanderhoof it is not

anticipated that water quality will change significantly, and therefore no further monitoring is recommended until that time.

Pine River

The Pine River, a tributary to the Peace River, supplies water to Chetwynd and supports significant sport fish populations. The water quality is considered to be mostly in a natural state with the major influence coming from forestry and from treated sewage from the Village of Chetwynd. On August 1, 2000 an oil pipeline ruptured, spilling almost 1 million litres of BC light crude oil to ground adjacent to the upper Pine River. Roughly half of this (or 500,000 litres) was believed to enter the Pine River. After an extensive cleanup, an estimated 80,000 L of in-river oil remained unaccounted for. This oil was likely dissolved in water, trapped in backwaters and deposited into and onto river sediment and river bottom substrates. Monitoring is ongoing, with continued spill response on an as-needed basis. Impact studies to determine potential short and long-term impacts from the spill are being reviewed by the Ministry at this time.

With regards to the other objectives currently proposed for the Pine river, we presently consider monitoring to be a low priority for this basin and none was carried out after 1992. Past results show all objectives being met fairly consistently, with a water quality rating of good (index = 5).

Pouce Coupe River and Dawson Creek

The Pouce Coupe River enters the Peace River inside the Alberta Border. Dawson Creek is its major tributary. The waters are impacted mainly by municipal discharges and agriculture.

The exact causes for objectives not being met need to be found. Water quality ratings were fair for the Pouce Coupe River (index = 33; period of record: 1987 to 1990), and borderline for Dawson Creek (index = 56; period of record: 1987 to 1989). Since objectives were

consistently not met up to 1992, we will not resume monitoring to check their attainment until measures are taken to correct the problem.

The City of Dawson Creek is monitoring both Dawson Creek and the Pouce Coupe River during spring freshet, as well as summer and winter low flows. We recommend that this work continue, and that data collected in the future be analyzed with respect to the existing water quality objectives for these water bodies.

Peace River

We have set objectives for the Peace River between the Bennett Dam and the B.C.-Alberta Border. The water is important for aquatic life and irrigation and can be affected by municipal discharges, forestry, agriculture, a gas plant, and a pulp mill built in 1988 after the objectives were set. We first checked the objectives in 1988. Water quality for the Peace River was judged as fair (index = 22), for the period of record from 1988 to 1993.

Objectives not met at times in 1994 included those for turbidity, suspended solids, temperature, and chromium. No monitoring was conducted between 1995 and 2001 to check objectives.

Considering Alberta's interest in the quality of the water crossing the provincial border, we recommend that objectives monitoring of the Peace River be resumed.

Upper Finlay River Sub-Basin

The Finlay River, located in the north east part of the Province, drains into the north end of Williston Lake. This river is broken into two sub-basins, the upper and the lower Finlay.

The drainage area of the upper Finlay sub-basin includes portions of the Skeena Mountains, Spatsizi Plateau, Omineca Mountains, and the Rocky Mountains. The upper Finlay was the site of a gold and silver mine and mill (the Baker Mine), now closed. The upper Finlay system is an important aquatic habitat for sports fishery species such as Dolly Varden

(*Salvelinus malma*), and Rainbow Trout (*Oncorhynchus mykiss*). In addition, other water uses include recreational uses and as a source of drinking water for the community of Ware. Objectives apply to Jock and Galen creeks, which eventually flow into the upper Finlay River.

The objectives were checked in 1987. The potential acid rock drainage situation at the Baker Mine is monitored annually in the spring and indicates that water quality in Galen Creek is acceptable. The Ministry will be negotiating a spring sampling program with the Baker Mine site owner. The large Kemess Mine, located in the Attichika Creek drainage above Thutade Lake, could potentially impact water quality, and monitoring of that site by the mining company is extensive.

Lower Finlay River Sub-Basin

The lower Finlay sub-basin drains a portion of the Rocky Mountains, and the Finlay Range about 8000 km² in size. Even though the lower Finlay is an important fish habitat, other water use is minimal due to low development and population in the area. Water quality concerns stem from logging and potential mineral extraction in the region.

No water quality monitoring is recommended at this time, but as development increases an assessments may show that monitoring is needed in the future.

Fraser River from the Source to Hope

This is the most important river in the Province in terms of fisheries values. Most of the contamination to the river between Moose Lake (the source of the river) and Hope is from pulp and paper mills and municipal treatment plants at Prince George and places downstream. Water quality objectives have been prepared to protect aquatic life, wildlife, irrigation, livestock watering, and drinking water supplies.

Table 6 lists results in 2000, Table 24 presents results in 2001, and Figure 5 shows site locations. A CCME index value was calculated for three sites on the Upper Fraser River in

2000 and 2001: the Fraser River near Prince George, Fraser River near Quesnel and Fraser River near Hope. Index values in 2000 ranged from 78 near Quesnel (a ranking of Fair) to 100 near Prince George (a ranking of Excellent). In 2001, rankings ranged from 40 near Quesnel (a ranking of Marginal) to 100 near Prince George (a ranking of Excellent).

- 2000 -

Insufficient data were collected from the Fraser River in 2000 to determine a 90th percentile value for fecal coliforms or *E. coli*, so these objectives could not be evaluated. Colour values occasionally exceeded objectives.

- 2001 -

Once again, insufficient data were collected from the Fraser River in 2001 to determine a 90th percentile value for fecal coliforms or *E. coli*. Colour values at Marguerite and Hope, and pH and dissolved oxygen levels at Marguerite were occasionally outside of objective limits.

We recommend continued monitoring to check objectives in this section of the Fraser River, as well as increasing sampling frequency for fecal coliforms and *E. coli* sufficiently to be able to evaluate objective compliance.

CARIBOO REGION

Williams Lake

Williams Lake drains to the Fraser River and is important for drinking water, recreation, and aquatic life (Figure 6). The water quality is affected by phosphorus that comes from lake sediments and traditional farming practices in the San Jose River drainage, the main inlet to the lake, and to a lesser extent from residential septic systems around the lake. For the period from 1987 to 1993, the water quality was rated as borderline (index = 55). However, cores of the lake bottom have recently been sampled, and preliminary findings indicate that Williams Lake has historically been more eutrophic (productive) than originally thought. Therefore, the algal blooms and other indicators of high phosphorus concentrations may be endemic rather than linked to anthropogenic activities. Pending the final results of this investigation, the water quality objectives for Williams Lake may be changed to reflect this new information.

Total dissolved phosphorus concentrations measured between 1987 and the present show annual fluctuations that reflect changes in the amount of annual runoff each year, with no clear increasing or decreasing trend. However, water clarity appears to be steadily improving, with increasing mean Secchi disk depths from 1977 to the present. Phosphorus concentrations and Secchi depths were the only parameters measured in both 2000 and 2001 for which objectives exist.

Table 7 lists results in 2000, Table 25 presents results in 2001, and Figure 6 shows site locations. The CCME index value for Williams Lake in both 2000 and 2001 was 28, which equates to a ranking of marginal.

- 2000 -

Spring overturn phosphorus was measured at two sites throughout the lake in 2000. The guideline for spring-overturn total phosphorus was exceeded at both sites. Secchi depth was measured 20 times in 2000, and 16 of these 20 measurements met the guidelines.

-2001 -

As in 2000, spring overturn phosphorus was measured at two sites, and at both of these sites the water quality objective was exceeded. Secchi depth was measured 17 times, and the objective was not met in only one instance.

There are continued concerns with land use in the Williams Lake basin, and ranchers have made numerous changes to reduce their impact. As such, they are generally in compliance with the Code of Agricultural Practice for Waste Management as specified in the Agricultural Waste Control Regulation. The South Lakeside area is now connected to the Williams Lake sewer system, which should help maintain water quality. However, Williams Lake should continue to be monitored and further potential impacts from upstream land uses have to be minimized to maintain and improve water quality. For this reason, we recommend continued monitoring of objectives to track the progress of corrective measures being undertaken in the watershed, and for the water quality objectives for Williams Lake to be updated to reflect new knowledge.

San Jose River

The San Jose River originates at Lac La Hache and is the main inlet to Williams Lake (Figure 7). It is used mainly for irrigation, livestock watering, and water storage. Ranching is the activity with the most influence on water quality.

The Ministry set only one objective for the San Jose River, namely the total annual loading of dissolved phosphorus entering Williams Lake. The Region has measured this loading since the 1970's.

The annual load was based on a calendar year. It was derived by adding daily stream flows in Borland Creek and the San Jose River just upstream, multiplying the total daily flow by the dissolved phosphorus daily concentrations measured in the San Jose downstream from Borland, plotting these daily loads against time, and measuring the area under the curve to obtain annual load. Sampling was suspended in 1997, and is not expected to continue until the objectives for Williams Lake have been revisited.

SOUTHERN INTERIOR REGION

Bonaparte River

The Bonaparte River is a tributary to the Thompson River. It is an important trout habitat and is affected by agricultural operations and municipal discharges. Its main tributaries are Clinton Creek and Loon Creek.

The water quality objectives were last checked in 1994. Objectives not met at times included those for fecal coliforms, suspended solids, turbidity, chlorophyll-*a*, and the objective for dissolved oxygen in Loon Lake. The water quality rating for the time period 1987 to 1993 was fair.

There are plans to improve water quality and correct problems. Routine monitoring to check attainment of objectives should resume after improvements are made.

Okanagan Valley Lakes

To date, objectives have only been set in the five main lakes for phosphorus, which is the major factor controlling the trophic state of the lakes (Figure 8). The lakes are highly valued for recreation, fisheries, and as a source of drinking and irrigation water. The major anthropogenic inputs of phosphorus are from treated municipal sewage and from diffuse sources that include septic tanks, agriculture, and forestry. However, the vast majority of phosphorus loading to the lakes is due to natural sources within the watershed (e.g. erosion). Phosphorus release from sediments also occurs in Wood Lake and Osoyoos Lake.

Table 8 lists results in 2000, Table 26 presents results in 2001, and Figure 8 shows site locations. The number of sampling locations represented for all of the Okanagan Valley Lakes has been increased for 2000 and 2001, to give a more complete picture of overall water quality in each lake. CCME index rankings for Kalamalka, Okanagan and Osoyoos lakes in 2000 were in the Marginal range, with index values ranging from 17 in Kalamalka Lake to 35 in Okanagan Lake. Skaha and Wood lakes were both rated as Excellent for 2000, with index values of 100. In 2001, Kalamalka, Okanagan, Osoyoos and Wood lakes

all were given ratings of Marginal with index ranking ranging from 17 in Kalamalka Lake to 33 in Osoyoos Lake. Skaha Lake once again received a ranking of 100, which equates to a rating of Excellent.

- 2000 -

Average spring turnover phosphorus objectives for the Okanagan Valley Lakes were met in 52% of instances where an assessment of data could be made. Objectives were consistently met in both Wood and Skaha lakes, consistently not met in Kalamalka and Osoyoos lakes, and occasionally met in Okanagan Lake.

- 2001 -

Phosphorus objectives were met only 44% of the time in 2001, with only Skaha Lake consistently meeting its objective. Wood and Kalamalka lakes consistently exceeded their objectives, while Osoyoos and Okanagan lakes occasionally met their objectives.

Because there is only the single phosphorus objective for each lake, the index gives only a rough idea of the state of water quality. Better estimates will be provided when a few more pertinent objectives have been established and monitored.

Given the environmental and recreational importance of these lakes, we recommend continued monitoring of phosphorus at spring overturn, and the preparation of a more complete set of water quality guidelines.

Similkameen River

The Similkameen River flows from Manning Park, east through the south Okanagan, then south across the U.S. border (Figure 9). It is important for fisheries, drinking water, and irrigation. Water quality could potentially be affected by mining and municipal discharges to ground and surface waters. We updated the water quality objectives in 1990 because of an increase in mining activity in the Hedley Creek area.

Monitoring between 1987 and 1993 has given consistent results with water quality ranked as good (index = 14), and was suspended in 1994 as low priority. The main problem has been with fecal coliforms, possibly from agricultural operations, which did not always meet the drinking water objective required for water that is treated by disinfection only. Limited data was collected in 1996 and 1997. All objectives were met in 1996, and all objectives except for total lead in Hedley Creek were met in 1997.

Table 9 lists results in 2000, Table 27 presents results in 2001, and Figure 9 shows the various site locations. CCME index rankings were calculated for Hedley Creek and the Similkameen River for both 2000 and 2001, and values ranged from 87 to 94 for the Similkameen River and from 92 to 93 for Hedley Creek. All of these values equate to a rating of Good for the two systems.

- 2000 -

Samples were collected on approximately 30 occasions at various locations in the Similkameen River and Hedley Creek in 2000. Exceedences occurred occasionally for turbidity, total copper, total nickel and total iron. 97% of samples met their respective objectives in 2000. However, sampling frequencies of fecal coliforms and *E. coli* were insufficient to determine if ninetieth-percentile objectives were exceeded, and the limited data suggests that this is likely the case.

- 2001 -

In 2001, approximately 32 samples were collected for the Similkameen River and Hedley Creek. Objectives were met in 99% of all instances where there were sufficient data to determine compliance. Objectives that were exceeded on occasion include total copper, and total iron. Once again, fecal coliforms and *E. coli* were not measured at sufficient frequencies to determine objectives compliance.

Cahill Creek

Cahill Creek, its tributaries (Nickel Plate Mine Creek and Sunset Creek), and a parallel stream (Red Top Gulch Creek) enter the Similkameen River near Hedley (Figure 10). Fish

from the Similkameen River use the creek near its mouth and the water is also used for irrigation. This watershed is the site of a gold mine and mill that began operating in 1987, and closed in 1996. Monitoring to check objectives began in 1987, with water quality for 1987 to 1993 being rated as good (index =13). Objectives not met in 1999 included dissolved sulphate and nitrate. Cahill Creek was sampled for a limited number of parameters on two occasions in 2000, and on only one occasion in 2001.

Table 10 shows 2000 data, Table 28 presents results for 2001 and Figure 10 shows site locations. CCME index ratings were calculated for Cahill Creek and Red Top Gulch Creek in both 2000 and 2001. Ratings for Cahill Creek were 88 in 2000 (which equates to a rank of Good) to 100 in 2001 (which equates to rank of Excellent). Ratings for Red Top Gulch Creek ranged from 64 (Fair) in 2000 to 92 (Good) in 2001.

- 2000 -

Objectives were met in 79% of instances where there were sufficient data to determine compliance. Parameters that occasionally did not meet their respective objectives included turbidity (Red Top Gulch Creek), sulphate (Red Top Gulch Creek) and total arsenic (Red Top Gulch Creek and Cahill Creek).

- 2001 -

Objectives were met for 95% of samples for which objective attainment could be determined. The only exceedence occurred for sulphate concentrations in Red Top Gulch Creek.

Monitoring by the permittee will continue in order to document improving trends in nitrate, cyanide and sulphate in various surface waters draining the mine site.

Bessette Creek

Bessette Creek, which flows into the Shuswap River, is formed by the confluence of Harris and Duteau creeks near the town of Lumby (Figure 11). Lawson Creek, and its tributary Spider Creek, flow into Duteau Creek. These creeks provide spawning habitat for trout and

four species of salmon. Activities that can affect water quality include a telephone pole treatment plant near Harris Creek, a wood-waste landfill along Lawson Creek, seasonal discharge of municipal sewage effluent to Bessette Creek, and agricultural operations in the area generally. Based on data from 1990 to 1993, water quality was rated as fair for Bessette Creek (index = 33), Lawson Creek (index = 40), and Spider Creek (index = 40), but good in Harris Creek (index = 17).

Monitoring was suspended for 2000 and 2001.

Tributaries to Okanagan Lake near Westbank

We set objectives for Peachland, Trepanier, and Westbank creeks, which flow into Okanagan Lake in the Peachland-Westbank area. Peachland and Trepanier creeks support spawning populations of kokanee or trout, and all three creeks are used for irrigation and domestic water supplies. Effluent from a molybdenum mine (which closed in the early 1990's) had the potential to impact Peachland and Trepanier creeks, but seepage from this site is now captured and treated in order to meet the water quality objectives in Trepanier Creek. Westbank Creek is influenced by urban runoff and agricultural activities.

The objectives have been checked for three years with results showing generally good water quality, with water quality rating of fair to good. Further monitoring was considered a low priority and was discontinued in 1994.

Since that time, concerns have been raised about possible discharges from the closed Brenda Mines Operations. Hearings of the Environmental Appeal Board have resulted in the region re-assessing current objectives for Trepanier Creek.

Tributaries to Okanagan Lake near Kelowna

Mission, Kelowna, and Brandt's creeks are tributaries to Okanagan Lake on its east shore near Kelowna. Mission and Kelowna creeks support salmonids and the water is also used for irrigation and domestic supply. Brandt's Creek is used mainly for irrigation. The creeks

can be affected by urban storm-water runoff in their lower reaches and by logging or agriculture further upstream. Treated wastewater is discharged to Brandt's Creek.

The objectives were last checked in 1994. At that time, as in previous years, the objectives for bacteriological indicators (fecal coliforms, *E. coli*, and enterococci) were generally not met. Continued monitoring will depend on action taken in the future to control storm-water and other diffuse sources of contamination.

Tributaries to Okanagan Lake near Vernon

Lower Vernon Creek and Deep Creek are tributaries to Okanagan Lake at its north end (Figure 12). The water is used for domestic and irrigation purposes and has some fisheries values, especially in lower Vernon Creek. Potential sources of contamination are urban storm-water runoff, a municipal sewage discharge, agricultural operations, and groundwater affected by spray irrigation of treated sewage.

Objectives were last checked in 1996, when objectives for suspended solids were not met in both creeks, and those for fecal coliforms and *E. coli* were not met on the Lower Vernon Creek.

Hydraulic Creek

Hydraulic Creek flows into Okanagan Lake via Mission Creek about 10 km upstream from the lake. Hydraulic Creek is an important source of drinking water relying on disinfection only. The creek also supports a recreational fishery and is used for irrigation. Commercial logging in the watershed can affect these water uses.

Monitoring between 1991 and 1993 to check objectives showed that fecal coliform contamination was the main problem, with a water quality rating of fair (index =35). Monitoring was discontinued in 1994, as results were fairly predictable.

Christina Lake

Christina Lake, located in south central B.C., drains into the Kettle River which joins the Columbia River in Washington State. The lake is important for recreation, domestic water supply and sport fish. The potential sources of contamination are residential development, agriculture, and logging.

Objectives were checked for the first time in 1994 and those not met included objectives for phytoplankton distribution, periphyton distribution, dissolved oxygen, and periphyton chlorophyll-*a*.

Tables 11 and 29 show 2000 and 2001 attainment, respectively. CCME index values for Christina Lake ranged from 61 in 2000 (which equates to a ranking of Fair) to 84 in 2001 (which equates to a ranking of Good).

- 2000 -

While water clarity (as measured by Secchi depth) and nitrogen concentrations consistently met objectives, chlorophyll-*a* concentrations exceeded objectives on one occasion, and spring overturn phosphorus concentrations exceeded objectives both times it was measured.

- 2001 -

Total phosphorus concentrations at spring overturn was the only parameter to exceed objective levels for Christina Lake in 2001.

We recommend resuming sampling until objectives have been checked for at least two more years to obtain a reasonable database.

Thompson River

We set objectives in 1992 for the South Thompson which drains Little Shuswap Lake, the North Thompson which joins the South Thompson at Kamloops, Kamloops Lake, and the lower Thompson which is a major tributary to the Fraser River (Figure 13). This river

system is very important for fish, especially salmon and trout. It is used extensively for recreation and is also a source of water for drinking, irrigation, and industrial use.

Between the North Thompson River and Kamloops Lake, the river receives treated effluents from a bleached kraft pulp mill and from the City of Kamloops. There are also diffuse discharges from agriculture and forestry. All these discharges can affect Kamloops Lake and the Thompson River downstream.

Of the objectives checked in 1996, only the dioxin and furan objectives for sediments were not met. Dioxin and furan levels in sediments were not monitored in 1997.

Table 12 lists results in 2000, Table 30 presents results in 2001, and Figure 13 shows site locations. The CCME index value for the Lower Thompson ranged from 85 in 2000 (equivalent to a ranking of Good) to a value of 70 for 2001 (equivalent to a ranking of Fair). Index values for Kamloops Lake and the North and South Thompson rivers were identical for 2000 and 2001, with a value of 100 (equating to a rank of Excellent).

- 2000 -

The majority of parameters checked in 2000 met their applicable objectives, including colour and resin acids, with the exception chlorophyll-*a*. However, fecal coliform and *E. coli* samples were collected at an insufficient frequency to determine compliance, and dioxin and furan levels in both sediments and fish were not measured.

- 2001 -

Results for the 2001 monitoring program were identical to those of previous years, with objectives for colour and resin acids being met and those for dioxins and furans not measured. As in 2000, chlorophyll-*a* once again did not meet objective levels.

We recommend continued monitoring to check Thompson River objectives.

KOOTENAY REGION

Columbia and Windermere Lakes

The two lakes are important for fisheries, recreation, and as a source of drinking water. Residential development around the lakes is the main potential influence on water quality.

We monitored to check objectives between 1987 and 1992. Since the objectives have been met fairly consistently, with a water quality rating of good (index = 5 for Columbia Lake and 4 for Windermere Lake), monitoring was discontinued in 1993.

Toby Creek and Upper Columbia River

Toby Creek enters the Upper Columbia River just downstream from Windermere Lake. Both streams are important for aquatic life and recreation. Toby Creek can be affected by indirect discharges of domestic sewage and by drainage from an abandoned mine. The Upper Columbia River receives an indirect discharge of treated sewage from Radium Hot Springs.

All objectives have generally been met except, on occasion, those for fecal coliforms. We did not monitor after 1989 in Toby Creek and 1992 in the Upper Columbia River. We consider future monitoring a low priority at this time.

Columbia River from Keenleyside to Birchbank

The Columbia River is one of the major rivers in British Columbia and in Washington State further downstream (Figure 14). In B.C., this section of the river is important for aquatic life, sport fishing, recreation and, to a lesser extent, as a drinking water supply. In the U.S., it supports a food fishery, major salmon runs, and irrigation and drinking water supplies. Between the Hugh Keenleyside Dam and Birchbank, the main influence is a kraft pulp mill that recently expanded production and upgraded its effluent treatment to secondary. There are also small discharges of secondary-treated municipal effluent and urban runoff. Water quality was rated as fair (index = 35), but appears to be improving based on data review

from 1991 to 1993. The CCME index value for the Columbia River between Keenleyside and Birchbank was 85 in both 2000 and 2001, which equates to a ranking of Good.

Objectives for dissolved gasses were not met in both 1996 and 1997, and those for dioxin/furan levels in fish were not met in 1996. The monitoring program in 1997 was significantly reduced over previous years.

Table 13 lists results for 2000, Table 31 presents results in 2001, and Figure 14 shows site locations.

- 2000 -

Objectives were met in 93% of instances where a determination could be made. Both dissolved oxygen concentrations and pH levels were occasionally outside of their objective ranges. Dioxins and furans, as well as resin acids, were not measured.

- 2001 -

In 2001, objectives were met 98% of the time. Dissolved oxygen concentrations were occasionally below the objective level. As in 2000, dioxins, furans and resin acids were not measured.

Considering the international significance of the river and its importance to aquatic life, continued monitoring to check the attainment of objectives is recommended.

Columbia River from Birchbank to the International Border

The Columbia River is one of the major rivers in British Columbia and in Washington State further downstream. In B.C., this section of the river is important for aquatic life, sport fishing, recreation and, to a lesser extent, as a drinking water supply. In the U.S., it supports a food fishery, major salmon runs, and irrigation and drinking water supplies. Between the Birchbank and the international border, the main influence is a metal smelter and refinery at Trail. There are also small discharges of secondary-treated municipal effluent and urban runoff.

The objectives report for this section of the Columbia River was completed in 1997. Objectives checked in 1998 and 1999 showed occasional non-compliance with pH, dissolved gas and dissolved oxygen.

Table 14 lists results for 2000, and Table 32 presents results in 2001. The CCME index value for the Lower Columbia River ranged from 78 in 2000 (which equates to a ranking of Fair) to a value of 73 in 2001 (which also equates to a ranking of Fair).

- 2000 -

95% of samples analyzed in 2000 met objective levels in those instances where a determination could be made. Parameters that occasionally did not meet their objectives included pH, fecal coliforms, total cadmium, total lead and total zinc.

- 2001 -

In 2001, 93% of samples met objectives levels. As in 2000, pH, fecal coliforms, total cadmium, total lead, and total zinc occasionally exceeded objectives, as well as enterococci, total chromium and total copper.

Considering the international significance of the river and its importance to aquatic life, continued monitoring to check the attainment of objectives is recommended.

Elk River

The Elk River and its main tributaries, the Fording River, Line Creek and Michel Creek, are located in the south-eastern part of the province. The Elk River is a tributary to Lake Koochanusa on the east side. We have set provisional objectives for suspended solids and substrate sedimentation to protect aquatic life against the potential effects of coal mining operations in the basin.

The objectives for suspended solids apply to base flow, or the non-freshet period, in the Elk River basin. They were generally met at all sites in 1993. Further monitoring to check these objectives was considered a low priority.

LOWER MAINLAND REGION

Fraser River from Hope to Kanaka Creek

We have set objectives for the Fraser River between Hope and Kanaka Creek, for tributaries entering from the south, and for all major water courses between the Fraser River and the International Border. The Fraser River is a major salmon migration route and the tributaries are important spawning areas. The major discharges to the Fraser River in this section are of treated municipal sewage.

Monitoring to check objectives was carried out in 1987, 1988, 1990, 1992, and 1993. The objectives were updated in 1998 and we recommend checking the revised objectives when they are finalized. Overall water quality was rated as good (index = 7).

Fraser River from Kanaka Creek to the Mouth

The river downstream from Kanaka Creek and the outer estuary are very important for salmon migration and rearing (Figure 15). The water is used for irrigation and certain beaches are heavily used for recreation. Water quality can be affected by industry, treated sewage, and agriculture.

Water quality was rated as good (index = 4), in the Main Stem, fair (index = 28), in the Main Arm, and fair (index = 18), in the North Arm.

We have monitored to check objectives annually since 1987. Due to the provincial importance of this river and the threats to water quality that exist in this section, we recommend that such monitoring be continued annually. Updated objectives were released in 2000.

Table 15 lists results in 2000 and Figure 15 shows site locations. CCME index values were calculated for 2000 for the Main Arm, Main Stem, Middle Arm and North Arm of the Fraser River (all areas where data were available). The CCME index ranking for the Main Arm

was 86 (Good), the ranking for the Main Stem was 97 (Excellent), the ranking for the Middle Arm was 62 (Marginal) and the ranking for the North Arm was 90 (Good).

- 2000 -

In contrast to recent years when only fecal coliforms were measured, a wide variety of parameters were sampled in 2000, including metals, chlorophenols (in both water and sediments), dioxins and furans, PCB's and PAH's (in sediments). For those samples where a determination could be made, 93% met their respective objectives. Parameters that occasionally exceeded objectives included chromium in sediments, copper and manganese in water, and some PAH's in sediments.

While these results indicate an improvement in water quality compared to previous years, we cannot be certain they are truly representative because of the very limited monitoring.

Boundary Bay

Boundary Bay sustains a crab and herring fishery and is important for recreation. The Little Campbell River, the Serpentine River, and the Nicomekl River are tributaries to Boundary Bay on the east side. They provide important habitat for trout and salmon and are used for irrigation. The main influences on water quality are from sewage pumping stations, storm-water, and septic tanks in Boundary Bay and from agriculture in the tributaries.

Objectives were checked from 1988 to 1993 giving consistent results, with a water quality rating of fair (index = 40). Since the situation is stable and fairly well documented, further monitoring was considered a low priority except where required at bathing beaches for human health reasons. Sampling resumed in 1999, when four samples were collected at various sites and analyzed for a number of parameters. Three samples were also collected in 2000.

Table 16 presents results for Boundary Bay in 2000, and Figure 15 shows site locations. CCME rankings were calculated for Boundary Bay for 2000, and the majority of creeks within the watershed were given rankings of 100 (which equates to a value of Excellent).

These included Mahood Creek, Serpentine River, Anderson Creek, Murray Creek, Latimer Creek, Hyland Creek and Little Campbell River. The exception was the Nicomekl River, which received a value of 89.5, which equates to a ranking of Excellent.

- 2000 -

The only objective not met for Boundary Bay was an increase in suspended solids in the Nicomekl River. Parameters that were met included maximum fecal coliforms, ammonia, nitrate, pH and total lead.

Burrard Inlet

Burrard Inlet includes Port Moody Arm, Indian Arm, Vancouver Harbour, False Creek, and English Bay (Figure 16). The water is designated for aquatic life and wildlife in all areas and for primary-contact recreation in most areas, except in False Creek. There are several municipal and industrial discharges to Burrard Inlet that can affect water quality. These include primary-treated sewage, combined sewer overflows, storm-water, bulk-loading terminals, a sugar refinery, a sodium chlorate plant, a chlor-alkali plant, and oil depots. Water quality was ranked as fair in Port Moody Arm (index = 40), Indian Arm (index = 18), Second Narrows to Roche Point (index = 31), First to Second Narrows (index = 42), and outer Burrard Inlet (index = 20), but borderline in False Creek (index = 44). Samples were last collected in 1996 and 1997, but analyzed only for fecal coliforms. Objectives for fecal coliforms were occasionally not met at Deep Cover, Cates Park and Brockton Point.

In the past, objectives have not been met for a number of other variables, including metals in sediments, phenol in water, and PCBs and PAHs in sediments. Approximately five samples were collected at various sites in the inlet in 2000.

Table 17 presents results for Burrard Inlet in 2000, and Figure 16 shows site locations. CCME rankings for the individual sub-basins for 2000 were: 1st Narrows to 2nd Narrows, an index value of 49 (equivalent to a ranking of Marginal); False Creek, a value of 31 (equivalent to a ranking of Poor); Indian Arm, a value of 100 (equivalent to a ranking of Excellent); Outer Burrard, a value of 38 (equivalent to a ranking of Poor); Port Moody Arm,

a value of 36 (equivalent to a ranking of Poor); and 2nd Narrows to Roche Point, a ranking of 76 (equivalent to a ranking of Fair).

- 2000 -

Objectives for Burrard Inlet were met in only 41% of instances where there was sufficient data to make a determination in 2000. Objectives frequently exceeded included those for total cadmium, copper, lead, mercury and zinc (all in sediments), as well as some PAH's in sediments.

Burrard Inlet Tributaries

We have set objectives for the following three tributaries to Burrard Inlet: School House Brook (which discharges to Port Moody Arm and could be influenced by a chemical polymer plant); Lynn Creek (which discharges to Vancouver Harbour and could be affected by a municipal landfill); and the Capilano River (which discharges to outer Burrard Inlet and may also be affected by a municipal landfill). The main uses of these tributaries are recreation, aquatic life, and wildlife.

The water quality objectives were last checked in 1994. At that time, objectives were not met at times for phenols, water temperature, chromium, iron, zinc, and chlorophenols in water. Water quality was ranked as fair in School House Brook (index = 38), good in Lynn Creek (index = 12), and good in the Capilano River (index = 16).

Although we have data for four years, we recommend resuming monitoring because the past record is rather incomplete.

North Shore Lower Fraser Tributaries

Objectives have been set for the following four tributaries to the north shore of the lower Fraser River in the Lower Mainland: Kanaka Creek, the Pitt River, the Coquitlam River, and the Brunette River. All these streams, and their tributary streams and lakes, support salmon and trout fisheries to varying degrees. Most are important for recreation and some are sources of drinking water requiring treatment. Discharges that can affect water quality include storm-water, agricultural runoff, treated sewage, landfill leachates, wastewaters from gravel operations, and a wood preservation plant.

Monitoring from 1990 to 1993 gave fairly consistent results, and we consider future monitoring to be a relatively low priority until some of the water quality problems, caused mainly by non-point sources, are addressed. Water quality was ranked as fair in Kanaka Creek (index = 41), good in the Pitt River (index = 16), and Pitt Lake (index = 4), fair in the Alouette (index = 24) and North Alouette (index = 22) rivers, and excellent (index = 3) in Alouette Lake. Coquitlam River water quality was ranked as fair (index = 34), while the Brunette River was good (index = 14).

Pender Harbour

Pender Harbour, a small coastal inlet on the Sechelt Peninsula, is important for recreational boating and fishing. It also supports commercial fishing and some commercial shellfish harvesting. The main influences on water quality are from diffuse sources such as septic tanks, some agriculture, and sewage discharges from boats.

In 1994, the third year of monitoring, objectives were often not met for copper, lead, and zinc in both water and sediments and for iron in water. Objectives for tri-butyl tin in water and PAHs in sediments were also not met. These results were similar to those of past years. Since the situation is stable and reasonably well defined, monitoring is a lower priority in the immediate future.

Sechelt Inlet

Sechelt Inlet is located on the mainland coast about 80 km northwest of Vancouver. It is important for fisheries, especially fish farming, and recreation and has potential for shellfish harvesting. Potential sources of contamination include residential development, marinas, logging and minor discharges from gravel washing, a fish hatchery, and mariculture.

Monitoring for the second time in 1994 showed that objectives for suspended solids, copper, lead, and zinc were not met at times, mostly near a dock in Porpoise Bay at the south end of the inlet.

We recommend continuing the program for at least one more year to obtain a reasonable database.

Table 1. Provincial overview of water quality objectives – 2000

Region	Number of Occurrences				
	Objectives Met	Objectives Not Met	Indefinite Results	Omitted 2000	Totals
Vancouver Island	399 70.1%	118 20.7%	37 6.5%	15 2.6%	569 100.0%
Omineca - Peace	444 75.8%	38 6.5%	79 13.5%	25 4.3%	586 100.0%
Cariboo	0 0.0%	2 22.2%	1 11.1%	6 66.7%	9 100.0%
Southern Interior	799 83.3%	46 4.8%	69 7.2%	45 4.7%	959 100.0%
Kootenays	711 91.4%	30 3.9%	13 1.7%	24 3.1%	778 100.0%
Lower Mainland	739 55.0%	453 33.7%	113 8.4%	38 2.8%	1343 100.0%
All Regions	3092 72.9%	687 16.2%	312 7.4%	153 3.6%	4244 100.0%
All Regions less occurrences with no result	3092 81.8%	687 18.2%			3779 100.0%

Table 2. Cowichan - Koksilah Rivers Water Quality Objectives - 2000

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms < 10 /100 mL 90th percentile (np)	Cowichan River: E206108	Mar.7 - Nov.30	7	<1 - 4 CFU/100 mL	Objective met
	d/s Cowichan Lake	Nov.2 - 30	1	np = 3.6 CFU/100 mL	
	0120808 300m u/s L. Cowichan STP	Mar.7 - Nov.30	10	<1 - 24 CFU/100 mL	Objective not met
		Nov.2 - 30	1	np = 18 CFU/100 mL	
	E206107 400m d/s L. Cowichan STP	Mar.7 - Nov.30	10	<1 - 21 CFU/100 mL	Objective not met
		Nov.2 - 30	1	np = 17 CFU/100 mL	
	0120802 u/s Highway 1	Mar.7 - Nov.30	6	1 - 35 CFU/100 mL	Objective not met
		Nov.2 - 30	1	np = 23.8 CFU/100 mL	
	E206106 1 km D/S PE1497	Jan.5 - Dec.28	36	< 1 - 180 CFU/100 mL	Objective not met
		Mar.2 - 30, Sep.19 - Oct.18, Nov.1 - 16, Nov.21 - Dec.6	4	np = 15.2 - 30.4 CFU/100 mL	
	Koksilah River: E207425	Sep.7 - Nov.30	6	< 1 - 17 CFU/100 mL	Objective not met
	Pt. Renfrew Rd.	Nov.2 - 30	1	np = 11.4 CFU/100 mL	
E206976 Koksilah Rd.	Sep.7 - Nov.30	6	2 - 101 CFU/100 mL	Objective not met	
	Nov.2 - 30	1	np = 70.2 CFU/100 mL		
0123981 at Highway 1	Jan.5 - Dec.28	35	1 - 402 CFU/100 mL	Objective not met	
	Sep.7 - Oct.4, Oct.11 - Nov.8, Nov.21 - Dec.6	3	np = 91.2 - 279.6 CFU/100 mL		
<i>E. coli</i> < 10 /100 mL 90th percentile (np)	Cowichan River: 0120808	Apr.11 - Oct.3	2	3 - 9 CFU/100 mL	Indefinite result
	300m u/s L. Cowichan STP		1	np = 8.4 CFU/100 mL	
	E206107 400m d/s L. Cowichan STP	Apr.11 - Oct.3	2	3 - 23 CFU/100 mL	Indefinite result
		1	np = 21 CFU/100 mL		
<i>Enterococci</i> < 3 /100 mL 90th percentile (np)	Cowichan River	2000	0	no data collected	Omitted 2000
Turbidity max increase: 5 NTU or 10%	Cowichan River: E206106	Jan.5 - Dec.28	28	0.05 - 5 NTU	Objective met
	1 km D/S PE1497	Jan.20, Feb.13, Mar.2	3	5.7 - 8.1 NTU	Indefinite result - no control
	Koksilah River: 0123981 at Highway 1	Jan.5 - Dec.28	30	0.08 - 3.6 NTU	Objective met

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION	
	SITE	DATE	n	VALUE		
Suspended Solids max. increase 10 mg/L or 10%	Cowichan River: E206108 d/s Cowichan Lake	Oct.4 - Nov.30	5	< 5 - 7 mg/L	Control Site	
	0120808 300m u/s L. Cowichan STP	Oct.4 - Nov.30	5	< 5 - 8 mg/L	Objective met	
			5	increase = 0 - 3 mg/L		
	E206107 400m d/s L. Cowichan STP	Oct.4 - Nov.30	5	all < 5 mg/L	Objective met	
			5	increase = 0 mg/L		
	Cowichan River: 0120802 u/s Highway 1	Oct.4 - Nov.30	5	< 5 - 8 mg/L	Objective met	
			5	increase = 0 - 3 mg/L		
	E206106 1 km d/s Duncan STP	Oct.4 - Nov.30	5	< 5 - 6 mg/L	Objective met	
			5	increase = 0 - 1 mg/L		
	Koksilah River: E207425 Pt. Renfrew Rd.	Oct.4 - Nov.30	5	all < 5 mg/L	Control Site	
	E206976 Koksilah Rd.	Oct.4 - Nov.30	5	all < 5 mg/L	Objective met	
			5	increase = 0 mg/L		
0123981 at Highway 1	Oct.4 - Nov.30 Nov.16 Oct.4 - Nov.30	5	< 5 - 23 mg/L	Objective not met Objective met		
		1	increase = 18 mg/L			
		4	increase = 0 mg/L			
Ammonia-N < 1.30 mg/L av 6.75 mg/L max at pH = 7.9 temp = 15 C	Cowichan River: E206108 d/s Cowichan Lake	Sep.7 - Nov.30	6	< 0.005 - 0.005 mg/L	Max obj. met	
		Nov.2 - 30	1	av. = 0.005 mg/L	Av obj. met	
	0120808 300m u/s L. Cowichan STP	Apr.11 - Nov.30	10	< 0.005 - 0.01 mg/L	Max obj. met	
			1	av. = 0.0052 mg/L	Av obj. met	
	E206107 400m d/s L. Cowichan STP	Apr.11 - Nov.30	10	< 0.003 - 0.014 mg/L	Max obj. met	
			1	av. = 0.0094 mg/L	Av obj. met	
	0120802 u/s Highway 1	Sep.7 - Nov.30	7	< 0.005 - 0.014 mg/L	Max obj. met	
			1	av. = 0.0102 mg/L	Av obj. met	
	E206106 1 km d/s Duncan STP	Sep.7 - Nov.30	7	0.013 - 0.118 mg/L	Max obj. met	
			1	av. = 0.0366 mg/L	Av obj. met	
	Chlorophyll-a 50 mg/m ² max	Cowichan River	2000	0	no data collected	Omitted 2000
	Total Cl ₂ Res. 0.002 mg/L max	Cowichan River	2000	0	no data collected	Omitted 2000

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Dissolved Oxygen 8.0 mg/L min Jun - Sep 11.2 mg/L min Oct - May	Cowichan River Koksilah River	2000	0	no data collected	Omitted 2000
Dissolved Cu <0.002 mg/L av 0.004 mg/L max or 20% increase	Cowichan River Koksilah River	2000	0	no data collected	Omitted 2000
Dissolved Pb <0.003 mg/L av 0.008 mg/L max or 20% increase	Cowichan River Koksilah River	2000	0	no data collected	Omitted 2000
Dissolved Zn <0.030 mg/L av 0.180 mg/L max or 20% increase	Cowichan River Koksilah River	2000	0	no data collected	Omitted 2000
Cu-8 Quinolinolate 0.0005 mg/L max	Cowichan River	2000	0	no data collected	Omitted 2000

Table 3. Middle Quinsam Lake Water Quality Objectives - 2000

VARIABLE & OBJECTIVE	MEASUREMENT			CONCLUSION	
	SITE	DATE	n		VALUE
Total-P < 0.007 mg/L av. (May - Sept.)	Long Lake: E219412 at outlet	Apr.12 - Jun.29	3	0.004 - 0.009 mg/L	Indefinite result
			1	av. = 0.0063 mg/L	
Total-P < 0.006 mg/L av. (May - Sept.)	0900504 Middle Quinsam Lake Outlet	Apr.13 - Sep.28	3	0.003 - 0.005 mg/L	Indefinite result
			1	av. = 0.0037 mg/L	
Chlorophyll-a < 50 mg/m ²	Quinsam River Quinsam Lake No Name Lake Long Lake	2000	0	no data collected	Omitted 2000
Turbidity < 1.0 NTU av. 5.0 NTU max.	Quinsam River D/S from Quinsam Lake	2000	0	no data collected	Omitted 2000
Suspended Solids < 5 mg/L av. 25 mg/L max. or 10 mg/L max. inc.	Quinsam River Quinsam Lake No Name Lake Long Lake	2000	0	no data collected	Omitted 2000
Ammonia-N < 1.82 mg/L av. 12.5 mg/L max. at pH = 7.5 temp. = 12 °C	0126402 Quinsam River u/s Middle Quinsam Lake	Apr.12 - Jun.29	3	< 0.005 mg/L	Objective met
			1	av. = < 0.005 mg/L	Indefinite result
	E217017 No Name Lake outlet	Apr.12 - Jun.29	3	< 0.005 - 0.02 mg/L	Objective met
Nitrite-N < 0.02 mg/L av. 0.06 mg/L max.	Quinsam River Quinsam Lake No Name Lake Long Lake	2000	0	no data collected	Omitted 2000
			1	av. = 0.01 mg/L	Indefinite result
Dissolved Oxygen 3 mg/L min. 1m above sed. (May - Sept.)	Quinsam River Quinsam Lake No Name Lake Long Lake	2000	0	no data collected	Omitted 2000
pH > 6.5 90th percentile (np) > 6.9 median (med.)	E219412 Long Lake at outlet	Apr.12 - Sep.28	4	7.72 - 7.82	Indefinite result Indefinite result
			1	med = 7.76	
			1	np = 7.81	
	0900504 Middle Quinsam Lake Outlet	Apr.13 - Sep.28	3	7.7 - 7.76	Indefinite result Indefinite result
			1	med = 7.7	
			1	np = 7.75	
	0126402 Quinsam River u/s Middle Quinsam Lake	Apr.13 - Sep.28	3	7.66 - 7.93	Indefinite result Indefinite result
			1	med = 7.67	
			1	np = 7.88	
	E217017 No Name Lake outlet	Apr.12 - Sep.27	4	7.45 - 7.73	Indefinite result Indefinite result
1			med = 7.58		
1			np = 7.72		

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Dissolved Aluminum < 0.05 mg/L av 0.1 mg/L max.	E219412 Long Lake at outlet	Apr.12 - Jun.29	3	0.00006 - 0.0133 mg/L	Max. obj. met
			1	av. = 0.00735 mg/L	Indefinite result
	0900504 Middle Quinsam Lake Outlet	Apr.13 - Jun.29	2	0.011 - 0.0128 mg/L	Max. obj. met
			1	av. = 0.0119 mg/L	Indefinite result
	0126402 Quinsam River u/s Middle Quinsam Lake	Apr.13 - Jun.29	2	0.0152 - 0.0246 mg/L	Max. obj. met
			1	av. = 0.0199 mg/L	Indefinite result
E217017 No Name Lake outlet	Apr.12 - Jun.29	3	0.0045 - 0.0124 mg/L	Max. obj. met	
		1	av. = 0.00827 mg/L	Indefinite result	
Total Arsenic < 0.05 mg/L max.	E219412 Long Lake at outlet	Apr.12 - Sep.28	4	0.0003 - 0.0006 mg/L	Max. obj. met
	0900504 Middle Quinsam Lake Outlet	Apr.13 - Sep.28	3	0.0001 - 0.0002 mg/L	Max. obj. met
	0126402 Quinsam River u/s Middle Quinsam Lake	Apr.13 - Sep.28	3	< 0.0001 - 0.0002 mg/L	Max. obj. met
	E217017 No Name Lake outlet	Apr.12 - Sep.27	4	0.0003 - 0.0006 mg/L	Max. obj. met
Total Cadmium < 0.0002 mg/L av. 0.0003 mg/L max.	E219412 Long Lake at outlet	Apr.12 - Sep.28	4	< 0.00001 - 0.00002 mg/L	Max. obj. met
			1	av. = 0.0000125 mg/L	Indefinite result
	0900504 Middle Quinsam Lake Outlet	Apr.13 - Sep.28	3	< 0.00001 - 0.00001 mg/L	Max. obj. met
			1	av. = 0.00001 mg/L	Indefinite result
	0126402 Quinsam River u/s Middle Quinsam Lake	Apr.13 - Sep.28	3	all < 0.00001 mg/L	Max. obj. met
			1	av. = < 0.00001 mg/L	Indefinite result
E217017 No Name Lake outlet	Apr.12 - Sep.27	4	< 0.00001 - 0.00004 mg/L	Max. obj. met	
		1	av. = 0.0000225 mg/L	Indefinite result	
Total Copper < 0.002 mg/L av.	E219412 Long Lake at outlet	Apr.12 - Sep.28	4	0.0005 - 0.00313 mg/L	
			1	av. = 0.00121 mg/L	Indefinite result
	0900504 Middle Quinsam Lake Outlet	Apr.13 - Sep.28	3	0.00054 - 0.00062 mg/L	
			1	av. = 0.00058 mg/L	Indefinite result
	0126402 Quinsam River u/s Middle Quinsam Lake	Apr.13 - Sep.28	3	0.00056 - 0.00072 mg/L	
			1	av. = 0.00064 mg/L	Indefinite result

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Copper < 0.002 mg/L av.	E217017 No Name Lake outlet	Apr.12 - Sep.27	4	0.00036 - 0.00119 mg/L	Indefinite result
			1	av. = 0.00063 mg/L	
Total Iron < 0.3 mg/L av.	E219412 Long Lake at outlet	Apr.12 - Sep.28	4	0.02 - 0.061 mg/L	Indefinite result
			1	av. = 0.052 mg/L	
	0900504 Middle Quinsam Lake Outlet	Apr.13 - Sep.28	3	0.041 - 0.081 mg/L	Indefinite result
			1	av. = 0.055 mg/L	
	0126402 Quinsam River u/s Middle Quinsam Lake	Apr.13 - Sep.28	3	0.023 - 0.036 mg/L	Indefinite result
			1	av. = 0.027 mg/L	
E217017 No Name Lake outlet	Apr.12 - Sep.27	4	0.059 - 0.172 mg/L	Indefinite result	
		1	av. = 0.092 mg/L		
Total Lead <0.003 mg/L av. 0.005 mg/L max.	E219412 Long Lake at outlet	Apr.12 - Sep.28	4	< 0.00001 - 0.00007 mg/L	Max. obj. met
			1	av. = 0.0000325 mg/L	Indefinite result
	0900504 Middle Quinsam Lake Outlet	Apr.13 - Sep.28	3	< 0.00001 - 0.00007 mg/L	Max. obj. met
			1	av. = 0.00003 mg/L	Indefinite result
	0126402 Quinsam River u/s Middle Quinsam Lake	Apr.13 - Sep.28	3	< 0.00001 - 0.00002 mg/L	Max. obj. met
			1	av. = 0.000013 mg/L	Indefinite result
E217017 No Name Lake outlet	Apr.12 - Sep.27	4	< 0.00001 - 0.00004 mg/L	Max. obj. met	
		1	av. = 0.000018 mg/L	Indefinite result	
Total Mercury 0.1 ug/L max.	Quinsam River Quinsam Lake No Name Lake Long Lake	2000	0	no data collected	Omitted 2000
Total Nickel 0.025 mg/L max.	E219412 Long Lake at outlet	Apr.12 - Sep.28	4	0.00064 - 0.00171 mg/L	Max. obj. met
			3	0.00043 - 0.00065 mg/L	Max. obj. met
	0900504 Middle Quinsam Lake Outlet	Apr.13 - Sep.28	3	0.00023 - 0.00031 mg/L	Max. obj. met
			4	0.00015 - 0.0123 mg/L	Max. obj. met

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Silver 0.0001 mg/L max.	E219412 Long Lake at outlet	Apr.12 - Sep.28	4	all < 0.00002 mg/L	Max. obj. met
	0900504 Middle Quinsam Lake Outlet	Apr.13 - Sep.28	3	all < 0.00002 mg/L	Max. obj. met
	0126402 Quinsam River u/s Middle Quinsam Lake	Apr.13 - Sep.28	3	all < 0.00002 mg/L	Max. obj. met
	E217017 No Name Lake outlet	Apr.12 - Sep.27	4	all < 0.00002 mg/L	Max. obj. met
Total Zinc 0.03 mg/L max.	E219412 Long Lake at outlet	Apr.12 - Sep.28	4	< 0.0001 - 0.0009 mg/L	Max. obj. met
	0900504 Middle Quinsam Lake Outlet	Apr.13 - Sep.28	3	< 0.0001 - 0.0009 mg/L	Max. obj. met
	0126402 Quinsam River u/s Middle Quinsam Lake	Apr.13 - Sep.28	3	< 0.0001 - 0.0003 mg/L	Max. obj. met
	E217017 No Name Lake outlet	Apr.12 - Sep.27	4	0.0002 - 0.0041 mg/L	Max. obj. met

Table 4. Tsolum River Water Quality Objectives - 2000

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Dissolved Copper < 0.007 mg/L av. 0.011 mg/L max.	E207826	Jan.10 - Dec.12	158	0.0021 - 0.011 mg/L	Objective met
	Tsolum River	Apr.28 - Nov.5	69	0.0114 - 0.049 mg/L	Objective not met
	500m d/s Murex Creek	Apr.27 - Dec.6	36	av. = 0.00708 - 0.0362 mg/L	Objective not met
		Jul.11 - Dec.12	8	av. = 0.00396 - 0.00692 mg/L	Objective met
% steelhead egg survival	Tsolum River	2000	0	no in situ bioassay data collected	Omitted 2000
no difference between test & control (at 95% confidence)					

Table 5. Nechako River Water Quality Objectives - 2000

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliform <100/100ml 90th perc. (np)	Nechako River E206583 at Prince George	Jan.5 - Dec.18	25	< 1 - 92 CFU/100 mL	Indefinite result No 5-in-30 samples
	Chilako River:	2000	0	np = 56 CFU/100 mL	
Fecal Coliforms <10/100ml 90th perc (np)	Stuart River:	2000	0	no data collected	Omitted 2000
Fecal Coliforms <200/100ml geometric mean (gm) <400/100ml 90 perc. (np)	Necoslie River:	2000	0	no data collected	Omitted 2000
Total Cl ₂ Res. 0.002 mg/L max	Nechako & Stuart Rivers	2000	0	no data collected	Omitted 2000
Ammonia-N <2.05 mg/L av 14.1 mg/L max at pH = 7.5 temp = 1 °C	Nechako River	2000	0	no data collected	Omitted 2000
Ammonia-N <1.24 mg/L av 6.46 mg/L max at pH = 8.0 temp = 1 °C	Stuart River	2000	0	no data collected	Omitted 2000
Nitrite-N < 0.02 mg/L av 0.06 mg/l max	Nechako River	2000	0	no data collected	Omitted 2000
Chlorophyll - a < 50 mg/L av	Nechako River Stuart River	2000	0	no data collected	Omitted 2000
Chlorophyll - a < 100 mg/L av	Chilako River	2000	0	no data collected	Omitted 2000
Dissolved Oxygen 7.75 - 11.2 mg/L min depending on fish egg stage	Nechako River E206583 at Prince George	Nov.2 - Dec.18	5	11.1 - 13.1 mg/L	Objective met
pH 6.5 - 8.5	Nechako River E206583 at Prince George	Jan.5 - Dec.18	27	7.27 - 8.01	Objective met

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Temperature < 15 °C av ~ 100 m d/s Cheslatta Falls	Nechako River: immediately d/s Cheslatta Falls* (DFO's Cheslatta Falls site)	2000	0	no data collected	Omitted 2000
	10 km d/s Cheslatta Falls* (DFO's B. Irvine site)	2000	0	no data collected	Omitted 2000
Temperature < 20 °C Jul - Aug. < 18 °C Sep - Jun. ~ 100 m u/s Stuart River	Nechako River: at Vanderhoof ~40 km u/s Stuart R. confl. (DFO's Vanderhoof site)	2000	0	no data collected	Omitted 2000
Total Gas Pressure 109 % max	Nechako River	2000	0	no data collected	Omitted 2000

Table 6. Fraser River (From the Source to Hope) Water Quality Objectives - 2000

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <100 /100 mL 90th percentile (np)	E206182 at Stoner (d/s Pr. Ge. mills)	Jan.12 - Dec.6	8	22 -> 2400 CFU/100 mL	No 5-in-30 samples:
			1	np = 1860 CFU/100 mL	Indefinite result
	0600011 at Marguerite (d/s Quesnel)	Apr.18 - Oct.16	8	< 1 - 54 CFU/100 mL	No 5-in-30 samples:
			1	np = 38 CFU/100 mL	Indefinite result
	E206581 at Hope	Jan.4 - Dec.19	24	2 - 52 CFU/100 mL	No 5-in-30 samples:
			1	np = 42 CFU/100 mL	Indefinite result
<i>E. coli</i> <100/100 mL 90th percentile (np)	E206182 at Stoner (d/s Pr. Ge. mills)	Jan.12 - Dec.6	8	8 - 1600 CFU/100 mL	No 5-in-30 samples:
			1	np = 564 CFU/100 mL	Indefinite result
Chlorine Residual < 2 ug/L av.	Fraser River	2000	0	no data collected	Omitted 2000
Suspended Solids 10 mg/L or 10% max increase	Fraser River	2000	0	no data collected	Omitted 2000
Turbidity 1 - 5 NTU max increase (control: 5 - 50 NTU)	0600011 at Marguerite (d/s Quesnel)	Apr.18 - Oct.16	8	10.5 - 78 NTU	Indefinite result No control
	E206581 at Hope	Feb.15 - Dec.19	27	2.3 - 200 NTU	Indefinite result No control
Colour 15 TCU max Jun - Sep 75 TCU max Oct - May	0600011 at Marguerite (d/s Quesnel)	Apr.18 - May 30	3	20 - 60 TCU	Objective met
		Jul.12 - Sep.20	4	17.5 - 40 TCU	Objective not met
		Oct.16	1	20 TCU	Objective met
	E206581 at Hope	Apr. 4 - May 23	12	< 2.5 - 50 TCU	Objective met
		Jun.6 - Sep.26	6	2.5 - 15 TCU	Objective met
		Jun.20, Jul.4	2	17.5 TCU	Objective not met
Oct.10 - Dec.19	7	12.5 - 25 TCU	Objective met		
Temperature 1 °C max increase	E206182 at Stoner (d/s Pr. Ge. mills)	Nov.21 - Dec.6	2	0.4 - 0.9 °C	Indefinite result No control
			0600011 at Marguerite (d/s Quesnel)	Apr.18 - Oct.16	8
	E206581 at Hope	Jan.4 - Dec.19	26	1.5 - 18.5 °C	Indefinite result No control

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Ammonia-N < 1.78 mg/L av 9.26 mg/L max at pH = 7.8 temp = 0 °C	Fraser River	2000	0	no data collected	Omitted 2000
Nitrite - N < 0.04 mg/L av. 0.12 mg/L max. at chloride 2-4 mg/L	Fraser River	2000	0	no data collected	Omitted 2000
Nitrate+Nitrite-N 10 mg/L max	Fraser River	2000	0	no data collected	Omitted 2000
Chlorophyll-a 50 mg/m2 max	Fraser River	2000	0	no data collected	Omitted 2000
pH 6.5 - 8.5	E206182 at Stoner (d/s Pr. Ge. mills)	Feb.17 - Nov.21	2	7.87 - 8.27	Objective met
	0600011 at Marguerite (d/s Quesnel)	Apr.18 - Oct.16	8	7.63 - 8.00	Objective met
	E206581 at Hope	Jan.4 - Dec.19	26	7.24 - 8.13	Objective met
Dissolved Oxygen 8.0 mg/L min May to Oct 11.0 mg/L min Nov to Apr	E206182 at Stoner (d/s Pr. Ge. mills)	Nov.21 - Dec.6	2	13.2 - 13.5 mg/L	Objective met
	0600011 at Marguerite (d/s Quesnel)	Apr.18 May 18 - Oct.16	1 7	12.6 mg/L 9.3 - 10.3 mg/L	Objective met
	E206581 at Hope	Jan.4 - Apr.25 May 9 - Oct.25 Nov.7 - Dec.19	10 11 5	12.2 - 14 mg/L 9.8 - 12 mg/L 12.4 - 14 mg/L	Objective met
Total Lead 0.8 ug/g max in fish muscle	Fraser River	2000	0	no data collected	Omitted 2000
Total PCBs 2.0 ug/g max in fish muscle 0.1 ug/g max in whole fish	Fraser River	2000	0	no data collected	Omitted 2000

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Chlorophenols max. TCP's pH 7.8 2,3,4-: 0.1 ug/L 2,3,5-: 0.08 ug/L 2,3,6-: 0.32 ug/L 2,4,5-: 0.08 ug/L 2,4,6-: 0.5 ug/L 3,4,5-: 0.06 ug/L tot: 1.14 ug/L	Fraser River	2000	0	no data collected	Omitted 2000
max TTCPs pH 7.8: 2,3,4,5-: 0.2 ug/L 2,3,4,6-: 0.3 ug/L tot: 0.6 ug/L	Fraser River	2000	0	no data collected	Omitted 2000
max PCP pH 7.8: 0.1 ug/L	Fraser River	2000	0	no data collected	Omitted 2000
AOX no increase over control at 95% confidence	Fraser River	2000	0	no data collected	Omitted 2000
Resin Acids 12 ug/L max DHA 45 ug/L max total at pH 7.5	Fraser River	2000	0	no data collected	Omitted 2000
Dioxins and Furans in water 0.06 pg/L max TCDD-TEQ	Fraser River	2000	0	no data collected	Omitted 2000
Dioxins and Furans in sediments 0.25 pg/g max TCDD-TEQ	Fraser River	2000	0	no data collected	Omitted 2000
Dioxins and Furans in fish lipids 50 pg/g TCDD-TEQ	Fraser River	2000	0	no data collected	Omitted 2000

Table 7. Williams Lake Water Quality Objectives – 2000

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliform < 200 /100 mL geometric mean (gm) < 400 /100 mL 90th percentile (np) at beaches	Williams Lake	2000	0	no data collected	Omitted 2000
Fecal Coliform < 10/100 mL 90th percentile at water intakes	Williams Lake	2000	0	no data collected	Omitted 2000
Turbidity < 1 NTU av 5 NTU max.	Williams Lake	2000	0	no data collected	Omitted 2000
Total P < 0.020 mg/L av at spring overturn	0603019 Williams Lake: at lake centre	Apr.12	7	0.046 - 0.068 mg/L	Objective not met
			1	av. = 0.0494 mg/L	
	0603022 Williams Lake: at deepest point	Apr.12	1	0.054 m	Objective not met
			1	av. = 0.054	
Chlorophyll-a < 5 ug/L av (May to Aug)	Williams Lake	2000	0	no data collected	Omitted 2000
Dissolved Oxygen 4.0 mg/L min 5 m above sed.	Williams Lake	2000	0	no data collected	Omitted 2000
Water Clarity 1.2 m min Secchi reading (May to August)	Williams Lake	May 1 - Aug 30	1 6	1.23 - 3.65 m	Objective met Objective not met
		May 7 - Jun.6	4	0.78 - 1.11 m	

Table 8. Okanagan Valley Lakes Water Quality Objectives – 2000

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total - P < 0.040 mg/L av. at spring overturn (short-term)	0500450 Wood Lake West of Vernon Creek	Mar.1	2	<10 m: 0.030 - 0.046 mg/L	Objective met
			1	>20 m: 0.043 mg/L	
			1	av. = 0.040 mg/L	
	0500848 Wood Lake Deep Basin	Mar.1	4	<10 m: 0.017 - 0.019 mg/L	Objective met
			3	>20 m: 0.017 - 0.019 mg/L	
			1	av. = 0.0177 mg/L	
Total - P < 0.008 mg/L av. at spring overturn	0500246 Kalamalka Lake at south end	Mar.1	1	<10 m: 0.008 mg/L	Objective not met
			1	>10 m: 0.008 - 0.011 mg/L	
			1	av. = 0.009 mg/L	
	0500461 Kalamalka Lake South of Coldstream Creek	Mar.1	1	<10 m: 0.011 mg/L	Objective not met
			2	>10 m: 0.01 - 0.011 mg/L	
			1	av. = 0.0105 mg/L	
0500847 Kalamalka Lake Deep Site	Mar.1	1	<10 m: 0.01 mg/L	Objective not met	
		1	>20 m: 0.011 mg/L		
		1	av. = 0.0105 mg/L		
Total - P < 0.010 mg/L av at spring overturn	0500239 Okanagan Lake at Armstrong Arm	Apr.11	1	1 m: 0.013 mg/L	Objective not met
			1	20 m: 0.011 mg/L	
			1	45 m: 0.016 mg/L	
			1	av. = 0.0123 mg/L	
		Apr.12	1	1 m: 0.011 mg/L	Objective not met
			2	20 m: 0.012 mg/L	
			1	av. = 0.0115 mg/L	
			1	av. = 0.017 mg/L	
	May.15	1	1 m: 0.014 mg/L	Objective not met	
		1	20 m: 0.016 mg/L		
		1	45 m: 0.021 mg/L		
		1	av. = 0.017 mg/L		
	0500238 Okanagan Lake at Vernon Arm	Feb.29	1	1m: 0.013 mg/L	Objective met
			1	15m: 0.008 mg/L	
			1	20m: 0.009 mg/L	
			1	av. = 0.010 mg/L	
	0500730 Okanagan Lake at north basin	Feb.29	1	1 m: 0.009 mg/L	Objective met
			1	20 m: 0.008 mg/L	
1			av. = 0.0085 mg/L		
1			av. = 0.006 mg/L		
Apr.11		1	1 m: 0.006 mg/L	Objective met	
		1	20 m: 0.006 mg/L		
		1	45 m: 0.006 mg/L		
		1	av. = 0.006 mg/L		
May.15	1	1 m: 0.006 mg/L	Objective met		
	1	20 m: 0.005 mg/L			
	1	45 m: 0.005 mg/L			
	1	av. = 0.0053 mg/L			

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total - P < 0.010 mg/L av at spring overturn	0500236 Okanagan Lake at central basin	Feb.23	1	1 m: 0.01 mg/L	Objective not met
			1	15 m: 0.01 mg/L	
			1	20 m: 0.011 mg/L	
			1	av. = 0.0103 mg/L	
	0500729 Okanagan Lake at south basin	Feb.21	1	1 m: 0.01 mg/L	Objective not met
			1	15 m: 0.011 mg/L	
			1	20 m: 0.012 mg/L	
			1	av. = 0.011 mg/L	
	0500454 Okanagan Lake U/S Kelowna STP	Feb.21	1	1 m: 0.013 mg/L	Objective not met
			1	20 m: 0.011 mg/L	
			1	av. = 0.012 mg/L	
			1	av. = 0.012 mg/L	
		Apr.12	1	1 m: 0.006 mg/L	Objective met
			1	20 m: 0.008 mg/L	
			1	40 m: 0.006 mg/L	
			1	av. = 0.0067 mg/L	
	May.16	1	1 m: 0.006 mg/L	Objective met	
		1	20 m: 0.006 mg/L		
		1	40 m: 0.006 mg/L		
		1	av. = 0.006 mg/L		
0500456 Okanagan Lake South Prairie C.	Feb.23	1	1 m: 0.012 mg/L	Objective not met	
		1	20 m: 0.012 mg/L		
		1	av. = 0.012 mg/L		
Total - P < 0.015 mg/L av at spring overturn	0500615 Skaha Lake at center	Feb.10	1	1 m: 0.001 mg/L	Objective met
			1	20 m: 0.001 mg/L	
			1	av. = 0.001 mg/L	
	0500453 Skaha Lake W.Okanagan L. river mouth	Feb.10	1	1 m: 0.009 mg/L	Objective met
			1	20 m: 0.009 mg/L	
			1	av. = 0.009 mg/L	
	0500846 Skaha Lake south basin	Feb.10	1	1 m: 0.009 mg/L	Objective met
			1	20 m: 0.010 mg/L	
			1	av. = 0.0095 mg/L	
	0500249 Osoyoos Lake at north basin	Feb 24	1	1 m: 0.017 mg/L	Objective not met
			1	15 m: 0.017 mg/L	
			1	20 m: 0.012 mg/L	
1			av. = 0.0153 mg/L		
0500728 Osoyoos Lake opp. Monashee Co-op	Feb 26	1	1 m: 0.016 mg/L	Objective not met	
		1	20 m: 0.016 mg/L		
		1	av. = 0.016 mg/L		

Table 9. Similkameen River and Hedley Creek Water Quality Objectives – 2000

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms < 10 /100 mL 90th percentile (np)	0500073 Similkameen River @ Chopka Rd. Bridge	Feb.8 - Dec.27	25	<1 - 46 CFU/100 mL	Indefinite result
			1	np = 11.6 CFU/100 mL	
	0500629 Similkameen River @ Princeton Hwy 3 Bridge	Feb.9 - Dec.27	26	< 1 - 284 CFU/100 mL	Indefinite result
			1	np = 11 CFU/100 mL	
<i>E. coli</i> < 10 /100 mL 90th percentile (np)	Similkameen River	2000	0	no data collected	Omitted 2000
Enterococci < 3 /100 mL 90th percentile	Similkameen River	2000	0	no data collected	Omitted 2000
Suspended Solids max. increase: 10 mg/L or 10%	Similkameen River	2000	0	no data collected	Omitted 2000
Substrate Sedimentation: no increase in weight of particles < 3 mm dia.	Similkameen River	2000	0	no data collected	Omitted 2000
Turbidity max. increase: 1 - 5 NTU or 10%	0500073 Similkameen River @ Chopka Rd. Bridge	Jan.11 - Dec.27	27	0.06 - 10.5 NTU	Control Site
		0500629 Similkameen River @ Princeton Hwy 3 Bridge	Jan.11 - Dec.27	29	
	Jan.11 - Dec.27 Apr.4	24 1	increase = 0 - 1.1 NTU increase = 9 NTU	Objective met Objective not met	
Total Cl ₂ Residue 0.002 mg/L max.	Similkameen River	2000	0	no data collected	Omitted 2000
WAD-CN < 0.005 mg/L av 0.010 mg/L max.	0500073 Similkameen River @ Chopka Rd. Bridge	Jan.11 - Dec.27	27	< 0.0005 - 0.0039 mg/L	Max objective met
			1	av. = 0.00073 mg/L	Indefinite result
	0500629 Similkameen River @ Princeton Hwy 3 Bridge	Jan.11 - Dec.27	29	< 0.0005 - 0.0015 mg/L	Max objective met
			Aug.8 - Sep.5	1	av. = < 0.0005 mg/L
WAD-CN < 0.005 mg/L av 0.010 mg/L max. or 20% increase	Hedley Creek	2000	0	no data collected	Omitted 2000

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
SAD-CN + SCN 0.20 mg/L	0500073 Similkameen River @ Chopka Rd. Bridge	Jan.11 - Dec.27	27	< 0.0005 - 0.0045 mg/L	Objective met
	0500629 Similkameen River @ Princeton Hwy 3 Bridge	Jan.11 - Dec.27	29	< 0.0005 - 0.0019 mg/L	Objective met
	Hedley Creek	2000	0	no data collected	Omitted 2000
Cyanate as CN 0.45 mg/L max.	Similkameen River	2000	0	no data collected	Omitted 2000
Total Arsenic 0.005 mg/L max. or 20% increase	0500073 Similkameen River @ Chopka Rd. Bridge	Jan.11 - Dec.27	29	0.0004 - 0.0028 mg/L	Objective met
	0500629 Similkameen River @ Princeton Hwy 3 Bridge	Jan.11 - Dec.27	29	< 0.0001 - 0.0007 mg/L	Objective met
	0500693 Similkameen River D/S Keremeos STP	May 16 - May 25	2	< 0.0005 - 0.0012 mg/L	Objective met
	E223873 Hedley Creek U/S Nickel Plate Diffuser	May 16 - May 25	2	< 0.0005 - 0.0007 mg/L	Objective met
	E223874 Hedley Creek 100 m D/S Nickel Plate Diffuser	May.16	1	< 0.0005 mg/L	Objective met
Chlorophyll-a < 50 mg/m ² av.	Similkameen River	2000	0	no data collected	Omitted 2000
Dissolved Oxygen 8 mg/L min. (July - March) 11 mg/L min. (April - June)	Similkameen River	2000	0	no data collected	Omitted 2000
pH 6.5 - 8.5	0500073 Similkameen River @ Chopka Rd. Bridge	Jan.11 - Dec.27	27	7.18 - 8.15	Objective met
	0500629 Similkameen River @ Princeton Hwy 3 Bridge	Jan.11 - Dec.27	29	7.29 - 8.06	Objective met
Dissolved Aluminum < 0.05 mg/L av. 0.10 mg/L max. or 20% increase	Similkameen River	2000	0	no data collected	Omitted 2000

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Chromium < 0.002 mg/L av. 0.02 mg/L max. or 20% increase	0500073 Similkameen River @ Chopka Rd. Bridge	Jan.11 - Dec.27	27	< 0.0002 - 0.0028 mg/L	Objective met
			1	av. = 0.0004 mg/L	Indefinite result
	0500629 Similkameen River @ Princeton Hwy 3 Bridge	Jan.11 - Dec.27	30	< 0.0002 - 0.008 mg/L	Objective met
			1	0.00056 mg/L	Indefinite result
	0500693 Similkameen River D/S Keremeos STP	May 16 - May 25	2	< 0.006 - 0.012 mg/L	Objective met
			1	av. = 0.009 mg/L	Indefinite result
	E223873 Hedley Creek U/S Nickel Plate Diffuser	May 16 - May 25	2	< 0.006 - 0.0147 mg/L	Objective met
			1	av. = 0.010 mg/L	Indefinite result
	E223874 Hedley Creek 100 m D/S Nickel Plate Diffuser	May.16	1	< 0.006 mg/L	Objective met
			1	av. = < 0.006 mg/L	Indefinite result
Total Copper < 0.002 mg/L av. 0.003 mg/L max. or 20% inc. at hardness = 14	0500073 Similkameen River @ Chopka Rd. Bridge	Jan.11 - Dec.27 May 2 - May 16	25	0.0003 - 0.0028 mg/L	Objective met
			2	0.0031 - 0.0049 mg/L	Objective not met
		1	av. = 0.0011 mg/L	Indefinite result	
	0500629 Similkameen River @ Princeton Hwy 3 Bridge	Jan.11 - Dec.27 Feb.22 - May 25 Aug.8 - Sep.5	30	0.0003 - 0.0024 mg/L	Objective met
			4	0.004 - 0.0201 mg/L	Objective not met
			1	av. = 0.0006 mg/L	Objective met
	0500693 Similkameen River D/S Keremeos STP	May 16 - May 25	2	< 0.006 mg/L	Indefinite result
			1	av. = < 0.006 mg/L	Indefinite result
	E223873 Hedley Creek U/S Nickel Plate Diffuser	May 16 - May 25	2	< 0.006 mg/L	Objective met
			1	av. = < 0.006 mg/L	Indefinite result
1			< 0.006 mg/L	Objective met	
E223874 Hedley Creek 100 m D/S Nickel Plate Diffuser	May.16	1	< 0.006 mg/L	Objective met	
		1	av. = < 0.006 mg/L	Indefinite result	
Total Iron 0.3 mg/L max. or 20% increase	0500073 Similkameen River @ Chopka Rd. Bridge	Jan.11 - Dec.27	21	0.014 - 0.217 mg/L	Objective met
		Apr.4 - Jun.13	8	0.363 - 1.47 mg/L	Objective not met
	0500629 Similkameen River @ Princeton Hwy 3 Bridge	Jan.11 - Dec.27	25	0.0113 - 0.216 mg/L	Objective met
		Apr.4 - May 25	5	0.375 - 0.928 mg/L	Objective not met
	0500693 Similkameen River D/S Keremeos STP	May 16 - May 25	2	0.582 - 0.831 mg/L	Objective not met
	E223873 Hedley Creek U/S Nickel Plate Diffuser	May 16 - May 25	2	0.216 - 0.27 mg/L	Objective met
E223874 Hedley Creek 100 m D/S Nickel Plate Diffuser	May.16	1	0.273 mg/L	Objective met	

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Manganese 0.05 mg/L max. or 20% increase	0500073 Similkameen River @ Chopka Rd. Bridge	Jan.11 - Dec.27	29	0.0034 - 0.0378 mg/L	Objective met
	0500629 Similkameen River @ Princeton Hwy 3 Bridge	Jan.11 - Dec.27	30	0.0008 - 0.018 mg/L	Objective met
	0500693 Similkameen River D/S Keremeos STP	May 16 - May 25	2	0.015 - 0.02 mg/L	Objective met
	E223873 Hedley Creek U/S Nickel Plate Diffuser	May 16 - May 25	2	0.007 - 0.015 mg/L	Objective met
	E223874 Hedley Creek 100 m D/S Nickel Plate Diffuser	May.16	1	0.008 mg/L	Objective met
Total Lead 0.004 mg/L av. 0.030 mg/L max. or 20% inc. at hardness = 46	0500073 Similkameen River @ Chopka Rd. Bridge	Jan.11 - Dec.27	27	< 0.0002 - 0.0009 mg/L	Objective met
			1	av. = 0.00026 mg/L	Indefinite result
	0500629 Similkameen River @ Princeton Hwy 3 Bridge	Jan.11 - Dec.27	29	< 0.0002 - 0.0009 mg/L	Objective met
			1	av. = 0.00022 mg/L	Objective met
	0500693 Similkameen River D/S Keremeos STP	May 16 - May 25	2	< 0.06 mg/L	Indefinite result
			1	av. = < 0.06 mg/L	Indefinite result
	E223873 Hedley Creek U/S Nickel Plate Diffuser	May 16 - May 25	2	< 0.06 mg/L	Indefinite result
			1	av. = < 0.06 mg/L	Indefinite result
	E223874 Hedley Creek 100 m D/S Nickel Plate Diffuser	May.16	1	< 0.06 mg/L	Indefinite result
			1	av. = < 0.06 mg/L	Indefinite result
Total Mercury < 0.02 ug/L av. 0.1 ug/L max.	Similkameen River	2000	0	no data collected	Omitted 2000
Total Molybdenum < 0.01 mg/L av. 0.05 mg/L max. (May - Sept.)	0500073 Similkameen River @ Chopka Rd. Bridge	May 2 - Sept.19	12	0.0005 - 0.0019 mg/L	Objective met
			1	av. = 0.0012 mg/L	Indefinite result
	0500629 Similkameen River @ Princeton Hwy 3 Bridge	May 2 - Sept.19	13	0.0004 - 0.0011 mg/L	Objective met
			1	av. = 0.00106 mg/L	Objective met
	0500693 Similkameen River D/S Keremeos STP	May 16 - May 25	2	< 0.01 mg/L	Objective met
			1	av. = < 0.01 mg/L	Indefinite result
	E223873 Hedley Creek U/S Nickel Plate Diffuser	May 16 - May 25	2	< 0.01 - 0.02 mg/L	Objective met
			1	av. = 0.015 mg/L	Indefinite result
	E223874 Hedley Creek 100 m D/S Nickel Plate Diffuser	May.16	1	< 0.01 mg/L	Objective met
			1	av. = < 0.01 mg/L	Indefinite result

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Nickel 0.025 mg/L max. or 20% increase at hardness < 65	0500073 Similkameen River @ Chopka Rd. Bridge	Jan.11 - Dec.27	27	< 0.0002 - 0.0014 mg/L	Objective met
	0500629 Similkameen River @ Princeton Hwy 3 Bridge	Jan.11 - Dec.27	29	< 0.0002 - 0.0009 mg/L	Objective met
	0500693 Similkameen River D/S Keremeos STP	May 16 - May 25	2	< 0.02 - 0.02 mg/L	Objective met
	E223873 Hedley Creek U/S Nickel Plate Diffuser	May 16 May 25	1 1	< 0.02 mg/L 0.03 mg/L	Objective met Objective not met
	E223874 Hedley Creek 100 m D/S Nickel Plate Diffuser	May.16	1	< 0.02 mg/L	Objective met
Total Uranium < 0.01 mg/L av. 0.10 mg/L max. or 20% increase	Similkameen River	2000	0	no data collected	Omitted 2000
Total Zinc < 0.01 mg/L av. 0.03 mg/L max. or 20% increase	0500073 Similkameen River @ Chopka Rd. Bridge	Jan.11 - Dec.27	29	< 0.0002 - 0.0041 mg/L	Objective met
			1	av. = 0.00086 mg/L	Indefinite result
	0500629 Similkameen River @ Princeton Hwy 3 Bridge	Jan.11 - Dec.27	30	< 0.0002 - 0.006 mg/L	Objective met
			1	av. = 0.00074 mg/L	Objective met
	0500693 Similkameen River D/S Keremeos STP	May 16 - May 25	2	0.004 - 0.01 mg/L	Objective met
			1	av. = 0.007 mg/L	Indefinite result
	E223873 Hedley Creek U/S Nickel Plate Diffuser	May 16 - May 25	2	< 0.002 - 0.011 mg/L	Objective met
			1	av. = 0.0065 mg/L	Indefinite result
	E223874 Hedley Creek 100 m D/S Nickel Plate Diffuser	May.16	1	< 0.002 mg/L	Objective met
			1	av. = < 0.002 mg/L	Indefinite result

Table 10. Cahill Creek Water Quality Objectives - 2000

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Suspended Solids 10 mg/L or 10% max. increase	Cahill Creek (Hwy to Similkameen) Red Top Gulch Creek	2000	0	no data collected	Omitted 2000
Suspended Solids 20 mg/L or 10% max. increase	Cahill Creek (Headwaters to Hwy) Nickel Plate Mine Creek Sunset Creek	2000	0	no data collected	Omitted 2000
Turbidity 5 NTU or 10% max. increase	E206637 Cahill Creek at highway	May 16	1	1.4 NTU	Objective met
	E206638 Red Top Gulch at highway	May 16	1	13 NTU	Objective not met
Dissolved Solids 500 mg/L max.	Cahill Creek Red Top Gulch Nickel Plate Mine Creek Sunset Creek	2000	0	no data collected	Omitted 2000
Sulphate < 50 mg/L av. 150 mg/L max.	E206637 Cahill Creek at highway	May 16	1	86 mg/L	Max objective met
			1	av. = 86 mg/L	Indefinite result
	E206638 Red Top Gulch at highway	May 16	1	249 mg/L	Objective not met
			1	av. = 249 mg/L	Indefinite result
	Nickel Plate Mine Creek Sunset Creek	2000	0	no data collected	Omitted 2000
WAD-CN < 0.005 mg/L av. 0.010 mg/L max.	E206637 Cahill Creek at highway	May 16	1	< 0.0005 mg/L	Objective met
			1	av. = < 0.0005 mg/L	Indefinite result
	E206638 Red Top Gulch at highway	May 16	1	0.0005 mg/L	Objective met
			1	av. = 0.0005 mg/L	Indefinite result
	Nickel Plate Mine Creek Sunset Creek	2000	0	no data collected	Omitted 2000
SAD - CN + Thiocyanate as CN 0.20 mg/L max.	E206637 Cahill Creek at highway	May 16	1	0.0162 mg/L	Objective met
	E206638 Red Top Gulch at highway	May 16	1	0.0293 mg/L	Objective met
	Nickel Plate Mine Creek Sunset Creek	2000	0	no data collected	Omitted 2000

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT			CONCLUSION	
	SITE	DATE	n		VALUE
Cyanates as CN 0.45 mg/L max.	Cahill Creek Red Top Gulch Nickel Plate Mine Creek Sunset Creek	2000	0	no data collected	Omitted 2000
Total Arsenic 0.005 mg/L max.	E206637 Cahill Creek at highway	May 16 - 25	2	0.0118 - 0.0126 mg/L	Objective not met
	E206638 Red Top Gulch at highway	May 16	1	0.0126 mg/L	Objective not met
	Nickel Plate Mine Creek Sunset Creek	2000	0	no data collected	Omitted 2000
Ammonia-N < 1.11 mg/L av. 5.78 mg/L max. at pH = 8.0 temp. = 12 °C	Cahill Creek Red Top Gulch Nickel Plate Mine Creek Sunset Creek	2000	0	no data collected	Omitted 2000
Nitrite-N < 0.02 mg/L av. 0.06 mg/L max.	E206637 Cahill Creek at highway	May 16	1	< 0.005 mg/L	Objective met
			1	av. = < 0.005 mg/L	Indefinite result
	E206638 Red Top Gulch at highway	May 16	1	< 0.005 mg/L	Objective met
			1	av. = < 0.005 mg/L	Indefinite result
Nitrate-N 10 mg/L max.	E206637 Cahill Creek at highway	May 16	1	4.31 mg/L	Objective met
	E206638 Red Top Gulch at highway	May 16	1	13.8 mg/L	Objective not met
	Nickel Plate Mine Creek Sunset Creek	2000	0	no data collected	Omitted 2000
pH 6.5 - 8.5	Cahill Creek Red Top Gulch Nickel Plate Mine Creek Sunset Creek	2000	0	no data collected	Omitted 2000
Total Aluminum 0.30 mg/L max. or 20% increase at pH > 7	E206637 Cahill Creek at highway	May 16, May 25	2	0.16 - 0.2 mg/L	Objective met
	E206638 Red Top Gulch at highway	May 16	1	0.34 mg/L	Objective not met
	Nickel Plate Mine Creek Sunset Creek	2000	0	no data collected	Omitted 2000

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Cadmium 0.005 mg/L maximum	E206637 Cahill Creek at highway	May 16, May 25	2	both < 0.006 mg/L	Indefinite result
	E206638 Red Top Gulch at highway	May 16	1	< 0.006 mg/L	Indefinite result
	Nickel Plate Mine Creek Sunset Creek	2000	0	no data collected	Omitted 2000
Total Copper < 0.005 mg/L av. 0.007 mg/L max. or 20% max. increase	E206637 Cahill Creek at highway	May 16, May 25	2	both < 0.006 mg/L	Objective met
			1	av. = < 0.006 mg/L	Indefinite result
	E206638 Red Top Gulch at highway	May 16	1	< 0.006 mg/L	Objective met
			1	av. = < 0.006 mg/L	Indefinite result
	Nickel Plate Mine Creek Sunset Creek	2000	0	no data collected	Omitted 2000
Dissolved Iron 0.3 mg/L max.	Cahill Creek Red Top Gulch Nickel Plate Mine Creek Sunset Creek	2000	0	no data collected	Omitted 2000
Total Lead < 0.005 mg/L av. 0.015 mg/L max. at 20% increase	Cahill Creek Red Top Gulch Nickel Plate Mine Creek Sunset Creek	2000	0	no data collected	Omitted 2000
Total Lead < 0.005 mg/L av. 0.015 mg/L max. at 20% increase	E206637 Cahill Creek at highway	May 16, May 25	2	both < 0.06 mg/L	Indefinite result
			1	av. = < 0.06 mg/L	Indefinite result
	E206638 Red Top Gulch at highway	May 16	1	< 0.06 mg/L	Indefinite result
			1	av. = < 0.06 mg/L	Indefinite result
	Nickel Plate Mine Creek Sunset Creek	2000	0	no data collected	Omitted 2000
Total Mercury 0.1 ug/L max.	Cahill Creek Red Top Gulch Nickel Plate Mine Creek Sunset Creek	2000	0	no data collected	Omitted 2000

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Molybdenum 0.01 mg/L av. 0.05 mg/L max. (May - Sept.)	Cahill Creek Red Top Gulch Nickel Plate Mine Creek Sunset Creek	2000	0	no data collected	Omitted 2000
Total Molybdenum 0.01 mg/L av. 0.05 mg/L max. (May - Sept.)	E206637 Cahill Creek at highway	May 16, May 25	2	both < 0.01 mg/L	Objective met
			1	av. = < 0.01 mg/L	Indefinite result
	E206638 Red Top Gulch at highway	May 16	1	< 0.01 mg/L	Objective met
			1	av. = < 0.01 mg/L	Indefinite result
	Nickel Plate Mine Creek Sunset Creek	2000	0	no data collected	Omitted 2000
Total Selenium 0.01 mg/L max. or 20% max. increase	E206637 Cahill Creek at highway	May 16	1	0.0026 mg/L	Objective met
		May 25	1	< 0.06 mg/L	Indefinite result
			1	av. = < 0.0313 mg/L	Indefinite result
	E206638 Red Top Gulch at highway	May 16	1	0.0066 mg/L	Objective met
			1	av. = 0.0066 mg/L	Indefinite result
	Nickel Plate Mine Creek Sunset Creek	2000	0	no data collected	Omitted 2000
Total Silver 0.0001 mg/L max. or 20% max. increase	E206637 Cahill Creek at highway	May 16, May 25	2	both < 0.01 mg/L	Indefinite result
	E206638 Red Top Gulch at highway	May 16	1	< 0.01 mg/L	Indefinite result
	Nickel Plate Mine Creek Sunset Creek	2000	0	no data collected	Omitted 2000
Total Zinc 0.05 mg/L max.	E206637 Cahill Creek at highway	May 16, May 25	2	< 0.002 - 0.003 mg/L	Objective met
	E206638 Red Top Gulch at highway	May 16	1	0.005 mg/L	Objective met
	Nickel Plate Mine Creek Sunset Creek	2000	0	no data collected	Omitted 2000

Table 11. Christina Lake Water Quality Objectives – 2000

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Zooplankton > 10% for any of the rotifers (ro objective) <i>Kellicottia</i> <i>Conochilus</i> > 10% for any of the crustaceans (cr objective) <i>Bosmina</i> <i>Epishura</i> <i>Diatocyclops</i>	Christina Lake	1998	0	no data collected	Omitted 1998
Dissolved Oxygen 8 mg/L at any depth	Christina Lake	1998	0	no data collected	Omitted 1998
Turbidity ≤ 1 NTU seasonal av 5 NTU max	Christina Lake	1998	0	no data collected	Omitted 1998
Secchi Depth 3 m min seasonal av > 10 m	0200078 Christina Lake at Christina	Mar.9	1	11.6 m	Objective met
			1	av = 11.6 m	Indefinite result
	E215758 north basin deep center	Mar.9	1	12.8 m	Objective met
			1	av = 12.8 m	Indefinite result
Total Phosphorus < 0.007 mg/L av at spring overturn	0200078 Christina Lake at Christina	Mar.9	3	0.014 - 0.018 mg/L	
			1	av = 0.016 g/L	Objective not met
	E215758 north basin deep center	Mar.9	3	0.012 - < 0.1 mg/L	
			1	av = < 0.042 mg/L	Objective not met
Total Nitrogen ≤ 0.200 mg/L av at spring overturn	0200078 Christina Lake at Christina	Mar.9	3	0.07 - 0.08 mg/L	
			1	av = 0.073 mg/L	Objective met
	E215758 north basin deep center	Mar.9	3	0.07 - 0.08 mg/L	
			1	av = 0.075 mg/L	Objective met
Chlorophyll - a ≤ 0.0025 mg/L seasonal av.	0200078 Christina Lake at Christina	Mar.9 - Oct.5	4	0.0027 - 0.0064 mg/L	
			1	av = 0.0040 mg/L	Objective not met
	E215758 north basin deep center	Mar.9 - Oct.5	4	0.0021 - 0.0027 mg/L	
			1	av = 0.0023 mg/L	Objective met

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Periphyton Chlorophyll - <i>a</i> 10 mg/m ² seasonal av.	Christina Lake	1998	0	no data collected	Omitted 1998
Fecal Coliforms ≤ 10/100 mL 90th perc. (np) over 30 days	Christina Lake	1998	0	no data collected	Omitted 1998

Table 12. Thompson River Water Quality Objectives - 2000

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliform < 10 CFU/100 mL 90th percentile. (np)	0600135 South Thompson River Kamloops d/s Peterson Cr.	Jan.17 - Dec.27	13	< 1 - 540 CFU/100 mL	No 5-in-30 samples
			1	np = 92.2 CFU/100 mL	Indefinite result
	0600164 North Thompson River at Kamloops u/s Paul Cr.	Jan.18 - Dec.27	4	< 1 - 2 CFU/100 mL	No 5-in-30 samples
			1	np = 2 CFU/100 mL	Indefinite result
	E218768 Kamloops Lake near outlet	Jan.18 - Dec.27	4	< 1 - 600 CFU/100 mL	No 5-in-30 samples
			1	np = 420.6 CFU/100 mL	Indefinite result
	0600004 Lower Thompson at Savona	Jan.18 - Dec.27	4	< 1 - 6 CFU/100 mL	No 5-in-30 samples
			1	np = 4.8 CFU/100 mL	Indefinite result
	0600163 Lower Thompson d/s Walhachin	Jan.18 - Dec.27	4	< 1 - < 2 CFU/100 mL	No 5-in-30 samples
			1	np = 2 CFU/100 mL	Indefinite result
	0600005 Lower Thompson at Spences Bridge	Jan.18 - Dec.27	4	3 - 16 CFU/100 mL	No 5-in-30 samples
			1	np = 14.2 CFU/100 mL	Indefinite result
	E206586 Lower Thompson at Spences Br. d/s Nicola R.	Jan.5 - Dec.19	24	1 - 69 CFU/100 mL	No 5-in-30 samples
			1	np = 18.2 CFU/100 mL	Indefinite result
<i>E. coli</i> < 200/100 mL geometric mean (gm)	0600135 South Thompson River Kamloops d/s Peterson Cr.	Jan.17 - Dec.27	12	< 1 - 84 CFU/100 mL	No 5-in-30 samples
			1	np = 9.7 CFU/100 mL	Indefinite result
	0600164 North Thompson River at Kamloops u/s Paul Cr.	Jan.18 - Dec.27	4	< 1 - 2 CFU/100 mL	No 5-in-30 samples
			1	np = 2 CFU/100 mL	Indefinite result
	E218768 Kamloops Lake near outlet	Jan.18 - Dec.27	4	< 1 - 1000 CFU/100 mL	No 5-in-30 samples
			1	np = 700.6 CFU/100 mL	Indefinite result
	0600004 Lower Thompson at Savona	Jan.18 - Dec.27	4	< 1 - < 2 CFU/100 mL	No 5-in-30 samples
			1	np = < 2 CFU/100 mL	Indefinite result
	0600163 Lower Thompson d/s Walhachin	Jan.18 - Dec.27	4	< 1 - < 2 CFU/100 mL	No 5-in-30 samples
			1	np = < 2 CFU/100 mL	Indefinite result
	0600005 Lower Thompson at Spences Bridge	Jan.18 - Dec.27	4	< 2 - 16 CFU/100 mL	No 5-in-30 samples
			1	np = 12.1 CFU/100 mL	Indefinite result

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Colour 15 TCU max. or 5 TCU increase over average of N + S Thompson Rivers	0600135 South Thompson River Kamloops d/s Peterson Cr.	Jan.18 - Nov.20	3	2.5 - 8 TCU	Objective met
	0600164 North Thompson River at Kamloops u/s Paul Cr.	Jan.18 - Nov.20	3	all 7.5 TCU	Objective met
	E218768 Kamloops Lake near outlet	Jan.18 - Nov.20	3	2.5 - 15 TCU	Objective met
	0600004 Lower Thompson at Savona	Jan.18 - Nov.20	3	7.5 - 12.5 TCU	Objective met
	0600163 Lower Thompson d/s Walhachin	Jan.18 - Nov.20	3	< 5 - 12.5 TCU	Objective met
	0600005 Lower Thompson at Spences Bridge	Jan.18 - Nov.20	3	2.5 - 10 TCU	Objective met
	E206586 Lower Thompson at Spences Br. d/s Nicola R.	Jan.5 - Dec.19	26	2.5 - 15 TCU	Objective met
Chlorophyll - <i>a</i> < 50 mg/m ²	0600005 Lower Thompson at Spences Bridge	Mar.15	6	187 - 259 mg/m ²	Objective not met
			1	av. = 209 mg/m ²	
Dioxins & Furans 0.2 pg/L max. TEQ-TCDD	Thompson River Kamloops Lake	2000	0	no data collected	Omitted 2000
Dioxins & Furans 1.0 pg/g max. TEQ-TCDD wet weight in fish	Thompson River Kamloops Lake	2000	0	no data collected	Omitted 2000
Dioxins & Furans 0.7 pg/g max. TEQ-TCDD dry weight in sed.	Thompson River Kamloops Lake	2000	0	no data collected	Omitted 2000

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Resin Acids 12 µg/L DHA max. 45 µg/L total max. at pH = 7.5	0600135 South Thompson River Kamloops d/s Peterson Cr.	Nov.28	1 1	DHA: < 0.02 µg/L total: < 0.3 µg/L	Objective met Objective met
	0600164 North Thompson River at Kamloops u/s Paul Cr.	Nov.28	1 1	DHA: < 0.02 µg/L total: < 0.3 µg/L	Objective met Objective met
	E218768 Kamloops Lake near outlet	Nov.28	1 1	DHA: < 0.02 µg/L total: < 0.3 µg/L	Objective met Objective met
	0600004 Lower Thompson at Savona	Nov.28	1 1	DHA: < 0.02 µg/L total: < 0.3 µg/L	Objective met Objective met
	0600163 Lower Thompson d/s Walhachin	Nov.28	1 1	DHA: < 0.02 µg/L total: < 0.3 µg/L	Objective met Objective met
	0600005 Lower Thompson at Spences Bridge	Nov.28	1 1	DHA: < 0.02 µg/L total: < 0.3 µg/L	Objective met Objective met

Table 13. Columbia River (From Keenleyside to Birchbank) Water Quality Objectives – 2000

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Dissolved Oxygen 10 mg/L min.	200003 at Birchbank	Feb.24	1	11 mg/L	Objective met
		Oct.30 - Nov. 15	4	8.1 - 9.3 mg/L	Objective not met
	E223892 D/S Stoney Creek	Feb.10-24	2	11.0 – 12.2 mg/L	Objective met
		Oct.30 - Nov. 15	4	8.5 - 9.2 mg/L	Objective not met
E223893 100 m D/S RDCK STP outfall	Oct.30 - Nov. 15	4	9.2 - 9.8 mg/L	Objective not met	
pH 6.5 - 8.5	0200003 at Birchbank	Jan.10 - Dec.27	52	6.57 - 8.19	Objective met
		Feb.23	1	6.43	Objective not met
	E223892 D/S Stoney Creek	Jan.26 - Nov.15	18	6.9 - 8.18	Objective met
		E223893 100 m D/S RDCK STP outfall	Jan.26 - Nov.15	15	7.14 - 8.05
Colour 15 TCU max	0200003 at Birchbank	Jan.10 - Dec.27	26	< 2.5 - 7.5 TCU	Objective met
Suspended Solids 10 mg/L max increase	0200003 at Birchbank	Jan.26 - Nov.15	10	< 5 - 5 mg/L	Control site
	E223892 D/S Stoney Creek	Jan.26 - Nov.15	10	Increase = 0 mg/L for all	Objective met
	E223893 100 m D/S RDCK STP outfall	Jan.26 - Nov.15	10	Increase = 0 mg/L for all	Objective met
Turbidity 5 NTU max increase	0200003 at Birchbank	Jan.10 - Dec.27	36	0.06 - 1.25 NTU	Control site
	E223892 D/S Stoney Creek	Jan.26 - Nov.15	10	Increase = 0 - 0.53 NTU	Objective met
	E223893 100 m D/S RDCK STP outfall	Jan.26 - Nov.15	10	Increase = 0 - 0.11 NTU	Objective met
Sediment TOC no increase u/s to d/s at 95% confidence	Columbia River:	2000	0	no data collected	Omitted 2000
Dissolved Gas	0200003 Columbia River	Jan.26 - Nov.15	10	102.0 - 106.2 %	Objective met

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
110% max.	at Birchbank				
Fecal Coliform < 100/100 mL 90th percentile (np)	0200003 at Birchbank	Jan.10 - Feb.7	5	< 2 - 6 CFU/100 mL	Objective met
		Feb.10 - Feb.24	5	< 2 - 2 CFU/100 mL	
		Oct.2 - Oct 30	5	< 1 - 3 CFU/100 mL	
		Nov.1 - Nov.27	5	< 1 - 2 CFU/100 mL	
		4	np = 1.6 – 4.4 CFU/100 mL		
	E223893 100 m D/S RDCK STP outfall	Jan.26 - Feb.17	5	2 - 31 CFU/100 mL	
Oct.19 - Nov.15		5	1 - 7 CFU/100 mL		
		2	np = 5 - 21 CFU/100 mL		
E. coli < 100 /100mL 90th percentile (np)	0200003 at Birchbank	Jan.26 - Feb.17	5	< 2 - 2 CFU/100 mL	Objective met
		Oct.19 - Nov.15	5	< 1 - 1 CFU/100 mL	
			2	np = 1 - 2 CFU /100 mL	
	E223893 100 m D/S RDCK STP outfall	Jan.26 - Feb.17	5	2 - 31 CFU/100 mL	
		Oct.19 - Nov.15	5	1 – 4 CFU/100 mL	
			2	np = 3.2 - 19.4 CFU/100 mL	
Toxicity % mill effluent in river: < 0.05 of the 96 - h LC ₅₀	Columbia River	2000	0	no data collected	Omitted 2000
Chlorophenols < 0.05 µg/L tri < 0.10 µg/L tetra < 0.05 µg/L penta	Columbia River	2000	0	no data collected	Omitted 2000
Dioxins & Furans 1pg/g TCDD TEQ max. in fish (wet weight)	Columbia River	2000	0	no data collected	Omitted 2000
Dioxins & Furans max. in water	Columbia River	2000	0	no data collected	Omitted 2000
Dioxins & Furans 0.7 pg/L TCDD TEQ max. in sed.	Columbia River	2000	0	no data collected	Omitted 2000
Resin Acids 12 µg/L max DHA 45 µg/L max total pH = 7.6	Columbia River	2000	0	no data collected	Omitted 2000
Chlorinated Resin Acids 6 µg/L max. of mono Cl-DHA & di Cl-DHA	Columbia River	2000	0	no data collected	Omitted 2000
Chlorophyll - a < 50 mg/m ² av.	Columbia River	2000	0	no data collected	Omitted 2000

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	

Table 14 . Columbia River (From Birchbank to the International Border) Water Quality Objectives - 2000.

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
pH 6.5 - 8.5	0200559 at Waneta	Jan.10 - Dec.13	76	6.9 - 8.13	Objective met
		Nov.15, Dec.18, Dec.27	3	3.27 – 6.47	Objective not met
	0200558 New Trail Bridge	Jan.26 - Nov.15	18	7.64 - 8.19	Objective met
	E216137 Old Trail Bridge	Jan.26 - Nov.15	18	7.29 - 8.16	Objective met
Ammonia 30-day average 1.13 mg/L at 10°C and pH 8.0	0200559 at Waneta	Jan.24 - Dec.13	20	0.007 - 0.5 mg/L	
		Jan.26 - Feb.24, Oct.19 - Nov.15	2	av. = 0.010 - 0.018 mg/L	Objective met
	0200558 New Trail Bridge	Jan.26 - Nov.15	10	0.006 - 0.08 mg/L	
		Jan.26 - Feb.24, Oct.19 - Nov.15	2	av. = 0.017 - 0.056 mg/L	Objective met
	E216137 Old Trail Bridge	Jan.26 - Nov.15	10	< 0.005 - 0.029 mg/L	
		Jan.26 - Feb.24, Oct.19 - Nov.15	2	av. = 0.012 - 0.021 mg/L	Objective met
Dissolved Gas 110% max.	0200559 at Waneta	Jan.26 - Nov.15	10	101.6 - 104.9 %	Objective met
Fecal Coliform < 10 /100 mL 90th percentile (np)	0200559 at Waneta	Jan.6 – Dec.27	64	< 1 - 80 /100 mL	
		Feb.16 - Feb.28, Apr.11 - May.8, Oct.30 - Nov.8, Nov.14 - Dec.4	4	np = 2 - 7.2 CFU /100 mL	Objective met
		Jan.5 - Jan.26, Jan.31 - Feb.12, Mar.7 - Apr.3, May.16 - Jun.12, Jun.21 - Jul.17, Jul.24 - Aug.22, Aug.31 - Sep.27, Oct.2 - Oct.24	8	np = 18.2 - 61.6 CFU/100 mL	Objective not met
E. coli < 10 /100mL 90th percentile (np)	0200559 at Waneta	Jan.26 - Nov.15	11	1 - 10 CFU/100 mL	
		Jan.26 - Feb.17, Oct.19 - Nov.15	2	np = 6.2 - 7.6 CFU /100 mL	Objective met
Enterococcus sp. < 3 /100mL 90th percentile (np)	0200559 at Waneta	Jan.26 - Nov.15	11	< 1 - 4 CFU/100 mL	
		Jan.26 - Feb.17, Oct.19 - Nov.15	2	np = 2 - 3.6 CFU /100 mL	Objective met
Total As 0.005 mg/L av.	0200559 at Waneta	Jan.5 - Dec.27	73	0.0001 – 0.007 mg/L	
		Jan.5 - Jan.26, Jan.31 - Feb.16, Feb.17 - 28, Mar.6 - 27, Apr.3 - 24, May 1 - 23, Jun.1 - 21, Jun.26 - Jul.27, Aug.1 - 22, Aug.31 - Sep.20, Sep.27 - Oct.17, Oct.19 - Nov.1, Nov.7 - 20, Nov.27 - Dec.13	14	av. = 0.0002 – 0.00424 mg/L	Objective met
	E223892	Jan.26 - Nov.15	10	< 0.0001 - 0.0009 mg/L	
	D/S Stony Creek	Jan.26 - Feb.24, Oct.19 - Nov.15	2	av. = 0.0004 - 0.00018 mg/L	Objective met
	0200558	Jan.26 - Nov.15	10	<0. 0001 – 0.0007 mg/L	
	New Trail Bridge	Jan.26 - Feb.24, Oct.19 - Nov.15	2	av. = 0.0002 - 0.0003 mg/L	Objective met
E216137	Jan.26 - Nov.15	10	<0. 0001 – 0.0002 mg/L		
Old Trail Bridge	Jan.26 - Feb.24, Oct.19 - Nov.15	2	av. = 0.00014 - 0.00018 mg/L	Objective met	

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Cd 0.00005 mg/L av.	0200559 at Waneta	Jan.5 - Dec.27 Feb.16-24	73 1	< 0.00001 - 0.00048 mg/L 0.000038 mg/L	Objective met
		Jan.5 - 24, Jan.26-Feb.10, Feb.28 - Mar.21, Apr.3 - 24, May.1 - 23, Jun.1 - 21, Jun.26 - Jul.24, Aug.1 - 22, Aug.31 - Sep.20, Sep.27 - Oct.17, Oct.19 - Nov.1, Nov.7 - 20, Nov.27 - Dec.13	13	av. = 0.000051 - 0.000176 mg/L	Indefinite result (most < 0.001 mg/L)
	E223892	Jan.26 - Nov.15	10	< 0.00001 - 0.0001 mg/L	
	D/S Stony Creek	Jan.26 - Feb.24, Oct.19 - Nov.15	2	av. = 0.000024 - 0.000032 mg/L	Objective met
	0200558	Jan.26 - Nov.15	10	<0. 00001 – 0.00081 mg/L	
	New Trail Bridge	Jan.26 - Feb.24, Oct.19 - Nov.15	2	av. = 0.000062 - 0.00024 mg/L	Objective not met
	E216137	Jan.26 - Nov.15 Jan.26 - Feb.24	10 1	<0. 00001 – 0.00008 mg/L av. = 0.000024 mg/L	Objective met
	Old Trail Bridge	Oct.19 - Nov.15	1	av. = 0.000058 mg/L	Objective not met
Total Cr 0.001 mg/L av.	0200559 at Waneta	Jan.5 - Dec.27	63	<0. 0002 – 0.0006 mg/L	
		Jan.5 - 26, Jan.31-Feb.16, Feb.17-Mar.7, Mar.14 - Apr.11, Apr.18 - May16, May23 - Jun.21, Jun.26 - Jul.24, Aug.1 - 31, Sep.5 - Oct.2, Oct.11 - Oct.30, Nov.1 - 15, Nov.20 - Dec.13	12	av. = < 0.0002 – 0.00028 mg/L	Objective met
	E223892	Jan.26 - Nov.11	10	all < 0.0002 mg/L	
	D/S Stony Creek	Jan.26 - Feb.24, Oct.19 - Nov.15	2	av. = < 0.0002 mg/L	Objective met
	0200558	Jan.26 - Nov.15	10	all < 0.0002 mg/L	
	New Trail Bridge	Jan.26 - Feb.24, Oct.19 - Nov.15	2	av. = < 0.0002 mg/L	Objective met
	E216137	Jan.26 - Nov.15	10	< 0. 0002 – 0.0003 mg/L	
	Old Trail Bridge	Jan.26 - Feb.24, Oct.19 - Nov.15	2	av. = 0.00022 mg/L	Objective met
Total Cu 0.00717 mg/L max 0.002 mg/L av.	0200559 at Waneta	Jan.5 - Dec.27	73	<0. 0002 – 0.0022 mg/L	Max. obj. met
		Jan.5 - 24, Jan.26 - Feb.10, Feb.16 - 24, Feb.28 - Mar.21, Mar.27 - Apr.18, Apr.24 - May23, May.23 - Jun.12, Jun.21 - Jul.17, Jul.24 - Aug.15, Aug.22 - Sep.20, Sep.20 - Oct.11, Oct.17 - Oct.30, Nov.1 - 15, Nov.20 - Dec.13	14	av. = 0.00036 - 0.00092 mg/L	Av. obj. met
	E223892	Jan.26 - Nov.15	10	0.00026 - 0.0004 mg/L	Max. obj. met
	D/S Stony Creek	Jan.26 - Feb.24, Oct.19 - Nov.15	2	av. = 0.00033 - 0.00034 mg/L	Av. obj. met
	0200558	Jan.26 - Nov.15	10	0.00034 - 0.00176 mg/L	Max. obj. met
	New Trail Bridge	Jan.26 - Feb.24, Oct.19 - Nov.15	2	av. = 0.00043 - 0.00071mg/L	Av. obj. met
	E216137	Jan.26 - Nov.15	10	0.00026 - 0.00081 mg/L	
	Old Trail Bridge	Jan.26 - Feb.24, Oct.19 - Nov.15	2	av. = 0.00036 - 0.00047 mg/L	Objective met

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Pb 0.0379 mg/L max 0.0048 mg/L av.	0200559 at Waneta	Jan.5 - Dec.27	73	<0.0002 – 0.0022 mg/L	Max. obj. met
	E223892 D/S Stony Creek	Jan.5 - 24, Jan.26 - Feb.10, Feb.16 - 24, Feb.28 - Mar.21, Mar.27 - Apr.18, Apr.24 - May23, May.23 - Jun.12, Jun.21 - Jul.17, Jul.24 - Aug.15, Aug.22 - Sep.20, Sep.20 - Oct.11, Oct.17 - Oct.30, Nov.1 - 15, Nov.20 - Dec.13	14	av. = 0.00036 - 0.00092 mg/L	Av. obj. met
		Jan.26 - Nov.15	10	0.00001 - 0.00267 mg/L	Max. obj. met
	0200558 New Trail Bridge	Jan.26 - Feb.24, Oct.19 - Nov.15	2	av. = 0.00006 - 0.000584 mg/L	Av. obj. met
		Jan.26 - Nov.15	10	0.00002 - 0.02163 mg/L	Max. obj. met
	E216137 Old Trail Bridge	Jan.26 - Feb.24	1	av. = 0.00030 mg/L	Av. obj. met
Oct.19 - Nov.15		1	av. = 0.00506 mg/L	Av. obj. not met	
Total TI 0.0008 mg/L av.	0200559 at Waneta	Jan.26 - Nov.15	10	0.00008 - 0.00035 mg/L	Max. obj. met
		Jan.26 - Feb.24, Oct.19 - Nov.15	2	av. = 0.00018 - 0.00023 mg/L	Av. obj. met
	E223892 D/S Stony Creek	Jan.26 - Dec.13	20	< 0.000002 – 0.000087 mg/L	Av. obj. met
		Jan.26 - Feb.24, Oct.30 - Nov.27	2	0.0000164 - 0.0000436 mg/L	
	0200558 New Trail Bridge	Jan.26 - Nov.15	10	< 0.000002 - 0.000008 mg/L	Av. obj. met
		Jan.26 - Feb.24, Oct.19 - Nov.15	2	av. = 0.0000026 - 0.0000032 mg/L	
E216137 Old Trail Bridge	Jan.26 - Nov.15	10	< 0.000002 - 0.00026 mg/L	Av. obj. met	
	Jan.26 - Feb.24, Oct.19 - Nov.15	2	av. = 0.000025 - 0.000126 mg/L		
Total Zn 0.033 mg/L max 0.0075 mg/L av.	0200559 at Waneta	Jan.5 - Dec.27	69	<0.0002 – 0.017 mg/L	Max. obj. met
		Jan.10 - 31, Feb.7 - 22, Feb.24 - Mar.14, Mar.21 - Apr.18, Apr.24 - May.23, Jun.1 - 12, Jun.21 - Jul.17, Jul.24 - Aug.31, Sep.5 - 27, Oct.2 - 24, Oct.30 - Nov.8, Nov.14 - Dec.4, Dec.13 - 27	13	av. = 0.00136 - 0.00664 mg/L	Av. obj. met
	E223892 D/S Stony Creek	Jan.26 - Nov.15	10	< 0.0001 - 0.0068 mg/L	Max. obj. met
		Jan.26 - Feb.24, Oct.19 - Nov.15	2	av. = 0.00112 - 0.00326 mg/L	Av. obj. met
	0200558 New Trail Bridge	Jan.26 - Nov.15	9	0.0012 - 0.0119 mg/L	Max. obj. met
		Oct.19	1	0.0399 mg/L	Max. obj. not met
	E216137 Old Trail Bridge	Jan.26 - Feb.24	1	av. = 0.0047 mg/L	Av. obj. met
		Oct.19 - Nov.15	1	av. = 0.01278 mg/L	Av. obj. not met
Total As 5.7 mg/kg dry weight max in sediments	Columbia River	2000	0	no data collected	Omitted 2000

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Cd 0.6 mg/kg dry weight max in sediments	Columbia River	2000	0	no data collected	Omitted 2000
Total Cr 36.4 mg/kg dry weight max in sediments	Columbia River	2000	0	no data collected	Omitted 2000
Total Cu 35.1 mg/kg dry weight max in sediments	Columbia River	2000	0	no data collected	Omitted 2000
Total Pb 33.4 mg/kg dry weight max in sediments	Columbia River	2000	0	no data collected	Omitted 2000
Total Hg 0.16 mg/kg dry weight max in sediments	Columbia River	2000	0	no data collected	Omitted 2000
Total Zn 120 mg/kg dry weight max in sediments	Columbia River	2000	0	no data collected	Omitted 2000
Total As 471 µg/kg wet weight max in fish	Columbia River	2000	0	no data collected	Omitted 2000
Total Cd 900 µg/kg wet weight max in fish	Columbia River	2000	0	no data collected	Omitted 2000
Total Cr 940 µg/kg wet weight max in fish	Columbia River	2000	0	no data collected	Omitted 2000
Total Pb 160 µg/kg wet weight max in fish	Columbia River	2000	0	no data collected	Omitted 2000
Total Hg 100 µg/kg wet weight max in fish	Columbia River	2000	0	no data collected	Omitted 2000
Dioxins & Furans 0.25 ng/kg PCDD and PCDF TEQ max. in sediments (dry weight)	Columbia River	2000	0	no data collected	Omitted 2000
Dioxins & Furans 1.1 ng/kg	Columbia River	2000	0	no data collected	Omitted 2000

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
PCDD and PCDF TEQ max. in fish (wet weight)	Columbia River	2000	0	no data collected	Omitted 2000

Table 15. Fraser River (Kanaka Creek to the Mouth) Water Quality Objectives – 2000

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms < 200 CFU /100 mL geometric mean (gm) April - October	Main Stem North Arm Middle Arm Main Arm Sturgeon Banks Roberts Banks	2000	0	no data collected	Omitted 2000
Enterococci < 20 CFU /100 mL geometric mean (gm) April - October	Main Stem North Arm Middle Arm Main Arm Sturgeon Banks Roberts Banks	2000	0	no data collected	Omitted 2000
<i>Escherichia coli</i> < 77 CFU /100 mL geometric mean (gm) April - October	Main Stem North Arm Middle Arm Main Arm Sturgeon Banks Roberts Banks	2000	0	no data collected	Omitted 2000
<i>Pseudomonas aeruginosa</i> < 10 CFU /100 mL geometric mean (gm) April - October	Main Stem North Arm Middle Arm Main Arm Sturgeon Banks Roberts Banks	2000	0	no data collected	Omitted 2000
Suspended Solids max. increase: 10 mg/L or 10 %	North Arm Middle Arm Main Arm:	2000	0	no data collected	Omitted 2000
Total Cl ₂ Res. 0.002 mg/L max.	Main Arm	2000	0	no data collected	Omitted 2000
Ammonia-N 1.85 mg/L av 17.6 mg/L max. at pH = 7.2 temp = 10°C	Main Stem: E206965 Barnston Island	Jan. 21 - Dec.8	2	0.028 - 0.052 mg/L	Max objective met Av. not checked.
	E206966 Sapperton Channel	Dec.8	1	0.028 mg/L	Max objective met Av. not checked.
	North Arm: E206967 Belkin Slough	Dec.8	1	0.065 mg/L	Max objective met Av. not checked.

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Ammonia-N (continued)	E206968 McDonald Slough	Jan. 20 - Dec.9	2	0.062 - 0.115 mg/L	Max objective met Av. not checked.
	Main Arm: E206969 Annacis Island	Dec.8	1	0.108 mg/L	Max objective met Av. not checked.
	E206970 Ewen Slough	Jan. 20 - Dec.7	2	0.05 - 0.112 mg/L	Max objective met Av. not checked.
Dissolved Oxygen May-October: 5 mg/L inst. min. 30-d mean > 8.0 mg/L or 80% saturation (whichever is higher)	Main Stem Main Arm North Arm Middle Arm	2000	0	no data collected	Omitted 2000
November - April: 9 mg/L inst. min. 30-d mean > 11.0 mg/L					
Dissolved Oxygen 5 mg/L inst. min. 30-d mean > 8.0 mg/L or 80% saturation (whichever is higher)	Sturgeon Bank Roberts Bank	2000	0	no data collected	Omitted 2000
pH 6.5 - 8.5	Main Stem: E206965 Barnston Island	Jan. 21 - Dec.8	2	7.44 - 7.57	Objective met
	E206966 Sapperton Channel	Dec.8	1	7.75	Objective met
	North Arm: E206967 Belkin Slough	Dec.8	1	7.83	Objective met
	E206968 McDonald Slough	Jan. 20 - Dec.9	2	7.74 - 7.82	Objective met
	Main Arm: E206969 Annacis Island	Dec.8	1	7.82	Objective met
	E206970 Ewen Slough	Jan. 20 - Dec.7	2	7.69 - 7.78	Objective met

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Cr < 26 µg/g dry weight in sediment	Main Arm: E206969 Annacis Island	Dec.8	1	44.1 µg/g	Objective not met
	E206970 Ewen Slough	Dec. 7	1	50.6 µg/g	Objective not met
	Shelter Point Marina	Dec. 8	4	45.9 - 57.6 µg/g	Objective not met
	Deas Slough	Dec. 7	2	57.6 - 59.6 µg/g	Objective not met
Total Cu <0.004 mg/L av 0.006 mg/L max. at hardness > 35 or 20% increase	Main Stem: E206965 Barnston Island	Dec.8 Jan.21	1 1	<0.006 mg/L 0.008 mg/L	Objective met Objective not met Av. not checked
	E206966 Sapperton Channel	Dec.8	1	<0.006 mg/L	Objective met Av. not checked
	North Arm: E206967 Belkin Slough	Dec.8	1	<0.006 mg/L	Objective met Av. not checked
	E206968 McDonald Slough	Jan. 20 - Dec.9	2	<0.006 mg/L	Objective met Av. not checked
	Main Arm: E206969 Annacis Island	Dec.8	1	<0.006 mg/L	Objective met Av. not checked
	E206970 Ewen Slough	Jan. 20 - Dec.7	2	<0.006 mg/L	Objective met Av. not checked
	Total Pb < 0.003 mg/L av 0.010 mg/L max.	Main Stem: E206965 Barnston Island	Jan. 21 - Dec.8	2	<0.06 - 0.07 mg/L
E206966 Sapperton Channel		Dec.8	1	<0.06 mg/L	Objective met Av. not checked
North Arm: E206967 Belkin Slough		Dec.8	1	<0.06 mg/L	Objective met Av. not checked
E206968 McDonald Slough		Jan. 20 - Dec.9	2	<0.06 mg/L	Objective met Av. not checked
Main Arm: E206969 Annacis Island		Dec.8	1	<0.06 mg/L	Objective met Av. not checked
E206970 Ewen Slough		Jan. 20 - Dec.7	2	<0.06 mg/L	Objective met Av. not checked

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Mn < 0.030 mg/L max.	Main Stem: E206965 Barnston Island	Jan. 21 - Dec.8	2	0.015 - 0.022 mg/L	Objective met
	E206966 Sapperton Channel	Dec.8	1	0.016 mg/L	Objective met
	North Arm: E206967 Belkin Slough	Dec.8	1	0.017 mg/L	Objective met
	E206968 McDonald Slough	Jan. 20 Dec.9	1 1	0.046 mg/L 0.028 mg/L	Objective not met Objective met
	Main Arm: E206969 Annacis Island	Dec.8	1	0.016 mg/L	Objective met
	E206970 Ewen Slough	Jan. 20 Dec.7	1 1	0.032 mg/L 0.025 mg/L	Objective not met Objective met
	Total Zn < 0.050 mg/L av. 0.100 mg/L max.	Main Stem: E206965 Barnston Island	Jan. 21 - Dec.8	2	< 0.002 - 0.013 mg/L
E206966 Sapperton Channel		Dec.8	1	0.002 mg/L	Objective met Av. not checked
North Arm: E206967 Belkin Slough		Dec.8	1	0.002 mg/L	Objective met Av. not checked
E206968 McDonald Slough		Jan. 20 - Dec.9	2	both 0.013 mg/L	Objective met Av. not checked
Main Arm: E206969 Annacis Island		Dec.8	1	0.004 mg/L	Objective met Av. not checked
E206970 Ewen Slough		Jan. 20 - Dec.7	2	0.011 - 0.013 mg/L	Objective met Av. not checked
Chlorophenols 2,3,4,5-TTCP North and Middle Arms in water < 0.04 µg/L at pH < 7.1 <0.3 µg/L at pH > 7.1		Main Stem: E206965 Barnston Island	Jan. 21 - Dec.8	2	both < 0.005 µg/L
	E206966 Sapperton Channel	Dec.8	1	< 0.005 µg/L	Objective met
	North Arm: E206967 Belkin Slough	Dec.8	1	< 0.005 µg/L	Objective met
	E206968 McDonald Slough	Jan. 20 - Dec.9	2	both < 0.005 µg/L	Objective met

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Chlorophenols 2,3,4,6-TTCP North and Middle Arms in water < 0.02 µg/L at pH < 7.1 < 0.3 µg/L at pH > 7.1 < 0.25 µg/L at pH > 8.1	Main Stem: E206965 Barnston Island	Jan. 21 - Dec.8	2	both < 0.002 µg/L	Objective met
	E206966 Sapperton Channel	Dec.8	1	< 0.002 µg/L	Objective met
	North Arm: E206967 Belkin Slough	Dec.8	1	< 0.002 µg/L	Objective met
	E206968 McDonald Slough	Jan. 20 - Dec.9	2	both < 0.002 µg/L	Objective met
Chlorophenols PCP in water < 0.02 µg/L at pH < 6.9 < 0.1 µg/L at pH > 6.9, < 7.9	Main Stem: E206965 Barnston Island	Jan. 21 - Dec.8	2	both < 0.005 µg/L	Objective met
	E206966 Sapperton Channel	Dec.8	1	< 0.005 µg/L	Objective met
	North Arm: E206967 Belkin Slough	Dec.8	1	< 0.005 µg/L	Objective met
	E206968 McDonald Slough	Jan. 20 - Dec.9	2	both < 0.005 µg/L	Objective met
Chlorophenols (tri + tetra + penta - CP) in sediments 0.01 ug/g max. av of replicates (dry weight)	Main Stem: E206965 Barnston Island	Jan. 21 - Dec.8	2	both < 0.0012 mg/L	Objective met
	E206966 Sapperton Channel	Dec.8	1	< 0.0012 mg/L	Objective met
	North Arm: E206967 Belkin Slough	Dec.8	1	< 0.0012 mg/L	Objective met
	E206968 McDonald Slough	Jan. 20 - Dec.9	2	both < 0.0012 mg/L	Objective met
	Main Arm: E206969 Annacis Island	Dec.8	1	< 0.0012 mg/L	Objective met
	E206970 Ewen Slough	Jan. 20 - Dec.7	2	both < 0.0012 mg/L	Objective met
Chlorophenols (tri+ tetra+ penta) in fish 0.10 ug/g max. (wet weight)	Main Stem Main Arm North Arm	2000	0	no data collected	Omitted 2000

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
PCBs in sediments < 0.02 ug/g max. av of replicates (dry weight)	Main Stem: E206965 Barnston Island	Jan. 21 - Dec. 8	4	all < 0.04 µg/g	Indefinite result
	Sapperton Channel	Dec. 8	1	< 0.04 µg/g	Indefinite result
	North Arm: Belkin Slough	Dec. 8	1	< 0.04 µg/g	Indefinite result
	E206968 McDonald Slough	Dec. 9	4	all < 0.04 µg/g	Indefinite result
	Main Arm: Annacis Island	Dec. 8	1	< 0.04 µg/g	Indefinite result
	E206970 Ewen Slough	Dec. 7	1	< 0.04 µg/g	Indefinite result
PCBs in fish 0.1 ug/g max. (wet weight)	Main Stem Main Arm North Arm Middle Arm	2000	0	no data collected	Omitted 2000
Dioxins and Furans in sediments 2,3,7,8-T ₄ CDD TEQs < 0.25 pg TEQ/g sediment normalized to 1% organic carbon	Main Stem: E206965 Barnston Island	Jan. 21	1	0.048 pg TEQ/g	Objective met
	North Arm: E206968 McDonald Slough	Jan. 20	1	0.486 pg TEQ/g	Objective met
	Main Arm: E206970 Ewen Slough	Jan. 20	1	0.131 pg TEQ/g	Objective met
Dioxins and Furans in fish 2,3,7,8-T ₄ CDD TEQs < 50 pg TEQ/g wet weight in fish muscle or egg tissue	Main Stem North Arm Middle Arm Main Arm	2000	0	no data collected	Omitted 2000
PAHs acridine in sediment < 1 ug/g max. av of replicates (dry weight)	Main Stem North Arm Middle Arm Main Arm	2000	0	no data collected	Omitted 2000

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
PAHs acenaphthene in sediment < 0.15 ug/g max. av of replicates (dry weight)	Main Stem: E206965 Barnston Island	Jan. 21 - Dec. 8	4	< 0.01 - < 0.02 µg/g	Objective met
	Sapperton Channel	Dec. 8	1	< 0.02 µg/g	Objective met
	North Arm: Belkin Slough	Dec. 8	1	< 0.02 µg/g	Objective met
	E206968 McDonald Slough	Dec. 9	4	< 0.01 - < 0.02 µg/g	Objective met
	Middle Arm: Bridgepoint Marina	Dec. 9	4	< 0.02 - 0.02 µg/g	Objective met
	Gallion Marina	Dec. 9	4	0.04 - 0.07 µg/g	Objective met
	Main Arm: Annacis Island	Dec. 8	1	< 0.02 µg/g	Objective met
	Annieville Channel	Dec. 8	4	< 0.02 - 0.05 µg/g	Objective met
	Deas Slough	Dec. 7	2	< 0.02 - 0.04 µg/g	Objective met
	Ewen Slough	Jan. 20 - Dec. 7	4	< 0.01 - < 0.02 µg/g	Objective met
PAHs acenaphthylene in sediment < 0.66 ug/g max. av of replicates (dry weight) (September - April) <0.01 µg/g max. av of replicates (dry weight) (May to August)	Main Stem: E206965 Barnston Island	Jan. 21 - Dec. 8	4	< 0.01 - < 0.02 µg/g	Objective met
	Sapperton Channel	Dec. 8	1	< 0.02 µg/g	Objective met
	North Arm: Belkin Slough	Dec. 8	1	< 0.02 µg/g	Objective met
	E206968 McDonald Slough	Dec. 9	4	< 0.01 - < 0.02 µg/g	Objective met
	Middle Arm: Bridgepoint Marina	Dec. 9	4	all < 0.02 µg/g	Objective met
	Gallion Marina	Dec. 9	4	all < 0.02 µg/g	Objective met

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
PAHs acenaphthylene in sediment < 0.66 ug/g max. av of replicates (dry weight) (September - April) <0.01 µg/g max. av of replicates (dry weight) (May to August)	Main Arm: Annacis Island	Dec. 8	1	< 0.02 µg/g	Objective met
	Annieville Channel	Dec. 8	4	all < 0.02 µg/g	Objective met
	Deas Slough	Dec. 7	2	both < 0.02 µg/g	Objective met
	Ewen Slough	Jan. 20 - Dec. 7	4	< 0.01 - < 0.02 µg/g	Objective met
PAHs benzo(a)anthracene in sediment < 0.06 ug/g max. av of replicates (dry weight)	Main Stem: E206965 Barnston Island	Jan. 21 - Dec. 8	4	< 0.01 - < 0.02 µg/g	Objective met
	Sapperton Channel	Dec. 8	1	< 0.02 µg/g	Objective met
	North Arm: Belkin Slough	Dec. 8	1	< 0.02 µg/g	Objective met
	E206968 McDonald Slough	Dec. 9	4	< 0.01 - < 0.02 µg/g	Objective met
	Middle Arm: Bridgepoint Marina	Dec. 9	4	all < 0.02 µg/g	Objective met
	Gallion Marina	Dec. 9	4	all < 0.02 µg/g	Objective met
	Main Arm: Annacis Island	Dec. 8	1	< 0.02 µg/g	Objective met
	Annieville Channel	Dec. 8	4	all < 0.02 µg/g	Objective met
	Deas Slough	Dec. 7	2	both < 0.02 µg/g	Objective met
	Ewen Slough	Jan. 20 - Dec. 7	4	< 0.01 - < 0.02 µg/g	Objective met
PAHs benzo(a)pyrene in sediment < 0.06 ug/g max. av of replicates (dry weight)	Main Stem: E206965 Barnston Island	Jan. 21 - Dec. 8	4	< 0.01 - < 0.02 µg/g	Objective met
	Sapperton Channel	Dec. 8	1	0.02 µg/g	Objective met

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
PAHs benzo(a)pyrene in sediment < 0.06 ug/g max. av of replicates (dry weight)	North Arm: Belkin Slough	Dec. 8	1	< 0.02 µg/g	Objective met
	E206968 McDonald Slough	Dec. 9	4	< 0.02 - 0.03 µg/g	Objective met
	Middle Arm: Bridgepoint Marina	Dec. 9	4	0.02 - 0.04 µg/g	Objective met
	Gallion Marina	Dec. 9	4	< 0.02 - 0.03 µg/g	Objective met
	Main Arm: Annacis Island	Dec. 8	1	< 0.02 µg/g	Objective met
	Annieville Channel	Dec. 8	4	< 0.02 - 0.04 µg/g	Objective met
	Deas Slough	Dec. 7	2	both < 0.02 µg/g	Objective met
	Ewen Slough	Jan. 20 - Dec. 7	4	all < 0.02 µg/g	Objective met
PAHs benzo(a)pyrene in fish < 1 ug/kg max. av of replicates (wet weight)	Main Stem North Arm Middle Arm Main Arm	2000	0	no data collected	Omitted 2000
PAHs chrysene in sediment < 0.2 ug/g max. av of replicates (dry weight)	Main Stem: E206965 Barnston Island	Jan. 21 - Dec. 8	4	< 0.01 - < 0.02 µg/g	Objective met
	Sapperton Channel	Dec. 8	1	0.04 µg/g	Objective met
	North Arm: Belkin Slough	Dec. 8	1	< 0.02 µg/g	Objective met
	E206968 McDonald Slough	Dec. 9	4	0.03 - 0.04 µg/g	Objective met
	Middle Arm: Bridgepoint Marina	Dec. 9	4	0.05 - 0.07 µg/g	Objective met
	Gallion Marina	Dec. 9	4	0.04 - 0.09 µg/g	Objective met

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
PAHs chrysene in sediment (continued)	Main Arm: Annacis Island	Dec. 8	1	0.02 µg/g	Objective met
	Annieville Channel	Dec. 8	4	< 0.02 - 0.08 µg/g	Objective met
	Deas Slough	Dec. 7	2	both < 0.02 µg/g	Objective met
	Ewen Slough	Jan. 20 - Dec. 7	4	0.01 - 0.03 µg/g	Objective met
PAHs dibenzo(a,h)anthracene in sediment < 0.005 ug/g max. av of replicates (dry weight)	Main Stem: E206965 Barnston Island	Jan. 21 - Dec. 8	4	<0.01 - <0.02 µg/g	Indefinite result
	Sapperton Channel	Dec. 8	1	< 0.02 µg/g	Indefinite result
	North Arm: Belkin Slough	Dec. 8	1	< 0.02 µg/g	Indefinite result
	E206968 McDonald Slough	Dec. 9	4	< 0.01 - < 0.02 µg/g	Indefinite result
	Middle Arm: Bridgepoint Marina	Dec. 9 Dec. 9	3 1	all < 0.02 µg/g 0.02 µg/g	Indefinite result Objective not met
	Gallion Marina	Dec. 9	4	all < 0.02 µg/g	Indefinite result
	Main Arm: Annacis Island	Dec. 8	1	< 0.02 µg/g	Indefinite result
	Annieville Channel	Dec. 8	4	all < 0.02 µg/g	Indefinite result
	Deas Slough	Dec. 7	2	all < 0.02 µg/g	Indefinite result
	Ewen Slough	Jan. 20 - Dec. 7	4	< 0.01 - < 0.02 µg/g	Indefinite result
PAHs fluoranthene in sediment < 2 ug/g max. av of replicates (dry weight)	Main Stem: E206965 Barnston Island	Jan. 21 - Dec. 8	4	<0.01 - <0.02 µg/g	Objective met
	Sapperton Channel	Dec. 8	1	0.1 µg/g	Objective met

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
PAHs fluoranthene in sediment (continued)	North Arm: Belkin Slough	Dec. 8	1	0.03 µg/g	Objective met
	E206968 McDonald Slough	Dec. 9	4	0.05 - 0.16 µg/g	Objective met
	Middle Arm: Bridgepoint Marina	Dec. 9	3	0.13 - 0.21 µg/g	Objective met
	Gallion Marina	Dec. 9	4	0.21 - 0.38 µg/g	Objective met
	Main Arm: Annacis Island	Dec. 8	1	0.05 µg/g	Objective met
	Annieville Channel	Dec. 8	4	0.05 - 0.47 µg/g	Objective met
	Deas Slough	Dec. 7	2	0.04 - 0.14 µg/g	Objective met
	Ewen Slough	Jan. 20 - Dec. 7	4	< 0.01 - 0.06 µg/g	Objective met
PAHs fluorene in sediment < 0.2 ug/g max. av of replicates (dry weight)	Main Stem: E206965 Barnston Island	Jan. 21 - Dec. 8	4	< 0.01 - < 0.02 µg/g	Objective met
	Sapperton Channel	Dec. 8	1	< 0.02 µg/g	Objective met
	North Arm: Belkin Slough	Dec. 8	1	< 0.02 µg/g	Objective met
	E206968 McDonald Slough	Dec. 9	4	< 0.01 - 0.02 µg/g	Objective met
	Middle Arm: Bridgepoint Marina	Dec. 9	4	0.02 - 0.03 µg/g	Objective met
	Gallion Marina	Dec. 9	4	0.05 - 0.08 µg/g	Objective met
	Main Arm: Annacis Island	Dec. 8	1	< 0.02 µg/g	Objective met
	Annieville Channel	Dec. 8	4	< 0.02 - 0.09 µg/g	Objective met

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION	
	SITE	DATE	n	VALUE		
PAHs fluorene in sediment (continued)	Deas Slough	Dec. 7	2	both < 0.02 µg/g	Objective met	
	Ewen Slough	Jan. 20 - Dec. 7	4	< 0.01 - 0.04 µg/g	Objective met	
PAHs naphthalene in sediment < 0.01 ug/g max. av of replicates (dry weight)	Main Stem: E206965 Barnston Island	Jan. 21 Dec. 8	3 1	<0.01 - 0.01 µg/g <0.02	Objective met Indefinite result	
	Sapperton Channel	Dec. 8	1	< 0.02 µg/g	Indefinite result	
	North Arm: Belkin Slough	Dec. 8	1	<0.02 µg/g	Indefinite result	
	E206968 McDonald Slough	Dec. 9	4	0.02 - 0.05 µg/g	Objective not met	
	Middle Arm: Bridgepoint Marina	Dec. 9	4	0.04 - 0.05 µg/g	Objective not met	
	Gallion Marina	Dec. 9	4	0.07 - 0.13 µg/g	Objective not met	
	Main Arm: Annacis Island	Dec. 8	1	< 0.02 µg/g	Indefinite result	
	Annieville Channel	Dec. 8 Dec. 8	3 1	all < 0.02 µg/g 0.02 µg/g	Indefinite result Objective not met	
	Deas Slough	Dec. 7	2	both < 0.02 µg/g	Indefinite result	
	Ewen Slough	Jan. 20 Jan. 20 Dec. 7	2 1 1	0.01 µg/g 0.02 µg/g < 0.02 µg/g	Objective met Objective not met Indefinite result	
	PAHs phenanthrene in sediment < 0.0867 ug/g max. av of replicates (dry weight) (September - April) <0.04 µg/g max. av of replicates (dry weight) (May to August)	Main Stem: E206965 Barnston Island	Jan. 21 - Dec. 8	4	< 0.01 - 0.02 µg/g	Objective met
		Sapperton Channel	Dec. 8	1	0.08 µg/g	Objective met
North Arm: Belkin Slough		Dec. 8	1	0.02 µg/g	Objective met	
E206968 McDonald Slough		Dec. 9	4	0.02 - 0.06 µg/g	Objective met	

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
PAHs phenanthrene in sediment (continued)	Middle Arm: Bridgepoint Marina	Dec. 9	4	0.09 - 0.13 µg/g	Objective not met
	Gallion Marina	Dec. 9	4	0.13 - 0.26 µg/g	Objective not met
	Main Arm: Annacis Island	Dec. 8	1	0.04 µg/g	Objective met
	Annieville Channel	Dec. 8	2	0.03 - 0.07 µg/g	Objective met
		Dec. 8	2	0.18 - 0.37 µg/g	Objective not met
	Deas Slough	Dec. 7	1	0.04 µg/g	Objective met
		Dec. 7	1	0.27	Objective not met
Ewen Slough	Jan. 20 - Dec. 7	4	0.03 - 0.04 µg/g	Objective met	

Table 16. Burrard Inlet Water Quality Objectives – 2000.

VARIABLE & OBJECTIVE	MEASUREMENT			CONCLUSION	
	SITE	DATE	n		VALUE
Fecal Coliforms < 200 /100 mL geometric mean (gm) May - Oct	Outer Burrard Inlet 1st to 2nd Narrows 2nd Narrows to Roche Pt. Port Moody Arm Indian Arm False Creek	2000	0	no data collected	Omitted 2000
Enterococci <200 /100 mL geometric mean (gm) May - Oct	Outer Burrard Inlet 1st to 2nd Narrows 2nd Narrows to Roche Pt. Port Moody Arm Indian Arm False Creek	2000	0	no data collected	Omitted 2000
Suspended Solids 10 mg/L max. increase	Port Moody Arm 2nd Narrows-Roche Pt. 1st-2nd Narrows Outer Burrard False Creek	2000	0	no data collected	Omitted 2000
Turbidity 5 NTU max. increase geometric mean	Port Moody Arm 2nd Narrows-Roche Pt. 1st-2nd Narrows Outer Burrard False Creek	2000	0	no data collected	Omitted 2000
<i>Cl₂-Produced Oxidants</i> 3 ug/L av	Port Moody Arm 2nd Narrows-Roche Pt.	2000	0	no data collected	Omitted 2000
Ammonia-N <1.0 mg/L av 2.5 mg/L max.	1st-2nd Narrows E207813 Coal Harbour	Dec. 12	1	0.009 mg/L	Max objective met Av. not checked.
	E207818 Clarke Drive	Dec. 12	1	0.005 mg/L	Max objective met Av. not checked.
	E207816 Vancouver Wharves	Dec. 12	1	0.011 mg/L	Max objective met Av. not checked.
	False Creek: E207814 False Creek East End	Dec. 12	1	0.05 mg/L	Max objective met Av. not checked.
	2nd Narrows - Roche Pt.: E207821 Second Narrows Chevron	Dec. 10	1	0.006 mg/L	Max objective met Av. not checked.
	Port Moody: E207823 Port Moody IOCO	Dec. 10	1	0.049 mg/L	Max objective met Av. not checked.

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Dissolved Oxygen 6.5 mg/L min.	Indian Arm Port Moody Arm 2nd Narrows-Roche Pt. 1st-2nd Narrows Outer Burrard False Creek	2000	0	no data collected	Omitted 2000
WAD - CN 0.001 mg/L max	Port Moody Arm	2000	0	no data collected	Omitted 2000
H ₂ S 0.002 mg/L max	Port Moody Arm 1st-2nd Narrows	2000	0	no data collected	Omitted 2000
pH 6.5 - 8.5	2nd Narrows-Roche Pt.	2000	0	no data collected	Omitted 2000
Total As 0.010 mg/L max	1st-2nd Narrows E207813 Coal Harbour	Dec. 12	1	< 0.06 mg/L	Objective met
	E207818 Clarke Drive	Dec. 12	1	< 0.06 mg/L	Objective met
	E207816 Vancouver Wharves	Dec. 12	1	< 0.06 mg/L	Objective met
	False Creek: E207814 False Creek East End	Dec. 12	1	< 0.06 mg/L	Objective met
	2nd Narrows - Roche Pt.: E207821 Second Narrows Chevron	Dec. 10	1	< 0.06 mg/L	Objective met
	Port Moody: E207823 Port Moody IOCO	Dec. 10	1	< 0.06 mg/L	Objective met
Total As <20 ug/g max. in sediment (long term)	Outer Burrard: Vancouver Yacht Club in English Bay	Dec. 9	4	< 8 - 13 µg/g	Objective met
	1st-2nd Narrows E207813 Coal Harbour	Dec. 12	5	< 8 - 16 µg/g	Objective met
	Mosquito Creek	Dec. 12	4	< 8 - 9 µg/g	Objective met
	E207818 Clarke Drive	Dec. 12	1	11 µg/L	Objective met
	E207816 Vancouver Wharves	Dec. 12	1	11 µg/L	Objective met
	False Creek: E207814 False Creek East End	Dec. 12	2	< 8 - 14 µg/g	Objective met

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total As in sediment (continued)	Granville Island in West False Creek	Dec. 9	3	15 - 19 µg/g	Objective met
		Dec. 9	1	23 µg/g	Objective not met
	2nd Narrows - Roche Pt.: E207821 Second Narrows Chevron	Dec. 10	1	< 8 µg/g	Objective met
	Port Moody: E207823 Port Moody IOCO	Dec. 10	1	14 µg/g	Objective met
	Port Moody Reed Point	Dec. 10	4	14 - 16 µg/g	Objective met
Total Ba 0.5 mg/L max.	2nd Narrows - Roche Pt.: E207821 Second Narrows Chevron	Dec. 10	1	0.008 mg/L	Objective met
Total Cd <0.009 mg/L av 0.043 mg/L max. in water	1st-2nd Narrows E207813 Coal Harbour	Dec. 12	1	<0.006 mg/L	Max objective met Av. not checked.
		Dec. 12	1	<0.006 mg/L	Max objective met Av. not checked.
	E207816 Vancouver Wharves	Dec. 12	1	<0.006 mg/L	Max objective met Av. not checked.
	False Creek: E207814 False Creek East End	Dec. 12	1	<0.006 mg/L	Max objective met Av. not checked.
	2nd Narrows - Roche Pt.: E207821 Second Narrows Chevron	Dec. 10	1	<0.006 mg/L	Max objective met Av. not checked.
	Port Moody: E207823 Port Moody IOCO	Dec. 10	1	<0.006 mg/L	Max objective met Av. not checked.
	Indian Arm: 0300080 Cable Crossing	Dec. 10	1	<0.006 mg/L	Max objective met Av. not checked.
	Total Cd <1.0 ug/g max. in sediment (long term)	Outer Burrard: Vancouver Yacht Club in English Bay	Dec. 9	3	< 0.8 µg/g
Dec. 9			1	1.1 µg/g	Objective not met
1st-2nd Narrows E207813 Coal Harbour		Dec. 12	1	< 0.8 µg/g	Objective met
		Dec. 12	4	1.3 - 1.6 µg/g	Objective not met
Mosquito Creek		Dec. 12 Dec. 12	1 3	< 0.8 µg/g 1.2 - 2.1 µg/g	Objective met Objective not met
	E207818 Clarke Drive	Dec. 12	1	1.1 µg/L	Objective not met

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Cd in sediment (continued)	E207816 Vancouver Wharves	Dec. 12	1	2.5 µg/L	Objective not met
	False Creek: E207814	Dec. 12	1	< 0.8 µg/g	Objective met
	False Creek East End	Dec. 12	1	1.8	Objective not met
	Granville Island in West False Creek	Dec. 9 Dec. 9	2 2	both 0.9 µg/g 1.1 - 2.1 µg/g	Objective met Objective not met
	2nd Narrows - Roche Pt.: E207821	Dec. 10	1	< 0.8 µg/g	Objective met
	Second Narrows Chevron				
Port Moody: E207823 Port Moody IOCO		Dec. 10	1	2.3 µg/g	Objective not met
	Port Moody Reed Point	Dec. 10 Dec. 10	1 3	< 0.8 µg/g 1.1 - 1.9 µg/g	Objective met Objective not met
Total Cr <0.050 mg/L max. in water	False Creek: E207814	Dec. 12	1	< 0.006 mg/L	Objective met
	False Creek East End				
	2nd Narrows - Roche Pt.: E207821	Dec. 10	1	< 0.006 mg/L	Objective met
Second Narrows Chevron					
Port Moody: E207823 Port Moody IOCO		Dec. 10	1	0.009 mg/L	Objective met
Total Cr < 60 ug/g max. in sediment (long term)	Outer Burrard: Vancouver Yacht Club in English Bay	Dec. 9	4	53.1 - 56.6 µg/g	Objective met
	1st-2nd Narrows E207813	Dec. 12	5	28.3 - 51.4 µg/g	Objective met
	Coal Harbour				
	Mosquito Creek	Dec. 12	4	31.7 - 42.6 µg/g	Objective met
	E207818 Clarke Drive	Dec. 12	1	24.0 µg/L	Objective met
	E207816 Vancouver Wharves	Dec. 12	1	38.0 µg/L	Objective met
	False Creek: E207814	Dec. 12	2	32.7 - 59.5 µg/g	Objective met
False Creek East End					
Granville Island in West False Creek		Dec. 9	1	48.9 µg/g	Objective met
		Dec. 9	3	60.5 - 68.3 µg/g	Objective not met

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Cr in sediment (continued)	2nd Narrows - Roche Pt.: E207821 Second Narrows Chevron	Dec. 10	1	31 µg/g	Objective met
	Port Moody: E207823 Port Moody IOCO	Dec. 10	1	60.5 µg/g	Objective not met
	Port Moody Reed Point	Dec. 10 Dec. 10	2 2	53.9 - 59.0 µg/g 60.8 - 68.8 µg/g	Objective met Objective not met
Total Cu <0.002 mg/L av 0.003 mg/L max. in water	Outer Burrard: E207812 Locarno Park	Dec. 9	1	<0.006 mg/L	Indefinite result Av. not checked.
	1st-2nd Narrows E207813 Coal Harbour	Dec. 12	1	<0.006 mg/L	Indefinite result Av. not checked.
	E207818 Clarke Drive	Dec. 12	1	<0.006 mg/L	Indefinite result Av. not checked.
	E207816 Vancouver Wharves	Dec. 12	1	<0.006 mg/L	Indefinite result Av. not checked.
	False Creek: E207814 False Creek East End	Dec. 12	1	<0.006 mg/L	Indefinite result Av. not checked.
	2nd Narrows - Roche Pt.: E207821 Second Narrows Chevron	Dec. 10	1	<0.006 mg/L	Indefinite result Av. not checked.
	Port Moody: E207823 Port Moody IOCO	Dec. 10	1	<0.006 mg/L	Indefinite result Av. not checked.
	Indian Arm: 0300080 Cable Crossing	Dec. 10	1	<0.006 mg/L	Indefinite result Av. not checked.
Total Cu < 100 ug/g max. in sediment (long term)	Outer Burrard: Vancouver Yacht Club in English Bay	Dec. 9	4	61.3 - 79.3 µg/g	Objective met
	1st-2nd Narrows E207813 Coal Harbour	Dec. 12 Dec. 12	1 4	37.7 µg/g 108 - 235 µg/g	Objective met Objective not met
	Mosquito Creek	Dec. 12 Dec. 12	1 3	55.8 µg/g 130 - 633 µg/g	Objective met Objective not met
	E207818 Clarke Drive	Dec. 12	1	199 µg/L	Objective not met
	E207816 Vancouver Wharves	Dec. 12	1	985 µg/L	Objective not met

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Cu in sediment (continued)	False Creek: E207814	Dec. 12	1	29.6 µg/g	Objective met
	False Creek East End	Dec. 12	1	134 µg/g	Objective not met
	Granville Island in West False Creek	Dec. 9	1	91.5 µg/g	Objective met
		Dec. 9	3	128 - 201 µg/g	Objective not met
	2nd Narrows - Roche Pt.: E207821	Dec. 10	1	56 µg/g	Objective met
	Second Narrows Chevron				
Port Moody: E207823	Dec. 10	1	132.9 µg/g	Objective not met	
Port Moody IOCO					
Port Moody Reed Point	Dec. 10	4	114 - 140 µg/g	Objective not met	
Total Fe 0.3 mg/L max. in water	Outer Burrard: E207812	Dec. 9	1	0.185 mg/L	Objective met
	Locarno Park				
	1st-2nd Narrows E207813	Dec. 12	1	0.042 mg/L	Objective met
	Coal Harbour				
	E207818 Clarke Drive	Dec. 12	1	0.110 mg/L	Objective met
	E207816 Vancouver Wharves	Dec. 12	1	0.120 mg/L	Objective met
	False Creek: E207814	Dec. 12	1	0.107 mg/L	Objective met
	False Creek East End				
Port Moody: E207823	Dec. 10	1	0.060 mg/L	Objective met	
Port Moody IOCO					
Indian Arm: 0300080	Dec. 10	1	0.019 mg/L	Objective met	
Cable Crossing					
Total Pb < 0.002 mg/L av. 0.140 mg/L max. in water	Outer Burrard: E207812	Dec. 9	1	<0.06 mg/L	Objective met
	Locarno Park				Av. not checked
	1st-2nd Narrows E207813	Dec. 12	1	<0.06 mg/L	Objective met
	Coal Harbour				Av. not checked
	E207818 Clarke Drive	Dec. 12	1	<0.06 mg/L	Objective met
				Av. not checked	
E207816 Vancouver Wharves	Dec. 12	1	<0.06 mg/L	Objective met	
				Av. not checked	

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Pb (continued)	False Creek: E207814 False Creek East End	Dec. 12	1	<0.06 mg/L	Objective met Av. not checked
	2nd Narrows - Roche Pt.: E207821 Second Narrows Chevron	Dec. 10	1	<0.06 mg/L	Objective met Av. not checked
	Port Moody: E207823 Port Moody IOCO	Dec. 10	1	<0.06 mg/L	Objective met Av. not checked
	Indian Arm: 0300080 Cable Crossing	Dec. 10	1	<0.06 mg/L	Objective met Av. not checked
Total Pb 0.8 µg/g max. (wet weight) in fish	Indian Arm Port Moody Arm 2nd Narrows-Roche Pt. 1st-2nd Narrows Outer Burrard False Creek	2000	0	no data collected	Omitted 2000
Total Pb < 30 µg/g max. in sediment (long term)	Outer Burrard: Vancouver Yacht Club in English Bay	Dec. 9	4	44 - 58 µg/g	Objective not met
	1st-2nd Narrows E207813 Coal Harbour	Dec. 12	5	46 - 136 µg/g	Objective not met
	Mosquito Creek	Dec. 12	4	31 - 168 µg/g	Objective not met
	E207818 Clarke Drive	Dec. 12	1	168 µg/L	Objective not met
	E207816 Vancouver Wharves	Dec. 12	1	126 µg/L	Objective not met
	False Creek: E207814 False Creek East End	Dec. 12 Dec. 12	1 1	24 µg/g 129 µg/g	Objective met Objective not met
	Granville Island in West False Creek	Dec. 9	4	93 - 269 µg/g	Objective not met
	2nd Narrows - Roche Pt.: E207821 Second Narrows Chevron	Dec. 10	1	101 µg/g	Objective not met
	Port Moody: E207823 Port Moody IOCO	Dec. 10	1	85 µg/g	Objective not met
	Port Moody Reed Point	Dec. 10	4	82 - 110 µg/g	Objective not met

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Hg 0.02 µg/L av. 2.0 µg/L max. in water	2nd Narrows-Roche Pt. 1st-2nd Narrows Outer Burrard False Creek	2000	0	no data collected	Omitted 2000
Total Hg 0.5 µg/g max. wet weight in fish	2nd Narrows-Roche Pt. 1st-2nd Narrows Outer Burrard False Creek	2000	0	no data collected	Omitted 2000
Total Hg 0.15 µg/g max. dry weight in sediment	1st-2nd Narrows E207813 Coal Harbour	Dec. 12	1	0.453 µg/g	Objective not met
	E207818 Clarke Drive	Dec. 12	1	1.76 µg/L	Objective not met
	E207816 Vancouver Wharves	Dec. 12	1	0.181 µg/L	Objective not met
	False Creek: E207814 False Creek East End	Dec. 12 Dec. 12	1 1	0.051 µg/g 0.412 µg/g	Objective met Objective not met
	2nd Narrows - Roche Pt.: E207821 Second Narrows Chevron	Dec. 10	1	0.650 µg/g	Objective not met
	Port Moody: E207823 Port Moody IOCO	Dec. 10	1	0.219 µg/g	Objective not met
	Total Ni < 0.008 mg/L av. 0.075 mg/L max. in water	1st-2nd Narrows E207813 Coal Harbour	Dec. 12	1	<0.02 mg/L
E207818 Clarke Drive		Dec. 12	1	<0.02 mg/L	Objective met Av. not checked
E207816 Vancouver Wharves		Dec. 12	1	<0.02 mg/L	Objective met Av. not checked
False Creek: E207814 False Creek East End		Dec. 12	1	<0.02 mg/L	Objective met Av. not checked
2nd Narrows - Roche Pt.: E207821 Second Narrows Chevron		Dec. 10	1	<0.02 mg/L	Objective met Av. not checked
Total Ni < 45 ug/g max. in sediment		Outer Burrard: Vancouver Yacht Club in English Bay	Dec. 9	4	50 - 52 µg/g
	1st-2nd Narrows E207813 Coal Harbour	Dec. 12	5	27 - 43 µg/g	Objective met

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Ni in sediment (continued)	Mosquito Creek	Dec. 12	4	29 - 40 µg/g	Objective met
	E207818 Clarke Drive	Dec. 12	1	30 µg/L	Objective met
	E207816 Vancouver Wharves	Dec. 12	1	44 µg/L	Objective met
	False Creek: E207814 False Creek East End	Dec. 12	2	35 - 43 µg/g	Objective met
	Granville Island in West False Creek	Dec. 9 Dec. 9	1 3	41 µg/g 49 - 52 µg/g	Objective met Objective not met
	2nd Narrows - Roche Pt.: E207821 Second Narrows Chevron	Dec. 10	1	23 µg/g	Objective met
	Port Moody: E207823 Port Moody IOCO	Dec. 10	1	38 µg/g	Objective met
	Port Moody Reed Point	Dec. 10 Dec. 10	3 1	33 - 38 µg/g 47 µg/g	Objective met Objective not met
Total Zn < 0.086 mg/L av. 0.095 mg/L max. in water	Outer Burrard: E207812 Locarno Park	Dec. 9	1	0.043 mg/L	Objective met Av. not checked
	1st-2nd Narrows E207813 Coal Harbour	Dec. 12	1	0.009 mg/L	Objective met Av. not checked
	E207818 Clarke Drive	Dec. 12	1	0.005 mg/L	Objective met Av. not checked
	E207816 Vancouver Wharves	Dec. 12	1	0.011 mg/L	Objective met Av. not checked
	False Creek: E207814 False Creek East End	Dec. 12	1	0.05 mg/L	Objective met Av. not checked
	2nd Narrows - Roche Pt.: E207821 Second Narrows Chevron	Dec. 10	1	0.006 mg/L	Objective met Av. not checked
	Port Moody: E207823 Port Moody IOCO	Dec. 10	1	0.049 mg/L	Objective met Av. not checked
	Indian Arm: 0300080 Cable Crossing	Dec. 10	1	< 0.005 mg/L	Objective met Av. not checked

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Zn < 150 µg/g max. in sediment (long-term)	Outer Burrard: Vancouver Yacht Club in English Bay	Dec. 9	4	130 - 149 µg/g	Objective met
	1st-2nd Narrows E207813 Coal Harbour	Dec. 12	1	82.8 µg/g	Objective met
		Dec. 12	4	152 - 237 µg/g	Objective not met
	Mosquito Creek	Dec. 12	1	103 µg/g	Objective met
		Dec. 12	3	175 - 360 µg/g	Objective not met
	E207818 Clarke Drive	Dec. 12	1	268 µg/L	Objective not met
	E207816 Vancouver Wharves	Dec. 12	1	575 µg/L	Objective not met
	False Creek: E207814 False Creek East End	Dec. 12	1	73.7 µg/g	Objective met
		Dec. 12	1	332 µg/g	Objective not met
	Granville Island in West False Creek	Dec. 9	4	183 - 466 µg/g	Objective not met
	2nd Narrows - Roche Pt.: E207821 Second Narrows Chevron	Dec. 10	1	120 µg/g	Objective met
Port Moody: E207823 Port Moody IOCO	Dec. 10	1	204 µg/g	Objective not met	
Port Moody Reed Point	Dec. 10	4	186 - 242 µg/g	Objective not met	
Chlorophenols (tri + tetra + penta - CP) 0.2 µg/L max. in water	1st-2nd Narrows E207813 Coal Harbour	Dec. 12	1	<0.012 mg/L	Objective met
	E207818 Clarke Drive	Dec. 12	1	<0.012 mg/L	Objective met
	E207816 Vancouver Wharves	Dec. 12	1	<0.012 mg/L	Objective met
Chlorophenols (tri + tetra + penta - CP) in sediments 0.01 µg/g max. av of replicates (dry weight)	1st-2nd Narrows E207813 Coal Harbour	Dec. 12	1	< 0.0012 µg/g	Objective met
	E207818 Clarke Drive	Dec. 12	1	< 0.0016 µg/L	Objective met
	E207816 Vancouver Wharves	Dec. 12	1	< 0.0018 µg/L	Objective met

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Chlorophenols (tri+ tetra+ penta) in fish 0.10 ug/g max. (wet weight)	1st to 2nd Narrows	2000	0	no data collected	Omitted 2000
PCBs in sediments < 0.03 ug/g max. (dry weight)	1st-2nd Narrows E207813 Coal Harbour	Dec. 12	1	0.101 µg/g	Objective not met
	E207818 Clarke Drive	Dec. 12	1	0.041 µg/L	Objective not met
	E207816 Vancouver Wharves	Dec. 12	1	< 0.06 µg/L	Indefinite result
	False Creek: E207814	Dec. 12	1	< 0.045 µg/g	Indefinite result
	False Creek East End	Dec. 12	1	0.068 µg/g	Objective not met
	2nd Narrows - Roche Pt.: E207821	Dec. 10	1	< 0.04 µg/g	Indefinite result
	Second Narrows Chevron				
Port Moody: E207823 Port Moody IOCO	Dec. 10	1	0.044 µg/g	Objective not met	
PCBs in fish 0.1 ug/g max. (wet weight)	Port Moody Arm 2nd Narrows-Roche Pt. 1st-2nd Narrows Outer Burrard False Creek	2000	0	no data collected	Omitted 2000
Tributyl tin in sediment 0.03 ug/g max. (dry weight)	Port Moody Arm 2nd Narrows-Roche Pt. 1st-2nd Narrows Outer Burrard False Creek	2000	0	no data collected	Omitted 2000
Tributyl tin in fish 0.5 ug/g max. (wet weight)	Port Moody Arm 2nd Narrows-Roche Pt. 1st-2nd Narrows Outer Burrard False Creek	2000	0	no data collected	Omitted 2000
Phenols 1 µg/L max. in water	Port Moody Arm 2nd Narrows-Roche Pt.	2000	0	no data collected	Omitted 2000
Styrene 0.05 mg/L max. in water	Port Moody Arm	2000	0	no data collected	Omitted 2000

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
PAHs acenaphthene in sediment < 0.05 ug/g max. (dry weight) (long-term)	Outer Burrard: Vancouver Yacht Club in English Bay	Dec. 9	4	0.03 - 0.05 µg/g	Objective met
	1st-2nd Narrows E207813 Coal Harbour	Dec. 12	4	0.02 – 0.04 µg/g	Objective met
	Mosquito Creek	Dec. 12	4	0.02 – 0.05 µg/g	Objective met
	E207818 Clarke Drive	Dec. 12	1	< 0.04 µg/L	Objective met
	E207816 Vancouver Wharves	Dec. 12	1	0.12 µg/L	Objective not met
	False Creek: E207814 False Creek East End	Dec. 12 Dec. 12	1 1	0.04 µg/g 0.06 µg/g	Objective met Objective not met
	Granville Island in West False Creek	Dec. 9 Dec. 9	1 3	0.04 µg/g 0.06 – 0.11 µg/g	Objective met Objective not met
	2nd Narrows - Roche Pt.: E207821 Second Narrows Chevron	Dec. 10	1	< 0.02 µg/g	Objective met
	Port Moody: E207823 Port Moody IOCO	Dec. 10	1	0.04 µg/g	Objective met
	Port Moody Reed Point	Dec. 10 Dec. 10	3 1	0.02 – 0.05 µg/g 0.06 µg/g	Objective met Objective not met
	PAHs acenaphthylene in sediment < 0.06 ug/g max. (dry weight) (long-term)	Outer Burrard: Vancouver Yacht Club in English Bay	Dec. 9	4	0.03 - 0.05 µg/g
1st-2nd Narrows E207813 Coal Harbour		Dec. 12	5	0.02 - 0.05 µg/g	Objective met
Mosquito Creek		Dec. 12	4	0.02 - 0.05 µg/g	Objective met
E207818 Clarke Drive		Dec. 12	1	< 0.04 µg/L	Objective met
E207816 Vancouver Wharves		Dec. 12	1	0.02 µg/L	Objective met
False Creek: E207814 False Creek East End		Dec. 12	2	0.06 - 0.12 µg/g	Objective not met

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
PAHs acenaphthylene in sediment (continued)	Granville Island in West False Creek	Dec. 9	1	0.04 µg/g	Objective met
		Dec. 9	3	0.09 - 0.17 µg/g	Objective not met
	2nd Narrows - Roche Pt.: E207821 Second Narrows Chevron	Dec. 10	1	< 0.02 µg/g	Objective met
	Port Moody: E207823 Port Moody IOCO	Dec. 10	1	0.05 µg/g	Objective met
PAHs anthracene in sediment < 0.1 ug/g max. (dry weight) (long-term)	Outer Burrard: Vancouver Yacht Club in English Bay	Dec. 9	4	0.15 - 0.38 µg/g	Objective not met
		Dec. 12	3	0.05 - 0.09 µg/g	Objective met
	1st-2nd Narrows E207813 Coal Harbour	Dec. 12	2	0.16 - 0.21 µg/g	Objective not met
		Dec. 12	3	0.03 - 0.10 µg/g	Objective met
	Mosquito Creek	Dec. 12	1	0.11 µg/g	Objective not met
		Dec. 12	1	0.04 µg/L	Objective met
	E207818 Clarke Drive	Dec. 12	1	0.04 µg/L	Objective met
	E207816 Vancouver Wharves	Dec. 12	1	0.25 µg/L	Objective not met
	False Creek: E207814 False Creek East End	Dec. 12	1	0.06 µg/g	Objective met
		Dec. 12	1	0.24 µg/g	Objective not met
	Granville Island in West False Creek	Dec. 9	1	0.09 µg/g	Objective met
		Dec. 9	3	0.17 - 0.21 µg/g	Objective not met
	2nd Narrows - Roche Pt.: E207821 Second Narrows Chevron	Dec. 10	1	< 0.02 µg/g	Objective met
Port Moody: E207823 Port Moody IOCO	Dec. 10	1	0.05 µg/g	Objective met	
Port Moody Reed Point	Dec. 10	1	0.08 µg/g	Objective met	
	Dec. 10	3	0.11 - 0.22 µg/g	Objective not met	
PAHs benzo(a)anthracene in sediment < 0.13 ug/g max. (dry weight) (long-term)	Outer Burrard: Vancouver Yacht Club in English Bay	Dec. 9	1	0.09 µg/g	Objective met
		Dec. 9	3	0.34 - 1.04 µg/g	Objective not met
	1st-2nd Narrows E207813 Coal Harbour	Dec. 12	1	0.07 µg/g	Objective met
		Dec. 12	4	0.16 - 0.37 µg/g	Objective not met

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
PAHs benzo(a)anthracene in sediment (continued)	Mosquito Creek	Dec. 12	2	0.05 - 0.13 µg/g	Objective met
		Dec. 12	2	both 0.17 µg/g	Objective not met
	E207818 Clarke Drive	Dec. 12	1	0.11 µg/L	Objective met
	E207816 Vancouver Wharves	Dec. 12	1	0.33 µg/L	Objective not met
	False Creek: E207814 False Creek East End	Dec. 12	2	0.23 - 0.42 µg/g	Objective not met
	Granville Island in West False Creek	Dec. 9	4	0.16 - 0.49 µg/g	Objective not met
	2nd Narrows - Roche Pt.: E207821 Second Narrows Chevron	Dec. 10	1	0.06 µg/g	Objective met
	Port Moody: E207823 Port Moody IOCO	Dec. 10	1	0.74 µg/g	Objective not met
Port Moody Reed Point	Dec. 10	3	0.10 - 0.13 µg/g	Objective met	
	Dec. 10	1	0.34 µg/g	Objective not met	
PAHs benzo(a)pyrene in sediment < 0.16 ug/g max. (dry weight) (long-term)	Outer Burrard: Vancouver Yacht Club in English Bay	Dec. 9	4	0.34 - 0.82 µg/g	Objective not met
		1st-2nd Narrows			
	E207813	Dec. 12	2	0.04 - 0.16 µg/g	Objective met
	Coal Harbour	Dec. 12	3	0.17 - 0.36 µg/g	Objective not met
	Mosquito Creek	Dec. 12	2	0.04 - 0.14 µg/g	Objective met
		Dec. 12	2	0.18 - 0.20 µg/g	Objective not met
	E207818 Clarke Drive	Dec. 12	1	0.09 µg/L	Objective met
	E207816 Vancouver Wharves	Dec. 12	1	0.24 µg/L	Objective not met
False Creek: E207814 False Creek East End	Dec. 12	2	0.18 - 0.50 µg/g	Objective not met	
Granville Island in West False Creek	Dec. 9	1	0.16 µg/g	Objective met	
	Dec. 9	3	0.22 - 0.56 µg/g	Objective not met	
2nd Narrows - Roche Pt.: E207821 Second Narrows Chevron	Dec. 10	1	0.23 µg/g	Objective not met	

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
PAHs benzo(a)pyrene in sediment (continued)	Port Moody: E207823 Port Moody IOCO	Dec. 10	1	0.39 µg/g	Objective not met
	Port Moody Reed Point	Dec. 10 Dec. 10	3 1	0.10 - 0.16 µg/g 0.23 µg/g	Objective met Objective not met
PAHs benzo-fluoranthenes in sediment < 0.32 ug/g max. (dry weight) (long-term)	Outer Burrard: Vancouver Yacht Club in English Bay	Dec. 9	4	1.00 - 2.41 µg/g	Objective not met
	1st-2nd Narrows E207813 Coal Harbour	Dec. 12 Dec. 12	1 4	0.17 µg/g 0.37 - 0.78 µg/g	Objective met Objective not met
	Mosquito Creek	Dec. 12 Dec. 12	1 3	0.09 µg/g 0.38 - 0.52 µg/g	Objective met Objective not met
	E207818 Clarke Drive	Dec. 12	1	0.19 µg/L	Objective met
	E207816 Vancouver Wharves	Dec. 12	1	0.51 µg/L	Objective not met
	False Creek: E207814 False Creek East End	Dec. 12 Dec. 12	1 1	0.30 µg/g 0.80 µg/g	Objective met Objective not met
	Granville Island in West False Creek	Dec. 9	4	0.43 – 1.37 µg/g	Objective not met
	2nd Narrows - Roche Pt.: E207821 Second Narrows Chevron	Dec. 10	1	0.13 µg/g	Objective met
	Port Moody: E207823 Port Moody IOCO	Dec. 10	1	0.98 µg/g	Objective not met
	Port Moody Reed Point	Dec. 10 Dec. 10	2 2	0.27 - 0.29 µg/g 0.34 - 0.65 µg/g	Objective met Objective not met
	PAHs benzo(g,h,i)perylene in sediment < 0.07 ug/g max. (dry weight) (long-term)	Outer Burrard: Vancouver Yacht Club in English Bay	Dec. 9	4	0.13 - 0.25 µg/g
1st-2nd Narrows E207813 Coal Harbour		Dec. 12	5	0.09 - 0.31 µg/g	Objective not met
Mosquito Creek		Dec. 12 Dec. 12	1 3	0.05 µg/g 0.11 - 0.16 µg/g	Objective met Objective not met
E207818 Clarke Drive		Dec. 12	1	0.08 µg/L	Objective not met

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
PAHs benzo(g,h,i)perylene in sediment (continued)	E207816 Vancouver Wharves	Dec. 12	1	0.26 µg/L	Objective not met
	False Creek: E207814 False Creek East End	Dec. 12	2	0.11 - 0.32 µg/g	Objective not met
	Granville Island in West False Creek	Dec. 9	4	0.12 - 0.32 µg/g	Objective not met
	2nd Narrows - Roche Pt.: E207821 Second Narrows Chevron	Dec. 10	1	0.15 µg/g	Objective not met
	Port Moody: E207823 Port Moody IOCO	Dec. 10	1	0.18 µg/g	Objective not met
	Port Moody Reed Point	Dec. 10	4	0.08 - 0.21 µg/g	Objective not met
PAHs chrysene in sediment < 0.14 ug/g max. (dry weight) (long-term)	Outer Burrard: Vancouver Yacht Club in English Bay	Dec. 9	4	0.66 - 1.83 µg/g	Objective not met
	1st-2nd Narrows E207813	Dec. 12	1	0.05 µg/g	Objective met
	Coal Harbour	Dec. 12	4	0.16 - 0.40 µg/g	Objective not met
	Mosquito Creek	Dec. 12	1	0.04 µg/g	Objective met
		Dec. 12	3	0.19 - 0.28 µg/g	Objective not met
	E207818 Clarke Drive	Dec. 12	1	0.12 µg/L	Objective met
	E207816 Vancouver Wharves	Dec. 12	1	0.49 µg/L	Objective not met
	False Creek: E207814 False Creek East End	Dec. 12	2	0.21 - 0.50 µg/g	Objective not met
	Granville Island in West False Creek	Dec. 9	4	0.22 - 0.91 µg/g	Objective not met
	2nd Narrows - Roche Pt.: E207821 Second Narrows Chevron	Dec. 10	1	0.12 µg/g	Objective met
	Port Moody: E207823 Port Moody IOCO	Dec. 10	1	0.95 µg/g	Objective not met
Port Moody Reed Point	Dec. 10	1	0.12 µg/g	Objective met	
	Dec. 10	3	0.15 - 0.59 µg/g	Objective not met	

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
PAHs dibenzo(a,h)anthracene in sediment < 0.06 ug/g max. (dry weight) (long-term)	Outer Burrard: Vancouver Yacht Club in English Bay	Dec. 9	1	0.06 µg/g	Objective met
		Dec. 9	3	0.08 - 0.10 µg/g	Objective not met
	1st-2nd Narrows E207813	Dec. 12	3	0.03 - 0.05 µg/g	Objective met
	Coal Harbour	Dec. 12	2	0.10 - 0.14 µg/g	Objective not met
	Mosquito Creek	Dec. 12	4	0.02 - 0.05 µg/g	Objective met
	E207818 Clarke Drive	Dec. 12	1	< 0.04 µg/L	Objective met
	E207816 Vancouver Wharves	Dec. 12	1	0.05 µg/L	Objective met
	False Creek: E207814	Dec. 12	1	0.04 µg/g	Objective met
	False Creek East End	Dec. 12	1	0.10 µg/g	Objective not met
	Granville Island in West False Creek	Dec. 9	2	both 0.05 µg/g	Objective met
		Dec. 9	2	0.08 - 0.09 µg/g	Objective not met
	2nd Narrows - Roche Pt.: E207821	Dec. 10	1	<0.02 µg/g	Objective met
	Second Narrows Chevron				
Port Moody: E207823	Dec. 10	1	0.10 µg/g	Objective not met	
Port Moody IOCO					
Port Moody Reed Point	Dec. 10	4	0.04 - 0.06 µg/g	Objective met	
PAHs fluoranthene in sediment < 0.17 ug/g max. (dry weight) (long-term)	Outer Burrard: Vancouver Yacht Club in English Bay	Dec. 9	4	0.39 - 1.39 µg/g	Objective not met
	1st-2nd Narrows E207813	Dec. 12	5	0.18 - 1.20 µg/g	Objective not met
	Coal Harbour				
	Mosquito Creek	Dec. 12	1	0.11 µg/g	Objective met
		Dec. 12	3	0.31 - 0.44 µg/g	Objective not met
	E207818 Clarke Drive	Dec. 12	1	0.28 µg/L	Objective not met
	E207816 Vancouver Wharves	Dec. 12	1	0.66 µg/L	Objective not met
False Creek: E207814	Dec. 12	2	0.36 - 0.70 µg/g	Objective not met	
False Creek East End					

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
PAHs fluoranthene in sediment (continued)	Granville Island in West False Creek	Dec. 9	4	0.37 - 1.22 µg/g	Objective not met
	2nd Narrows - Roche Pt.: E207821 Second Narrows Chevron	Dec. 10	1	0.11 µg/g	Objective met
	Port Moody: E207823 Port Moody IOCO	Dec. 10	1	1.09 µg/g	Objective not met
	Port Moody Reed Point	Dec. 10	4	0.23 - 0.52 µg/g	Objective not met
PAHs fluorene in sediment < 0.05 ug/g max. (dry weight) (long-term)	Outer Burrard: Vancouver Yacht Club in English Bay	Dec. 9	4	0.06 - 0.16 µg/g	Objective not met
	1st-2nd Narrows E207813 Coal Harbour	Dec. 12	4	0.03 - 0.04 µg/g	Objective met
		Dec. 12	1	0.06 µg/g	Objective not met
	Mosquito Creek	Dec. 12	3	0.02 - 0.05 µg/g	Objective met
		Dec. 12	1	0.06 µg/g	Objective not met
	E207818 Clarke Drive	Dec. 12	1	< 0.04 µg/L	Objective met
	E207816 Vancouver Wharves	Dec. 12	1	0.10 µg/L	Objective not met
	False Creek: E207814 False Creek East End	Dec. 12	1	0.04 µg/g	Objective met
		Dec. 12	1	0.09 µg/g	Objective not met
	Granville Island in West False Creek	Dec. 9	1	0.05 µg/g	Objective met
		Dec. 9	3	0.09 - 0.14 µg/g	Objective not met
	2nd Narrows - Roche Pt.: E207821 Second Narrows Chevron	Dec. 10	1	< 0.02 µg/g	Objective met
	Port Moody: E207823 Port Moody IOCO	Dec. 10	1	0.11 µg/g	Objective not met
Port Moody Reed Point	Dec. 10	1	0.03 µg/g	Objective met	
	Dec. 10	3	0.06 - 0.11 µg/g	Objective not met	
PAHs indeno(1,2,3-c,d)pyrene in sediment < 0.06 ug/g max. (dry weight) (long-term)	Outer Burrard: Vancouver Yacht Club in English Bay	Dec. 9	4	0.18 - 0.35 µg/g	Objective not met
	1st-2nd Narrows E207813 Coal Harbour	Dec. 12	5	0.14 - 0.35 µg/g	Objective not met

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
PAHs indeno(1,2,3-c,d)pyrene in sediment (continued)	Mosquito Creek	Dec. 12	1	0.06 µg/g	Objective met
		Dec. 12	3	0.12 - 0.19 µg/g	Objective not met
	E207818 Clarke Drive	Dec. 12	1	0.09 µg/L	Objective not met
	E207816 Vancouver Wharves	Dec. 12	1	0.16 µg/L	Objective not met
	False Creek: E207814 False Creek East End	Dec. 12	2	0.15 - 0.34 µg/g	Objective not met
	Granville Island in West False Creek	Dec. 9	4	0.15 - 0.38 µg/g	Objective not met
	2nd Narrows - Roche Pt.: E207821 Second Narrows Chevron	Dec. 10	1	0.07 µg/g	Objective not met
	Port Moody: E207823 Port Moody IOCO	Dec. 10	1	0.23 µg/g	Objective not met
Port Moody Reed Point	Dec. 10	4	0.10 - 0.21 µg/g	Objective not met	
PAHs naphthalene in sediment < 0.2 ug/g max. (dry weight) (long-term)	Outer Burrard: Vancouver Yacht Club in English Bay	Dec. 9	4	0.04 - 0.10 µg/g	Objective met
	1st-2nd Narrows E207813 Coal Harbour	Dec. 12	5	0.11 - 0.18 µg/g	Objective met
	Mosquito Creek	Dec. 12	4	0.11 - 0.20 µg/g	Objective met
	E207818 Clarke Drive	Dec. 12	1	0.15 µg/L	Objective met
	E207816 Vancouver Wharves	Dec. 12	1	0.25 µg/L	Objective not met
	False Creek: E207814 False Creek East End	Dec. 12 Dec. 12	1 1	0.20 µg/g 0.39 µg/g	Objective met Objective not met
	Granville Island in West False Creek	Dec. 9	4	0.21 - 0.97 µg/g	Objective not met
	2nd Narrows - Roche Pt.: E207821 Second Narrows Chevron	Dec. 10	1	< 0.02 µg/g	Objective met

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
PAHs naphthalene in sediment (continued)	Port Moody: E207823 Port Moody IOCO	Dec. 10	1	0.21 µg/g	Objective not met
	Port Moody Reed Point	Dec. 10 Dec. 10	1 3	0.12 µg/g 0.38 - 0.60 µg/g	Objective met Objective not met
PAHs phenanthrene in sediment < 0.15 ug/g max. (dry weight) (long-term)	Outer Burrard: Vancouver Yacht Club in English Bay	Dec. 9	4	0.23 - 0.78µg/g	Objective not met
	1st-2nd Narrows E207813 Coal Harbour	Dec. 12 Dec. 12	1 4	0.13 µg/g 0.19 - 0.74 µg/g	Objective met Objective not met
	Mosquito Creek	Dec. 12 Dec. 12	1 3	0.08 µg/g 0.18 - 0.29 µg/g	Objective met Objective not met
	E207818 Clarke Drive	Dec. 12	1	0.17 µg/L	Objective not met
	E207816 Vancouver Wharves	Dec. 12	1	0.35 µg/L	Objective not met
	False Creek: E207814 False Creek East End	Dec. 12	2	0.16 - 0.34 µg/g	Objective not met
	Granville Island in West False Creek	Dec. 9	4	0.23 - 0.52 µg/g	Objective not met
	2nd Narrows - Roche Pt.: E207821 Second Narrows Chevron	Dec. 10	1	0.05 µg/g	Objective met
	Port Moody: E207823 Port Moody IOCO	Dec. 10	1	0.54 µg/g	Objective not met
	Port Moody Reed Point	Dec. 10	4	0.18 - 0.52 µg/g	Objective not met
PAHs pyrene in sediment < 0.26 ug/g max. (dry weight) (long-term)	Outer Burrard: Vancouver Yacht Club in English Bay	Dec. 9	4	0.95 - 4.11µg/g	Objective not met
	1st-2nd Narrows E207813 Coal Harbour	Dec. 12 Dec. 12	1 4	0.19 µg/g 0.47 - 1.27 µg/g	Objective met Objective not met
	Mosquito Creek	Dec. 12 Dec. 12	1 3	0.16 µg/g 0.46 - 0.78 µg/g	Objective met Objective not met
	E207818 Clarke Drive	Dec. 12	1	0.23 µg/L	Objective met

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
PAHs pyrene in sediment (continued)	E207816 Vancouver Wharves	Dec. 12	1	0.59 µg/L	Objective not met
	False Creek: E207814 False Creek East End	Dec. 12	2	0.46 - 1.24 µg/g	Objective not met
	Granville Island in West False Creek	Dec. 9	4	0.65 - 1.83 µg/g	Objective not met
	2nd Narrows - Roche Pt.: E207821 Second Narrows Chevron	Dec. 10	1	0.19 µg/g	Objective met
	Port Moody: E207823 Port Moody IOCO	Dec. 10	1	1.53 µg/g	Objective not met
	Port Moody Reed Point	Dec. 10 Dec. 10	1 3	0.05 µg/g 0.55 - 1.03 µg/g	Objective met Objective not met
Total LPAH (naphthalene, acenaphtylene, acenaphthene, fluorene, phenanthrene, anthracene) in sediment < 0.5 ug/g max. (dry weight) (long-term)	Outer Burrard: Vancouver Yacht Club in English Bay	Dec. 9	4	0.58 - 1.52 µg/g	Objective not met
	1st-2nd Narrows E207813 Coal Harbour	Dec. 12 Dec. 12	2 3	both 0.44 µg/g 0.51 - 1.11 µg/g	Objective met Objective not met
	Mosquito Creek	Dec. 12 Dec. 12	2 2	0.28 - 0.43 µg/g 0.61 - 0.76 µg/g	Objective met Objective not met
	E207818 Clarke Drive	Dec. 12	1	0.48 µg/L	Objective met
	E207816 Vancouver Wharves	Dec. 12	1	1.09 µg/L	Objective not met
	False Creek: E207814 False Creek East End	Dec. 12	2	0.56 - 1.24 µg/g	Objective not met
	Granville Island in West False Creek	Dec. 9	4	0.66 - 2.08 µg/g	Objective not met
	2nd Narrows - Roche Pt.: E207821 Second Narrows Chevron	Dec. 10	1	1.05 µg/g	Objective not met
	Port Moody: E207823 Port Moody IOCO	Dec. 10	1	1.23 µg/g	Objective not met
	Port Moody Reed Point	Dec. 10 Dec. 10	1 3	0.46 µg/g 1.04 - 1.53 µg/g	Objective met Objective not met

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total HPAH (fluoranthene pymene, benzo(a)anthracene, chrysene, benzo-fluoranthenes, benzo(a)pyrene, indeno(1,2,3-c,d)pyrene dibenzo(a,h)anthracene benzo(g,h,i)perylene) in sediment < 1.2 ug/g max. (dry weight) (long-term)	Outer Burrard: Vancouver Yacht Club in English Bay	Dec. 9	4	4.18 - 11.11 µg/g	Objective not met
	1st-2nd Narrows E207813	Dec. 12	1	0.99 µg/g	Objective met
	Coal Harbour	Dec. 12	4	2.11 - 4.91 µg/g	Objective not met
	Mosquito Creek	Dec. 12	1	0.64 µg/g	Objective met
		Dec. 12	3	1.88- 2.71 µg/g	Objective not met
	E207818 Clarke Drive	Dec. 12	1	1.23 µg/L	Objective not met
	E207816 Vancouver Wharves	Dec. 12	1	3.16 µg/L	Objective not met
	False Creek: E207814 False Creek East End	Dec. 12	2	2.04 - 4.92 µg/g	Objective not met
	Granville Island in West False Creek	Dec. 9	4	2.31 - 7.17 µg/g	Objective not met
	2nd Narrows - Roche Pt.: E207821 Second Narrows Chevron	Dec. 10	1	1.08 µg/g	Objective met
	Port Moody: E207823 Port Moody IOCO	Dec. 10	1	6.29 µg/g	Objective not met
	Port Moody Reed Point	Dec. 10	1	1.16 µg/g	Objective met
	Dec. 10	3	1.79 - 3.84 µg/g	Objective not met	

Table 17. Boundary Bay Water Quality Objectives - 2000.

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION		
	SITE	DATE	n	VALUE			
Fecal Coliform <1000 / 100 mL geometric mean (gm) <4000 / 100 mL max April - October	0300056 Mahood Creek at 52nd St.	Aug.30	1	1900 CFU / 100 mL	Objective met		
			1	gm = 1900 CFU / 100 mL	Indefinite result		
	0300057 Serpentine River at Hwy. 99A	Aug.30	1	3900 CFU / 100 mL	Objective met		
			1	gm = 3900 CFU / 100 mL	Indefinite result		
	0300059 Serpentine River at 80th Avenue	Aug.30	1	970 CFU / 100 mL	Objective met		
			1	gm = 970 CFU / 100 mL	Indefinite result		
	0300060 Nicomekl River at Hwy. 99A	Aug.30	1	18 CFU / 100 mL	Objective met		
			1	gm = 18 CFU / 100 mL	Indefinite result		
	0300061 Nicomekl River at 192nd Street	Aug.30	1	1100 CFU / 100 mL	Objective met		
			1	gm = 1100 CFU / 100 mL	Indefinite result		
	0300062 Nicomekl River at 64th Ave	Aug.30	1	1 CFU / 100 mL	Objective met		
			1	gm = 1 CFU / 100 mL	Indefinite result		
	0300063 Anderson Creek at Colebrook Road	Aug.30	1	77 CFU / 100 mL	Objective met		
			1	gm = 77 CFU / 100 mL	Indefinite result		
0300064 Murray Creek at 48th Avenue	Aug.30	1	47 CFU / 100 mL	Objective met			
		1	gm = 47 CFU / 100 mL	Indefinite result			
E207716 Latimer Creek 100 m U/S mouth	Aug.30	1	42 CFU / 100 mL	Objective met			
		1	gm = 42 CFU / 100 mL	Indefinite result			
E207719 Hyland Creek at Hwy. 99A	Aug.30	4	400 CFU / 100 mL	Objective met			
		1	gm = 400 CFU / 100 mL	Indefinite result			
Fecal Coliform <200 / 100 mL geometric mean (gm) <400 / 100 mL 90th perc. (np) April - October	Little Campbell River	2000	0	no data collected	Omitted 2000		
Suspended Solids max increase: 10 mg/L or 10%	0300056 Mahood Creek at 52nd St.	Apr.3 - Oct.12	3	<5 - 8 mg/L	Indefinite result		
			0300059 Serpentine River at 80th Avenue	Apr.3 - Oct.12	3	9 - 64 mg/L	Control site
			0300057 Serpentine River at Hwy. 99A	Apr.3 - Oct.12	3	9 - 16 mg/L	Objective met
3	inc. = 0 - 3 mg/L						

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Suspended Solids (continued)	0300062 Nicomekl River at 64th Ave	Apr.3 - Oct.12	3	<5 - 6 mg/L	Control site
	0300060 Nicomekl River at Hwy. 99A	Apr.3 - Oct.12	3	11 - 34 mg/L	Objective met
		Oct.12	1	inc. = 5 mg/L	Objective not met
	0300061 Nicomekl River at 192nd Street	Apr.3 - Oct.12	3	<5 - 8 mg/L	
			3	inc. = 0 - 3 mg/L	Objective met
	0300063 Anderson Creek at Colebrook Road	Apr.3 - Oct.12	3	<5 - 6 mg/L	Indefinite result
	0300064 Murray Creek at 48th Avenue	Apr.3 - Oct.12	3	all <5 mg/L	Indefinite result
	E207716 Latimer Creek 100 m U/S mouth	Apr.3 - Oct.12	3	<5 - 6 mg/L	Indefinite result
	E207719 Hyland Creek at Hwy. 99A	Apr.3 - Oct.12	3	<5 - 8 mg/L	Indefinite result
	0300066 Little Campbell River at 216th Street	Apr.3 - Oct.12	3	<5 - 21 mg/L	Control site
0300065 Little Campbell River at 176th Street	Apr.3 - Oct.12	2	6 - 7 mg/L		
		2	inc. = 0 - 2 mg/L	Objective met	
Substrate Sedimentation no increase in weight of particles <3 mm dia	Mahood Creek Serpentine River Nicomekl River Anderson Creek Murray Creek Latimer Creek Hyland Creek Little Campbell River	2000	0	no data collected	Omitted 2000
Turbidity max increase: 5 NTU or 10%	Mahood Creek Serpentine River Nicomekl River Anderson Creek Murray Creek Latimer Creek Hyland Creek Little Campbell River	2000	0	no data collected	Omitted 2000

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Ammonia-N <0.76 mg/L av 5.6 mg/L max at pH = 8.0 temp = 20 C	0300056 Mahood Creek at 52nd St.	Apr.3 - Oct.12	3	0.022 - 0.032 mg/L	Max objective met
			1	av = 0.029 mg/L	Indefinite result
	0300057 Serpentine River at Hwy. 99A	Apr.3 - Oct.12	3	0.01 - 0.151 mg/L	Max objective met
			1	av = 0.064 mg/L	Indefinite result
	0300059 Serpentine River at 80th Avenue	Apr.3 - Oct.12	3	0.091 - 0.55 mg/L	Max objective met
			1	av = 0.269 mg/L	Indefinite result
	0300060 Nicomekl River at Hwy. 99A	Apr.3 - Oct.12	3	< 0.005 - 0.069 mg/L	Max objective met
			1	av = 0.044 mg/L	Indefinite result
	0300061 Nicomekl River at 192nd Street	Apr.3 - Oct.12	3	0.018 - 0.05 mg/L	Max objective met
			1	av = 0.038 mg/L	Indefinite result
	0300062 Nicomekl River at 64th Ave	Apr.3 - Oct.12	3	< 0.005 - 0.116 mg/L	Max objective met
			1	av = 0.048 mg/L	Indefinite result
	0300063 Anderson Creek at Colebrook Road	Apr.3 - Oct.12	3	< 0.005 - 0.007 mg/L	Max objective met
			1	av = 0.006 mg/L	Indefinite result
	0300064 Murray Creek at 48th Avenue	Apr.3 - Oct.12	3	0.006 - 0.019 mg/L	Max objective met
			1	av = 0.014 mg/L	Indefinite result
	E207716 Latimer Creek 100 m U/S mouth	Apr.3 - Oct.12	3	< 0.005 - 0.032 mg/L	Max objective met
			1	av = 0.021 mg/L	Indefinite result
E207719 Hyland Creek at Hwy. 99A	Apr.3 - Oct.12	3	0.03 - 0.048 mg/L	Max objective met	
		1	av = 0.039 mg/L	Indefinite result	
0300065 Little Campbell River at 176th Street	Apr.3 - Oct.12	2	0.021 - 0.037 mg/L	Max objective met	
		1	av = 0.029 mg/L	Indefinite result	
0300066 Little Campbell River at 216th Street	Apr.3 - Oct.12	3	< 0.005 - 0.064 mg/L	Max objective met	
		1	av = 0.031 mg/L	Indefinite result	
Nitrite - N < 0.02 mg/L av 0.06 mg/L max	0300056 Mahood Creek at 52nd St.	Apr.3 - Oct.12	3	0.008 - 0.019 mg/L	Max objective met
			1	av = 0.013 mg/L	Indefinite result
	0300057 Serpentine River at Hwy. 99A	Apr.3 - Oct.12	3	< 0.002 - 0.02 mg/L	Max objective met
			1	av = 0.01 mg/L	Indefinite result
	0300059 Serpentine River at 80th Avenue	Apr.3 - Oct.12	3	0.01 - 0.03 mg/L	Max objective met
			1	av = 0.021 mg/L	Indefinite result
	0300060 Nicomekl River at Hwy. 99A	Apr.3 - Oct.12	3	0.005 - 0.02 mg/L	Max objective met
			1	av = 0.015 mg/L	Indefinite result

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Nitrite – N (continued)	0300061 Nicomekl River at 192nd Street	Apr.3 - Oct.12	3	0.008 - 0.018 mg/L	Max objective met
			1	av = 0.014 mg/L	Indefinite result
	0300062 Nicomekl River at 64th Ave	Apr.3 - Oct.12	3	0.01 - 0.027 mg/L	Max objective met
			1	av = 0.016 mg/L	Indefinite result
	0300063 Anderson Creek at Colebrook Road	Apr.3 - Oct.12	3	0.005 - 0.008 mg/L	Max objective met
			1	av = 0.006 mg/L	Indefinite result
	0300064 Murray Creek at 48th Avenue	Apr.3 - Oct.12	3	0.004 - 0.006 mg/L	Max objective met
			1	av = 0.005 mg/L	Indefinite result
	E207716 Latimer Creek 100 m U/S mouth	Apr.3 - Oct.12	3	0.006 - 0.02 mg/L	Max objective met
			1	av = 0.011 mg/L	Indefinite result
E207719 Hyland Creek at Hwy. 99A	Apr.3 - Oct.12	3	0.005 - 0.022 mg/L	Max objective met	
		1	av = 0.012 mg/L	Indefinite result	
0300065 Little Campbell River at 176th Street	Apr.3 - Oct.12	2	0.007 - 0.021 mg/L	Max objective met	
		1	av = 0.014 mg/L	Indefinite result	
0300066 Little Campbell River at 216th Street	Apr.3 - Oct.12	3	< 0.002 - 0.003 mg/L	Max objective met	
		1	av = 0.002 mg/L	Indefinite result	
Chlorophyll-a 50 mg/m ² av	Mahood Creek Serpentine River Nicomekl River Anderson Creek Murray Creek Latimer Creek Hyland Creek Little Campbell River	2000	0	no data collected	Omitted 2000
Dissolved Oxygen 6 mg/L min Jun - Oct	Mahood Creek Serpentine River Nicomekl River Anderson Creek Murray Creek Latimer Creek Hyland Creek Little Campbell River	2000	0	no data collected	Omitted 2000
pH 6.5 - 8.5	0300065 Little Campbell River at 176th Street	Apr.3 - Oct.12	2	7.29 - 7.42	Objective met
	0300066 Little Campbell River at 216th Street	Apr.3 - Oct.12	3	6.65 - 7.32	Objective met

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION	
	SITE	DATE	n	VALUE		
pH 6.6 - 8.5 or 0.2 max increase (continued)	0300056 Mahood Creek at 52nd St.	Apr.3 - Oct.12	3	7.25 - 7.83	Objective met	
	0300057 Serpentine River at Hwy. 99A	Apr.3 - Oct.12	3	6.93 - 7.79	Objective met	
	0300059 Serpentine River at 80th Avenue	Apr.3 - Oct.12	3	6.91 - 7.35	Objective met	
	0300060 Nicomekl River at Hwy. 99A	Apr.3 - Oct.12	3	7.04 - 7.87	Objective met	
	0300061 Nicomekl River at 192nd Street	Apr.3 - Oct.12	3	7.13 - 7.66	Objective met	
	0300062 Nicomekl River at 64th Ave	Apr.3 - Oct.12	3	7.08 - 7.67	Objective met	
	0300063 Anderson Creek at Colebrook Road	Apr.3 - Oct.12	3	7.29 - 7.79	Objective met	
	0300064 Murray Creek at 48th Avenue	Apr.3 - Oct.12	3	7.21 - 7.76	Objective met	
	E207716 Latimer Creek 100 m U/S mouth	Apr.3 - Oct.12	3	6.94 - 7.56	Objective met	
	E207719 Hyland Creek at Hwy. 99A	Apr.3 - Oct.12	3	7.1 - 7.3	Objective met	
Total Lead <0.005 mg/L av 0.010 mg/L max	0300060 Nicomekl River at Hwy. 99A	Oct.12	1	0.0004 mg/L	Objective met	
			1	av = 0.0004 mg/L	Indefinite result	
	0300061 Nicomekl River at 192nd Street	Oct.12	1	0.00048 mg/L	Objective met	
			1	av = 0.00048 mg/L	Indefinite result	
0300062 Nicomekl River at 64th Ave	Oct.12	1	0.00176 mg/L	Objective met		
		1	av = 0.00176 mg/L	Indefinite result		
PCBs 0.001 ug/L max in water	Serpentine River Mahood Creek Latimer Creek Hyland Creek	2000	0	no data collected	Omitted 2000	
	PCBs <0.1-0.5 ug/g wet weight in fish	Serpentine River Mahood Creek Latimer Creek Hyland Creek	2000	0	no data collected	Omitted 2000

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
PCBs <0.03 ug/g dry weight in sediments	Serpentine River Mahood Creek Latimer Creek Hyland Creek	2000	0	no data collected	Omitted 2000

Table 18. Provincial overview of water quality objectives - 2001

Region	Number of Occurrences				Totals
	Objectives Met	Objectives Not Met	Indefinite Results	Omitted 2001	
Vancouver Island	255 50.5%	183 36.2%	41 8.1%	26 5.1%	505 100.0%
Omineca - Peace	786 75.2%	89 8.5%	114 10.9%	56 5.4%	1045 100.0%
Cariboo	0 0.0%	1 12.5%	1 12.5%	6 75.0%	8 100.0%
Southern Interior	846 88.6%	33 3.5%	36 3.8%	40 4.2%	955 100.0%
Kootenays	867 92.7%	29 3.1%	15 1.6%	24 2.6%	935 100.0%
All Regions	2754 79.9%	335 9.7%	207 6.0%	152 4.4%	3448 100.0%
All Regions less occurrences with no result	2754 89.2%	335 10.8%			3089 100.0%

Table 19. Cowichan -Koksilah Rivers Water Quality Objectives – 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms < 10 /100 mL 90th percentile (np)	Cowichan River: E206108	Oct.17 - Nov.21	6	< 1 - 32 CFU/100 mL	
	d/s Cowichan Lake	Oct.24 - Nov.21	1	np = 24.4 CFU/100 mL	Objective not met
	0120808 300m u/s L. Cowichan STP	Apr.3 - Nov.21	10	2 - 41 CFU/100 mL	
		Oct.24 - Nov.21	1	np = 29.4 CFU/100 mL	Objective not met
	E206107 400m d/s L. Cowichan STP	Apr.3 - Oct.2	4	<1 - 27 CFU/100 mL	
			1	np = 23.4 CFU/100 mL	Indefinite result
	0120802 u/s Highway 1	Aug.23 - Nov.21	6	3 - 126 CFU/100 mL	
		Oct.24 - Nov.21	1	np = 88 CFU/100 mL	Objective not met
	E206106 1 km D/S PE1497	Jan.11 - Dec.13	35	1 - 440 CFU/100 mL	
		Jul.11 - Aug.2, Aug.9 - 30, Nov.1 - 27	3	np = 68 - 176.4 CFU/100 mL	Objective not met
	Koksilah River: E207425	Oct.17 - Nov.21	6	3 - 26 CFU/100 mL	
	Pt. Renfrew Rd.	Oct.24 - Nov.21	1	np = 25.2 CFU/100 mL	Objective not met
	E206976 Koksilah Rd.	Oct.17 - Nov.21	6	1 - 145 CFU/100 mL	
		Oct.24 - Nov.21	1	np = 133.8 CFU/100 mL	Objective not met
0123981 at Highway 1	Jan.11 - Dec.13	38	< 1 - 2001 CFU/100 mL		
	Jul.26 - Aug.23, Oct.4 - 31, Nov.1 - 21, Nov.22 - Dec.13	4	np = 81 - 1392 CFU/100 mL	Objective not met	
<i>E. coli</i> < 10 /100 mL 90th percentile (np)	Cowichan River: E206108	Oct.17 - Nov.21	6	< 1 - 30 CFU/100 mL	
	d/s Cowichan Lake	Oct.24 - Nov.21	1	np = 22 CFU/100 mL	Objective not met
	0120808 300m u/s L. Cowichan STP	Apr.3 - Nov.21	7	3 - 10 CFU/100 mL	
		Oct.24 - Nov.21	1	np = 8.8 CFU/100 mL	Objective met
	E206107 400m d/s L. Cowichan STP	Jun.12	1	23 CFU/100 mL	
			1	np = 23 CFU/100 mL	Indefinite result
	0120802 u/s Highway 1	Oct.17 - Nov.21	6	3 - 126 CFU/100 mL	
		Oct.24 - Nov.21	1	np = 83.2 CFU/100 mL	Objective not met
	Koksilah River: E207425	Oct.17 - Nov.21	6	3 - 26 CFU/100 mL	
	Pt. Renfrew Rd.	Oct.24 - Nov.21	1	np = 24.8 CFU/100 mL	Objective not met
	E206976 Koksilah Rd.	Oct.17 - Nov.21	6	1 - 117 CFU/100 mL	
		Oct.24 - Nov.21	1	np = 92.2 CFU/100 mL	Objective not met
	0123981 at Highway 1	Oct.17 - Nov.21	6	< 1 - 2001 CFU/100 mL	
		Oct.24 - Nov.21	1	np = 612 CFU/100 mL	Objective not met

WATER QUALITY IN B.C. – OBJECTIVES ATTINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION	
	SITE	DATE	n	VALUE		
<i>Enterococci</i> < 3 /100 mL 90th percentile (np)	Cowichan River: E206108	Oct.17 - Nov.21	6	all < 1 CFU/100 mL		
	d/s Cowichan Lake	Oct.24 - Nov.21	1	np = < 1 CFU/100 mL	Objective met	
	0120808	Oct.17 - Nov.21	6	all < 1 CFU/100 mL		
	300m u/s L. Cowichan STP	Oct.24 - Nov.21	1	np = < 1 CFU/100 mL	Objective met	
	0120802	Oct.17 - Nov.21	6	all < 1 CFU/100 mL		
	u/s Highway 1	Oct.24 - Nov.21	1	np = < 1 CFU/100 mL	Objective met	
	Koksilah River: E207425	Oct.17 - Nov.21	6	< 1 - 1 CFU/100 mL		
	Pt. Renfrew Rd.	Oct.24 - Nov.21	1	np = 1 CFU/100 mL	Objective met	
	E206976	Oct.17 - Nov.21	6	all < 1 CFU/100 mL		
	Koksilah Rd.	Oct.24 - Nov.21	1	np = < 1 CFU/100 mL	Objective met	
	0123981	Oct.17 - Nov.21	6	all < 1 CFU/100 mL		
	at Highway 1	Oct.24 - Nov.21	1	np = < 1 CFU/100 mL	Objective met	
	Turbidity max increase: 5 NTU or 10%	Cowichan River: E206108	Oct.17 - Nov.21	6	0.32 - 1.35 NTU	Control Site
		d/s Cowichan Lake				
0120808		Aug.29 - Nov.21	7	0.44 - 2.33 NTU		
300m u/s L. Cowichan STP		Oct.17 - Nov.21	6	increase = 0 - 1.35 NTU	Objective met	
E206107		Aug.29	1	0.5 NTU		
400m d/s L. Cowichan STP			1	max increase = 0.5 NTU	Objective met	
0120802		Oct.17 - Nov.21	6	1.35 - 18.4 NTU		
u/s Highway 1		Oct.17 - Nov.14	4	increase = 0.46 - 3.72 NTU	Objective met	
		Oct.31 - Nov.21	2	increase = 13.67 - 17.42 NTU	Objective not met	
E206106		Jan.11 - Dec.13	34	0.17 - 4.2 NTU		
1 km D/S PE1497		Jan.11 - Dec.13	28	max increase = 0.17 - 4.2 NTU	Objective met	
		Oct.17 - Nov.21	6	max increase = 5.55 - 19.1 NTU	Indefinite result - no control	
Koksilah River: E207425		Oct.17 - Nov.21	6	0.21 - 3.03 NTU	Control Site	
Pt. Renfrew Rd.						
E206976	Oct.17 - Nov.21	6	0.26 - 3.85 NTU			
Koksilah Rd.	Oct.17 - Nov.21	6	increase = 0 - 0.82 NTU	Objective met		
0123981	Jan.11 - Dec.13	38	0.17 - 30.9 NTU			
at Highway 1	Oct.17 - Nov.21	5	increase = 0.12 - 3.74 NTU	Objective met		
	Nov.14	1	increase = 5.86 NTU	Objective not met		
Suspended Solids max. increase 10 mg/L or 10%	Cowichan River: E206108	Oct.17 - Nov.21	6	all < 5 mg/L	Control Site	
	d/s Cowichan Lake					
	0120808	Oct.17 - Nov.21	5	< 5 - 47 mg/L		
	300m u/s L. Cowichan STP	Oct.17 - Nov.21	4	increase = 0 - 10 mg/L	Objective met	
		Oct.31	1	increase = 42 mg/L	Objective not met	

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION	
	SITE	DATE	n	VALUE		
Suspended Solids max. increase 10 mg/L or 10% (continued)	Cowichan River: 0120802 u/s Highway 1	Oct.17 - Nov.21	5	< 5 - 52 mg/L	Objective met Objective not met	
		Oct.17 - Nov.7	3	increase = 0 - 1 mg/L		
		Nov.14 - 21	2	increase = 27 - 47 mg/L		
	E206106 1 km d/s Duncan STP	Aug.2	2	< 5 mg/L	Objective met	
			2	increase = 0 mg/L		
	Koksilah River: E207425 Pt. Renfrew Rd.	Oct.17 - Nov.21	6	< 5 - 17 mg/L	Control Site	
		E206976 Koksilah Rd.	Oct.17 - Nov.21	5	< 5 - 6 mg/L	Objective met
			Oct.17 - Nov.21	5	increase = 0 mg/L	
		0123981 at Highway 1	Oct.17 - Nov.21	5	< 5 - 25 mg/L	Objective met
			Oct.17 - Nov.21	5	increase = 0 - 8 mg/L	
Ammonia-N < 1.30 mg/L av 6.75 mg/L max at pH = 7.9 temp = 15 C	Cowichan River: E206108 d/s Cowichan Lake	Oct.17 - Nov.21	6	< 0.005 - 0.01 mg/L	Max obj. met	
		Oct.24 - Nov.21	1	av. = 0.0076 mg/L	Av obj. met	
	0120808 300m u/s L. Cowichan STP	Oct.17 - Nov.21	6	< 0.003 - 0.015 mg/L	Max obj. met	
		Oct.24 - Nov.21	1	av. = 0.0074 mg/L	Av obj. met	
	E206107 400m d/s L. Cowichan STP	Apr.3 - Oct.2	4	< 0.003 - 0.014 mg/L	Max obj. met	
			1	av. = 0.00825 mg/L	Indefinite result	
	0120802 u/s Highway 1	Oct.17 - Nov.21	6	< 0.005 - 0.023 mg/L	Max obj. met	
		Oct.24 - Nov.21	1	av. = 0.0198 mg/L	Av obj. met	
	E206106 1 km d/s Duncan STP	Aug.2	2	0.345 - 0.44 mg/L	Max obj. met	
			1	av. = 0.393 mg/L	Indefinite result	
Chlorophyll-a 50 mg/m ² max	0120808 300m u/s L. Cowichan STP	Aug.29	2	5.3 mg/m ²	Max obj. met	
		E206107 400m d/s L. Cowichan STP	Aug.29	3	0.9 - 38 mg/m ²	Max obj. met
Total Cl ₂ Res. 0.002 mg/L max	Cowichan River	2001	0	no data collected	Omitted 2001	
Dissolved Oxygen 8.0 mg/L min Jun - Sep 11.2 mg/L min Oct - May	Cowichan River: E206106 1 km d/s Duncan STP	Jun.28 - Sep.20	9	7.1 - 7.9 mg/L	Objective not met	
		Aug.30	1	8.2 mg/L	Objective met	
	Koksilah River: 0123981 at Highway 1	Jun.28 - Sep.20	10	4.2 - 7.5 mg/L	Objective not met	

WATER QUALITY IN B.C. – OBJECTIVES ATTINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Dissolved Cu <0.002 mg/L av 0.004 mg/L max or 20% increase	Cowichan River Koksilah River	2001	0	no data collected	Omitted 2001
Dissolved Pb <0.003 mg/L av 0.008 mg/L max or 20% increase	Cowichan River Koksilah River	2001	0	no data collected	Omitted 2001
Dissolved Zn <0.030 mg/L av 0.180 mg/L max or 20% increase	Cowichan River Koksilah River	2001	0	no data collected	Omitted 2001
Cu-8 Quinolinolate 0.0005 mg/L max	Cowichan River	2001	0	no data collected	Omitted 2001

Table 20. Middle Quinsam River Water Quality Objectives – 2001.

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total-P < 0.007 mg/L av. (May - Sept.)	Long Lake	2001	0	no data collected	Omitted 2001
Total-P < 0.006 mg/L av. (May - Sept.)	Middle Quinsam Lake	2001	0	no data collected	Omitted 2001
Chlorophyll-a < 50 mg/m ²	Quinsam River Quinsam Lake No Name Lake Long Lake	2001	0	no data collected	Omitted 2001
Turbidity < 1.0 NTU av. 5.0 NTU max.	0900504 Middle Quinsam Lake Outlet	Oct.16 - Nov.20	7	0.28 - 1.21 NTU	Max. obj. met
		Oct.16 - Nov.6	1	av. = 0.52 NTU	Objective met
Suspended Solids < 5 mg/L av. 25 mg/L max. or 10 mg/L max. inc.	0900504 Middle Quinsam Lake Outlet	Oct.16 - Nov.20	7	all < 5 mg/L	Max. obj. met
		Oct.16 - Nov.6	1	av. = < 5 mg/L	Objective met
Ammonia-N < 1.82 mg/L av. 12.5 mg/L max. at pH = 7.5 temp. = 12 °C	E219412 Long Lake at outlet	Mar.27	1	< 0.005 mg/L	Max. obj. met
			1	av. = < 0.005 mg/L	Indefinite result
	0900504 Middle Quinsam Lake Outlet	Mar.27 - Nov.20	8	< 0.005 - 0.017 mg/L	Max. obj. met
			1	av. = 0.0119 mg/L	Objective met
	0126402 Quinsam River u/s Middle Quinsam Lake	Mar.27	1	< 0.005 mg/L	Max. obj. met
			1	av. = < 0.005 mg/L	Indefinite result
	E217017 No Name Lake outlet	Mar.28	1	< 0.005 mg/L	Max. obj. met
			1	av. = < 0.005 mg/L	Indefinite result
Nitrite-N < 0.02 mg/L av. 0.06 mg/L max.	0900504 Middle Quinsam Lake Outlet	Oct.16 - Nov.20	7	all < 0.002 mg/L	Max. obj. met
		Oct.16 - Nov.6	1	av. = < 0.002 mg/L	Objective met
Dissolved Oxygen 3 mg/L min. 1m above sed. (May - Sept.)	Quinsam River Quinsam Lake No Name Lake Long Lake	2001	0	no data collected	Omitted 2001
pH > 6.5 90th percentile	E219412 Long Lake at outlet	Jan.23 - Sep.11	3	7.25 - 7.83	Indefinite result Indefinite result
			1	med = 7.69	
(np) > 6.9 median (med.)	0900504 Middle Quinsam Lake Outlet	Jan.23 - Nov.20	1	6.52 - 7.75	Objective met Objective met
			0		
	0126402 Quinsam River u/s Middle Quinsam Lake	Jan.23 - Sep.11	1	med = 7.47	Objective met Objective met
			1	np = 7.55	
			3	7.49 - 7.66	Indefinite result Indefinite result
			1	med = 7.58	
			1	np = 7.64	

WATER QUALITY IN B.C. – OBJECTIVES ATTINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION									
	SITE	DATE	n	VALUE										
pH (continued)	E217017 No Name Lake outlet	Jan.23 - Sep.10	3	6.87 - 7.23	Indefinite result Indefinite result									
			1	med = 6.92										
			1	np = 7.17										
Dissolved Aluminum < 0.05 mg/L av 0.1 mg/L max.	Quinsam River Quinsam Lake No Name Lake Long Lake	2001	0	no data collected	Omitted 2001									
			E219412 Long Lake at outlet	Jan.23	1	0.0003 mg/L	Max. obj. met							
								0900504 Middle Quinsam Lake Outlet	Jan.23	1	0.0002 mg/L	Max. obj. met		
													0126402 Quinsam River u/s Middle Quinsam Lake	Jan.23
E217017 No Name Lake outlet	Jan.23	1												
			E219412 Long Lake at outlet	Jan.23	1	< 0.00001 mg/L	Max. obj. met							
								0900504 Middle Quinsam Lake Outlet	Jan.23	1	< 0.00001 mg/L	Max. obj. met		
													0126402 Quinsam River u/s Middle Quinsam Lake	Jan.23
E217017 No Name Lake outlet	Jan.23	1												
			E219412 Long Lake at outlet	Jan.23	1	0.0005 mg/L	Indefinite result							
								0900504 Middle Quinsam Lake Outlet	Jan.23	1	0.00088 mg/L	Indefinite result		
													0126402 Quinsam River u/s Middle Quinsam Lake	Jan.23
E217017 No Name Lake outlet	Jan.23	1												

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION	
	SITE	DATE	n	VALUE		
Total Iron < 0.3 mg/L av.	E219412 Long Lake at outlet	Jan.23	1	0.11 mg/L		
			1	av. = 0.11 mg/L	Indefinite result	
	0900504 Middle Quinsam Lake Outlet	Jan.23	1	0.059 mg/L		
			1	av. = 0.059 mg/L	Indefinite result	
	0126402 Quinsam River u/s Middle Quinsam Lake	Jan.23	1	0.021 mg/L		
			1	av. = 0.021 mg/L	Indefinite result	
	E217017 No Name Lake outlet	Jan.23	1	0.056 mg/L		
			1	av. = 0.056 mg/L	Indefinite result	
Total Lead <0.003 mg/L av. 0.005 mg/L max.	E219412 Long Lake at outlet	Jan.23	1	< 0.00001 mg/L	Max. obj. met	
			1	av. = < 0.00001mg/L	Indefinite result	
	0900504 Middle Quinsam Lake Outlet	Jan.23	1	0.00002 mg/L	Max. obj. met	
			1	av. = 0.00002 mg/L	Indefinite result	
	0126402 Quinsam River u/s Middle Quinsam Lake	Jan.23	1	< 0.00001 mg/L	Max. obj. met	
			1	av. = < 0.00001mg/L	Indefinite result	
	E217017 No Name Lake outlet	Jan.23	1	0.00001 mg/L	Max. obj. met	
			1	av. = 0.00001 mg/L	Indefinite result	
Total Mercury 0.1 ug/L max.	Quinsam River Quinsam Lake No Name Lake Long Lake	2001	0	no data collected	Omitted 2001	
Total Nickel 0.025 mg/L max.	E219412 Long Lake at outlet	Jan.23	1	0.00062 mg/L	Max. obj. met	
			1	0.00043 mg/L	Max. obj. met	
	0900504 Middle Quinsam Lake Outlet	Jan.23	1	0.00025 mg/L	Max. obj. met	
			1	0.00015 mg/L	Max. obj. met	
Total Silver 0.0001 mg/L max.	E219412 Long Lake at outlet	Jan.23	1	< 0.00002 mg/L	Max. obj. met	
			1	< 0.00002 mg/L	Max. obj. met	

WATER QUALITY IN B.C. – OBJECTIVES ATTINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Silver 0.0001 mg/L max.	0126402 Quinsam River u/s Middle Quinsam Lake	Jan.23	1	< 0.00002 mg/L	Max. obj. met
	E217017 No Name Lake outlet	Jan.23	1	< 0.00002 mg/L	Max. obj. met
Total Zinc 0.03 mg/L max.	E219412 Long Lake at outlet	Jan.23	1	0.0003 mg/L	Max. obj. met
	0900504 Middle Quinsam Lake Outlet	Jan.23	1	0.0021 mg/L	Max. obj. met
	0126402 Quinsam River u/s Middle Quinsam Lake	Jan.23	1	< 0.0001 mg/L	Max. obj. met
	E217017 No Name Lake outlet	Jan.23	1	0.0003 mg/L	Max. obj. met

Table 21. Oyster River Water Quality Objectives – 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms < 100 CFU /100 mL 90th percentile (np)	Oyster River: 0125580 at Highway	Oct.16 - Nov.20	6	12 - 152 CFU/100 mL	Objective not met
		Oct.23 - Nov.20	1	np = 105.2 CFU/100 mL	
Turbidity max increase: 5 NTU or 10%	Oyster River: 0125580 at Highway	Oct.16 - Nov.20	6	0.43 - 12 NTU	Indefinite result No control
Suspended Solids 12 mg/L max	Oyster River: 0125580 at Highway	Oct.16 - Nov.13	5	< 5 - 11 mg/L	Objective met
		Nov.20	1	35 mg/L	Objective not met
Ammonia-N < 1.85 mg/L av 12.7 mg/L max at pH = 7.5 temp = 10 C	Oyster River: 0125580 at Highway	Oct.16 - Nov.20	6	< 0.005 - 0.0026 mg/L	Max objective met
		Oct.16 - Nov.13	1	av. = 0.0094 mg/L	Av. obj. met
Nitrite - N <0.02 mg/L av 0.06 mg/L max	Oyster River: 0125580 at Highway	Oct.16 - Nov.20	6	< 0.0002 - 0.0002 mg/L	Max objective met
		Oct.16 - Nov.13	1	av = 0.0002 mg/L	Av. obj. met
Nitrate - N 10 mg/L max	Oyster River: 0125580 at Highway	Oct.16 - Nov.20	6	< 0.002 - 0.126 mg/L	Objective met
pH >6.5 90th perc (np) 8.5 max	Oyster River: 0125580 at Highway	Oct.16 - Nov.20	6	7.22 - 7.59	Max objective met
		Oct.16 - Nov.13	1	np = 7.55	Av. obj. met
Dissolved Al <0.05 mg/L av 0.1 mg/L max	Oyster River	2001	0	no data collected	Omitted 2001
Total As 0.05 mg/L max	Oyster River	2001	0	no data collected	Omitted 2001
Total Cd 0.2 ug/L max	Oyster River	2001	0	no data collected	Omitted 2001
Total Cr 2 ug/L max	Oyster River	2001	0	no data collected	Omitted 2001
Total Co 50 ug/L max	Oyster River	2001	0	no data collected	Omitted 2001
Total Cu <3 ug/L av 5 ug/L 90th perc. (np)	Oyster River	2001	0	no data collected	Omitted 2001

WATER QUALITY IN B.C. – OBJECTIVES ATTINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Dissolved Fe <0.3 mg/L 90th perc. (np)	Oyster River	2001	0	no data collected	Omitted 2001
Total Pb < 3.5 ug/L av 5.4 ug/L max at hardness 11.8 mg/L	Oyster River	2001	0	no data collected	Omitted 2001
Total Pb 0.8 ug/g max in fish muscle	Oyster River Woodhus Creek Little Oyster River	2001	0	no data collected	Omitted 2001
Total Mn 0.05 mg/L max	Oyster River	2001	0	no data collected	Omitted 2001
Total Hg <0.02 ug/L av 0.1 ug/L max	Oyster River	2001	0	no data collected	Omitted 2001
Total Hg 0.5 ug/g max in fish muscle	Oyster River Woodhus Creek Little Oyster River	2001	0	no data collected	Omitted 2001
Total Ni 0.025 mg/L max	Oyster River	2001	0	no data collected	Omitted 2001
Total Zn <0.01 mg/L av 0.03 mg/L max	Oyster River	2001	0	no data collected	Omitted 2001

Table 22. Tsolum River Water Quality Objectives - 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Dissolved	E207826	Apr.18 - Nov.11	50 10	0.0032 - 0.011 mg/L	Objective met
Copper < 0.007 mg/L av. 0.011 mg/L max.	Tsolum River 500m d/s Murex Creek	Feb.20 - Nov.14	3	0.0113 - 0.043 mg/L	Objective not met
		Apr.27 - Dec.6	36	av. = 0.00798 - 0.03228 mg/L	Objective not met
		Oct.5 - 9, Oct.10-12	2	av. = 0.00504 - 0.0063 mg/L	Objective met
% steelhead egg survival no difference between test & control (at 95% confidence)	Tsolum River	2001	0	no in situ bioassay data collected	Omitted 2001

Table 23. Nechako River Water Quality Objectives - 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliform <100/100ml 90th perc. (np)	Nechako River E206583 at Prince George	Jan.2 - Dec.10	29	< 1 - 21 CFU/100 mL	Objective met
		Feb.6 - Mar.5	1	np = 19.4 CFU/100 mL	
	Chilako River:	2001	0	no data collected	Omitted 2001
Fecal Coliforms <10/100ml 90th perc (np)	Stuart River:	2001	0	no data collected	Omitted 2001
Fecal Coliforms <200/100ml geometric mean (gm) <400/100ml 90 perc. (np)	Necoslie River:	2001	0	no data collected	Omitted 2001
Total Cl ₂ Res. 0.002 mg/L max	Nechako & Stuart Rivers	2001	0	no data collected	Omitted 2001
Ammonia-N <2.05 mg/L av 14.1 mg/L max at pH = 7.5 temp = 1 °C	Nechako River	2001	0	no data collected	Omitted 2001
Ammonia-N <1.24 mg/L av 6.46 mg/L max at pH = 8.0 temp = 1 °C	Stuart River	2001	0	no data collected	Omitted 2001
Nitrite-N < 0.02 mg/L av 0.06 mg/l max	Nechako River	2001	0	no data collected	Omitted 2001
Chlorophyll - a < 50 mg/L av	Nechako River Stuart River	2001	0	no data collected	Omitted 2001
Chlorophyll - a < 100 mg/L av	Chilako River	2001	0	no data collected	Omitted 2001
Dissolved Oxygen 7.75 - 11.2 mg/L min depending on fish egg stage	Nechako River E206583 at Prince George	Jan.2 - Dec.10	30	8.5 - 12.9 mg/L	Objective met
pH 6.5 - 8.5	Nechako River E206583 at Prince George	Jan.2 - Dec.10	32	7.29 - 8.33	Objective met

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Temperature < 15 °C av ~ 100 m d/s Cheslatta Falls	Nechako River: immediately d/s Cheslatta Falls* (DFO's Cheslatta Falls site)	2001	0	no data collected	Omitted 2001
	10 km d/s Cheslatta Falls* (DFO's B. Irvine site)	2001	0	no data collected	Omitted 2001
Temperature < 20 °C Jul - Aug. < 18 °C Sep - Jun. ~ 100 m u/s Stuart River	Nechako River: at Vanderhoof ~40 km u/s Stuart R. confl. (DFO's Vanderhoof site)	2001	0	no data collected	Omitted 2001
Total Gas Pressure 109 % max	Nechako River	2001	0	no data collected	Omitted 2001

Table 24. Fraser River (From the Source to Hope) Water Quality Objectives - 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <100 /100 mL 90th percentile (np)	E206182 at Stoner (d/s Pr. Ge. mills)	Jan.4 - Dec.11	11	13 - 500 CFU/100 mL	No 5-in-30 samples:
			1	np = 380 CFU/100 mL	Indefinite result
	0600011 at Marguerite (d/s Quesnel)	Feb.20 - Dec.11	19	< 1 - 140 CFU/100 mL	No 5-in-30 samples:
			1	np = 35.2 CFU/100 mL	Indefinite result
E206581 at Hope	Jan.2 - Dec.18	31	< 1 - 106 CFU/100 mL		
	Jan.30 - Feb.27	1	np = 10.8 CFU/100 mL	Objective met	
<i>E. coli</i> <100/100 mL 90th percentile (np)	E206182 at Stoner (d/s Pr. Ge. mills)	Jan.4 - Dec.11	11	13 - 500 CFU/100 mL	No 5-in-30 samples:
			1	np = 380 CFU/100 mL	Indefinite result
Chlorine Residual < 2 ug/L av.	Fraser River	2001	0	no data collected	Omitted 2001
Suspended Solids 10 mg/L or 10% max increase	Fraser River	2001	0	no data collected	Omitted 2001
Turbidity 1 - 5 NTU max increase (control: 5 - 50 NTU)	0600011 at Marguerite (d/s Quesnel)	Feb.20 - Dec.11	19	2.87 - 355 NTU	Indefinite result No control
	E206581 at Hope	Jan.2 - Dec.18	32	1.45 - 106 NTU	Indefinite result No control
Colour 15 TCU max Jun - Sep	0600011 at Marguerite (d/s Quesnel)	Feb.20 - May 14	8	18 - 55 TCU	Objective met
		Jul.9, Sep.18	2	13 TCU	Objective met
		Jun.1 - Sep.6	5	20 - 55 TCU	Objective not met
		Oct.17 - Dec.11	4	22.5 - 45 TCU	Objective met
75 TCU max Oct - May	E206581 at Hope	Jan.2 - May 22	14	12.5 - 55 TCU	Objective met
		Jul.17 - Sep.25	6	7.5 - 15 TCU	Objective met
		Jun.5 - Aug.28	5	16 - 22.5 TCU	Objective not met
Temperature 1 °C max increase	E206182 at Stoner (d/s Pr. Ge. mills)	Jan.4 - Dec.11	6	0 - 3.8 °C	Indefinite result No control
		Feb.20 - Dec.11	19	-1 - 16 °C	Indefinite result No control
	E206581 at Hope	Jan.2 - Dec.18	32	1.5 - 18.5 °C	Indefinite result No control
Ammonia-N < 1.78 mg/L av 9.26 mg/L max at pH = 7.8	Fraser River	2001	0	no data collected	Omitted 2001

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
temp = 0 °C					
Nitrite - N < 0.04 mg/L av. 0.12 mg/L max. at chloride 2-4 mg/L	Fraser River	2001	0	no data collected	Omitted 2001
Nitrate+Nitrite-N 10 mg/L max	Fraser River	2001	0	no data collected	Omitted 2001
Chlorophyll-a 50 mg/m2 max	Fraser River	2001	0	no data collected	Omitted 2001
pH 6.5 - 8.5	E206182 at Stoner (d/s Pr. Ge. mills)	Jan.4 - Dec.11	6	6.7 - 8.19	Objective met
	0600011 at Marguerite (d/s Quesnel)	Feb.20 - Dec.11 Jul.9	19 1	7.61 - 8.13 8.59	Objective met Objective not met
	E206581 at Hope	Jan.2 - Dec.18	32	7.3 - 8.13	Objective met
Dissolved Oxygen 8.0 mg/L min May to Oct 11.0 mg/L min Nov to Apr	E206182 at Stoner (d/s Pr. Ge. mills)	Jan.4 - Mar.8	4	11.7 - 12.2 mg/L	Objective met
		Nov.14 - Dec.11	2	11.9 - 12.5 mg/L	Objective met
	0600011 at Marguerite (d/s Quesnel)	Mar.8 - Apr.30	6	9.6 - 10.1 mg/L	Objective not met
		May 14 - Oct.17	9	8.7 - 10.5 mg/L	Objective met
		Nov.1 Nov.14 - Dec.11	1 2	11.8 mg/L 9.9 - 10.1 mg/L	Objective met Objective not met
E206581 at Hope	Jan.2 - Apr.24	12	12 - 14.2 mg/L	Objective met	
	May 8 - Oct.23	15	9.6 - 11.8 mg/L		
	Nov.6 - Dec.18	5	12.2 - 13.8 mg/L		
Total Lead 0.8 ug/g max in fish muscle	Fraser River	2001	0	no data collected	Omitted 2001
Total PCBs 2.0 ug/g max in fish muscle 0.1 ug/g max in whole fish	Fraser River	2001	0	no data collected	Omitted 2001
Chlorophenols max. TCP's pH 7.8 2,3,4-: 0.1 ug/L 2,3,5-: 0.08 ug/L 2,3,6-: 0.32 ug/L 2,4,5-: 0.08 ug/L 2,4,6-: 0.5 ug/L 3,4,5-: 0.06 ug/L tot: 1.14 ug/L	Fraser River	2001	0	no data collected	Omitted 2001
max TTCPs pH 7.8:	Fraser River	2001	0	no data collected	Omitted

WATER QUALITY IN B.C. – OBJECTIVES ATTINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
2,3,4,5-: 0.2 ug/L 2,3,4,6-: 0.3 ug/L tot: 0.6 ug/L					2001
max PCP pH 7.8: 0.1 ug/L	Fraser River	2001	0	no data collected	Omitted 2001
AOX no increase over control at 95% confidence	Fraser River	2001	0	no data collected	Omitted 2001
Resin Acids 12 ug/L max DHA 45 ug/L max total at pH 7.5	Fraser River	2001	0	no data collected	Omitted 2001
Dioxins and Furans in water 0.06 pg/L max TCDD-TEQ	Fraser River	2001	0	no data collected	Omitted 2001
Dioxins and Furans in sediments 0.25 pg/g max TCDD-TEQ	Fraser River	2001	0	no data collected	Omitted 2001
Dioxins and Furans in fish lipids 50 pg/g TCDD-TEQ	Fraser River	2001	0	no data collected	Omitted 2001

Table 25. Williams Lake Water Quality Objectives – 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliform < 200 /100 mL geometric mean (gm) < 400 /100 mL 90th percentile (np) at beaches	Williams Lake	2001	0	no data collected	Omitted 2001
Fecal Coliform < 10/100 mL 90th percentile at water intakes	Williams Lake	2001	0	no data collected	Omitted 2001
Turbidity < 1 NTU av 5 NTU max.	Williams Lake	2001	0	no data collected	Omitted 2001
Total P < 0.020 mg/L av at spring overturn	0603019 Williams Lake: at lake centre	Apr.18	6	0.059 - 0.079 mg/L	Objective not met
			1	av. = 0.066 mg/L	
	0603022 Williams Lake: at deepest point	Apr.18	1	0.071 m	Objective not met
			1	av. = 0.071	
Chlorophyll-a < 5 ug/L av (May to Aug)	Williams Lake	2001	0	no data collected	Omitted 2001
Dissolved Oxygen 4.0 mg/L min 5 m above sed.	Williams Lake	2001	0	no data collected	Omitted 2001
Water Clarity 1.2 m min Secchi reading (May to August)	Williams Lake	May 6 - Aug.26 Aug.11	1	1.36 - 3.10 m 1.09 m	Objective met Objective not met
			6		
			1		

Table 26. Okanagan Valley Lakes Water Quality Objectives – 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION	
	SITE	DATE	n	VALUE		
Total - P < 0.040 mg/L av. at spring overturn (short-term)	0500450 Wood Lake West of Vernon Creek	Mar.21	2	<10 m: 0.011 - 0.054 mg/L	Objective not met	
			1	>20 m: 0.058 mg/L		
			1	av. = 0.041 mg/L		
	0500848 Wood Lake Deep Basin	Mar.21	1	<10 m: 0.054 mg/L	Objective not met	
			1	>20 m: 0.051 - 0.054 mg/L		
			1	av. = 0.053 mg/L		
Total - P < 0.008 mg/L av. at spring overturn	0500246 Kalamalka Lake at south end	Mar.13	1	<10 m: 0.01 mg/L	Objective not met	
			2	>10 m: 0.01 mg/L		
			1	av. = 0.01 mg/L		
	0500461 Kalamalka Lake South of Coldstream Creek	Mar.13	1	<10 m: 0.014 mg/L	Objective not met	
			2	>10 m: 0.01 - 0.011 mg/L		
			1	av. = 0.0117 mg/L		
	0500847 Kalamalka Lake Deep Site	Mar.13	1	<10 m: 0.011 mg/L	Objective not met	
			1	>20 m: 0.012 mg/L		
			1	av. = 0.0115 mg/L		
Total - P < 0.010 mg/L av at spring overturn	0500239 Okanagan Lake at Armstrong Arm	Mar.26	1	1 m: 0.016 mg/L	Objective not met	
			1	20 m: 0.019 mg/L		
			1	av. = 0.0175 mg/L		
		Mar.27	1	15 m: 0.018 mg/L		Objective not met
			1	av. = 0.018 mg/L		
		Apr.23	1	1 m: 0.011 mg/L		Objective not met
	1		20 m: 0.011 mg/L			
	1		45 m: 0.014 mg/L			
	0500238 Okanagan Lake at Vernon Arm	Mar.14	1	1m: 0.012 mg/L	Objective not met	
			1	15m: 0.015 mg/L		
			1	20m: 0.009 mg/L		
			1	av. = 0.012 mg/L		
	0500730 Okanagan Lake at north basin	Mar.14	1	1 m: 0.015 mg/L	Objective not met	
			1	15 m: 0.018 mg/L		
			1	20 m: 0.015 mg/L		
1			av. = 0.016 mg/L			
Mar.23		1	1 m: 0.006 mg/L	Objective met		
		1	20 m: 0.008 mg/L			
0500236 Okanagan Lake at central basin	Feb.2	1	1 m: 0.009 mg/L	Objective not met		
		1	20 m: 0.012 mg/L			
		1	45 m: 0.012 mg/L			
		1	av. = 0.011 mg/L			
0500729 Okanagan Lake at south basin	Mar.12	1	1 m: 0.008 mg/L	Objective met		
		1	15 m: 0.009 mg/L			
		1	20 m: 0.007 mg/L			
		1	av. = 0.008 mg/L			

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total - P < 0.010 mg/L av at spring overturn	0500454 Okanagan Lake U/S Kelowna STP	Feb.21	1	1 m: 0.006 mg/L	Objective met
			1	20 m: 0.005 mg/L	
			1	av. = 0.0055 mg/L	
		Apr.24	1	1 m: 0.005 mg/L	Objective met
			1	20 m: 0.004 mg/L	
			1	40 m: 0.006 mg/L	
	0500456 Okanagan Lake South Prairie C.	Feb.22	1	1 m: 0.013 mg/L	Objective not met
			1	20 m: 0.012 mg/L	
			1	av. = 0.0125 mg/L	
	Total - P < 0.015 mg/L av at spring overturn	0500615 Skaha Lake at center	Feb 20	1	1 m: 0.012 mg/L
1				15 m: 0.012 mg/L	
1				20 m: 0.012 mg/L	
1				av. = 0.012 mg/L	
May.23			1	1 m: 0.009 mg/L	Objective met
			1	20 m: 0.008 mg/L	
			1	40 m: 0.009 mg/L	
			1	av. = 0.0087 mg/L	
0500453 Skaha Lake W.Okanagan L. river mouth		Feb.20	1	1 m: 0.014 mg/L	Objective met
			1	20 m: 0.012 mg/L	
			1	av. = 0.013 mg/L	
		May.23	1	1 m: 0.009 mg/L	Objective met
			1	20 m: 0.009 mg/L	
			1	36 m: 0.007 mg/L	
0500846 Skaha Lake south basin		Feb.20	1	1 m: 0.012 mg/L	Objective met
			1	20 m: 0.013 mg/L	
			1	av. = 0.0125 mg/L	
		May.23	1	1 m: 0.008 mg/L	Objective met
1			20 m: 0.009 mg/L		
1			36 m: 0.008 mg/L		
0500248 Osoyoos Lake south basin	Mar.15	1	1 m: 0.015 mg/L	Objective not met	
		1	20 m: 0.016 mg/L		
		1	av. = 0.0155 mg/L		
	May.23	1	1 m: 0.012 mg/L	Objective not met	
1		20 m: 0.01 mg/L			
1		24 m: 0.032 mg/L			
0500249 Osoyoos Lake at north basin	Mar.15	1	1 m: 0.015 mg/L	Objective met	
		1	15 m: 0.013 mg/L		
		1	20 m: 0.015 mg/L		
		1	av. = 0.0143 mg/L		

WATER QUALITY IN B.C. – OBJECTIVES ATTINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total - P < 0.015 mg/L av at spring overturn	0500728 Osoyoos Lake opp. Monashee Co-op	Mar.15	1	1 m: 0.015 mg/L	Objective not met
			1	20 m: 0.017 mg/L	
			1	av. = 0.016 mg/L	
	May.24	1	1 m: 0.012 mg/L	Objective met	
		1	20 m: 0.009 mg/L		
		1	45 m: 0.012 mg/L		
		1	av. = 0.011 mg/L		

Table 27. Similkameen River and Hedley Creek Water Quality Objectives - 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms < 10 /100 mL 90th percentile (np)	0500073 Similkameen River @ Chopka Rd. Bridge	Jan.9 - Dec.11	30	< 1 - 37CFU/100 mL	Indefinite result
			1	np = 11.6 CFU/100 mL	
	0500629 Similkameen River @ Princeton Hwy 3 Bridge	Jan.9 - Dec.18	32	< 1 - 24 CFU/100 mL	Indefinite result
			1	np = 7 CFU/100 mL	
<i>E. coli</i> < 10 /100 mL 90th percentile (np)	Similkameen River	2001	0	no data collected	Omitted 2001
Enterococci < 3 /100 mL 90th percentile	Similkameen River	2001	0	no data collected	Omitted 2001
Suspended Solids max. increase: 10 mg/L or 10%	Similkameen River	2001	0	no data collected	Omitted 2001
Substrate Sedimentation: no increase in weight of particles < 3 mm dia.	Similkameen River	2001	0	no data collected	Omitted 2001
Turbidity max. increase: 1 - 5 NTU or 10%	0500073 Similkameen River @ Chopka Rd. Bridge	Jan.9 - Dec.11	30	0.18 - 9.44 NTU	Control Site
			32	0.22 - 8.19 NTU	
	0500629 Similkameen River @ Princeton Hwy 3 Bridge	Jan.9 - Dec.18	23	increase = 0 - 0.77 NTU	Objective met
Total Cl ₂ Residue 0.002 mg/L max.	Similkameen River	2001	0	no data collected	Omitted 2001
WAD-CN < 0.005 mg/L av 0.010 mg/L max.	0500073 Similkameen River @ Chopka Rd. Bridge	Jan.9 - Dec.11	30	< 0.0005 - 0.0013 mg/L	Max objective met
			1	av. = < 0.0005 mg/L	Objective met
	0500629 Similkameen River @ Princeton Hwy 3 Bridge	Jan.9 - Dec.18	32	< 0.0005 - 0.0013 mg/L	Max objective met
			1	av. = 0.00078 mg/L	Objective met
	E223873 Hedley Creek U/S Nickel Plate Diffuser	Jul.18	1	< 0.0005 mg/L	Objective met
E223874 Hedley Creek 100 m D/S Nickel Plate Diffuser	Jul.18	1	< 0.0005 mg/L	Objective met	
SAD-CN + SCN 0.20 mg/L	0500073 Similkameen River @ Chopka Rd. Bridge	Jan.9 - Dec.11	30	< 0.0005 - 0.0026 mg/L	Objective met

WATER QUALITY IN B.C. – OBJECTIVES ATTINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
SAD-CN + SCN 0.20 mg/L	0500629 Similkameen River @ Princeton Hwy 3 Bridge	Jan.9 - Dec.18	32	< 0.0005 - 0.0067 mg/L	Objective met
	E223873 Hedley Creek U/S Nickel Plate Diffuser	Jul.18	1	0.0008 mg/L	Objective met
	E223874 Hedley Creek 100 m D/S Nickel Plate Diffuser	Jul.18	1	0.0044 mg/L	Objective met
Cyanate as CN 0.45 mg/L max.	E223873 Hedley Creek U/S Nickel Plate Diffuser	Jul.18	1	< 0.01 mg/L	Objective met
	E223874 Hedley Creek 100 m D/S Nickel Plate Diffuser	Jul.18	1	< 0.01 mg/L	Objective met
Total Arsenic 0.005 mg/L max. or 20% increase	0500073 Similkameen River @ Chopka Rd. Bridge	Jan.9 - Dec.11	29	0.0002 - 0.002 mg/L	Objective met
	0500629 Similkameen River @ Princeton Hwy 3 Bridge	Jan.9 - Dec.18	31	0.0002 - 0.0043 mg/L	Objective met
	E223873 Hedley Creek U/S Nickel Plate Diffuser	Jul.18	1	< 0.06	Indefinite result
	E223874 Hedley Creek 100 m D/S Nickel Plate Diffuser	Jul.18	1	< 0.06	Indefinite result
Chlorophyll-a < 50 mg/m ² av.	Similkameen River	2001	0	no data collected	Omitted 2001
Dissolved Oxygen 8 mg/L min. (July - March) 11 mg/L min. (April - June)	Similkameen River	2001	0	no data collected	Omitted 2001
pH 6.5 - 8.5	0500073 Similkameen River @ Chopka Rd. Bridge	Jan.9 - Dec.11	30	7.03 - 8.22	Objective met
	0500629 Similkameen River @ Princeton Hwy 3 Bridge	Jan.9 - Dec.18	32	7.12 - 8.18	Objective met
	E223873 Hedley Creek U/S Nickel Plate Diffuser	Jul.18	1	7.6	Objective met
	E223874 Hedley Creek 100 m D/S Nickel Plate Diffuser	Jul.18	1	7.36	Objective met

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Dissolved Aluminum < 0.05 mg/L av. 0.10 mg/L max. or 20% increase	Similkameen River	2001	0	no data collected	Omitted 2001
Total Chromium < 0.002 mg/L av. 0.02 mg/L max. or 20% increase	0500073 Similkameen River @ Chopka Rd. Bridge	Jan.9 - Dec.11	30	< 0.0002 - 0.0019 mg/L	Objective met
		Feb.6 - 27	1	av. = 0.0002 mg/L	Objective met
	0500629 Similkameen River @ Princeton Hwy 3 Bridge	Jan.9 - Dec.18	32	< 0.0002 - 0.0015 mg/L	Objective met
		Feb.6 - Mar.6	1	av. = 0.0002 mg/L	Objective met
	E223873 Hedley Creek U/S Nickel Plate Diffuser	Jul.18	1	< 0.006 mg/L	Objective met
			1	av. = < 0.006 mg/L	Indefinite result
Total Copper < 0.002 mg/L av. 0.003 mg/L max. or 20% inc. at hardness = 14	0500073 Similkameen River @ Chopka Rd. Bridge	Jan.9 - Dec.11	28	0.0003 - 0.0028 mg/L	Objective met
		May 1 - May 28	2	0.0032 - 0.0036 mg/L	Objective not met
		Feb.6 - 27	1	av. = 0.00034 mg/L	Objective met
	0500629 Similkameen River @ Princeton Hwy 3 Bridge	Jan.9 - Dec.18	32	0.0003 - 0.0024 mg/L	Objective met
		Feb.6 - Mar.6, May 15 - Jun.12	2	av. = 0.00052 - 0.00112 mg/L	Objective met
	E223873 Hedley Creek U/S Nickel Plate Diffuser	Jul.18	1	< 0.006 mg/L	Objective met
		1	av. = < 0.006 mg/L	Indefinite result	
Total Iron 0.3 mg/L max. or 20% increase	0500073 Similkameen River @ Chopka Rd. Bridge	Jan.9 - Dec.11	21	0.0091 - 0.228 mg/L	Objective met
		May 1 - May 28	3	0.59 - 1.08 mg/L	Objective not met
	0500629 Similkameen River @ Princeton Hwy 3 Bridge	Jan.9 - Dec.18	30	0.0118 - 0.281 mg/L	Objective met
		Apr.4 - May 25	2	0.319 - 0.58 mg/L	Objective not met
	E223873 Hedley Creek U/S Nickel Plate Diffuser	Jul.18	1	0.331 mg/L	Objective not met
	E223874 Hedley Creek 100 m D/S Nickel Plate Diffuser	Jul.18	1	0.335 mg/L	Objective not met
Total Manganese 0.05 mg/L max. or 20% increase	0500073 Similkameen River @ Chopka Rd. Bridge	Jan.9 - Dec.11	30	0.0027 - 0.0286 mg/L	Objective met
	0500629 Similkameen River @ Princeton Hwy 3 Bridge	Jan.9 - Dec.18	32	0.0011 - 0.0107 mg/L	Objective met

WATER QUALITY IN B.C. – OBJECTIVES ATTINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Manganese 0.05 mg/L max. or 20% increase	E223873 Hedley Creek U/S Nickel Plate Diffuser	Jul.18	1	0.012 mg/L	Objective met
	E223874 Hedley Creek 100 m D/S Nickel Plate Diffuser	Jul.18	1	0.012 mg/L	Objective met
Total Lead 0.004 mg/L av. 0.030 mg/L max. or 20% inc. at hardness = 46	0500073 Similkameen River @ Chopka Rd. Bridge	Jan.9 - Dec.11	30	< 0.0002 - 0.001 mg/L	Objective met
		Feb.6 - 27	1	av. = 0.0002 mg/L	Objective met
	0500629 Similkameen River @ Princeton Hwy 3 Bridge	Jan.9 - Dec.18	32	< 0.0002 - 0.0007 mg/L	Objective met
		Feb.6 - Mar.6, May 15 - Jun.12	2	av. = 0.0002 - 0.00054 mg/L	Objective met
	E223873 Hedley Creek U/S Nickel Plate Diffuser	Jul.18	1	< 0.06 mg/L	Indefinite result
			1	av. = < 0.06 mg/L	Indefinite result
Total Mercury < 0.02 ug/L av. 0.1 ug/L max.	Similkameen River	2001	0	no data collected	Omitted 2001
Total Molybdiium < 0.01 mg/L av. 0.05 mg/L max. (May - Sept.)	0500073 Similkameen River @ Chopka Rd. Bridge	May 1 - Sept.18	12	0.0007 - 0.0024 mg/L	Objective met
			1	av. = 0.00145 mg/L	Indefinite result
	0500629 Similkameen River @ Princeton Hwy 3 Bridge	May 1 - Sept.18	13	0.0005 - 0.0018 mg/L	Objective met
		May 15 - Jun.12	1	av. = 0.00054 mg/L	Objective met
	E223873 Hedley Creek U/S Nickel Plate Diffuser	Jul.18	1	< 0.01 mg/L	Objective met
			1	av. = < 0.01 mg/L	Indefinite result
Total Nickel 0.025 mg/L max. or 20% increase at hardness < 65	0500073 Similkameen River @ Chopka Rd. Bridge	Jan.9 - Dec.11	30	< 0.0002 - 0.0011 mg/L	Objective met
	0500629 Similkameen River @ Princeton Hwy 3 Bridge	Jan.9 - Dec.18	32	< 0.0002 - 0.0012 mg/L	Objective met
	E223873 Hedley Creek U/S Nickel Plate Diffuser	Jul.18	1	< 0.02 mg/L	Objective met
	E223874 Hedley Creek 100 m D/S Nickel Plate Diffuser	Jul.18	1	< 0.02 mg/L	Objective met

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Uranium < 0.01 mg/L av. 0.10 mg/L max. or 20% increase	Similkameen River	2001	0	no data collected	Omitted 2001
Total Zinc < 0.01 mg/L av. 0.03 mg/L max. or 20% increase	0500073 Similkameen River @ Chopka Rd. Bridge	Jan.9 - Dec.11	30	< 0.0002 - 0.0072 mg/L	Objective met
		Feb.6 - 27	1	av. = 0.00028 mg/L	Objective met
	0500629 Similkameen River	Jan.9 - Dec.18	32	< 0.0002 - 0.002 mg/L	Objective met
	@ Princeton Hwy 3 Bridge	Feb.13 - Mar.6, May 15 - Jun.12	2	av. = 0.00028 - 0.00076 mg/L	Objective met
	E223873 Hedley Creek	Jul.18	1	< 0.002 mg/L	Objective met
	U/S Nickel Plate Diffuser		1	av. = < 0.002 mg/L	Indefinite result
	E223874 Hedley Creek	Jul.18	1	< 0.002 mg/L	Objective met
100 m D/S Nickel Plate Diffuser		1	av. = < 0.002 mg/L	Indefinite result	

Table 28. Cahill Creek and Tributaries Water Quality Objectives - 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Suspended Solids 10 mg/L or 10% max. increase	Cahill Creek (Hwy to Similkameen) Red Top Gulch Creek	2001	0	no data collected	Omitted 2001
Suspended Solids 20 mg/L or 10% max. increase	Cahill Creek (Headwaters to Hwy) Nickel Plate Mine Creek Sunset Creek	2001	0	no data collected	Omitted 2001
Turbidity 5 NTU or 10% max. increase	E206637 Cahill Creek at highway	Jul.18	1	4.83 NTU	Objective met
	E206638 Red Top Gulch at highway	Jul.18	1	0.73 NTU	Objective met
Dissolved Solids 500 mg/L max.	E206637 Cahill Creek at highway	Jul.18	1	220 mg/L	Objective met
	E206638 Red Top Gulch at highway	Jul.18	1	473 mg/L	Objective met
	Nickel Plate Mine Creek Sunset Creek	2001	0	no data collected	Omitted 2001
Sulphate < 50 mg/L av. 150 mg/L max.	E206637 Cahill Creek at highway	Jul.18	1	56.1 mg/L	Max objective met
			1	av. = 56.1 mg/L	Indefinite result
	E206638 Red Top Gulch at highway	Jul.18	1	155 mg/L	Objective not met
			1	av. = 155 mg/L	Indefinite result
	Nickel Plate Mine Creek Sunset Creek	2001	0	no data collected	Omitted 2001
WAD-CN < 0.005 mg/L av. 0.010 mg/L max.	E206637 Cahill Creek at highway	Jul.18	1	< 0.0005 mg/L	Objective met
			1	av. = < 0.0005 mg/L	Indefinite result
	E206638 Red Top Gulch at highway	Jul.18	1	0.0005 mg/L	Objective met
			1	av. = 0.0005 mg/L	Indefinite result
	Nickel Plate Mine Creek Sunset Creek	2001	0	no data collected	Omitted 2001

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
SAD - CN + Thiocyanate as CN 0.20 mg/L max.	E206637 Cahill Creek at highway	Jul.18	1	0.0144 mg/L	Objective met
	E206638 Red Top Gulch at highway	Jul.18	1	0.0711 mg/L	Objective met
	Nickel Plate Mine Creek Sunset Creek	2001	0	no data collected	Omitted 2001
Cyantes as CN 0.45 mg/L max.	E206637 Cahill Creek at highway	Jul.18	1	< 0.01 mg/L	Objective met
	E206638 Red Top Gulch at highway	Jul.18	1	< 0.01 mg/L	Objective met
	Nickel Plate Mine Creek Sunset Creek	2001	0	no data collected	Omitted 2001
Total Arsenic 0.005 mg/L max.	Cahill Creek Red Top Gulch Nickel Plate Mine Creek Sunset Creek	2001	0	no data collected	Omitted 2001
Ammonia-N < 1.11 mg/L av. 5.78 mg/L max. at pH = 8.0 temp. = 12 °C	Cahill Creek Red Top Gulch Nickel Plate Mine Creek Sunset Creek	2001	0	no data collected	Omitted 2001
Nitrite-N < 0.02 mg/L av. 0.06 mg/L max.	E206637 Cahill Creek at highway	Jul.18	1	< 0.005	Objective met
			1	av. = < 0.005	Indefinite result
	E206638 Red Top Gulch at highway	Jul.18	1	< 0.005	Objective met
			1	av. = < 0.005	Indefinite result
Nitrate-N 10 mg/L max.	E206637 Cahill Creek at highway	Jul.18	1	1.56 mg/L	Objective met
	E206638 Red Top Gulch at highway	Jul.18	1	3.51 mg/L	Objective met
	Nickel Plate Mine Creek Sunset Creek	2001	0	no data collected	Omitted 2001
pH 6.5 - 8.5	E206637 Cahill Creek at highway	Jul.18	1	7.88	Objective met
	E206638 Red Top Gulch at highway	Jul.18	1	8.21	Objective met
	Nickel Plate Mine Creek Sunset Creek	2001	0	no data collected	Omitted 2001

WATER QUALITY IN B.C. – OBJECTIVES ATTINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Aluminum 0.30 mg/L max. or 20% increase at pH > 7	Cahill Creek Red Top Gulch Nickel Plate Mine Creek Sunset Creek	2001	0	no data collected	Omitted 2001
Total Cadmium 0.005 mg/L	Cahill Creek Red Top Gulch Nickel Plate Mine Creek Sunset Creek	2001	0	no data collected	Omitted 2001
Total Copper < 0.005 mg/L av. 0.007 mg/L max. or 20% max. increase	Cahill Creek Red Top Gulch Nickel Plate Mine Creek Sunset Creek	2001	0	no data collected	Omitted 2001
Dissolved Iron 0.3 mg/L max.	E206637 Cahill Creek at highway	Jul.18	1	0.042 mg/L	Objective met
	E206638 Red Top Gulch at highway	Jul.18	1	< 0.005 mg/L	Objective met
	Nickel Plate Mine Creek Sunset Creek	2001	0	no data collected	Omitted 2001
Total Lead < 0.005 mg/L av. 0.015 mg/L max. at 20% increase	Cahill Creek Red Top Gulch Nickel Plate Mine Creek Sunset Creek	2001	0	no data collected	Omitted 2001
Total Mercury 0.1 ug/L max.	Cahill Creek Red Top Gulch Nickel Plate Mine Creek Sunset Creek	2001	0	no data collected	Omitted 2001
Total Molybdenum 0.01 mg/L av. 0.05 mg/L max. (May - Sept.)	Cahill Creek Red Top Gulch Nickel Plate Mine Creek Sunset Creek	2001	0	no data collected	Omitted 2001
Total Selenium 1.0 ug/L max. or 20% max. increase	Cahill Creek Red Top Gulch Nickel Plate Mine Creek Sunset Creek	2001	0	no data collected	Omitted 2001
Total Silver 0.0001 mg/L max. or 20% max. increase	Cahill Creek Red Top Gulch Nickel Plate Mine Creek Sunset Creek	2001	0	no data collected	Omitted 2001
Total Zinc 0.05 mg/L max.	Cahill Creek Red Top Gulch Nickel Plate Mine Creek Sunset Creek	2001	0	no data collected	Omitted 2001

Table 29. Christina Lake Water Quality Objectives – 2001.

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Zooplankton > 10% for any of the rotifers (ro objective) <i>Kellicottia</i> <i>Conochilus</i> > 10% for any of the crustaceans (cr objective) <i>Bosmina</i> <i>Epishura</i> <i>Diatylops</i>	Christina Lake	1998	0	no data collected	Omitted 1998
Dissolved Oxygen 8 mg/L at any depth	Christina Lake	1998	0	no data collected	Omitted 1998
Turbidity ≤ 1 NTU seasonal av 5 NTU max	Christina Lake	1998	0	no data collected	Omitted 1998
Secchi Depth 3 m min seasonal av > 10 m	0200078 Christina Lake at Christina	Apr.10 - Oct.3	2	12 - 12.5 m	Objective met
			1	av = 12.25 m	Objective met
	E215758 north basin deep center	Apr.10 - Oct.3	2	12.7 - 13.5 m	Objective met
			1	av = 13.1 m	Indefinite result
Total Phosphorus < 0.007 mg/L av at spring overturn	0200078 Christina Lake at Christina	Apr.10	2	0.008 - 0.009 mg/L	
			1	av = 0.0085 g/L	Objective not met
	E215758 north basin deep center	Apr.10	2	0.008 - 0.008 mg/L	
			1	av = 0.008 mg/L	Objective not met
Total Nitrogen ≤ 0.200 mg/L av at spring overturn	0200078 Christina Lake at Christina	Mar.9	3	0.1 - 0.12 mg/L	
			1	av = 0.11 mg/L	Objective met
	E215758 north basin deep center	Mar.9	3	0.09 - 0.13 mg/L	
			1	av = 0.11 mg/L	Objective met
Chlorophyll - a ≤ 0.0025 mg/L seasonal av.	0200078 Christina Lake at Christina	Apr.10 - Oct.3	4	0.0005 - 0.0046 mg/L	
			1	av = 0.0021 mg/L	Objective met
	E215758 north basin deep center	Apr.10 - Oct.3	4	< 0.0004 - 0.0025 mg/L	
			1	av = 0.0013 mg/L	Objective met

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Periphyton Chlorophyll - <i>a</i> 10 mg/m ² seasonal av.	Christina Lake	1998	0	no data collected	Omitted 1998
Fecal Coliforms ≤ 10/100 mL 90th perc. (np) over 30 days	Christina Lake	1998	0	no data collected	Omitted 1998

Table 30. Thompson River Water Quality Objectives - 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliform < 10 CFU/100 mL 90th percentile. (np)	0600135 South Thompson River Kamloops d/s Peterson Cr.	Jan.22 - Dec.10	5	< 1 - 2 CFU/100 mL	No 5-in-30 samples
			1	np = 1.6 CFU/100 mL	Indefinite result
	0600164 North Thompson River at Kamloops u/s Paul Cr.	Jan.22 - Dec.10	5	< 1 - 3 CFU/100 mL	No 5-in-30 samples
			1	np = 2.6 CFU/100 mL	Indefinite result
	E218768 Kamloops Lake near outlet	Jan.22 - Dec.10	5	< 1 - 3 CFU/100 mL	No 5-in-30 samples
			1	np = 2.2 CFU/100 mL	Indefinite result
	0600004 Lower Thompson at Savona	Jan.22 - Dec.10	5	all < 1 CFU/100 mL	No 5-in-30 samples
			1	np = < 1 CFU/100 mL	Indefinite result
	0600163 Lower Thompson d/s Walhachin	Jan.22 - Dec.10	5	< 1 - 2 CFU/100 mL	No 5-in-30 samples
			1	np = 1.6 CFU/100 mL	Indefinite result
	0600005 Lower Thompson at Spences Bridge	Jan.22 - Dec.10	5	2 - 8 CFU/100 mL	No 5-in-30 samples
			1	np = 6.4 CFU/100 mL	Indefinite result
	E206586 Lower Thompson at Spences Br. d/s Nicola R.	Jan.2 - Dec.18 Feb.12 - Mar.6, May.9 - Jun.6 Sep.12 - Oct.10	34	< 1 - 22 CFU/100 mL	No 5-in-30 samples
			2	np = 10.2 - 14.8 CFU/100 mL	Objective not met
1			np = 18.2 CFU/100 mL	Objective met	
<i>E. coli</i> < 200/100 mL geometric mean (gm)	0600135 South Thompson River Kamloops d/s Peterson Cr.	Jan.22 - Dec.10	5	< 1 - 2 CFU/100 mL	No 5-in-30 samples
			1	np = 1.6 CFU/100 mL	Indefinite result
	0600164 North Thompson River at Kamloops u/s Paul Cr.	Jan.22 - Dec.10	5	< 1 - 3 CFU/100 mL	No 5-in-30 samples
			1	np = 2.6 CFU/100 mL	Indefinite result
	E218768 Kamloops Lake near outlet	Jan.22 - Dec.10	5	< 1 - 3 CFU/100 mL	No 5-in-30 samples
			1	np = 2.2 CFU/100 mL	Indefinite result
	0600004 Lower Thompson at Savona	Jan.22 - Dec.10	5	all <1 CFU/100 mL	No 5-in-30 samples
			1	np = < 1 CFU/100 mL	Indefinite result
	0600163 Lower Thompson d/s Walhachin	Jan.22 - Dec.10	5	<1 - 2 CFU/100 mL	No 5-in-30 samples
			1	np = 1.6 CFU/100 mL	Indefinite result
0600005 Lower Thompson at Spences Bridge	Jan.22 - Dec.10	5	2 - 5 CFU/100 mL	No 5-in-30 samples	
		1	np = 4.6 CFU/100 mL	Indefinite result	
Colour 15 TCU max. or 5 TCU increase over average of N + S Thompson R's	0600135 South Thompson River Kamloops d/s Peterson Cr.	Feb.20 - Dec.10	3	5 - 8 TCU	Objective met
			0600164 North Thompson River at Kamloops u/s Paul Cr.	Feb.20 - Dec.10	3

WATER QUALITY IN B.C. – OBJECTIVES ATTINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Colour (continued)	E218768 Kamloops Lake near outlet	Feb.20 - Dec.10	3	8 - 10 TCU	Objective met
	0600004 Lower Thompson at Savona	Feb.20 - Dec.10	3	8 - 10 TCU	Objective met
	0600163 Lower Thompson d/s Walhachin	Feb.20 - Dec.10	3	8 - 9 TCU	Objective met
	0600005 Lower Thompson at Spences Bridge	Feb.20 - Dec.10	3	8 - 9 TCU	Objective met
	E206586 Lower Thompson at Spences Br. d/s Nicola R.	Jan.2 - Dec.18 Jun.6	26 2	2.5 - 15 TCU 20 - 25 TCU	Objective met Objective not met
Chlorophyll - <i>a</i> < 50 mg/m ²	0600005 Lower Thompson at Spences Bridge	Feb.20	6	119 - 213 mg/m ²	Objective not met
		Oct.24	6	81 - 230 mg/m ²	
			2	av. = 133 - 177 mg/m ²	
Dioxins & Furans 0.2 pg/L max. TEQ-TCDD	Thompson River Kamloops Lake	2001	0	no data collected	Omitted 2001
Dioxins & Furans 1.0 pg/g max. TEQ-TCDD wet weight in fish	Thompson River Kamloops Lake	2001	0	no data collected	Omitted 2001
Dioxins & Furans 0.7 pg/g max. TEQ-TCDD dry weight in seds.	Thompson River Kamloops Lake	2001	0	no data collected	Omitted 2001
Resin Acids 12 µg/L DHA max. 45 µg/L total max. at pH = 7.5	0600135 South Thompson River Kamloops d/s Peterson Cr.	Dec.10	1	DHA: < 0.02 µg/L	Objective met
			1	total: < 0.3 µg/L	Objective met
	0600164 North Thompson River at Kamloops u/s Paul Cr.	Dec.10	1	DHA: < 0.02 µg/L	Objective met
			1	total: < 0.3 µg/L	Objective met
	E218768 Kamloops Lake near outlet	Dec.10	1	DHA: < 0.02 µg/L	Objective met
			1	total: < 0.3 µg/L	Objective met
0600004 Lower Thompson at Savona	Dec.10	1	DHA: < 0.02 µg/L	Objective met	
		1	total: < 0.3 µg/L	Objective met	
0600163 Lower Thompson d/s Walhachin	Dec.10	1	DHA: < 0.02 µg/L	Objective met	
		1	total: < 0.3 µg/L	Objective met	
0600005 Lower Thompson at Spences Bridge	Dec.10	1	DHA: < 0.02 µg/L	Objective met	
		1	total: < 0.3 µg/L	Objective met	

Table 31. Columbia River (From Keenleyside to Birchbank) Water Quality Objectives - 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Dissolved Oxygen 10 mg/L min.	200103 at Birchbank	Feb.12 - Dec.12	9	10 - 13.8 mg/L	Objective met
		Nov.20, Nov.26	2	9.6 - 9.8 mg/L	Objective not met
	E223892 D/S Stoney Creek	Feb.12 - Dec.12	9	10.1 - 12.3 mg/L	Objective met
		Nov.20, Nov.26	2	9.8 - 9.9 mg/L	Objective not met
	E223893 100 m D/S RDCK STP outfall	Feb.12 - Dec.12	10	10.1 - 12.3 mg/L	Objective met
May.9	1	9.7 mg/L	Objective not met		
pH 6.5 - 8.5	0200103 at Birchbank	Jan.8 - Dec.26	65	6.87 - 8.3	Objective met
		Feb.12 - Dec.6	27	6.82 - 8.27	Objective met
	E223892 D/S Stoney Creek	Dec.12	1	6.38	Objective not met
		Feb.12 - Dec.12	27	6.7 - 8.29	Objective met
	E223893 100 m D/S RDCK STP outfall	Feb.19, May.1	2	4.6, 9.25	Objective not met
Colour 15 TCU max	0200103 at Birchbank	Jan.8 - Dec.26	28	< 2.5 - 8 TCU	Objective met
		Feb.12 - Dec.12	15	< 5 - 11 mg/L	Control site
Suspended Solids 10 mg/L max increase	E223892 D/S Stoney Creek	Feb.12 - Dec.12	15	Increase = 0 mg/L for all	Objective met
	E223893 100 m D/S RDCK STP outfall	Feb.12 - Dec.12	15	Increase = 0 mg/L for all	Objective met
	0200103 at Birchbank	Jan.8 - Dec.26	43	0.21 - 1.33 NTU	Control site
Turbidity 5 NTU max increase	E223892 D/S Stoney Creek	Feb.12 - Dec.12	17	Increase = 0 - 0.07 NTU	Objective met
	E223893 100 m D/S RDCK STP outfall	Feb.12 - Dec.12	17	Increase = 0 - 0.2 NTU	Objective met
	Columbia River:	2001	0	no data collected	Omitted 2001
Sediment TOC no increase u/s to d/s at 95% confidence					

WATER QUALITY IN B.C. – OBJECTIVES ATTINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Dissolved Gas 110% max.	0200103 Columbia River at Birchbank	Feb.12 - Dec.1	15	100.3 - 106.1 %	Objective met
Fecal Coliform < 100/100 mL 90th percentile (np)	0200103 at Birchbank	Jan.8 - Dec.26 Jan.24-Feb.13, Feb.19 - Mar.20, Apr.3 - May.2, May.3 - 28, Oct.29 - Nov.26, Dec.3 - 26	31	< 2 - 6 CFU/100 mL	Objective met
		E223893 100 m D/S RDCK STP outfall	Feb.13 - Dec.12	14	
	Apr.24 - May.15, Nov.20 - Dec.12	2	np = 8.4 - 12.2 CFU/100 mL	Objective met	
E. coli < 100 /100mL 90th percentile (np)	0200103 at Birchbank	Feb.13 - Dec.12	15	< 1 - 7 CFU/100 mL	Objective met
		Feb.13 - 22, Apr.24 - May 15	2	np = 1 - 4.6 CFU /100 mL	
	E223893 100 m D/S RDCK STP outfall	Feb.13 - Dec.12	14	1 - 14 CFU/100 mL	Objective met
		Apr.24 - May.15, Nov.20 - Dec.12	2	np = 8 - 8.6 CFU/100 mL	
Toxicity % mill effluent in river: < 0.05 of the 96 - h LC ₅₀	Columbia River	2001	0	no data collected	Omitted 2001
Chlorophenols < 0.05 µg/L tri < 0.10 µg/L tetra < 0.05 µg/L penta	Columbia River	2001	0	no data collected	Omitted 2001
Dioxins & Furans 1pg/g TCDD TEQ max. in fish (wet weight)	Columbia River	2001	0	no data collected	Omitted 2001
Dioxins & Furans max. in water	Columbia River	2001	0	no data collected	Omitted 2001
Dioxins & Furans 0.7 pg/L TCDD TEQ max. in seds.	Columbia River	2001	0	no data collected	Omitted 2001
Resin Acids 12 µg/L max DHA 45 µg/L max total pH = 7.6	Columbia River	2001	0	no data collected	Omitted 2001

VARIABLE & OBJECTIVE	MEASUREMENT			CONCLUSION	
	SITE	DATE	n		VALUE
Chlorinated Resin Acids 6 µg/L max. of mono Cl-DHA & di Cl-DHA	Columbia River	2001	0	no data collected	Omitted 2001
Chlorophyll - a < 50 mg/m ² av.	Columbia River	2001	0	no data collected	Omitted 2001

Table 32. Columbia River (From Birchbank to the International Border) Water Quality Objectives - 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
pH 6.5 - 8.5	0200559 at Waneta	Jan.2 - Dec.26	85	6.91 - 8.33	Objective met
		Feb.20, Mar.20, Jun.27, Oct.15	4	4.9 - 6.05	Objective not met
	0200558 New Trail Bridge	Feb.12 - Dec.12	27	7.29 - 8.17	Objective met
		Feb.19 - Dec.12	2	6.33 - 9.53	Objective not met
	E216137 Old Trail Bridge	Feb.12 - Dec.12	28	6.9 - 8.25	Objective met
		Feb.19	1	9.58	Objective not met
Ammonia 30-day average 1.13 mg/L at 10°C and pH 8.0	0200559 at Waneta	Jan.24 - Dec.12	23	0.006 - 0.5 mg/L	
		Jan.24 - Feb.22, Apr.18 - May 6, Nov.20 - Dec.2	3	av. = 0.012 - 0.209 mg/L	Objective met
	0200558 New Trail Bridge	Feb.12 - Dec.12	15	< 0.005 - 0.035 mg/L	
		Feb.12 - 22, Apr.24 - May 15, Nov.20-Dec.12	3	av. = 0.014 - 0.024 mg/L	Objective met
	E216137 Old Trail Bridge	Feb.12 - Dec.12	15	< 0.005 - 0.025 mg/L	
		Feb.12 - 22, Apr.24 - May 15, Nov.20-Dec.12	3	av. = 0.010 - 0.018 mg/L	Objective met
Dissolved Gas 110% max.	0200559 at Waneta	Feb.12 - Dec.1	15	100.1 - 105.8 %	Objective met
Fecal Coliform < 10 /100 mL 90th percentile (np)	0200559 at Waneta	Jan.2 - Dec.26	66	< 1 - 74 /100 mL	
		Jan.2 - 29, Feb.5 - 19, Mar.20 - Apr.17, Apr.23 - May 3, May 8 - 22, Nov.19 - Dec.3	6	np = 1 - 9 CFU /100 mL	Objective met
		Feb.20 - Mar.12, May.28 - Jun.27, Jul.3 - 30, Aug.7 - Sep.4, Sep.10 - Oct.9, Oct.15 - Nov.13, Dec.6 - Dec.26	7	np = 12.8 - 74 CFU/100 mL	Objective not met
E. coli < 10 /100mL 90th percentile (np)	0200559 at Waneta	Feb.13 - Dec.12	14	< 1 - 8 CFU/100 mL	
		Apr.24 - May 15, Nov.20 - Dec.12	2	np = 5.6 - 6 CFU /100 mL	Objective met
Enterococcus sp. < 3 /100mL 90th percentile (np)	0200559 at Waneta	Feb.13 - Dec.12	14	< 1 - 11 CFU/100 mL	
		Apr.24 - May 15	1	np = 7.8 CFU /100 mL	Objective not met
		Nov.20 - Dec.12	1	np = < 1 CFU /100 mL	Objective met
Total As 0.005 mg/L av.	0200559 at Waneta	Jan.24 - Dec.26	73	< 0.0001 - 0.005 mg/L	
		Jan.24 - Feb.12, Feb.12 - 20, Feb.22 - Mar.12, Mar.20 - Apr.17, Apr.18 - May 2, May 3 - 15, May 15 - Jun.4, Jun.12 - Jul.9, Jul.11 - Aug.7, Aug.15 - Sep.4, Sep.9 - Oct.1, Oct.9 - 29, Nov.5 - 26, Nov.26 - Dec.10	14	av. = 0.00022 - 0.00316 mg/L	Objective met
	0200558 New Trail Bridge	Feb.12 - Dec.12	15	0.0001 - 0.0007 mg/L	
		Feb.12 - 22, Apr.24 - May 15, Nov.20 - Dec.12	3	av. = 0.00046 - 0.00062 mg/L	Objective met

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total As 0.005 mg/L av.	E216137	Feb.12 - Dec.12	10	< 0.0001 – 0.0004 mg/L	Objective met
(continued)	Old Trail Bridge	Feb.12 - 22, Apr.24 - May 15, Nov.20 - Dec.12	3	av. = 0.0003 - 0.0004 mg/L	
Total Cd 0.00005 mg/L av.	0200559 at Waneta	Jan.2 - Dec.26	76	< 0.00001 - 0.0002 mg/L	Indefinite result (most < 0.001 mg/L)
		Jan.2 - 24, Jan.29 - Feb.13, Feb.19 - 27, Mar.6 - 28, Apr.3 - 23, Apr.24 - May 6, May 8 - Jun.18, Jun.27 - Jul.17, Jul.24 - Aug. 21, Aug.22 - Sep.10, Sep.17 - Oct.15, Oct.21 - Nov.13, Nov.19 - Dec.3, Dec.3 - 17	15	av. = 0.000058 - 0.00014 mg/L	
	0200558	Feb.12 - Dec.12	15	0.00003 – 0.00025 mg/L	Objective not met
	New Trail Bridge	Feb.12 - 22, Apr.24 - May 15, Nov.20 - Dec.12	3	av. = 0.000072 - 0.00017 mg/L	
	E216137	Feb.12 - Dec.12	15	<0.00001 – 0.00009 mg/L	Objective met
		Feb.12 - 22, Nov.20 - Dec.12	2	av. = 0.00003 - 0.000032 mg/L	
	Old Trail Bridge	Apr.24 - May 15	1	av. = 0.000064 mg/L	Objective not met
Total Cr 0.001 mg/L av.	0200559 at Waneta	Jan.2 - Dec.26	67	<0.0002 – 0.0508 mg/L	Objective not met
		Jun.27 - Jul.24, Oct.9 - Nov.5	2	av. = 0.0014 - 0.01032 mg/L	
		Jan.2 - 29, Feb.5 - 1, Feb.19 - Mar.6, Mar.12 - Apr.9, Apr.17 - May 2, May 3 - 15, May 22 - Jun.18, Jul.30 - Aug.27, Sep.4 - Oct.1, Nov.13 - 26, Dec.3 - 12	11	av. = 0.0002 – 0.00076 mg/L	Objective met
	0200558	Feb.12 - Dec.12	15	< 0.0002 - 0.0015 mg/L	Objective met
	New Trail Bridge	Feb.12 - 22, Apr.24 - May 15, Nov.20 - Dec.12	3	av. = 0.0002 - 0.0007 mg/L	
	E216137	Feb.12 - Dec.12	15	< 0.0002 – 0.0014 mg/L	Objective met
	Old Trail Bridge	Feb.12 - 22, Apr.24 - May 15, Nov.20 - Dec.12	3	av. = 0.0002 - 0.00072 mg/L	
Total Cu 0.00717 mg/L max 0.002 mg/L av.	0200559 at Waneta	Jan.2 - Dec.26	76	0.00005 – 0.0013 mg/L	Max. obj. met
		Feb.22	1	0.012 mg/L	Max. obj. not met
		Jan.2 - 24, Jan.29 - Feb.13, Mar.6 - 28, Apr.3 - 23, Apr.24 - May6, May.8 - 22, May 28 - Jun.18, Jun.27 - Jul.17, Jul.24 - Aug.21, Aug.22 - Sep.10, Sep.17 - Oct.15, Oct.21 - Nov.13, Nov.19 - Dec.3, Dec.3 - 17	14	av. = 0.00034 - 0.00074 mg/L	Av. obj. met
		Feb.19 - 27	1	av. = 0.00269 mg/L	Av. obj. not met
	0200558	Feb.12 - Dec.12	15	<0.00005 - 0.00108 mg/L	Max. obj. met
	New Trail Bridge	Feb.12 - 22, Apr.24 - May 15, Nov.20 - Dec.12	3	av. = 0.000132 - 0.000506 mg/L	Av. obj. met
	E216137	Feb.12 - Dec.12	15	<0.00005 - 0.00047 mg/L	Max. obj. met
	Old Trail Bridge	Feb.12 - 22, Apr.24 - May 15, Nov.20 - Dec.12	3	av. = 0.000108 - 0.000422 mg/L	Av. obj. met

WATER QUALITY IN B.C. – OBJECTIVES ATTINMENT IN 2000 AND 2001

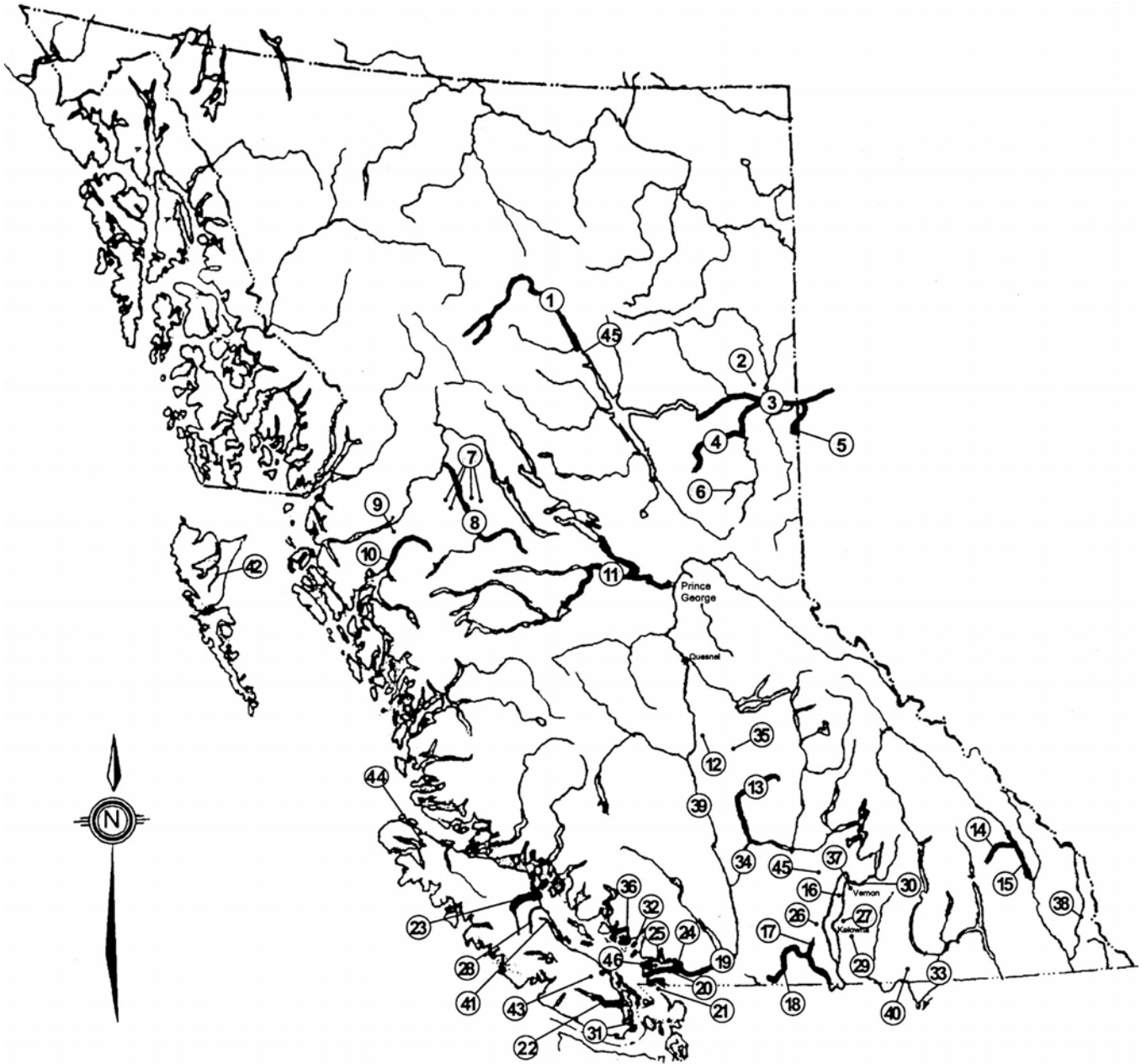
VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Pb 0.0379 mg/L max 0.0048 mg/L av.	0200559 at Waneta	Jan.2 - Dec.26	76	0.00004 - 0.00303 mg/L	Max. obj. met
		Jan.2 - 24, Jan.29 - Feb.13, Feb.19 - 27, Mar.6 - 28, Apr.3 - 23, Apr.24 - May6, May.8 - 22, May 28 - Jun.18, Jun.27 - Jul.17, Jul.24 - Aug.21, Aug.22 - Sep.10, Sep.17 - Oct.15, Oct.21 - Nov.13, Nov.19 - Dec.3, Dec.3 - 17	15	av. = 0.00014 - 0.001188 mg/L	Av. obj. met
	0200558	Feb.12 - Dec.12	15	0.00013 - 0.00159 mg/L	Max. obj. met
	New Trail Bridge	Feb.12 - 22, Apr.24 - May 15, Nov.20 - Dec.12	3	av. = 0.000548 - 0.000678 mg/L	Av. obj. met
	E216137	Feb.12 - Dec.12	15	0.00004 - 0.00091 mg/L	Max. obj. met
	Old Trail Bridge	Feb.12 - 22, Apr.24 - May 15, Nov.20 - Dec.12	3	av. = 0.000258 - 0.000364 mg/L	Av. obj. met
Total Tl 0.0008 mg/L av.	0200559 at Waneta	Jan.29 - Dec.26	24	< 0.000002 - 0.00019 mg/L	
		Jan.29 - Feb.27, Apr.24 - May.9, Nov.26 - Dec.26	3	0.0000168 - 0.0000756 mg/L	Av. obj. met
	0200558	Feb.12 - Dec.12	15	0.000083 - 0.000562 mg/L	
	New Trail Bridge	Feb.12 - 22, Apr.24 - May 15, Nov.20 - Dec.12	3	av. = 0.000148 - 0.000351 mg/L	Av. obj. met
	E216137	Feb.12 - Dec.12	15	< 0.000002 - 0.000246 mg/L	
	Old Trail Bridge	Feb.12 - 22, Apr.24 - May 15, Nov.20 - Dec.12	3	av. = 0.000028 - 0.000154 mg/L	Av. obj. met
Total Zn 0.033 mg/L max 0.0075 mg/L av.	0200559 at Waneta	Jan.2 - Dec.26	77	<0.0002 - 0.011 mg/L	Max. obj. met
		Jan.2 - 24, Jan.29 - Feb.13, Feb.19 - 27, Mar.6 - 20, Apr.3 - 23, Apr.24 - May6, May 9 - 22, May 22 - Jun.12, Jun.18 - Jul.17, Jul.24 - Aug.15, Aug.22 - Sep.10, Sep.17 - Oct.9, Oct.15 - Nov.5, Nov.13 - Dec.3, Dec.3 - 17	15	av. = 0.00074 - 0.00407 mg/L	Av. obj. met
	0200558	Feb.12 - Dec.12	15	0.0012 - 0.0119 mg/L	Max. obj. met
	New Trail Bridge	Feb.12 - 22, Apr.24 - May 15 Nov.20 - Dec.12	2 1	av. = 0.0083 - 0.00553 mg/L av. = 0.0114 mg/L	Av. obj. met Av. obj. not met
	E216137	Feb.12 - Dec.12	15	0.00139 - 0.0066 mg/L	Max. obj. met
	Old Trail Bridge	Feb.12 - 22, Apr.24 - May 15, Nov.20 - Dec.12	3	av. = 0.00196 - 0.0032 mg/L	Av. obj. met
Total As 5.7 mg/kg dry weight max in sediments	Columbia River	2001	0	no data collected	Omitted 2001
Total Cd 0.6 mg/kg dry weight max in sediments	Columbia River	2001	0	no data collected	Omitted 2001

WATER QUALITY IN B.C. – OBJECTIVES ATTAINMENT IN 2000 AND 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Cr 36.4 mg/kg dry weight max in sediments	Columbia River	2001	0	no data collected	Omitted 2001
Total Cu 35.1 mg/kg dry weight max in sediments	Columbia River	2001	0	no data collected	Omitted 2001
Total Pb 33.4 mg/kg dry weight max in sediments	Columbia River	2001	0	no data collected	Omitted 2001
Total Hg 0.16 mg/kg dry weight max in sediments	Columbia River	2001	0	no data collected	Omitted 2001
Total Zn 120 mg/kg dry weight max in sediments	Columbia River	2001	0	no data collected	Omitted 2001
Total As 471 µg/kg wet weight max in fish	Columbia River	2001	0	no data collected	Omitted 2001
Total Cd 900 µg/kg wet weight max in fish	Columbia River	2001	0	no data collected	Omitted 2001
Total Cr 940 µg/kg wet weight max in fish	Columbia River	2001	0	no data collected	Omitted 2001
Total Pb 160 µg/kg wet weight max in fish	Columbia River	2001	0	no data collected	Omitted 2001
Total Hg 100 µg/kg wet weight max in fish	Columbia River	2001	0	no data collected	Omitted 2001
Dioxins & Furans 0.25 ng/kg PCDD and PCDF TEQ max. in sediments (dry weight)	Columbia River	2001	0	no data collected	Omitted 2001
Dioxins & Furans 1.1 ng/kg	Columbia River	2001	0	no data collected	Omitted 2001

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
PCDD and PCDF TEQ max. in fish (wet weight)	Columbia River	2001	0	no data collected	Omitted 2001

Figure 2. Map of British Columbia showing locations of watersheds with water quality objectives.



- | | | | |
|-------------------------------|----------------------------------|---------------------------------|-------------------------------|
| ① Upper Finlay River | ⑫ Williams Lake | ⑳ Lower Fraser River | ㉔ Sechelt Inlet |
| ② Charlie Lake | ⑬ Bonaparte River | ㉑ Tributaries | ㉕ Okanagan Tribs. Vernon |
| ③ Peace River | ⑭ Toby Creek | ㉒ Burrard Inlet | ㉖ Elk River |
| ④ Pine River | ⑮ Columbia and Windermere | ㉓ Okanagan Tribs., Westbank | ㉗ Fraser River (Prince George |
| ⑤ Pouce Coupe River | Lakes | ㉔ Okanagan Tribs., Kelowna | to Hope) |
| ⑥ Bullmoose Creek | ⑯ Okanagan Valley Lakes | ㉕ Oyster River | ㉘ Christina Lake |
| ⑦ Kathlyn, Seymour, Round, | ⑰ Cahill Creek | ㉖ Hydraulic Creek | ㉙ Tsolum River |
| and Tyhee Lakes | ⑱ Similkameen River | ㉗ Bessette Creek | ㉚ Yakoun River |
| ⑧ Bulkley River | ⑲ Fraser River (Hope to Kanaka) | ㉘ Elk and Beaver Lakes | ㉛ Holland Cr & Stocking Lk |
| ⑨ Lakelse Lake | ⑳ Fraser River (Kanaka to Mouth) | ㉙ Pender Harbour | ㉜ Quatse Lake |
| ⑩ Lower Kitimat River and Arm | ㉑ Boundary Bay | ㉚ Columbia River (to Birchbank) | ㉝ Lower Finlay River |
| ⑪ Nechako River | ㉒ Cowichan-Koksilah Rivers | ㉛ Thompson River | ㉞ Burrard Inlet Trib. |
| | ㉓ Quinsam River | ㉜ San José River | |

Figure 3A. Quinsam River

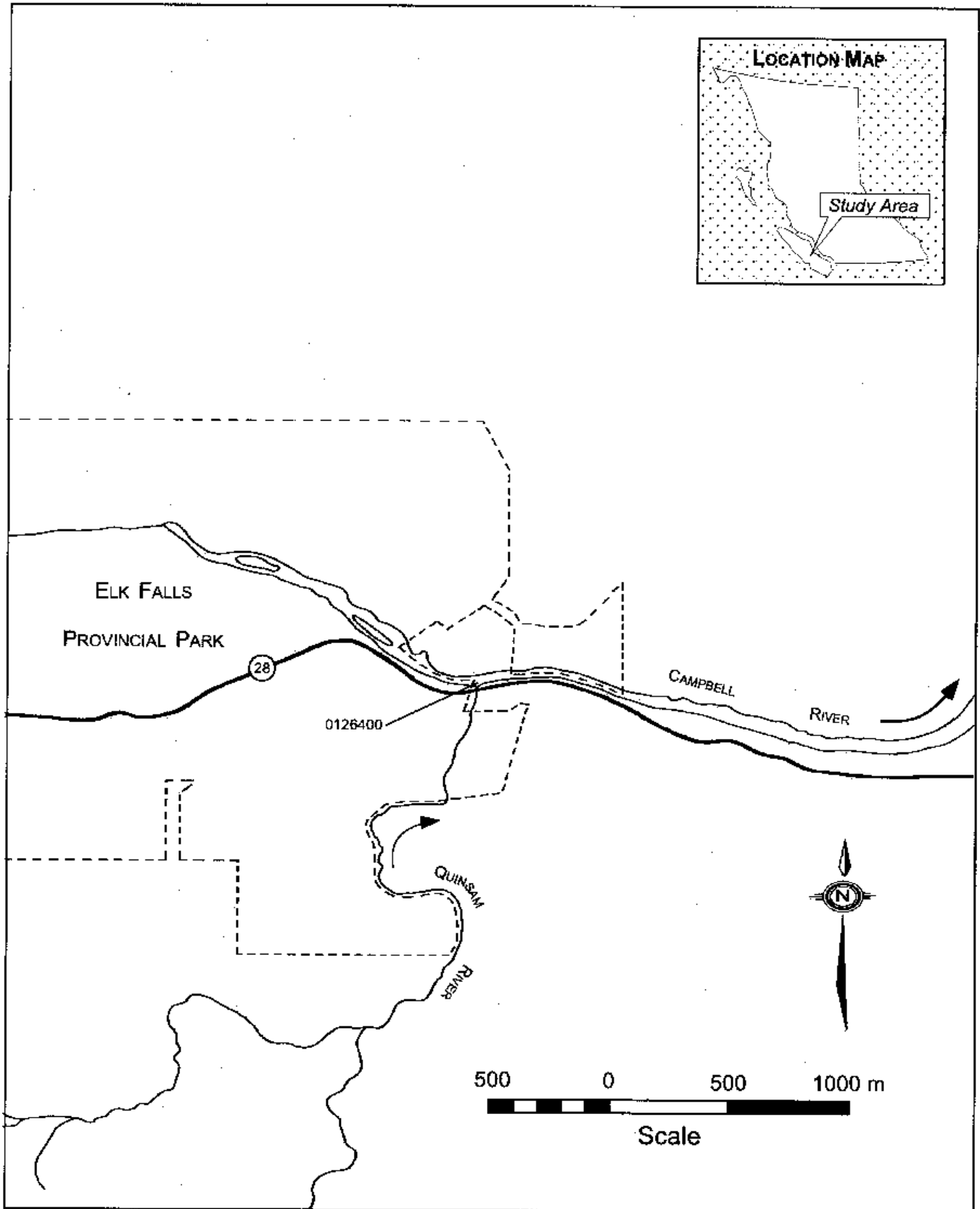


Figure 2B. Middle Quinsam Lake

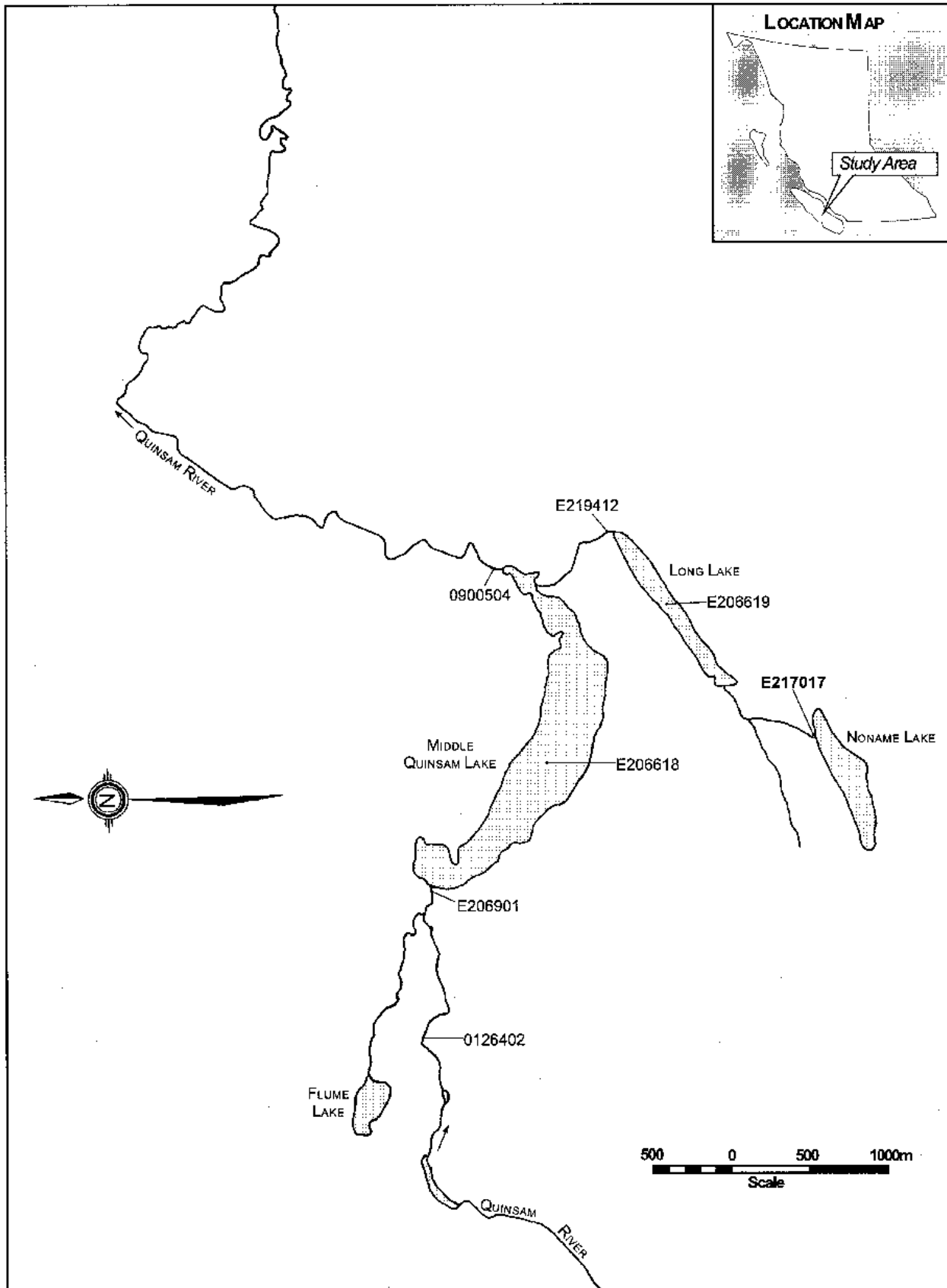


Figure 4. Tsolum River

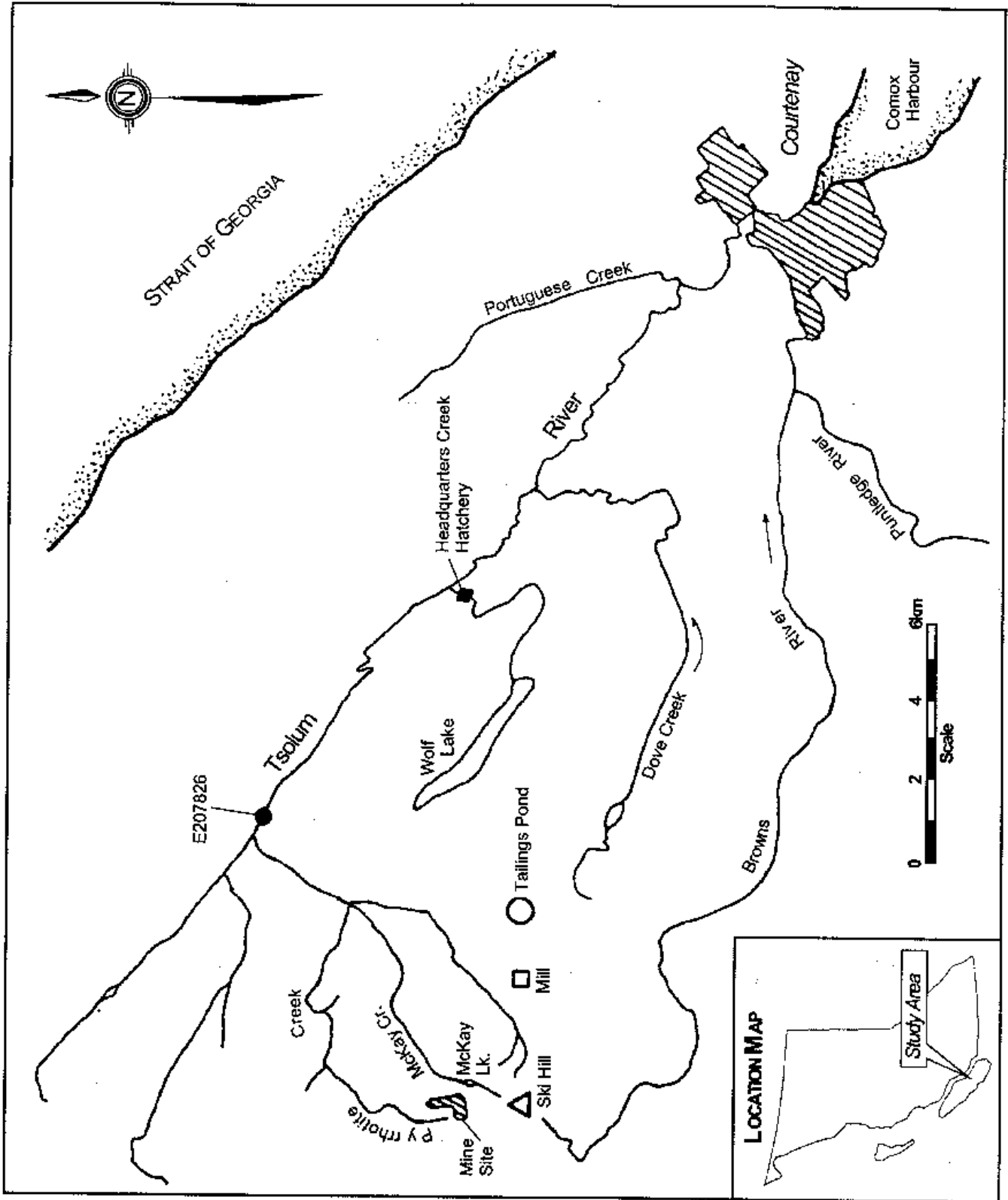


Figure 5. Nechako River

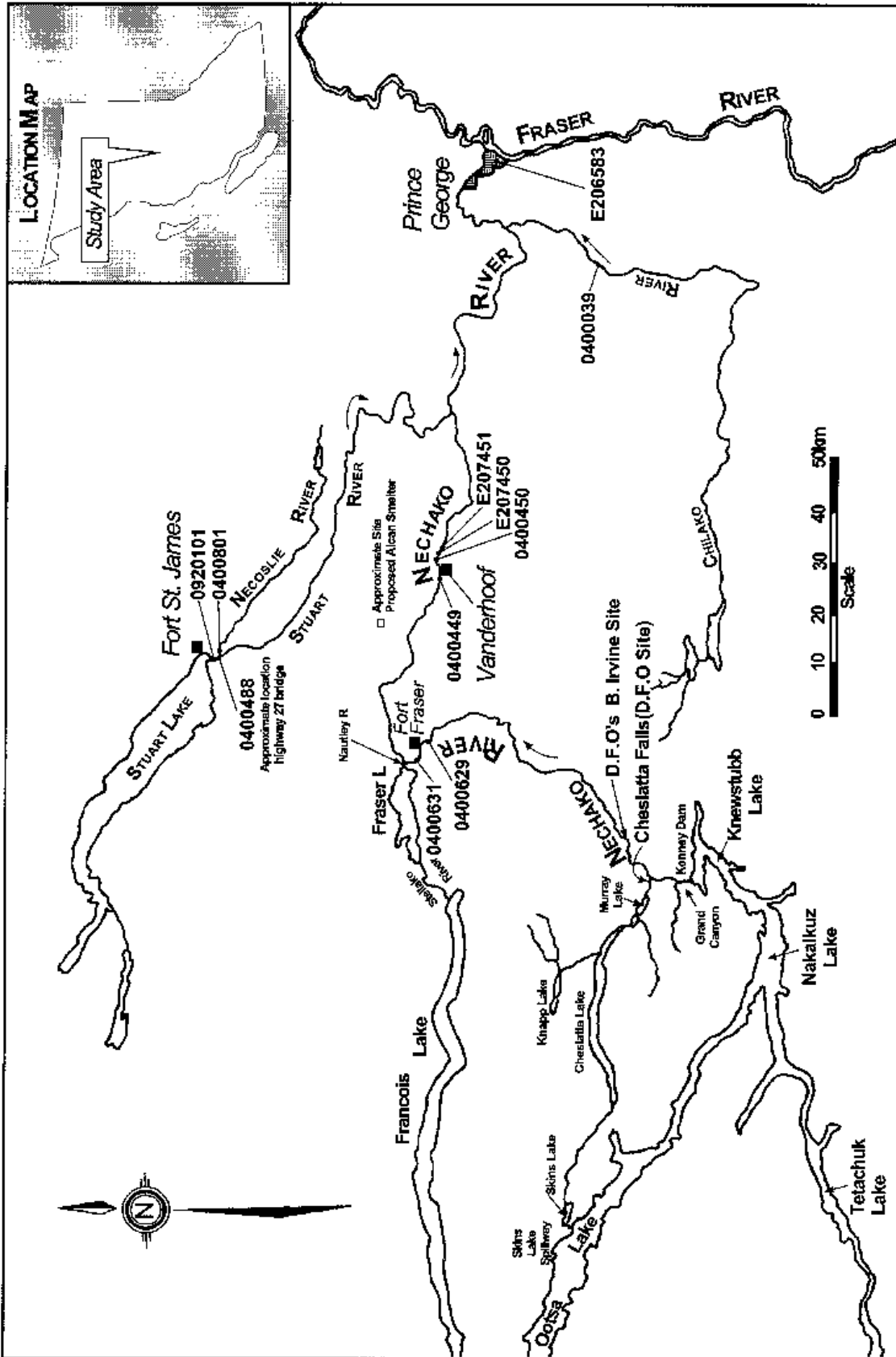


Figure 6. Upper Fraser River

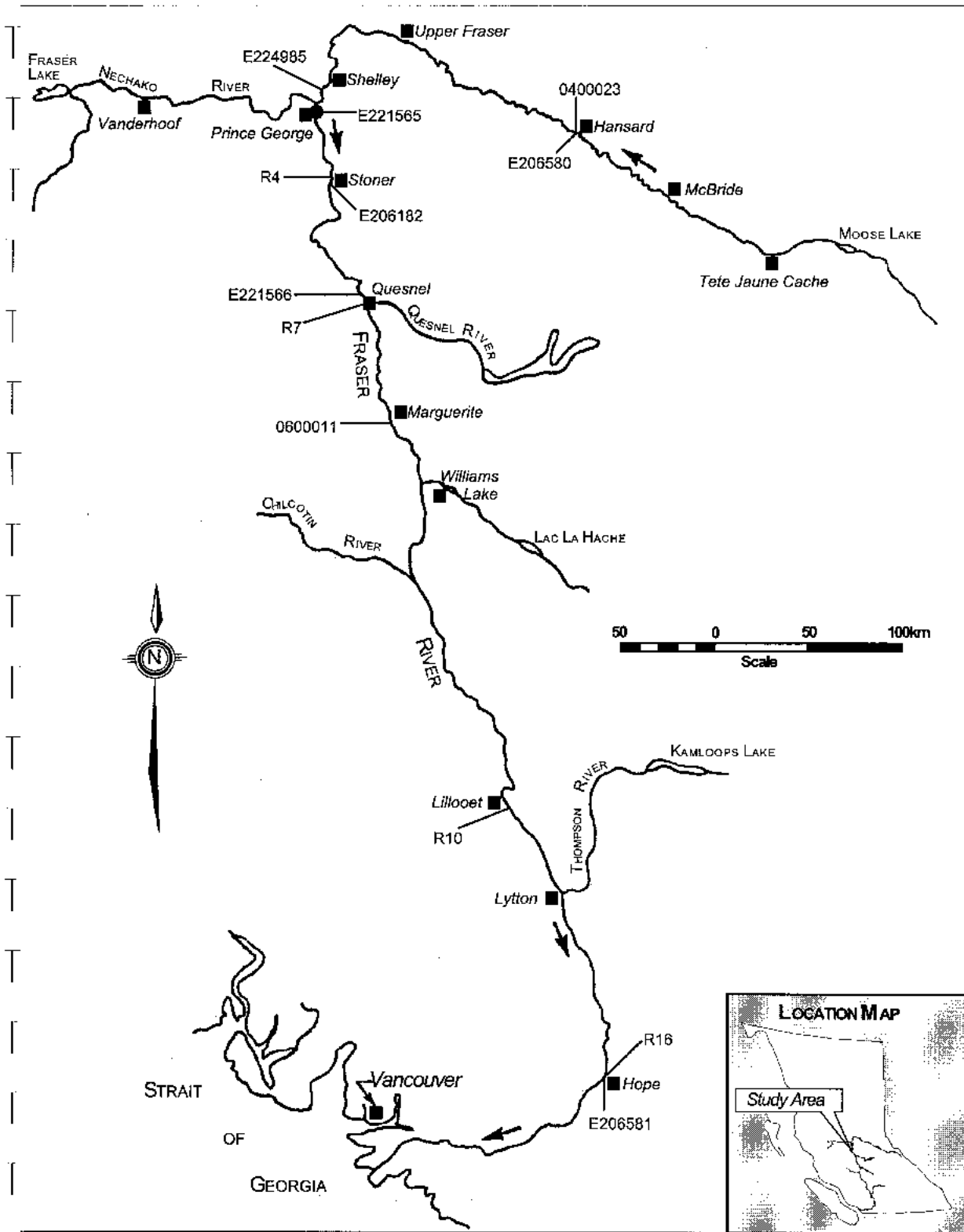


Figure 7. Williams Lake

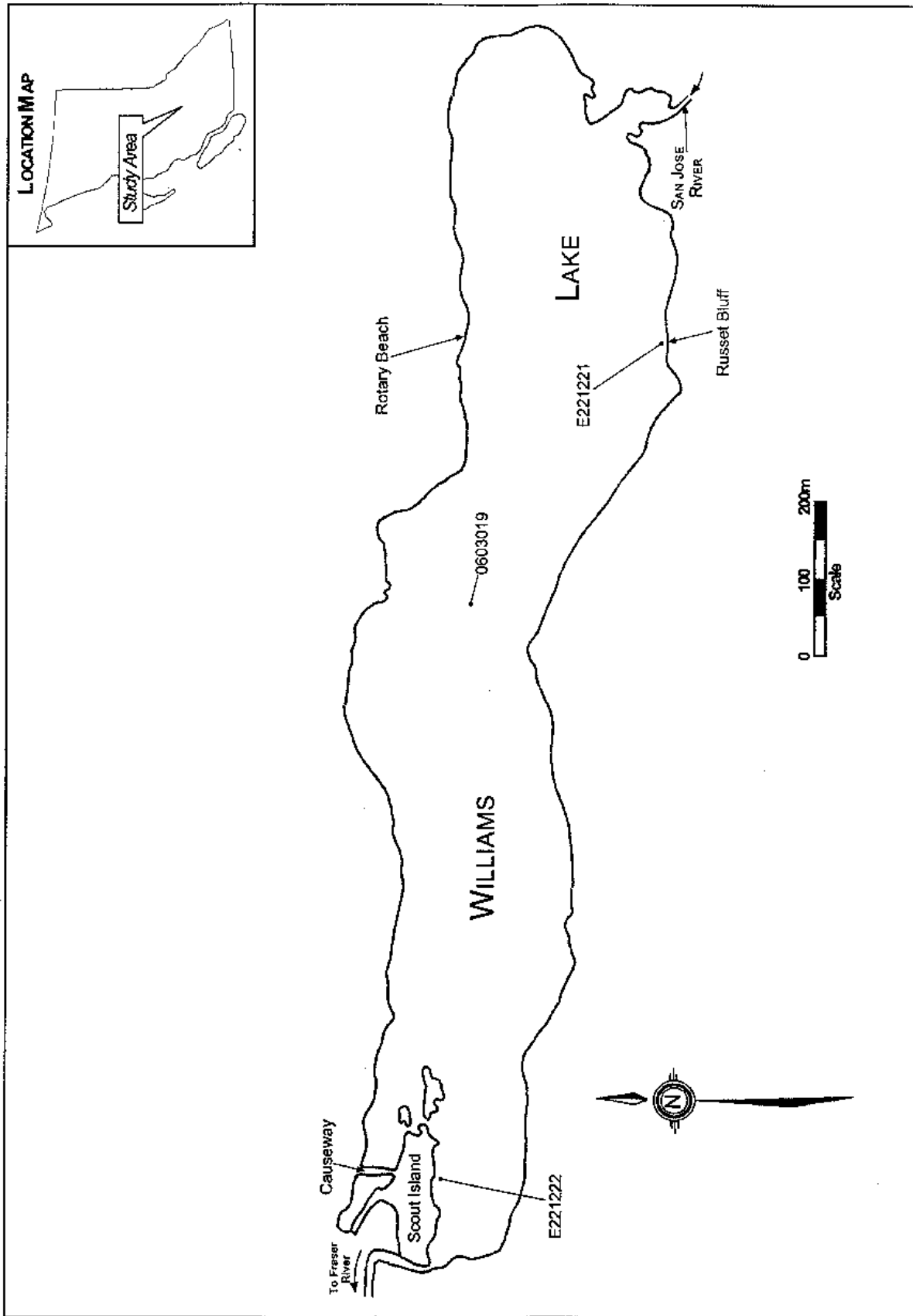


Figure 8. San Jose River.

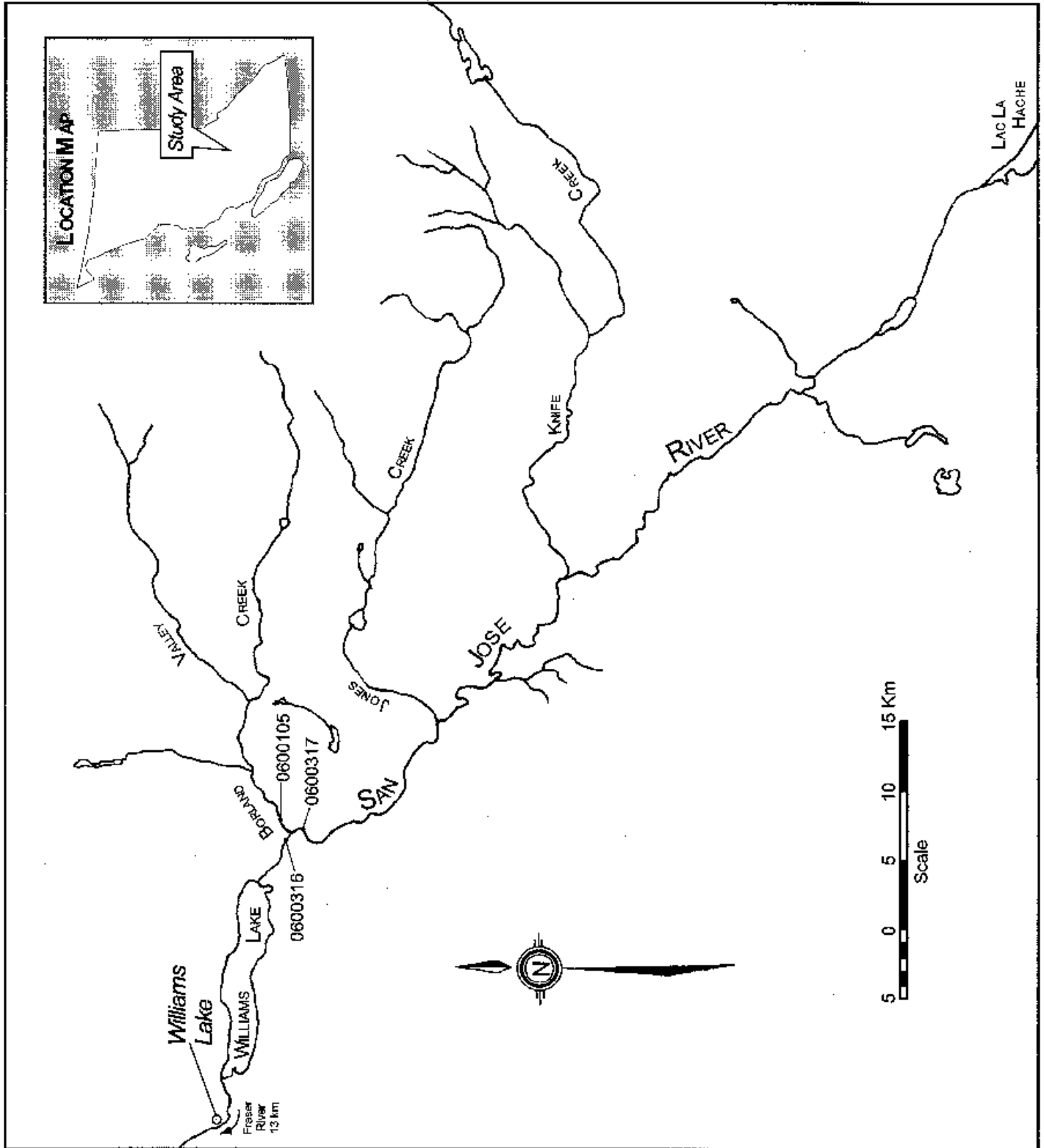


Figure 9. Okanagan Valley Lakes.

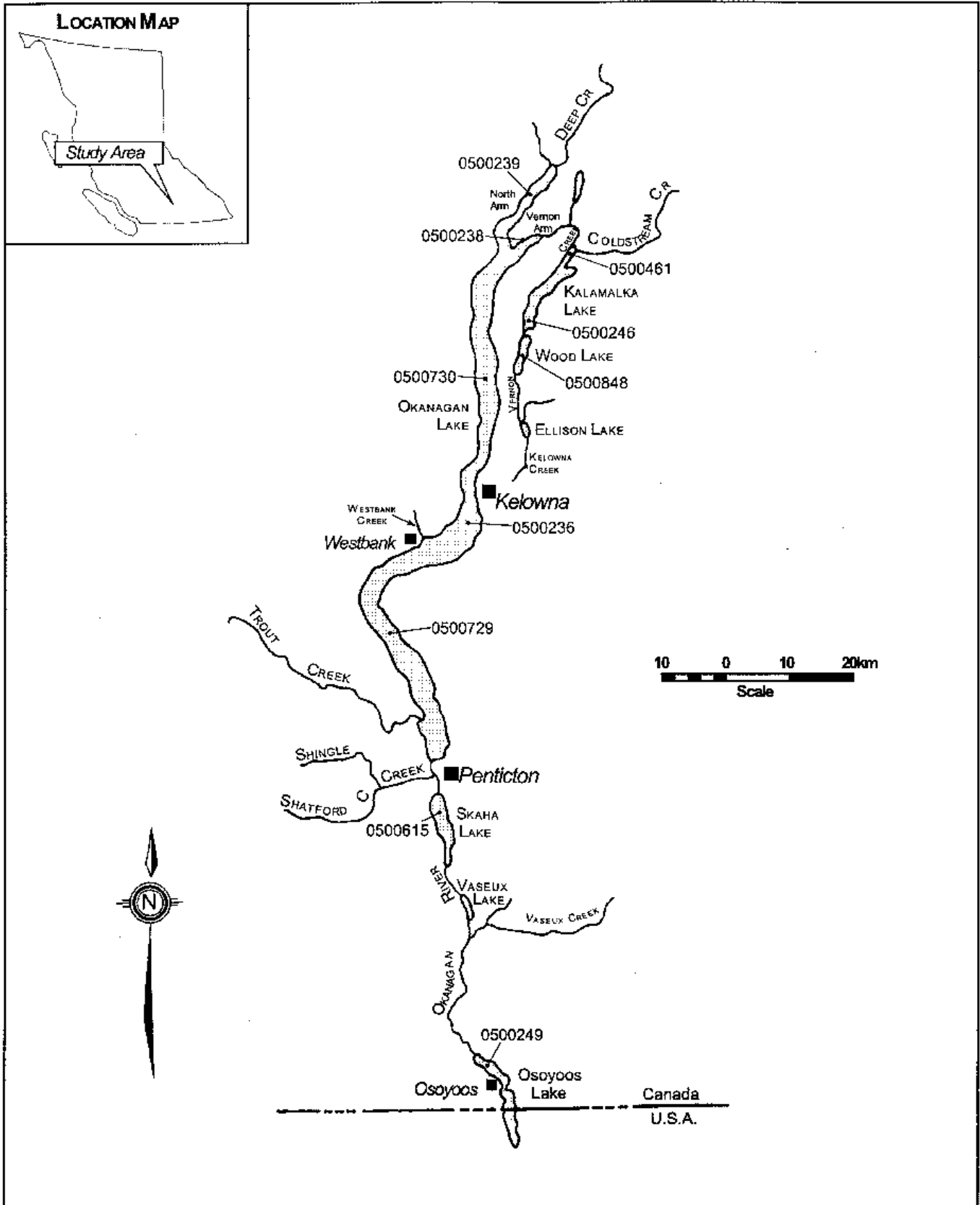


Figure 10. Similkameen River.

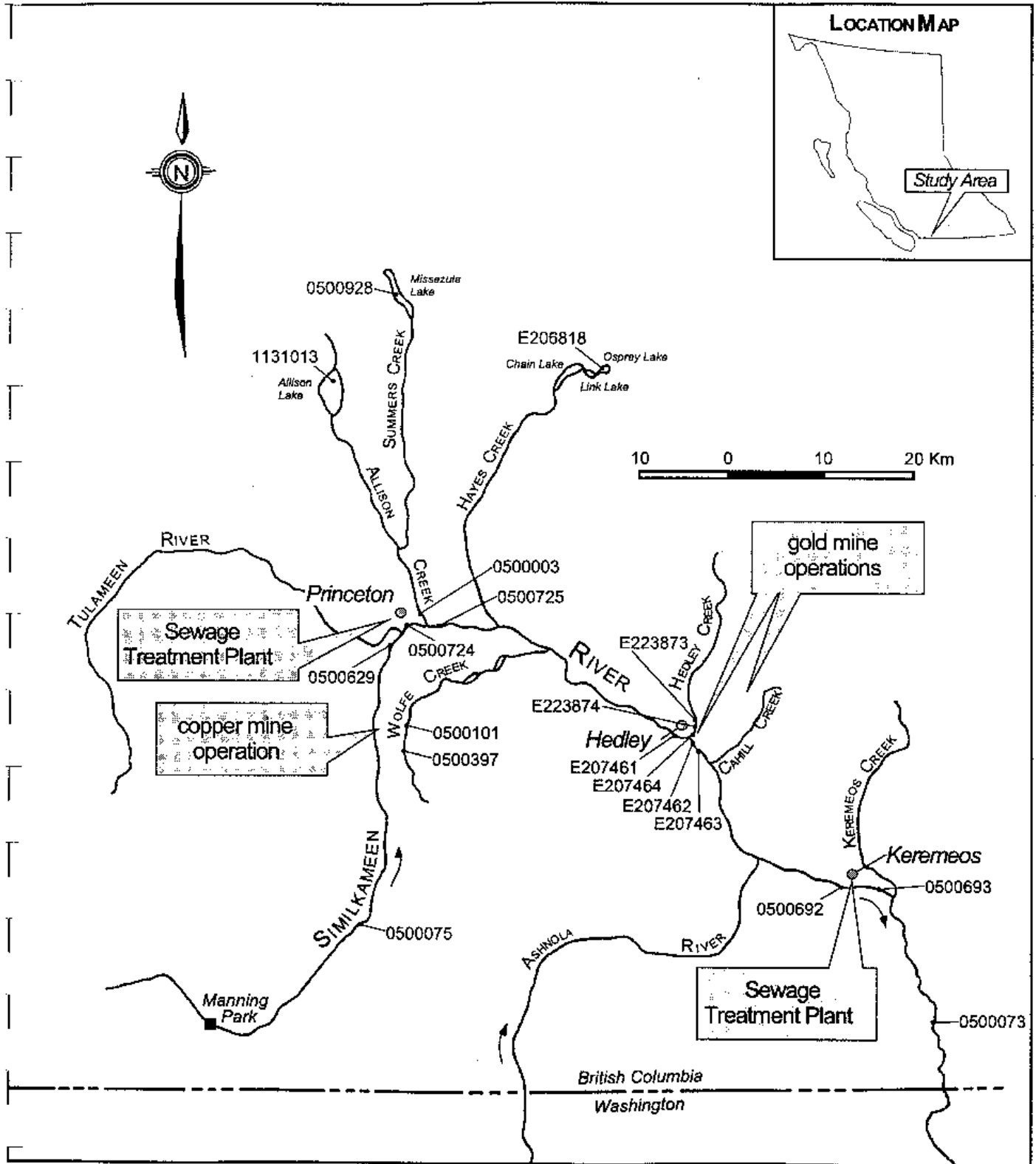


Figure 11. Cahill Creek.

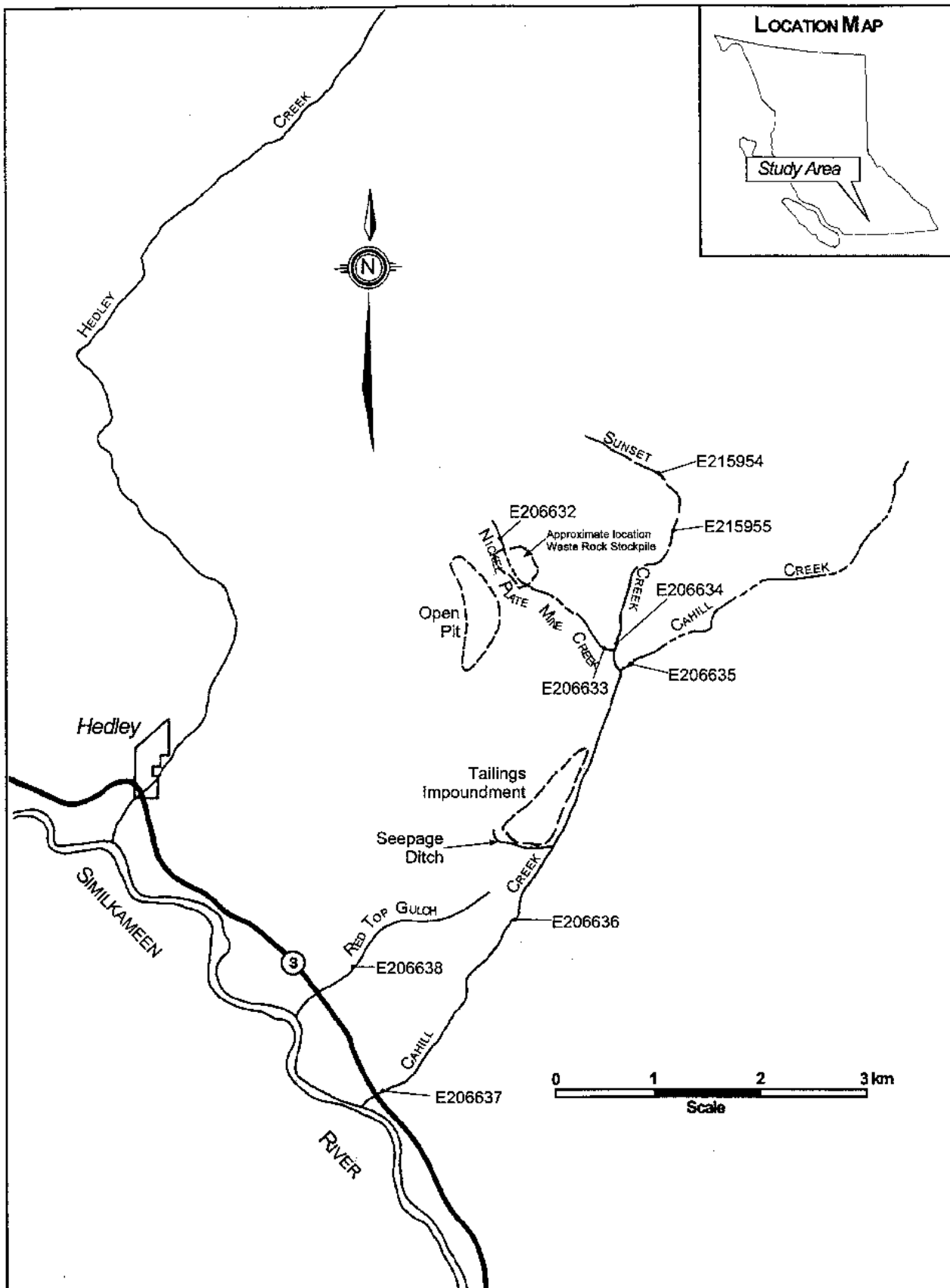


Figure 12. Bessette Creek.

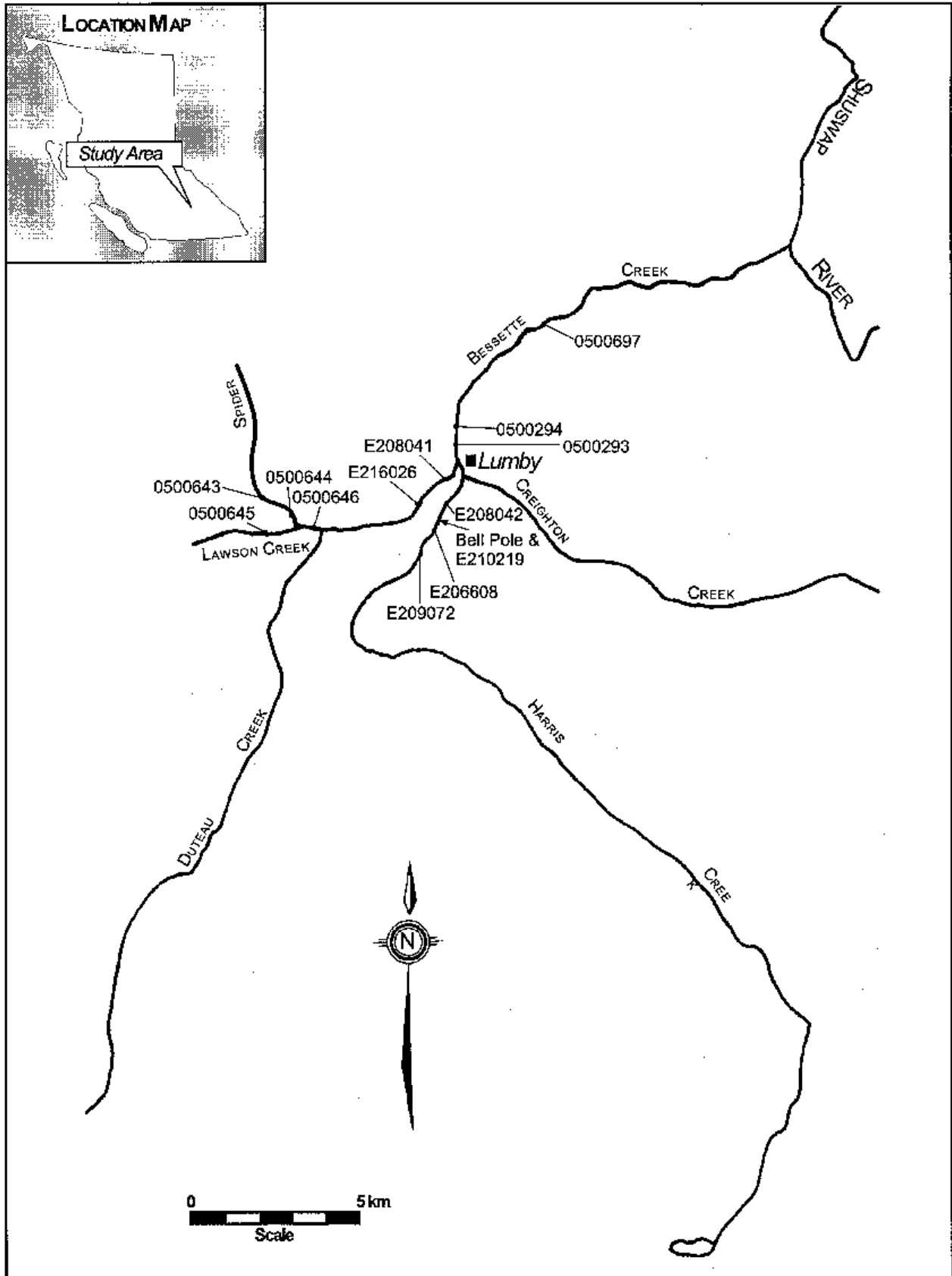


Figure 13. Tributaries to Okanagan Lake near Vernon.

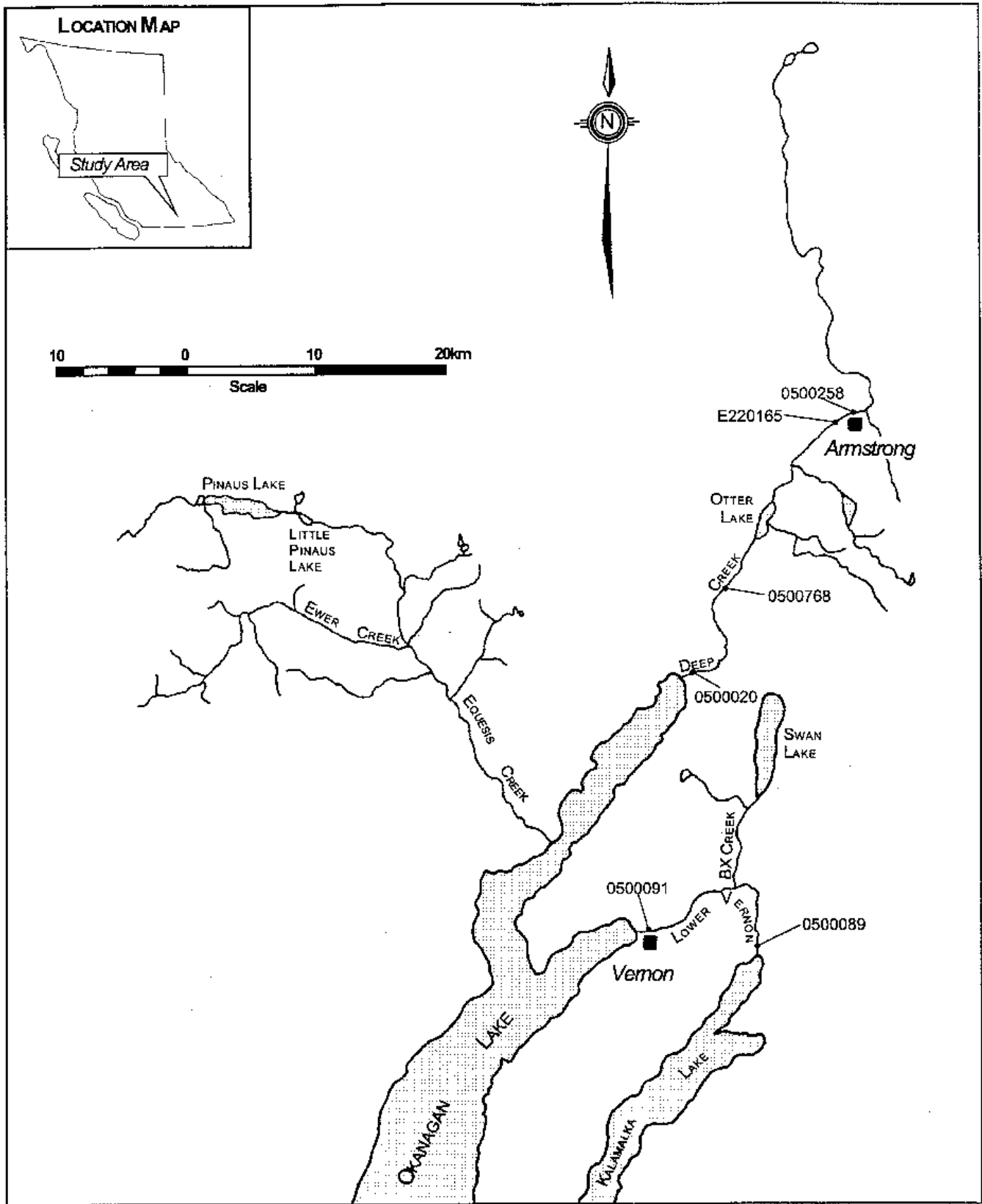


Figure 14. Thompson River.

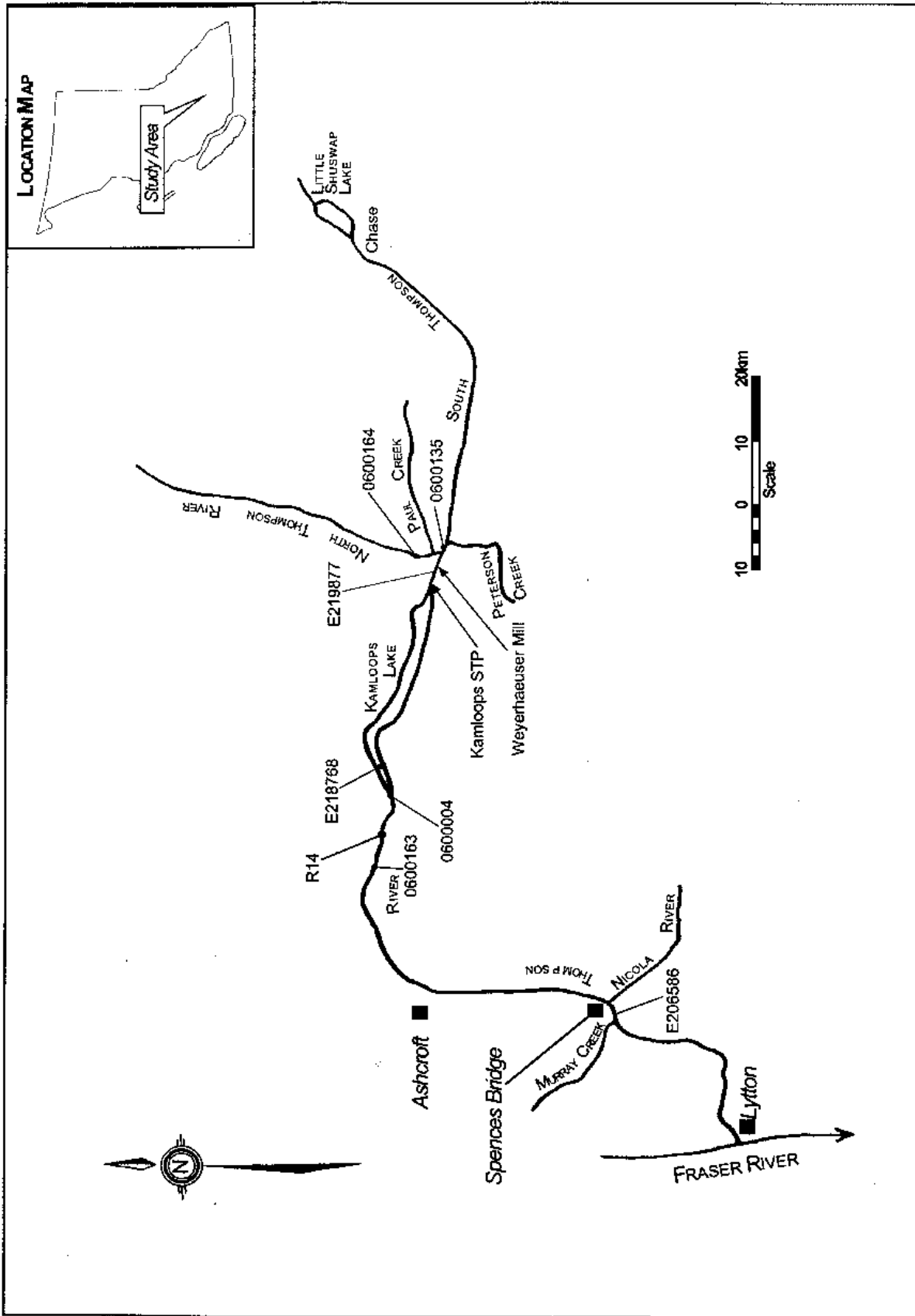


Figure 15. Columbia River from Keenleyside to Birchbank.

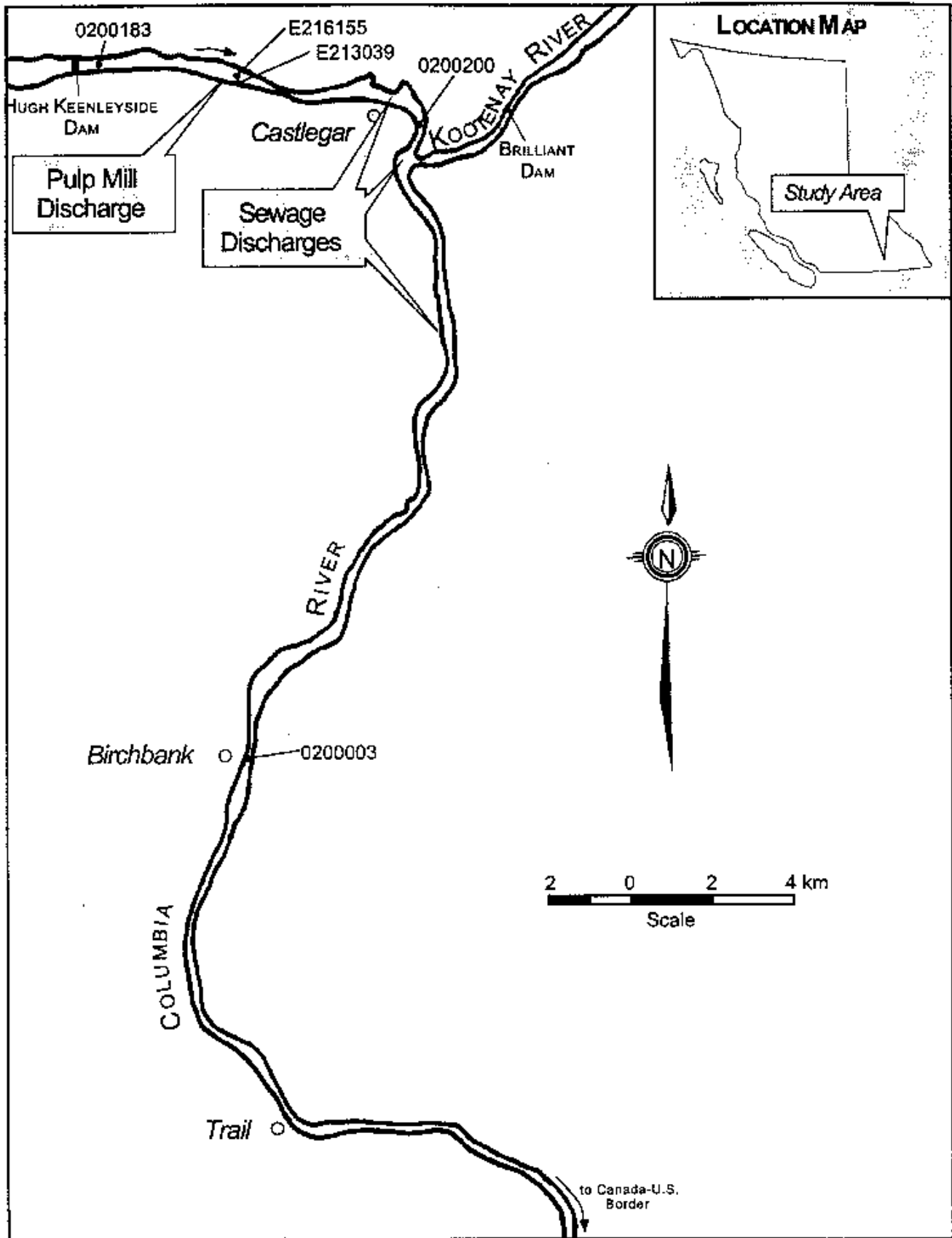


Figure 16. Fraser River from Kanaka Creek to the mouth.

