MINISTRY OF ENVIRONMENT

PROVINCE OF BRITISH COLUMBIA

THE ATTAINMENT OF AMBIENT WATER QUALITY OBJECTIVES IN 1990

Water Quality Branch

Water Management Division

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The regional staff of Environmental Protection carried out most of the monitoring, either directly or by using co-op students and contractors. Zenon Environmental Inc. analyzed the samples. Information was also obtained from industries via Environmental Protection, from the Canada-B.C. Water Quality Monitoring Agreement, from regional offices of the Ministry of Health, from the federal departments of Environment and of Fisheries and Oceans, and from the Greater Vancouver Regional District.

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1. SUMMARY

By the end of 1990, the Ministry had set water quality objectives in 30 bodies of water throughout the Province. This report presents the results of monitoring done in 1990 to check the attainment of these objectives.

The results are summarized in a series of tables. Overall, the objectives were met more than 90 percent of the time, an outcome similar to that of 1988 and 1989. Although this falls short of an ideal 100 percent compliance, one must bear in mind that it applies to objectives that were set only in problem areas. Thus, while the monitoring results describe indirectly how well problems are being dealt with, they do not describe the state of water quality in the Province as a whole. Variables for which objectives were sometimes exceeded in more than one basin included fecal coliforms, suspended solids, turbidity, substrate sedimentation, phosphorus, nitrogen, chlorophyll-a, pH, dissolved oxygen, temperature, copper, iron, lead, mercury, zinc, and chlorophenols.

Cases of objectives being exceeded should be assessed to determine the cause and the possible need for corrective action. Monitoring in future years will indicate whether problems are persisting or being solved.

2. INTRODUCTION

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

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

Work on water quality objectives began in 1982. By the beginning of 1991, objectives had been set in 30 separate bodies of water and updated in one. In each basin considered, some type of water quality problem was expected due to human activity. Objectives have been set for lakes, rivers, creeks, and marine areas in all six Environmental Regions of the Province.

This report for 1990 is the fifth in a series of annual reports which began in 1986. Since 1987, funds have been allocated for the minimum ambient monitoring needed to check the attainment of the objectives. As a result, a picture of how well objectives are met was obtained from 1987 to 1989 and is again given here for 1990. The report is for the use of the managers of the water resource and will help guide them in carrying out more detailed

assessments of the results. In presenting this report, familiarity with the background reports on water quality objectives for each basin is assumed.

The water basins in which water quality objectives are set are usually chosen because 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 man and likely to remain so for the foreseeable future. Nevertheless, reports in this series constitute a form of state-of-the-environment report on water quality in British Columbia.

3. METHODS OF PRESENTING AND INTERPRETING THE DATA

3.1 Reports on Objectives

By the end of 1990, the Ministry of Environment had essentially completed 30 reports on water quality objectives for specific water basins. The complexity and size of the reports varied considerably, depending upon the basin considered. These water basins were distributed among the Environment Regions as follows:

Vancouver Island	3
Skeena	4
Northern Interior	8
Southern Interior	8
Kootenay	2
Lower Mainland	5
	30

Work is in progress on another 22 reports for different water basins. These reports are now at various stages of completion.

3.2 Tables of Results

Data collected in 1990 to check objectives are summarized in Tables 2 to 28, with a separate table for each of the 27 water basins monitored. Three basins were not monitored in 1990, due either to low priority or late completion of the objectives. Decisions on which basins to monitor and on the details of monitoring and funding are reached early in the year after close

consultation with the Regions. The work to be done is described in monitoring schedules and the progress of the work is followed during the year.

Each table lists all the objectives that have been set, as they appear in the final reports on objectives. A few of the objectives have been updated to reflect new water quality criteria 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 MPN/100 mL for fecal coliforms is used when high fecal coliform values are recorded.

The tables summarize the measurements made to check the objectives. These include sites, sampling dates, number of samples taken, and the values obtained. The sites and tributaries are listed in the tables in an upstream to downstream sequence, starting with the upstream site or tributary. Finally, a concluding statement about the results is given.

The conclusion states whether the objective was met or not. The result is reported as indefinite if there are insufficient data to check the objective, or the data are suspect, or the mimimum detectable concentration is too high. The objective is reported as not checked if, for some reason, planned data collection did not take place. The objective is reported as omitted if it was deliberately not checked because of low priority, taking into account past results. We consider these tables to be the most important part of this report since they demonstrate, in a factual way, how well objectives were met in 1990.

3.3 Text

The text in this report first gives a provincial overview of the results. The tabulated data for each body of water are then described briefly, by Region, mentioning the highlights and drawing some general conclusions. Qualifying statements such as: "...the objectives were nearly met, slightly exceeded or probably met..." are avoided as being too speculative without the support of further evidence to explain them. Thus, objectives exceeded by a wide margin are categorized equally with apparent borderline cases. While a more detailed interpretation is desirable, the collection of data that would be required to document the significance of results in more detail is beyond the scope of the program at this time.

There is also no 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, and many other factors. Assessments of this type are presently being left to Regions to carry out on an ongoing basis. A quality assurance program to test the accuracy and precision of field and laboratory data is to be introduced and the results will be presented in future reports.

The report is written to guide 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 that certain objectives were exceeded due to natural phenomena. On the other hand it could reveal the need for corrective action if the cause of the problem was man-made.

3.4 Figures

The 30 basins where objectives have been set are shown on a location map in Figure 1. The 27 water basins monitored in 1990 are detailed in separate maps, Figures 2 to 28, on which sampling sites referred to in the tables are shown. Each figure number corresponds to the table of the same number.

4. PROVINCIAL OVERVIEW OF RESULTS

4.1 Presentation of Results

In the tables summarizing the monitoring data, there are five kinds of concluding statement. These are: objective met, objective not met, objective not checked, objective omitted, and indefinite result.

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

The results of this compilation are shown in Table 1. The sum of occurrences for each kind of conclusion is given by Region and then totalled for the whole Province. The occurrences are also expressed as a percent of the total of all occurrences, both by Region and for the Province as a whole.

4.2 Discussion of Results

Although the results apply to specific occurrences, we will assume in this analysis that they are representative of the whole year. This simplification can be justified as a conservative approach by the fact that data were usually collected during worst case conditions.

Table 1 shows that the objectives were met 83% of the time in the Province as a whole. This result varied according to Region

from 53% to 86%. Objectives were not met from between 0% to 11% of the time, with an overall average of 6%.

The occurrence of objectives not checked, objectives omitted, or indefinite results averaged 3%, 5%, and 3%, respectively. If we subtract these relatively minor instances of no result from the total, then the number of instances or percent of time that objectives were met and not met becomes 93% and 7%, respectively.

We can therefore state that in the Province as a whole the objectives were met over 90% of the time in 1990. This is an approximate statement since it can be influenced by several monitoring factors. For example, the frequency at which particular objectives in any Region are monitored can change the final result. The inclusion or omission of water basins with either serious or minor water quality problems will obviously also affect the outcome.

The overall result for 1990 was virtually the same as for 1988 and 1989. As the monitoring program is repeated in future years the general picture could change. New basins will be added and, with a fixed monitoring budget, there will be a tendency to cease monitoring in areas where objectives are being met consistently by a wide margin. As a first priority, we will probably concentrate on areas where the worst man-made water quality problems occur. The goal, of course, is for water quality objectives to be met 100% of the time in all such areas. Monitoring in future years will show how close we can get to this ideal situation.

5. VANCOUVER ISLAND REGION

5.1 Cowichan-Koksilah Rivers

Data and site locations are presented in Table 2 and Figure 2, respectively.

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.

The objectives for microbiological indicators (fecal coliforms, *E. coli*, and enterococci) were generally not met in either river, except immediately downstream from Cowichan Lake. These objectives are fairly restrictive since they were set to protect drinking-water use after disinfection only. The less restrictive objectives to protect recreation appear to have been met. These results are similar to those obtained in 1989. As recommended in the 1989 report, the sources of possible bacteriological contamination need to be established before this situation can be corrected.

Dissolved oxygen levels, measured in late summer, were at times below objective levels in both rivers, especially in the lower reaches. Similar results were obtained in 1989. Although the levels were not so low as to be an immediate threat to fish, we need to ascertain their cause.

The objectives for turbidity, suspended solids, ammonia, copper, lead, and zinc were generally met throughout both rivers. Chlorophyll-*a* objectives were not checked in the Cowichan River.

5.2 Middle Quinsam Lake

Data and site locations are presented in Table 3 and Figure 3, respectively.

Middle Quinsam Lake drains via the Quinsam River into the Campbell River near its estuary. The Middle Quinsam Lake sub-basin is a valuable habitat for trout and salmon and could be impacted by an open-pit coal mine now being developed in the area.

Not all the objectives needed to be checked in 1990 because the mine was operating at less than 25 percent of full-scale capacity. Thus several measurements were deliberately omitted in 1990, as shown in Table 3.

Most of the objectives tested were met. The only exception was the total zinc objective which was exceeded occasionally in the Quinsam River immediately entering and leaving Middle Quinsam Lake. Objectives met included those for turbidity, suspended solids, ammonia, nitrate, pH, aluminum, copper, iron, lead, manganese, mercury, and nickel. The results for cadmium and cobalt were indefinite because detection limits were too high. All these results were similar to those obtained in 1989, except for the high zinc values in 1990.

5.3 Oyster River

Data and site locations are presented in Table 4 and Figure 4, respectively.

The Oyster River flows from the Forbidden Plateau area into the Strait of Georgia, south of 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 and mine exploration. The latter is expected to lead to active mining in the future, especially of coal.

As in the Quinsam situation, not all the objectives needed to be checked in 1990 since in this case there were no active mines as yet. Table 4 therefore shows many measurements as omitted. Of the objectives checked in this first year of monitoring, all were met. These included those for fecal coliforms, turbidity, suspended solids, ammonia, pH, aluminum, cadmium, cobalt, copper, iron, lead, manganese, nickel, and zinc. The results for chromium were indefinite because the detection limit was too high.

6. SKEENA REGION

6.1 Bulkley River

Data and site locations are presented in Table 5 and Figure 5, respectively.

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 and possible contamination in the headwaters from mining.

The objective for fecal coliforms was not met upstream from Houston and Smithers. The objective is fairly restrictive in these locations since it was set to protect drinking water use. Elsewhere, the objective was met as were all other objectives checked. These included objectives for turbidity, suspended solids, chlorophyll-a, ammonia, and nitrite. Similar results have been obtained in past years. The source of the relatively higher fecal coliform counts needs to be established if the problem is to be corrected.

6.2 Kathlyn Seymour, Round, and Tyhee Lakes

Data and site locations are presented in Table 6 and Figure 6, respectively.

These four small lakes, in the Smithers area, are used for recreation, domestic water supply, and irrigation.

The fecal coliform objectives were generally met at all domestic water intakes and beaches where measured in all four lakes, except at an intake in Kathlyn Lake and one in Tyhee Lake. The objectives for turbidity were exceeded several times in all the lakes except Tyhee Lake. The objective for colour was frequently exceeded in all four lakes.

The total phosphorus objective was exceeded in Kathlyn Lake but could not be checked in Round and Tyhee lakes because stratification had occurred at sampling time. All the objective results reflect the tendency for the lakes to be eutrophic. Long-term measures outlined in the assessment report setting the objectives need to be implemented to reverse this trend.

6.3 Lower Kitimat River and Arm

Data and site locations are presented in Table 7 and Figure 7, respectively.

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 an aluminum smelter are located in the water basin.

The results from testing fecal coliforms were indefinite because of insufficient sampling. Fecal contamination in the past has been low although the area is closed to shellfish harvesting.

All other objectives checked were met. These included those for suspended solids, turbidity, cyanide, fluoride, ammonia, nitrite, pH, aluminum, cadmium, copper, iron, and lead. The results are an improvement over previous years when the objectives for some

metals and for cyanide were occasionally not met in Kitimat harbour and Arm.

6.4 Lakelse Lake

Data and site locations are presented in Table 8 and Figure 8, respectively.

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.

All the objectives set for the lake were met in 1990, except that for chlorophyll-a which was exceeded. Objectives met included those for fecal coliforms at water intakes and a beach, and for turbidity, phosphorus, and dissolved oxygen. Similar results were obtained in previous years, when all objectives were met, and indicate that the lake is in good condition.

7. NORTHERN INTERIOR REGION

7.1 Charlie Lake

Data and site locations are presented in Table 9 and Figure 9, respectively.

Charlie Lake is used as a drinking water supply and for recreation. Agriculture and development around the lake are factors affecting water quality.

At the bathing beaches, the geometric mean fecal coliform objective was met and the 90th percentile objective was usually met. As in 1989, there were no beach closures. At the Fort St. John intake, the more stringent fecal coliform objective to protect drinking water was met - an improvement over 1989. Overall, fecal contamination of the lake seems to be decreasing.

The phosphorus objective at spring overturn was not met and the objective for other times of the year was exceeded several times. These results show that the lake is as eutrophic as in the past.

7.2 Bullmoose Creek

Data and site locations are presented in Table 10 and Figure 10, respectively.

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

The objectives for turbidity and suspended solids were not checked in 1990. In the past, these objectives have sometimes been exceeded during the freshet period. The objective for chlorophyll-a, which was often exceded in 1989, was also not checked in 1990.

Other objectives that were checked were usually met. They included those for: fecal coliforms, ammonia, nitrite except on one occasion downstream from a sedimentation pond, dissolved oxygen, and pH. These results are similar to those of 1989.

7.3 Nechako River

Data and site locations are presented in Table 11 and Figure 11, respectively.

The Nechako River, a major tributary to the Fraser River at Prince George, has its flow controlled for power generation. The river is an important route for migrating salmon.

The fecal coliform objective was not met upstream from Vanderhoof but was met at sites downstream, a reversal of the result obtained in 1989. In major tributaries (Stuart River, Necoslie River, and Chilako River), the objective was either not checked or the results were indefinite due to insufficient sampling.

Other objectives which were met in the Nechako River (and the Stuart River as applicable) were those for ammonia, nitrite, dissolved oxygen, pH, and total gas pressure.

The temperature objective at a site downstream from Cheslatta Falls was met during the winter months, from January to July and

after late September. However, during the summer months (July to September) the objective was exceeded. Similar results have been obtained since 1987. Further downstream, just below Vanderhoof, a less stringent temperature objective was met during the winter. There were no summer measurements at this site.

7.4 Pine River

Data and site locations are presented in Table 12 and Figure 12, respectively.

The Pine River, a tributary to the Peace River, supplies water to Chetwynd and supports significant sportfish populations.

All objectives checked were met. These included objectives for fecal coliforms, turbidity, suspended solids, ammonia, and nitrite. Similar results have been obtained in the past.

7.5 Pouce Coupe River and Dawson Creek

Data and site locations are presented in Table 13 and Figure 13, respectively.

The Pouce Coupe River runs into the Peace River inside the Alberta Border. Dawson Creek is its major tributary. The waters are affected mainly by municipal discharges.

The results for the fecal coliform objective in the Pouce Coupe River were indefinite due to insufficient sampling. The objectives for ammonia and nitrite were met in the Pouce Coupe River, whereas objectives for turbidity and suspended solids were not. In the past, fecal coliform objectives have been met but most

other objectives have been exceeded at one time or other. No objectives were checked in Dawson Creek in 1990.

7.6 Peace River

Data and site locations are presented in Table 14 and Figure 14, respectively.

Objectives have been set 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, an oil and gas refinery, and a pulp mill built in 1988 after the objectives were set. The objectives were first checked in 1988.

The objective for fecal coliforms was met in the Peace River, except downstream from the pulp mill. The turbidity objective was not met downstream from Fort St. John and the suspended solids objective was also exceeded downstream from Fort St. John as well as below the oil refinery and the pulp mill. These results are similar to those of 1989. In the Beatton River, only the suspended solids objective was checked and was not met on one occasion

Other objectives which were met in the Peace River, as they generally were last year, included those for fluoride, cyanide, ammonia, dissolved oxygen, total dissolved gases, pH, temperature, phenols, and chlorophenols.

Regarding heavy metals, the objectives for copper were exceeded downstream from the pulp mill and the chromium objective was exceeded below the oil refinery. Lead, nickel, and zinc objectives were all met. Similar results were obtained in 1989.

7.7 Williams Lake

Data and site locations are presented in Table 15 and Figure 15, respectively.

Williams Lake drains to the Fraser River and is important for drinking water, recreation, and aquatic life. The water quality is affected by nutrients from traditional farming practices in the San Jose drainage, the main inlet to the lake.

The objective for fecal coliforms to protect bathing beaches was met. The objective to protect drinking water, which was met in 1989, was considered too low a priority to be measured in 1990 taking into account past results.

The objective for turbidity was met but the objectives for phosphorus, chlorophyll-a, dissolved oxygen, and water clarity were all exceeded. These results reflect the current eutrophic state of the lake.

7.8 Upper Finlay River

The Finlay River, located in the north east part of the Province, drains into the north end of Williston Lake. The area of the upper Finlay was the site of a gold and silver mine and mill, now closed. Objectives apply to Jock and Galen creeks which eventually flow into the upper Finlay River.

The objectives were checked in 1987. Since the area is remote and the operation is closed, no further monitoring has been carried out since. Future monitoring may be needed if the mill is reactivated on a full-time basis.

8 SOUTHERN INTERIOR REGION

8.1 Bonaparte River

Data and site locations are presented in Table 16 and Figure 16, respectively.

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

The fecal coliform objective was met in the upper reaches of the Bonaparte River but exceeded near the mouth downstream from Cache Creek. The objective was also exceeded in Loon Creek. These results are similar to those of 1989. The coliform objective was not checked in Clinton Creek or Loon Lake in 1990 since these areas were considered low priority.

The objectives for turbidity and suspended solids were not always met in the Bonaparte River, although they were met in Loon Creek. Similar results were obtained in 1989. The ammonia and nitrite objectives were met and the pH objective was generally met except, at times, in the Bonaparte River just downstream from Loon Creek. The slightly higher pH recorded at this point is believed to be a natural variation.

8.2 Okanagan Valley Lakes

Data and site locations are presented in Table 17 and Figure 17, respectively.

To date, objectives have only been set in the five main lakes for phosphorus, which is the main factor controlling the trophic state of the lakes. The lakes are highly valued for recreation, fisheries, and as a source of drinking and irrigation water.

The short-term phosphorus objective was met in Wood Lake, a reversal of previous results obtained in 1987, 1988, and 1989. The phosphorus objectives for Kalamalka and Okanagan lakes were met, including in the Vernon Arm of Okanagan Lake where the objective had been exceeded in previous years. In Skaha and Osoyoos lakes the objective was not met, as has been the result in the past.

8.3 Similkameen River

Data and site locations are presented in Table 18 and Figure 18, respectively.

The Similkameen River flows from Manning Park, through the south Okanagan, then south across the U.S. border. It is important for fisheries, drinking water, and irrigation. Water quality can be affected by mining and municipal discharges. The water quality objectives were updated in 1990 because of an increase in mining activity in the Hedley Creek area.

Objectives were not checked in the Similkameen River from Manning Park to Princeton, in Allison Creek, and in Wolfe Creek in 1990. Taking into account past results, these areas were considered a low priority for monitoring.

A wide range of objectives checked in the Similkameen River and in Hedley Creek were met. These included those for suspended solids, turbidity, cyanide in various forms, arsenic, ammonia, pH,

chromium, copper, lead, manganese, mercury, molybdenum, and uranium.

The fecal coliform objective, set to protect the water for drinking after disinfection only, was not met at times in the Similkameen River. A similar result was obtained in 1989. Other objectives not met included those for aluminum and zinc in Hedley Creek at the mouth, iron in the Similkameen River downstream from Candorado Mine near Hedley, and phosphorus in Missezula Lake. Objectives for chlorophyll-a and mercury in fish were not checked and the results for nickel were indefinite due to a high detection limit.

8.4 Cahill Creek

Data and site locations are presented in Table 19 and Figure 19, respectively.

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. This watershed is the site of a gold mine and mill which began operating in 1987.

Most of the objectives were met in 1990 as they had been in previous years. They included objectives for suspended solids, turbidity, dissolved solids, sulphate, cyanide in various forms (cyanide, in the weak-acid dissociable form, was not met in the past two years at Cahill Creek at the mouth), ammonia, nitrite, nitrate, pH, copper, iron, lead, mercury, molybdenum, and zinc. The exception was the objective for cadmium which was exceeded once at the mouth of Cahill Creek. The objectives-checking program was scaled down in 1990 as many sites and some variables were not

believed to be a priority for monitoring considering past results.

8.5 Bessette Creek

Data and site locations are presented in Table 20 and Figure 20, respectively.

Bessette Creek, which flows into the Shuswap River, is formed by the joining of Harris and Duteau creeks near the town of Lumby. 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 woodwaste landfill along Duteau Creek, and agricultural operations generally.

In this first year of monitoring, some sites and variables were omitted due to late completion of the report on objectives. Fecal coliform objectives to protect the water for drinking after partial treatment were not met in Bessette and Lawson creeks. The only other objective not met at times in Bessette Creek was suspended solids. Objectives that were met included those for turbidity, ammonia, nitrite, nitrate, and pH in Bessette and Lawson creeks and for dissolved solids and resin acids in Lawson Creek.

In Harris Creek, the only objectives that were checked were those for chlorophenols. The objectives for tetra-chlorophenol and penta-chlorophenol were not met at or downstream from the pole treatment plant. Monitoring for mono-, di-, or tri-chlorophenol was either omitted or gave indefinite results due to high detection limits.

All sites and variables will need to be monitored in the future to give a complete view of how objectives are being met.

8.6 Tributaries to Okanagan Lake near Westbank

Data and site locations are presented in Table 21 and Figure 21, respectively.

Objectives were set 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. Peachland and Trepanier creeks can be affected by seepage from a molybdenum mine which closed recently. Treated sewage effluent is discharged to Westbank Creek.

In this first year of monitoring, checking of objectives was incomplete because the report on their preparation was issued late in the year. No measurements were made in Westbank Creek. In Peachland and Trepanier creeks, objectives met included (where applicable) those for sodium, ammonia, nitrite, nitrate, pH, aluminum, copper, and molybdenum. The only objective not met was that for dissolved solids on one occasion in Trepanier Creek. More complete measurements are recommended to obtain a better picture of how well objectives are being met in these tributaries.

8.7 Tributaries to Okanagan Lake near Kelowna

Data and site locations are presented in Table 22 and Figure 22, respectively.

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 just irrigation. The creeks can be affected by urban stormwater runoff in their lower reaches and by logging or agriculture further upstream. Treated wastewater is discharged to Brandt's Creek.

As was done for the tributaries near Westbank (section 8.6), a scaled-down program was conducted in 1990, the first year of monitoring. None of the objectives for fecal coliforms, E. coli, or enterococci were met in Mission and Kelowna creeks. Objectives for ammonia, nitrite, and pH were met in both creeks. Objectives for metals (aluminum, copper, lead, and zinc) in Kelowna Creek were met. In Brandt's Creek, the objective for specific conductivity, the only one for this creek, was met.

8.8 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 recreational fish and is used for irrigation. Commercial logging in the watershed can affect these water uses.

The report setting objectives was completed too late in 1990 to allow monitoring. A program to check objectives will be carried out in 1991.

9 KOOTENAY REGION

9.1 Columbia and Windermere Lakes

Data and site locations are presented in Table 23 and Figure 23, respectively.

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

The pattern in the past has been for all objectives set in the lakes to be met. In 1990, all objectives checked were met. These included objectives for fecal coliforms at beaches and water intakes and for phosphorus at spring overturn. Objectives for turbidity and for fecal coliforms at Windermere Lake intakes were not checked.

9.2 Toby Creek and Upper Columbia River

Data and site locations are presented in Table 24 and Figure 24, respectively.

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 a discharge of treated sewage from Radium Hot Springs.

Taking into account past results, Toby Creek was considered

too low a priority to be monitored in 1990. In the Upper Columbia River, the results for checking fecal coliforms (the only objective set for this reach) were indefinite due to too few samples. Improved monitoring is recommended for 1991 in the Columbia River.

10 LOWER MAINLAND REGION

10.1 Fraser River from Hope to Kanaka Creek

Objectives have been set for the Fraser River, 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 sewage.

Taking into account past monitoring results, this water basin was considered to be too low a priority to be monitored in 1990.

10.2 Fraser River from Kanaka Creek to the Mouth

Data and site locations are presented in Table 25 and Figure 25, respectively.

The river and outer estuary are important for salmon migration and rearing. The water is used for irrigation and certain beaches are important for recreation. Water quality can be affected by major discharges of municipal and industrial effluents.

Since fairly complete monitoring had been carried out in 1987, 1988, and 1989, monitoring was scaled down in 1990.

The fecal coliform objective, set to protect irrigation, was met in the Main Stem, the North Arm, and the Middle Arm. In the Main Arm, it was not met at times downstream from Annacis, Lulu, and Steveston. The objective to protect swimming was met at all

points along Iona beach and Tsawwassen beach. All coliform results were similar to those obtained in 1988 and 1989.

The ammonia objective was met in the Main Arm and will be checked in early 1991 in the North and Middle arms. The dissolved oxygen objective was met in the Main Stem and in all the river arms. It was not checked in the sloughs, although in 1989 it was exceeded at times in Gunderson, Deas, Ladner, and MacDonald sloughs. Checking the dissolved oxygen objective on Sturgeon Bank and Roberts Bank has yet to be done and should be a priority for future monitoring.

The pH objective was met in the Main Arm and will be checked elsewhere in early 1991. The results for copper, lead, and zinc were indefinite because the dissolved fraction rather than the total metal fraction was measured.

The objective for chlorophenols in sediments was met in the Main Stem, the Main Arm, and the North Arm. This shows a definite improvement over 1989 when the objective was exceeded in the Main and North arms. The objective for PCBs in sediments was met in the Main Stem and in the Main and North arms, as it was in 1989.

A few data were obtained for PCBs in sturgeon caught downstream from Annacis. They show the objective for PCBs in fish tissue being met in a sturgeon 12 years old and exceeded in one 24 years old. In 1988, the objective was met in all fish tested.

10.3 Boundary Bay

Data and site locations are presented in Table 26 and Figure 26, respectively.

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 fecal coliform objectives to protect bathing beaches were generally met in Boundary Bay. Exceptions occurred at some sites in White Rock on the east side of the bay, a similar result to 1989. At Centennial Beach, on the west side, the objective was not exceeded, an improvement over 1989. In the tributary rivers, the objective to protect irrigation use was exceeded in the Serpentine River and its tributary, Murray Creek. It was met in the Serpentine River but exceeded in its tributaries (Latimer, Mahood, and Hyland creeks).

The objectives for suspended solids and turbidity were exceeded at times in the tributary rivers and in the creeks flowing into them. The high values occurred in the September to October period. Similar results were obtained in 1988 and 1989. The objectives were not checked in Boundary Bay itself.

The substrate sedimentation objective was checked, although not as completely as in 1988. The objective was exceeded at the mouth of Murray Creek but met in the Serpentine River, Latimer Creek, and Hyland Creek. Elsewhere, samplers were washed away leading to indefinite results.

The objectives for ammonia were generally met, except near the headwaters of Murray Creek. The nitrite objectives were exceeded in the Nicomekl River, the Serpentine River, and in some of the tributary creeks, a result similar to those of 1988 and 1989. The

chlorophyll-a objective was met in the Nicomekl River and in Murray, Latimer, and Mahood creeks, but was not measured elsewhere.

The dissolved oxygen objective was exceeded on a number of occasions in Boundary Bay, the Little Campbell River, and the Serpentine River. These results were similar to those of 1989 when a possible deterioration in dissolved oxygen conditions was noted. The pH objective was generally met, except occasionally in Latimer and Hyland creeks, a result noticed in the past.

The objectives for lead were met in the Nicomekl River as they were in 1989. As in the past, results for PCBs in water were indefinite due to high detection limits. The objective for PCBs in sediments was met where checked in Boundary Bay and in the Serpentine River and its tributaries. The same results were obtained in 1989.

10.4 Burrard Inlet

Data and site locations are presented in Table 27 and Figure 27, respectively.

Burrard Inlet includes Port Moody Arm, Indian Arm, Vancouver Harbour, False Creek, and English Bay. 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 which can affect water quality. These include primary-treated sewage, combined sewer overflows, stormwater, bulk-loading terminals, a sugar refinery, a sodium chlorate plant, and oil refineries. Objectives have also been set for the Capilano River, Lynn Creek, and School House Brook which are tributaries to Burrard Inlet and

have similar water uses.

This is the first year that objectives for Burrard Inlet have been checked, although monitoring was incomplete. Objectives for the tributaries will be checked in future years together with those of the inlet.

Extensive data were collected against which the fecal coliform objective to protect bathing beaches could be checked. Samples of the data are given in Table 27. The objective was frequently not met at Deep Cove beach in Indian Arm and at Brockton Point. The objective was met at other beaches including in Port Moody Arm, near 2nd. Narrows, in West Vancouver, around English Bay, and at the mouth of False Creek. The enterococci objective, which was not tested as extensively, followed a somewhat similar pattern. It was exceeded in Indian Arm and also near 2nd. Narrows, but was met in West Vancouver and English Bay.

The objectives for suspended solids and turbidity were tested using Indian Arm as a control site. The objectives were generally met except in Port Moody Arm, close to an oil refinery discharge.

The ammonia objective was met throughout Burrard Inlet. The objective for dissolved oxygen was exceeded occasionally in False Creek and in Port Moody Arm near a refinery outfall, but was met in other parts of Burrard Inlet. The cyanide objective, applicable only to Port Moody Arm, was generally considered met except on one occasion near a bulk-loading terminal. The pH objective, applicable between 2nd. Narrows and Roche Point, was met.

The objective for arsenic was not checked in water and was indefinite in sediments. Objectives for a number of heavy metals

in water and sediments were set for various locations. Results can be summarized as follows:

-in water, objectives for barium, cadmium, lead, mercury, nickel, and zinc were met while those for copper and iron were exceeded occasionally. High copper values occurred in Vancouver Harbour and high iron values in Port Moody Arm and English Bay.

-in sediments, objectives for cadmium, chromium, and nickel were met while those for copper, lead, mercury, and zinc were often not met. High values occurred near oil refineries and combined sewer overflows. In general, there is a trend for heavy metals to exceed objectives more in the sediments than in the water column.

Objectives have been set for a number of organic compounds including chlorophenols in water, sediments, and fish; PCBs in sediments and fish; tributyl tin, ethylene dichloride, phenols, and styrene in water; and poly-aromatic hydrocarbons in sediments. None were checked in 1990.

10.5 North Shore Lower Fraser Tributaries

Data and site locations are presented in Table 28 and Figure 28, respectively.

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 which can affect water quality include stormwater, agricultural runoff, treated sewage, landfill

leachates, and wastewaters from gravel operations and a wood preservation plant.

Fecal coliform, E. coli, and enterococci objectives were exceeded in Kanaka Creek, Scott Creek (a tributary to the Coquitlam River), and Burnaby Lake (which drains into the Brunette River). The objectives were generally met in the Pitt River, Pitt Lake, the Alouette River, Alouette Lake, the North Alouette River, the Coquitlam River, and Or Creek (a tributary to the Coquitlam River). Rxceptions were the Coquitlam River near the mouth where the E. coli and enterococci objectives were not met and the Pitt and Alouette rivers where the enterococci objectives were partly not met.

Objectives for suspended solids and turbidity were often exceeded in Kanaka Creek, the Alouette River, and the Coquitlam River. The turbidity objective was also not met in the North Alouette River. There were a number of indefinite results due to a lack of control sites. The substrate sedimentation objective was only checked in the Brunette River where it was not met.

The objectives for ammonia, nitrite, and chlorophyll-a were met in all areas checked. The dissolved oxygen objective was generally met, except occasionally in Kanaka Creek, the Coquitlam River, Still Creek, Burnaby Lake, and the Brunette River. The pH objective was met in all areas checked, except once in the North Alouette River when a slightly lower value was recorded.

Heavy metal objectives were frequently exceeded in the Brunette River drainage. Copper, lead, and zinc objectives for water were usually not met in Still Creek, Burnaby Lake, and the Brunette River, with the exception of the lead objective which was

met in Still Creek. In sediments, the objectives for copper, lead, and zinc were exceeded in Burnaby Lake and the Brunette River. Some objectives were met including those for chromium and mercury in water and for mercury in sediments of the Brunette River. The objective for mercury in sediments was exceeded in Burnaby Lake.

While the objective for chlorophenols in water was met in the Pitt River, the objective for chlorophenols in sediments was exceeded. These results reflect the influence of a wood preservation plant in the basin. The objective for chlorophenols in fish was not checked in 1990 but should be in the future.

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Water Quality Section

TABLE 1

PROVINCIAL OVERVIEW OF WATER QUALITY OBJECTIVES - 1990

REGION	NUMBER OF OCCURRENCES					
	OBJECTIVES MET	OBJECTIVES NOT MET	OBJECTIVES NOT CHECKED	OBJECTIVES OMITTED	INDEFINITE RESULT	TOTALS
Vancouver Island	410	30	10	109	17	576
	71%	5%	2%	19%	3%	100%
Skeena	252	34	13	2	9	310
	81%	11%	4%	1%	3%	100%
Northern Interior	1365	136	40	8	29	1578
	86%	8%	3%	1%	2%	100%
Southern Interior	972	44	33	120	55	1224
	79%	4%	3%	10%	4%	100%
Kootenay	9	0	1	4	3	17
	53%	0%	6%	23%	18%	100%
Lower Mainland	2383	179	104	105	60	2831
	84%	6%	4%	4%	2%	100%
All Regions	5391	423	201	348	173	6536
	83%	6%	3%	5%	3%	100%
All Regions less occurrences with no result	5391	423				5814
	93%	7%				100%

TABLE 2

COWICHAN - KOKSILAH RIVERS WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <10/100 mL 90th perc. (np)	Cowichan River: E206108 d/s Cowichan Lake	Aug 15,21,27, Sep 5,12	5	<2 - 6/100 mL np = 5/100 mL	Objective met
	0120808 u/s Lake Cowichwn STP	Aug 15,21,27, Sep 5,12	5	8 - 30/100 mL np = 25/100 mL	Objective not met
	0120802 u/s Highway 1	Aug 15,21,27, Sep 5,12	5	1 - 116/100 mL np = 40/100 mL	Objective not met
	Koksilah River: E207425 at Port Renfrew Road	Aug 15,21,27, Sep 5,12	5	16 - 142/100 mL np = 130/100 mL	Objective not met
	E206976 at Koksilah Road	Aug 15,21,27, Sep 5	4	4 - 60/100 mL	Indefinite result
	0123981 u/s Highway 1	Aug 15,21,27, Sep 5,12	5	27 - 61/100 mL np = 57/100 mL	Objective not met
E. Coli <10/100 mL 90th perc. (np)	Cowichan River: E206108 d/s Cowichan Lake	Aug 15,21,27, Sep 5,12	5	1 - 6/100 mL np = 5/100 mL	Objective met
	0120808 u/s Lake Cowichwn STP	Aug 15,21,27, Sep 5,12	5	<2 - 20/100 mL np = 19/100 mL	Objective not met
	0120802 u/s Highway 1	Aug 15,21,27, Sep 5,12	5	3 - 121/100 mL np = 50/100 mL	Objective not met
	Koksilah River: E207425 at Port Renfrew Road	Aug 15,21,27, Sep 5,12	5	19 - 148/100 mL np = 118/100 mL	Objective not met
	E206976 at Koksilah Road	Aug 15,21,27, Sep 5,12	5	24 - 88/100 mL np = 70/100 mL	Objective not met
	0123981 u/s Highway 1	Aug 15,21,27, Sep 5,12	5	27 - 54/100 mL np = 51/100 mL	Objective not met
Enterococci <3/100 mL. 90th perc. (np)	Cowichan River: E206108 d/s Cowichan Lake	Aug 15,21,27, Sep 5,12	5	1 - 11/100 mL np = 3/100 mL	Objective met
	0120808 u/s Lake Cowichan STP	Aug 15,21,27, Sep 5,12	5	2 - 65/100 mL np = 30/100 mL	Objective not met
	0120802 u/s Highway 1	Aug 15,21,27, Sep 5,12	5	<2 - 29/100 mL np = 27/100 mL	Objective not met

TABLE 2 continued

COWICHAN - KOKSILAH RIVERS WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Enterococci <3/100 mL 90th perc. (np)	Koksilah River: E207425 at Port Renfrew Road	Aug 15,21,27, Sep 5,12	5	87 - 320/100 mL np = 250/100 mL	Objective not met
	E206976 at Koksilah Road	Aug 15,21,27, Sep 5,12	5	4 - 64/100 mL np = 50/100 mL	Objective not met
	0123981 u/s Highway 1	Aug 15,21,27, Sep 5,12	5	23 - 67/100 mL np = 66/100 mL	Objective not met
E. Coli <385/100 mL geometric mean (gm)	Cowichan River: E206106 1 km d/s Duncan STP	Aug 21,27, Sep 5,12	4	16 - 25/100 mL	Indefinite result
Enterococci <100/100 mL geometric mean (gm)	Cowichan River: E206106 1 km d/s Duncan STP	Aug 15,21,27, Sep 5,12	5	7 - 18/100 mL gm = 11/100 mL	Objective met
Turbidity max increase 5 NTU or 10%	Cowichan River: E206108 d/s Cowichan Lake	May 14-Oct 10	7	0.6 - 1.0 NTU	Control site
	0120808 u/s Lake Cowichwn STP	May 14-Sep 12	6	0.4 - 0.6 NTU max inc. = 0 NTU	Objective met
	0120802 u/s Highway 1	May 14-Sep 12	6	0.4 - 0.7 NTU max inc. = 0 NTU	Objective met
	E206106 1 km d/s Duncan STP	May 14-Oct 2	6	0.6 - 0.7 NTU max inc. = 0 NTU	Objective met
	Koksilah River: E207425 at Port Renfrew Road	Aug 15-Sep 12	5	0.3 - 1.0 NTU	Control site
	E206976 at Koksilah Road	Aug 21-Sep 12	4	0.6 - 0.7 NTU max inc. = 0.4 NTU	Objective met
	0123981 u/s Highway 1	Aug 15-Sep 12	5	0.5 - 0.9 NTU max inc. = 0.6 NTU	Objective met
Suspended Solids max increase 10 mg/L or 10%	Cowichan River: E206108 d/s Cowichan Lake	Mar 7-Nov 15	5	1 - 5 mg/L	Control site
	0120808 u/s Lake Cowichwn STP	Mar 7-Aug 21	4	1 - 3 mg/L max inc. = 2 mg/L	Objective met

TABLE 2 continued

COWICHAN - KOKSILAH RIVERS WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Suspended Solidsd max increase 10 mg/L or 10%	Cowichan River: 0120802 u/s Highway 1	Jan 10-Sep 5	5	1 - 6 mg/L max inc. = 4 mg/L	Objective met
		Nov 15	1	34 mg/L inc. = 30 mg/L	Objective not met
	E206106 1 km d/s Duncan STP	Jan 10-May 14	3	1 - 6 mg/L max inc. = 4 mg/L	Objective met
		Nov 15	1	26 mg/L inc. = 22 mg/L	Objective not met
	Koksilah River: E207425 at Port Renfrew Road	Jun 5	1	1 mg/L	Control site
	E206976 at Koksilah Road	Jun 5-Aug 27	3	<1 - 2 mg/L max inc. = 1 mg/L	Objective met
	0123981 u/s Highway 1	Aug 15	1	1 mg/L inc. < 1 mg/L	Objective met
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	Jan 10-Nov 15	6	<0.005 - 0.011mg/L	Max obj. met Av not chkd.
	0120808 u/s Lake Cowichwn STP	Jan 10-Oct 2	4	<0.005 - 0.006mg/L	Max obj. met
	0120802 u/s Highway 1	Jan 10-Nov 15	8	<0.005 - 0.017mg/L	Max obj. met
	E206106 1 km d/s Duncan STP	Jan 10-Nov 15	12	0.005 - 0.230 mg/L	Max obj. met
	Koksilah River: E207425 at Port Renfrew Road	Jun 5-Jun 26	2	<0.005 - 0.005mg/L	Max obj. met Av not chkd.
	E206976 at Koksilah Road	Jun 5-Aug 1	3	all < 0.005 mg/L	Max obj. met
	0123981 u/s Highway 1	Jun 26-Aug 1	2	all < 0.005 mg/L	Max obj. met
Chlorophyll-a 50 mg/m2 max	Cowichan River	1990	0	no data collected	Objective not checked
Tot Cl2 Res. 0.002 mg/L max	Cowichan River	1990	0	no data collected	Omitted 1990

TABLE 2 continued

COWICHAN - KOKSILAH RIVERS WATER QUALITY OBJECTIVES - 1990

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: E206108 d/s Cowichan Lake	Aug 1,15,27, Sep 5,11	5	8.2 - 9.6 mg/L	Objective met
	0120808 u/s Lake Cowichwn STP	Aug 1,15,27, Sep 5,11	5	8.0 - 9.0 mg/L	Objective met
	E206107 d/s Lake Cowichan STP	Aug 1,15,27, Sep 5,11	5	8.0 - 10.4 mg/L 8.2 mg/L	Objective met
	0120802 u/s Highway 1	Aug27,Sep5,11 Aug 1,5	3 2	8.5 - 9.4 mg/L 7.3 mg/L	Obj. met Obj. not met
	E206106 1 km d/s Duncan STP	Aug27,Sep5,11 Aug 1,5	3 2	8.3 - 9.8 mg/L 6.4 - 7.2 mg/L	Obj. met Obj. not met
	Koksilah River: E207425 at Port Renfrew Road	Aug 15,27, Sep 5,12	4	8.0 - 11.2 mg/L	Objective met
	E206976 at Koksilah Road	Aug 27,Sep 5 Aug 15,Sep 12	2 2	8.9 - 10.5 mg/L 7.7 - 7.8 mg/L	Obj. met Obj. not met
	E207433 d/s Kelvin Creek	Aug 27 Aug15,Sep5,12	1 3	8.2 mg/L 7.2 - 7.9 mg/L	Obj. met Obj. not met
	0123981 u/s Highway 1	Sep 5 Aug15,27Sep12	1 3	8.4 mg/L 7.1 - 7.4 mg/L	Obj. met Obj. not met
Dissolved Cu <0.002 mg/L av 0.004 mg/L max or 20% increase	Cowichan River: E206108 d/s Cowichan Lake	Aug 15-Sep 12 Jun 26-Nov 15	5 9	av < 0.001 mg/L max = 0.001 mg/L	Control site
	0120802 u/s Highway 1	Jun 5-Nov 15	5	max = 0.001 mg/L	Max obj. met Av not chkd.
	E206106 1 km d/s Duncan STP	Jun 5-Nov 15	6	max = 0.001 mg/L	Max obj. met
	Koksilah River: E207425 at Port Renfrew Road	Aug 15,21,27, Sep 5,12	5	av < 0.002 mg/L max = 0.003 mg/L	Control site
	E206976 at Koksilah Road	Aug 15,21,27, Sep 5,12	5	av < 0.001 mg/L max = 0.001 mg/L	Objectives met
	0123981 u/s Highway 1	Aug 15,21,27, Sep 5,12	5	av = 0.001 mg/L max = 0.002 mg/L	Objectives met

TABLE 2 continued

COWICHAN - KOKSILAH RIVERS WATER QUALITY OBJECTIVES - 1989

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Dissolved Pb <0.003 mg/L av 0.008 mg/L max or 20% increase	Cowichan River: E206108 d/s Cowichan Lake	Aug 15-Sep 12 Jun 5-Nov 15	5 10	av < 0.001 mg/L max = 0.001 mg/L	Control site
	0120802 u/s Highway 1	Jun 5-Nov 15	4	max = 0.002 mg/L	Max obj. met Av not chkd.
	E206106 1 km d/s Duncan STP	Jun 5-Nov 15	5	max = 0.001 mg/L	Max obj. met
	Koksilah River: E207425 at Port Renfrew Road	Aug 15,21,27, Sep 5,12	5	all < 0.001 mg/L	Control site
	E206976 at Koksilah Road	Aug 15,27, Sep 5,12	4	max = 0.002 mg/L	Max obj. met
	0123981 u/s Highway 1	Aug 15,21,27, Sep 5,12	5	av < 0.001 mg/L max = 0.001 mg/L	Objectives met
Dissolved Zn <0.030 mg/L av 0.180 mg/L max	Cowichan River: E206108 d/s Cowichan Lake	Jun 5-Nov 15	10	all < 0.005 mg/L	Control site
	0120802 u/s Highway 1	Jun 5-Nov 15	5	all < 0.005 mg/L	Max obj. met Av not chkd.
	E206106 1 km d/s Duncan STP	Jun 5-Nov 15	6	all <0.005 mg/L	Max obj. met
	Koksilah River: E207425 at Port Renfrew Road	Aug 15,21,27, Sep 5,12	5	all < 0.005 mg/L	Control site
	E206976 at Koksilah Road	Aug 15,27 Sep 5,12	4	all < 0.005 mg/L	Max obj. met
	0123981 u/s Highway 1	Aug 15,21,27, Sep 5,12	5	all < 0.005 mg/L	Objectives met
Copper-8 Quinolinolate 0.0005mg/L max	Cowichan River	1990	0	no data collected	Omitted 1990

TABLE 3

MIDDLE QUINSAM LAKE WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total-P <0.007 mg/L av (May - Sep)	Long Lake	1990	0	no data collected	Omitted 1990
Total-P <0.006 mg/L av (May - Sep)	Middle Quinsam Lake	1990	0	no data collected	Omitted 1990
Chlorophyll-a <50 mg/m2 av	Quinsam River d/s Flume L & Long L	1990	0	no data collected	Omitted 1990
Turbidity <1.0 NTU av 5.0 NTU max	Quinsam River: 0126402 u/s Middle Quinsam L.	Nov 19,26, Dec 3,10,17	5	av = 1.4 NTU max = 1.8 NTU	Control site
	E206901 into Mid. Quinsam Lk.	Nov 9,26, Dec 3,10	4	max = 1.5 NTU	Max obj. met
	0900504 d/s Middle Quinsam L.	Nov 19,26, Dec 3,10,17	5	av = 1.0 NTU max = 1.3 NTU	Objectives met
Suspended Solids <5 mg/L av 25 mg/L max	Quinsam River: 0126402 u/s Middle Quinsam L.	Nov 19,26, Dec 3,10,17	5	av = 1.6 mg/L max = 2.0 mg/L	Control site
	E206901 into Mid. Quinsam Lk.	Nov 19,26, Dec 3,10	4	max = 2 mg/L	Max obj. met
	0900504 d/s Middle Quinsam L.	Nov 26, Dec 3,10,17	4	1 - 2 mg/L	Max obj. met Av not chkd.
	Long & Middle Q. Lks. d/s Flume L & Long L	1990	0	no data collected	Omitted 1990
Ammonia-N <1.85 mg/L av 12.7 mg/L max at pH = 7.5 temp = 10 C	Quinsam River: 0126402 u/s Middle Quinsam L.	Nov 19,26, Dec 3,10,17	5	av < 0.005 mg/L max = 0.005 mg/L	Objectives met
	E206901 into Mid. Quinsam Lk.	Nov 19,26, Dec 3,10	4	max = 0.017 mg/L	Max obj. met
	0900504 d/s Middle Quinsam L.	Nov 19,26, Dec 3,10,17	5	av = 0.009 mg/L max = 0.019 mg/L	Objectives met
	Long & Middle Q. Lks. d/s Flume L & Long L	1990	0	no data collected	Omitted 1990
Nitrate-N <40 mg/L av 200 mg/L max	Quinsam River: 0126402 u/s Middle Quinsam L.	Nov 19,26, Dec 3,10,17	5	av = 0.02 mg/L max = 0.04 mg/L	Objectives met

TABLE 3 continued

MIDDLE QUINSAM LAKE WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Nitrate-N <40 mg/L av 200 mg/L max	Quinsam River: E206901 into Mid. Quinsam Lk.	Nov 19,26, Dec 3,10	4	max = 0.16 mg/L	Max obj. met
	Long & Middle Q. Lks. d/s Flume L & Long L	1990	0	no data collected	Omitted 1990
Nitrate-N 10 mg/L max	Quinsam River: 0900504 d/s Middle Quinsam L.	Nov 19,26, Dec 3,10,17	5	<0.02 - 0.08 mg/L	Objective met
Nitrite-N <0.02 mg/L av 0.06 mg/L max	Quinsam River Long & Middle Q. Lks. d/s Flume L & Long L	1990	0	no data collected	Omitted 1990
Diss. Oxygen 3 mg/L min Jun - Aug	Long & Middle Q. Lks. (hypolimnion)	1990	0	no data collected	Omitted 1990
pH >6.5 90th perc (np) >6.9 median (med)	Quinsam River: 0126402 u/s Middle Quinsam L.	Nov 19,26, Dec 3,10,17	5	np = 7.4 med = 7.4	Objectives met
	E206901 into Mid. Quinsam Lk.	Nov 19,26, Dec 3,10	4	med = 7.3	Av obj. met
	0900504 d/s Middle Quinsam L.	Nov 19,26, Dec 3,10,17	5	np = 7.3 med = 7.3	Objectives met
	Long & Middle Q. Lks. d/s Flume L & Long L	1990	0	no data collected	Omitted 1990
Dissolved Al <0.05 mg/L av 0.1 mg/L max	Quinsam River: 0126402 u/s Middle Quinsam L.	Aug 13,19,26, Sep 3,9	5	av = 0.02 mg/L max = 0.05 mg/L	Objectives met
	E206901 into Mid. Quinsam Lk.	Nov 19	1	<0.1 mg/L	Max obj. met
	0900504 d/s Middle Quinsam L.	Aug 13,19,26, Sep 3,9	5	av < 0.02 mg/L max = 0.05 mg/L	Objectives met
	Long & Middle Q. Lks. d/s Flume L & Long L	1990	0	no data collected	Omitted 1990
Total As 0.05 mg/L max	Quinsam River	1990	0	no data collected	Obj not chkd
	Long & Middle Q. Lks. d/s Flume L & Long L	1990	0	no data collected	Omitted 1990

TABLE 3 continued

MIDDLE QUINSAM LAKE WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Cd <0.0002mg/L av 0.0003mg/L max	Quinsam River: 0126402 u/s Middle Quinsam L.	Nov 19,26, Dec 3,10,17	5	all < 0.01 mg/L	Indefinite results
	E206901 into Mid. Quinsam Lk.	Nov 19,26, Dec 3,10	4	all < 0.01 mg/L	Indefinite results
	0900504 d/s Middle Quinsam L.	Nov 19,26, Dec 3,10,17	5	all < 0.01 mg/L	Indefinite results
	Long & Middle Q. Lks. d/s Flume L & Long L	1990	0	no data collected	Omitted 1990
Total Co 0.05 mg/L max	Quinsam River: 0900504 d/s Middle Quinsam L.	Aug 13-Dec 17	10	all < 0.1 mg/L	Indefinite result
Total Cu <0.002 mg/L av	Quinsam River: 0126402 u/s Middle Quinsam L.	Nov 19,26, Dec 3,10,17	5	av = 0.001 mg/L	Objective met
	E206901 into Mid. Quinsam Lk.	Nov 19,26, Dec 3,10	4	<0.001 - 0.001mg/L	Indefinite result
	0900504 d/s Middle Quinsam L.	Nov 19,26, Dec 3,10,17	5	av = 0.001 mg/L	Objective met
	Long & Middle Q. Lks. d/s Flume L & Long L	1990	0	no data collected	Omitted 1990
Total Fe <0.3 mg/L av	Quinsam River: 0126402 u/s Middle Quinsam L.	Nov 19,26, Dec 3,10,17	5	av = 0.11 mg/L	Objective met
	E206901 into Mid. Quinsam Lk.	Nov 19,26, Dec 3,10	4	0.11 - 0.18 mg/L	Indefinite result
	0900504 d/s Middle Quinsam L.	Nov 20,27, Dec 4,11,18	5	av = 0.15 mg/L	Objective met
	Long & Middle Q. Lks. d/s Flume L & Long L	1990	0	no data collected	Omitted 1990
Total Pb <0.003 mg/L av 0.005 mg/L max	Quinsam River: 0126402 u/s Middle Quinsam L.	Nov 19,26, Dec 3,10,17	5	av < 0.001 mg/L max = 0.002 mg/L	Objectives met
	E206901 into Mid. Quinsam Lk.	Nov 19,26, Dec 3,10	4	<0.001 - 0.003mg/L	Max obj. met

TABLE 3 continued

MIDDLE QUINSAM LAKE WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Pb <0.003 mg/L av 0.005 mg/L max	Quinsam River: 0900504 d/s Middle Quinsam L.	Nov 19,26, Dec 3,10,17	5	av < 0.001 mg/L max = 0.001 mg/L	Objectives met
	Long & Middle Q. Lks. d/s Flume L & Long L	1990	0	no data collected	Omitted 1990
Total Mn 0.05 mg/L max	Quinsam River: 0900504 d/s Middle Quinsam L.	Aug 13-Dec 17 Dec 4,11,18	10	max = 0.01 mg/L	Objective met
Total Hg 0.0001mg/L max	Quinsam River: 0126402 u/s Middle Quinsam L.	Aug 26,Sep 3, 9	3	max = 0.00005 mg/L	Objective met
	0900504 d/s Middle Quinsam L.	Aug 19,26, Sep 3,9	4	all < 0.00005 mg/L	Objective met
	Long & Middle Q. Lks. d/s Flume L & Long L	1990	0	no data collected	Omitted 1990
Total Hg 0.5 mg/kg max in fish,wet wt	Quinsam River Long & Middle Q. Lks. d/s Flume L & Long L	1990	0	no data collected	Omitted 1990
Total Ni 0.025 mg/L max	Quinsam River: 0126402 u/s Middle Quinsam L.	Aug 13,19,26, Sep 3,9	5	max = 0.005 mg/L	Objective met
	E206901 into Mid. Quinsam Lk.	Nov 19,26, Dec 3,10	4	all < 0.05 mg/L	Indefinite result
	0900504 d/s Middle Quinsam L.	Aug 13,19,26, Sep 3,9	5	all < 0.003 mg/L	Objective met
	Long & Middle Q. Lks. d/s Flume L & Long L	1990	0	no data collected	Omitted 1990
Total Ag 0.0001mg/L max	Quinsam River Long & Middle Q. Lks. d/s Flume L & Long L	1990	0	no data collected	Objective not checked
Total Zn 0.03 mg/L max	Quinsam River: 0126402 u/s Middle Quinsam L.	Aug 13-Dec 17	10	max = 0.02 mg/L	Objective met
	E206901 into Mid. Quinsam Lk.	Nov 19-Dec 10 Dec 3	3 1	max = 0.02 mg/L 0.05 mg/L	Obj. met Obj. not met
	0900504 d/s Middle Quinsam L.	Aug 13-Dec 17 Nov 26	9 1	max = 0.03 mg/L 0.04 mg/L	Obj. met Obj. not met

TABLE 3 continued

MIDDLE QUINSAM LAKE WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Zn 0.03 mg/L max	Long & Middle Q. Lks. d/s Flume L & Long L	1990	0	no data collected	Omitted 1990

TABLE 4

OYSTER RIVER WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <100/100 mL 90th perc. (np)	Oyster River E208377 u/s Adrian Creek	May 16,21,29, June 4,11	5	all <2/100 mL	Objective met
	0125580 near the mouth	May 16,21,29, June 4,11	5	1 - 36/100 mL np = 20/100 mL	Objective met
Turbidity 5 NTU max	Oyster River E208377 u/s Adrian Creek	May 16,21,29, June 4,11	5	0.2 - 0.6 NTU	Objective met
Turbidity <7 NTU 90th perc.	Oyster River 0125580 near the mouth	May 16,29, June 4,11	4	0.8 - 3.0 NTU	Indefinite result
Susp. Solids 12 mg/L max	Oyster River E208377 u/s Adrian Creek	May 16,21,29, June 4,11	5	<1 - 4 mg/L	Objective met
Susp. Solids <15 mg/L 90th perc.	Oyster River 0125580 near the mouth	May 16,21,29, June 4,11	5	1 - 5 mg/L np = 4.8 mg/L	Objective met
Ammonia-N <1.85 mg/L av 12.7 mg/L max at pH = 7.5 temp = 10 C	Oyster River 0125580 near the mouth	May 21	1	<0.005 mg/L	Max obj. met Av not chkd.
	Woodhus Creek Little Oyster River	1990	0	no data collected	Omitted 1990
Nitrite-N <0.02 mg/L av 0.06 mg/L max	Oyster River Woodhus Creek Little Oyster River	1990	0	no data collected	Omitted 1990
Nitrate-N 10 mg/L max	Oyster River Woodhus Creek Little Oyster River	1990	0	no data collected	Omitted 1990
pH 6.5 - 8.5	Oyster River E208377 u/s Adrian Creek	May 16,21,29, June 4,11	5	6.8 - 7.5	Objective met
	Woodhus Creek Little Oyster River	1990	0	no data collected	Omitted 1990
pH >6.5 90th perc 8.5 max	Oyster River 0125580 near the mouth	May 16,29, June 4,11	4	7.3 - 7.7	Max obj. met np not chkd.

TABLE 4 continued

OYSTER RIVER WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Dissolved Al <0.05 mg/L av 0.1 mg/L max	Oyster River E208377 u/s Adrian Creek	May 16,21,29, June 4,11	5	0.02 - <0.10 mg/L	Max obj. met Av indef.
	0125580 near the mouth	May 16,21,29, June 4,11	5	0.03 - <0.10 mg/L	Max obj. met Av indef.
	Woodhus Creek Little Oyster River	1990	0	no data collected	Omitted 1990
Total As 0.05 mg/L max	Oyster River Woodhus Creek Little Oyster River	1990	0	no data collected	Omitted 1990
Total Cd 0.2 ug/L max	Oyster River E208377 u/s Adrian Creek	May 16,21,29, June 4,11	5	<0.1 - 0.1 ug/L	Objective met
	Woodhus Creek Little Oyster River	1990	0	no data collected	Omitted 1990
Total Cr 0.002 mg/L max	Oyster River E208377 u/s Adrian Creek	May 16,21,29, June 4,11	5	all <0.005 mg/L	Indefinite result
	0125580 near the mouth	May 16,21,29, June 4,11	5	all <0.005 mg/L	Indefinite result
	Woodhus Creek Little Oyster River	1990	0	no data collected	Omitted 1990
Total Co 0.002 mg/L max	Oyster River E208377 u/s Adrian Creek	May 16,21,29, June 4,11	5	<0.001 - 0.001mg/L	Objective met
	0125580 near the mouth	May 16,21,29, June 4,11	5	all <0.001 mg/L	Objective met
	Woodhus Creek Little Oyster River	1990	0	no data collected	Omitted 1990
Total Cu <0.003 mg/L av <0.005 mg/L 90th perc. (np)	Oyster River E208377 u/s Adrian Creek	May 16,21,29, June 4,11	5	all 0.001 mg/L	Objectives met
	0125580 near the mouth	May 16,21,29, June 4,11	5	av = 0.003 mg/L np = 0.004 mg/L	Objectives met
Total Cu <0.010 mg/L 90th perc.	Woodhus Creek Little Oyster River	1990	0	no data collected	Omitted 1990

TABLE 4 continued

OYSTER RIVER WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Dissolved Fe <0.3 mg/L 90th perc. (np)	Oyster River E208377 u/s Adrian Creek	May 16,21,29, June 4,11	5	all <0.01 mg/L	Objective met
	0125580 near the mouth	May 16,21,29, June 4,11	5	0.02 - 0.09 mg/L np = 0.07 mg/L	Objective met
Total Pb <3.6 ug/L av 6.4 ug/L max at hardness 13.6 mg/L	Oyster River E208377 u/s Adrian Creek	May 16,21,29, June 4,11	5	all <1 ug/L	Objectives met
	0125580 near the mouth	May 16,21,29, June 4,11	5	<1 - 1 ug/L	Objectives met
	Woodhus Creek Little Oyster River	1990	0	no data collected	Omitted 1990
Total Mn 0.05 mg/L max	Oyster River E208377 u/s Adrian Creek	May 16,21,29, June 4,11	5	all <0.01 mg/L	Objective met
	0125580 near the mouth	May 16,21,29, June 4,11	5	all <0.01 mg/L	Objective met
	Woodhus Creek Little Oyster River	1990	0	no data collected	Omitted 1990
Total Hg <0.02 ug/L av 0.1 ug/L max 0.5 ug/g max in fish muscle	Oyster River Woodhus Creek Little Oyster River	1990	0	no data collected	Omitted 1990
Total Ni 0.025 mg/L max	Oyster River E208377 u/s Adrian Creek	May 16,21,29, June 4,11	5	all = 0.003 mg/L	Objective met
	0125580 near the mouth	May 16,21,29, June 4,11	5	all = 0.003 mg/L	Objective met
	Woodhus Creek Little Oyster River	1990	0	no data collected	Omitted 1990

TABLE 4 continued

OYSTER RIVER WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Zn <0.01 mg/L av 0.03 mg/L max	Oyster River E208377 u/s Adrian Creek	May 16,21,29, June 4,11	5	all <0.01 mg/L	Objectives met
	0125580 near the mouth	May 16,21,29, June 4,11	5	all <0.01 mg/L	Objectives met
	Woodhus Creek Little Oyster River	1990	0	no data collected	Omitted 1990

TABLE 5

BULKLEY RIVER WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <10/100 mL 90th perc. (np)	0400297 u/s Houston	June 26, July 3,9	3	36 - 94/100 mL np > 10/100 mL	Objective not met
	0400434 u/s Smithers	June 26, July 3,9,18,23	5	4 - 35/100 mL np = 17/100 mL	Objective not met
Fecal Coliforms <200/100 mL geometric mean (gm)	0400295 100m d/s Houston	June 26, July 3,9	3	38 - 116/100 mL	Indefinite result
	0400435 d/s Smithers in initial dilution zone	June 26, July 3,9,18,23	5	3 - 33/100 mL gm = 9/100 mL	Objective met
Turbidity max increase: 5 NTU or 10%	0400297 u/s Houston	June 26, July 3,9	3	3.5 - 11 NTU	Control site
	0400295 100m d/s Houston	June 26, July 3,9	3	3.4 - 10 NTU max inc. = 0.0 NTU	Objective met
	0400434 u/s Smithers	June 26, July 3,9,18,23	5	3.0 - 12 NTU	Control site
	0400435 d/s Smithers in initial dilution zone	June 26, July 3,9,18,23	5	2.5 - 12 NTU max inc. = 0.2 NTU	Objective met
Susp. Solids max increase: 10 mg/L or 10%	0400297 u/s Houston	June 26, July 3,9	3	7 - 36 mg/L	Control site
	0400295 100m d/s Houston	June 26, July 3,9	3	3.4 - 10 mg/L max inc. = 1 mg/L	Objective met
	0400434 u/s Smithers	June 26, July 3,9,18,23	5	9 - 25 mg/L	Control site
	0400435 d/s Smithers in initial dilution zone	June 26, July 3,9,18,23	5	10 - 26 mg/L max inc. = 3 mg/L	Objective met
Tot. Cl2 Res. 0.002 mg/L max	d/s Houston d/s Smithers	1989	0	no data collected	Omitted 1990
Chlorophyll-a <50 mg/m2 av	0400434 u/s Smithers	August 27	6	7.3 - 28.3 mg/m2 av = 14.7 mg/m2	Objective met
	0400435 d/s Smithers in initial dilution zone	August 27	6	12.7 - 31.9 mg/m2 av = 20.1 mg/m2	Objective met

TABLE 5 continued

BULKLEY RIVER WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Ammonia-N <1.86 mg/L av 9.65 mg/L max at pH = 7.7 temp = 10 C	0400297 u/s Houston	June 26, July 3,9	3	<0.005 - 0.008mg/L	Max obj. met Av not chkd.
	0400295 100m d/s Houston	June 26, July 3,9	3	<0.005 - 0.009mg/L	Max obj. met
	0400434 u/s Smithers	June 26, July 3,9,18,23	5	av = 0.005 mg/L max = 0.006 mg/L	Objectives met
	0400435 d/s Smithers in initial dilution zone	June 26, July 3,9,18,23	5	av = 0.005 mg/L max = 0.005 mg/L	Objectives met
Nitrite-N <0.02 mg/L av 0.06 mg/L max	0400297 u/s Houston	June 26, July 3,9	3	all < 0.005 mg/L	Max obj. met Av not chkd.
	0400295 100m d/s Houston	June 26, July 3,9	3	all < 0.005 mg/L	Max obj. met
	0400434 u/s Smithers	June 26, July 3,9,18,23	5	all < 0.005 mg/L	Objectives met
	0400435 d/s Smithers in initial dilution zone	June 26, July 3,9,18,23	5	all < 0.005 mg/L	Objectives met
Dissolved Oxygen 7.8 mg/L min	Bulkley River	1990	0	no data collected	Objective not checked

TABLE 6

KATHLYN, SEYMOUR, ROUND & TYHEE LAKES WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms: <10/100 mL 90th perc. (np) at water intakes <200/100 mL geometric mean (gm) <400/100 mL 90th perc. (np) at beaches	Kathlyn Lake: E207548 beach	July 4,10,17, 24,30	5	gm = 7/100 mL np = 20/100 mL	Objectives met
	E207549 intake #2	July 4,10,17, 24,30	5	np < 2/100 mL	Objective met
	E207550 intake #3	July 4,10,17, 24,30	5	np = 20/100 mL	Objective not met
	Seymour Lake: E207552 intake #1	July 4,10,17, 24,30	5	np < 2/100 mL	Objective met
	E207553 intake #2	July 4,10,17, 24,30	5	np < 2/100 mL	Objective met
	Round Lake: E207555 beach	July 4,10,17, 24,30	5	gm = 3/100 mL np = 4/100 mL	Objectives met
	E207556 intake #2	July 4,10,17, 24,30	5	np < 2/100 mL	Objective met
	E207557 intake #3	July 4,10,17, 24,30	5	np < 2/100 mL	Objective met
	Tyhee Lake: E207559 beach	July 4,10,17, 24,30	5	gm = 2/100 mL np = 4/100 mL	Objectives met
	E207560 intake #2	July 4,10,17, 24,30	5	np = 30/100 mL	Objective not met
	E207561 intake #3	July 4,10,17, 24,30	5	np = 8/100 mL	Objective met
Turbidity <1 NTU av 5 NTU max	Kathlyn Lake: E207549 intake #2	July 4,10,17, 24,30	5	av = 1.6 NTU max = 3.0 NTU	Av not met Max obj. met
	E207550 intake #3	July 4,10,17, 24,30	5	av = 1.6 NTU max = 3.0 NTU	Av not met Max obj. met
	Seymour Lake: E207552 intake #1	July 4,10,17, 24,30	5	av = 8.9 NTU	Av not met
		July 4	1	max = 5.0 NTU	Max obj. met
		Jul 10-Jul 30	4	max = 7.0-13 NTU	Max not met

TABLE 6 continued

KATHLYN, SEYMOUR, ROUND & TYHEE LAKES WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Turbidity <1 NTU av 5 NTU max	Seymour Lake: E207553 intake #2	July 4,10,17, 24,30	5	av = 3.1.NTU	Av not met
		July 4	1	max = 6.0 NTU	Max not met
		Jul 10-Jul 30	4	max = 0.6-4.5 NTU	Max obj. met
	Round Lake: E207556 intake #2	July 4,10,17, 24,30	5	av = 1.1 NTU max = 2.0 NTU	Av not met Max obj. met
	E207557 intake #3	July 4,10,17, 24,30	5	av = 1.5 NTU max = 2.0 NTU	Av not met Max obj. met
	Tyhee Lake: E207560 intake #2	July 4,10,17, 24,30	5	av = 0.9 NTU max = 1.0 NTU	Objectives met
	E207561 intake #3	July 4,10,17, 24,30	5	av = 0.9 NTU max = 1.0 NTU	Objectives met
Total P <0.015 mg/L av at spring overturn	Kathlyn Lake 1131007 North Basin	April 18	3	0.5 m: 0.017 mg/L 4.0 m: 0.017 mg/L 8.0 m: 0.016 mg/L av = 0.017 mg/L	Objective not met
	Round Lake 1131008 mid-lake	April 18	3	0.5 m: 0.025 mg/L 3.5 m: 0.067 mg/L 17 m: 0.136 mg/L	Indefinite result
	Tyhee Lake 1131009 North Basin	April 18	3	0.5 m: 0.019 mg/L 6.0 m: 0.027 mg/L 15 m: 0.081 mg/L	Indefinite result
Colour 15 TCU max near water intakes	Kathlyn Lake: E207549 intake #2	July 4,10,17, 24,30	5	10 - 15 TCU	Objective met
	E207550 intake #3	July 4,17,24, 30	4	10 - 15 TCU	Objective met
		July 10	1	20 TCU	Obj. not met
	Seymour Lake: E207552 intake #1	July 4,10,17, 24,30	5	20 - 70 TCU	Objective not met

TABLE 6 continued

KATHLYN, SEYMOUR, ROUND & TYHEE LAKES WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Colour 15 TCU max near water intakes	Seymour Lake: E207553 intake #2	July 4,17,24, 30	4	40 - 50 TCU	Objective not met
		July 10	1	<5 TCU	Obj. met
	Round Lake: E207556 intake #2	July 4,24,30	3	10 - 15 TCU	Obj. met
		July 10,17	2	20 TCU	Obj. not met
	E207557 intake #3	July 4,10,17, 30	4	all = 20 TCU	Objective not met
		July 24	1	15 TCU	Obj. met
	Tyhee Lake: E207560 intake #2	July 4,10,17, 30	4	10 - 15 TCU	Objective met
		July 24	1	20 TCU	Obj. not met
	E207561 intake #3	July 4,10,17, 24,30	5	5 - 10 TCU	Objective met

TABLE 7

LOWER KITIMAT RIVER AND ARM WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms shellfish: <14/100 mL median (med) <43/100 mL 90th perc. (np) recreation: <200/100 mL geometric mean (gm) <400/100 mL 90th perc. (np)	Kitimat Harbour: (shellfish closure) 0400510 Ocelot Dock, N end	Aug 29	1	4/100 mL	Indefinite result
	0400512 Ocelot Dock, S end	Aug 29	1	1/100 mL	Indefinite result
	Kitimat Arm: (shellfish closure) E207571 Bish Cove	Aug 29	1	<2/100 mL	Indefinite result
	E207572 Hospital Beach	Aug 29	1	<2/100 mL	Indefinite result
	E207573 Mission Beach	Aug 29	1	<2/100 mL	Indefinite result
	E207574 Henderson's Beach	Aug 29	1	<2/100 mL	Indefinite result
Suspended Solids max increase: 10 mg/L or 10%	Kitimat River: 0430025 at Highway Bridge	Aug 1,15,21, 29	4	1 - 11 mg/L	Control site
	E207569 u/s STP & Eurocan	Aug 1,15,21, 29	4	6 - 13 mg/L max inc. = 5 mg/L	Objective met
	E207570 100m d/s Eurocan	Aug 1,15,21, 29	4	8 - 20 mg/L max inc. = 9 mg/L	Objective met
	Kitimat Harbour & Arm E207571 Bish Cove	Aug 29	1	9 mg/L	Control site
	0400510 Ocelot Dock, N end	Aug 29	1	6 mg/L	Objective met
	0400512 Ocelot Dock, S end	Aug 29	1	10 mg/L	Objective met
	E207572 Hospital Beach	Aug 29	1	15 mg/L	Objective met
	E207573 Mission Beach	Aug 29	1	8 mg/L	Objective met
	E207574 Henderson's Beach	Aug 29	1	8 mg/L	Objective met

TABLE 7 continued

LOWER KITIMAT RIVER AND ARM WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Turbidity max increase: 5 NTU or 10%	Kitimat River: 0430025 at Highway Bridge	Aug 1,15,21, 29	4	1.3 - 4.6 NTU	Control site
	E207569 u/s STP & Eurocan	Aug 1,15,21, 29	4	2.0 - 5.3 NTU max inc. = 0.7 NTU	Objective met
	E207570 100m d/s Eurocan	Aug 1,15,21, 29	4	4.0 - 6.3 NTU max inc. = 2.7 NTU	Objective met
	Kitimat Harbour & Arm E207571 Bish Cove	Aug 29	1	0.8 NTU	Control site
	0400510 Ocelot Dock, N end	Aug 29	1	2.4 NTU	Objective met
	0400512 Ocelot Dock, S end	Aug 29	1	2.3 NTU	Objective met
	E207572 Hospital Beach	Aug 29	1	1.5 NTU	Objective met
	E207573 Mission Beach	Aug 29	1	1.5 NTU	Objective met
	E207574 Henderson's Beach	Aug 29	1	2.5 NTU	Objective met
WAD Cyanide 0.001 mg/L max or min detection level of 0.005 mg/L	Kitimat Harbour & Arm 0400510 Ocelot Dock, N end	Aug 29	1	<0.005 mg/L	Objective met
	0400512 Ocelot Dock, S end	Aug 29	1	<0.005 mg/L	Objective met
	E207571 Bish Cove	Aug 29	1	<0.005 mg/L	Objective met
	E207572 Hospital Beach	Aug 29	1	<0.005 mg/L	Objective met
	E207573 Mission Beach	Aug 29	1	<0.005 mg/L	Objective met
	E207574 Henderson's Beach	Aug 29	1	<0.005 mg/L	Objective met

TABLE 7 continued

LOWER KITIMAT RIVER AND ARM WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fluoride 1.5 mg/L max	Kitimat Harbour & Arm 0400510 Ocelot Dock, N end	Aug 29	1	0.68 mg/L	Objective met
	0400512 Ocelot Dock, S end	Aug 29	1	0.44 mg/L	Objective met
	E207571 Bish Cove	Aug 29	1	0.70 mg/L	Objective met
	E207572 Hospital Beach	Aug 29	1	0.51 mg/L	Objective met
	E207573 Mission Beach	Aug 29	1	0.64 mg/L	Objective met
	E207574 Henderson's Beach	Aug 29	1	0.47 mg/L	Objective met
H2S 0.002 mg/L max	Kitimat River	1990	0	no data collected	Objective not checked
Chlorophyll-a <50 mg/m2 av	Kitimat River	1990	0	no data collected	Objective not checked
Ammonia-N <1.8 mg/L av 14.0 mg/L max at pH = 7.4 temp = 13 C	Kitimat River: 0430025 at Highway Bridge	Aug 1,15,21, 29	4	<0.005 - 0.031mg/L	Max obj. met Av not chkd.
	E207569 u/s STP & Eurocan	Aug 1,15,21, 29	4	<0.005 - 0.030mg/L	Max obj. met
	E207570 100m d/s Eurocan	Aug 1,15,21, 29	4	<0.005 - 0.029mg/L	Max obj. met
Ammonia-N <2.4 mg/L av 11.0 mg/L max at pH = 7.8 temp = 15 C sal. = 30g/Kg	Kitimat Harbour & Arm 0400510 Ocelot Dock, N end	Aug 29	1	0.048 mg/L	Max obj. met Av not chkd.
	0400512 Ocelot Dock, S end	Aug 29	1	0.017 mg/L	Max obj. met
	E207571 Bish Cove	Aug 29	1	<0.005 mg/L	Max obj. met
	E207572 Hospital Beach	Aug 29	1	0.047 mg/L	Max obj. met
	E207573 Mission Beach	Aug 29	1	<0.005 mg/L	Max obj. met

TABLE 7 continued

LOWER KITIMAT RIVER AND ARM WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Ammonia-N <2.2 mg/L av 11.0 mg/L max	Kitimat Harbour & Arm E207574 Henderson's Beach	Aug 29	1	<0.005 mg/L	Max obj. met
Nitrite-N <0.02 mg/L av 0.06 mg/L max	Kitimat River: 0430025 at Highway Bridge	Aug 1,15,21, 29	4	<0.005 - 0.040mg/L	Max obj. met Av not chkd.
	E207569 u/s STP & Eurocan	Aug 1,15,21, 29	4	<0.005 - 0.060mg/L	Max obj. met
	E207570 100m d/s Eurocan	Aug 1,15,21, 29	4	<0.005 - 0.040mg/L	Max obj. met
Diss. Oxygen 7.8 mg/L min	Kitimat River	1990	0	no data collected	Objective not checked
pH 6.5 - 9.0	Kitimat River: 0430025 at Highway Bridge	Aug 1,15,21, 29	4	7.2 - 7.7	Objective met
	E207569 u/s STP & Eurocan	Aug 1,15,21, 29	4	6.9 - 7.5	Objective met
	E207570 100m d/s Eurocan	Aug 1,15,21, 29	4	7.2 - 7.6	Objective met
Total Al 20% increase	Kitimat Harbour & Arm E207571 Bish Cove	Aug 29	1	<0.5 mg/L	Control site
	0400510 Ocelot Dock, N end	Aug 29	1	<0.5 mg/L	Objective met
	0400512 Ocelot Dock, S end	Aug 29	1	<0.5 mg/L	Objective met
	E207572 Hospital Beach	Aug 29	1	<0.5 mg/L	Objective met
	E207573 Mission Beach	Aug 29	1	<0.5 mg/L	Objective met
	E207574 Henderson's Beach	Aug 29	1	<0.5 mg/L	Objective met
Total Cd <0.012 mg/L av 0.038 mg/L max	Kitimat Harbour & Arm 0400510 Ocelot Dock, N end	Aug 29	1	<0.0005 mg/L	Max obj. met Av not chkd.

TABLE 7 continued

LOWER KITIMAT RIVER AND ARM WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Cd <0.012 mg/L av 0.038 mg/L max	Kitimat Harbour & Arm 0400512 Ocelot Dock, S end	Aug 29	1	<0.0005 mg/L	Max obj. met
	E207571 Bish Cove	Aug 29	1	<0.0005 mg/L	Max obj. met
	E207572 Hospital Beach	Aug 29	1	<0.0005 mg/L	Max obj. met
	E207573 Mission Beach	Aug 29	1	<0.0005 mg/L	Max obj. met
	E207574 Henderson's Beach	Aug 29	1	<0.0005 mg/L	Max obj. met
Total Cu <0.002 mg/L av 0.003 mg/L max or 20% increase	Kitimat Harbour & Arm E207571 Bish Cove	Aug 29	1	<0.001 mg/L	Control site
	0400510 Ocelot Dock, N end	Aug 29	1	<0.001 mg/L	Max obj. met Av not chkd.
	0400512 Ocelot Dock, S end	Aug 29	1	<0.001 mg/L	Max obj. met
	E207572 Hospital Beach	Aug 29	1	<0.001 mg/L	Max obj. met
	E207573 Mission Beach	Aug 29	1	<0.001 mg/L	Max obj. met
	E207574 Henderson's Beach	Aug 29	1	<0.001 mg/L	Max obj. met
Total Fe 0.3 mg/L max	Kitimat Harbour & Arm 0400510 Ocelot Dock, N end	Aug 29	1	0.229 mg/L	Objective met
	0400512 Ocelot Dock, S end	Aug 29	1	0.077 mg/L	Objective met
	E207571 Bish Cove	Aug 29	1	0.007 mg/L	Objective met
	E207572 Hospital Beach	Aug 29	1	0.157 mg/L	Objective met
	E207573 Mission Beach	Aug 29	1	0.017 mg/L	Objective met

TABLE 7 continued

LOWER KITIMAT RIVER AND ARM WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Fe 0.3 mg/L max	Kitimat Harbour & Arm E207574 Henderson's Beach	Aug 29	1	0.053 mg/L	Objective met
Total Pb <0.009 mg/L av 0.22 mg/L max or 20% increase	Kitimat Harbour & Arm E207571 Bish Cove	Aug 29	1	<0.001 mg/L	Control site
	0400510 Ocelot Dock, N end	Aug 29	1	<0.001 mg/L	Max obj. met Av not chkd.
	0400512 Ocelot Dock, S end	Aug 29	1	<0.001 mg/L	Max obj. met
	E207572 Hospital Beach	Aug 29	1	<0.001 mg/L	Max obj. met
	E207573 Mission Beach	Aug 29	1	<0.001 mg/L	Max obj. met
	E207574 Henderson's Beach	Aug 29	1	<0.001 mg/L	Max obj. met
Toxicity % mill effl. in river: <0.05 of the 96-h LC50	Kitimat River d/s Eurocan	1990	0	no data collected	Objective not checked

TABLE 8

LAKELSE LAKE WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <10/100 mL 90th perc (np) at water intakes	E207580 intake, lake NW	Aug 21,26, Sep 5,11,17	5	1 - 3/100 mL np < 2/100 mL	Objective met
	E207581 intake, Gainey Point	Aug 21,26, Sep 5,11,17	5	1 - 3/100 mL np < 2/100 mL	Objective met
Fecal Coliforms <200/100 mL geometric mean (gm) at beaches	E207583 Furlong Beach	Aug 21,26, Sep 5,11,17	5	1 - <2/100 mL gm < 2/100 mL	Objective met
Turbidity 1 NTU av 5 NTU max	E207580 intake, lake NW	Aug 21,26, Sep 5,11,17	5	av = 0.6 NTU max = 0.8 NTU	Objectives met
	E207581 intake, Gainey Point	Aug 21,26, Sep 5,11,17	5	av = 0.5 NTU max = 0.6 NTU	Objectives met
Total-P <0.010 mg/L av May - August (0 - 30 m)	E206616 N end, deepest point	May 15-Aug 14	11	<0.003 - 0.018mg/L (0.5 - 30 m) av = 0.007 mg/L	Objective met
Chlorophyll-a <3 ug/L av May - August (0 - 6 m)	E206616 N end, deepest point	May 15-Aug 14	4	1.1 - 11.3 ug/L (0 - 6 m) av = 4.0 ug/L	Objective not met
Dissolved Oxygen 6 mg/L min 5m above sed.	E206616 N end, deepest point (sediments at 30 m)	June 13 July 19 August 14	1 1 1	9.8 mg/L at 25 m 6.5 mg/L at 25 m 6.1 mg/L at 25 m	Objective met

TABLE 9

CHARLIE LAKE WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <10/100 mL 90th perc. (np) near water intakes	Fort St. John intake	Feb 28, Mar 7 14,22,28	5	all < 2/100 mL	Objective met
		July 18,25, August 1,8,15	5	<2 - 10/100 mL np = 5/100 mL	Objective met
		Nov 7,14,21, 28, Dec 5	5	all < 2/100 mL	Objective met
	Scurry intake	June 5	1	55/100 mL	Indefinite result
Fecal Coliforms <200/100 mL geometric mean (gm) <400/100 mL 90th perc. (np) at beaches	Beatton Park Beach north	June 5,20,26	3	4 - 93/100 mL	Indefinite results
	Beatton Park Beach centre	June 5,13,20, 26, July 3	5	5 - 90/100 mL gm = 15/100 mL np = 55/100 mL	Objectives met
		July 3,10,17, 24,31	5	<5 - 600/100 mL gm = 18/100 mL np = 100/100 mL	Objectives met
		July 24,31, Aug 7,13,20	5	<5 - 600/100 mL gm = 82/100 mL np = 580/100 mL	gm obj. met np not met
	Beatton Park Beach south	June 5,20,26, July 3	4	<5 - 1100/100 mL	Indefinite results
	Montney Park	June 5	1	25/100 mL	Indefinite results
Total-P <0.050 mg/L av at spring overturn <0.075 mg/L av at all other times	0400390 Charlie L. centre	May 15 (spring overturn)	1 1 1	1 m : 0.076 mg/L 5 m : 0.072 mg/L 9.5m : 0.075 mg/L av = 0.074 mg/L	Objective not met
		June 12	1 1	1 m : 0.051 mg/L 6 m : 0.051 mg/L 11 m: 0.053 mg/L	Obj. met Obj. met Obj. met
		June 22	1 1 1	1 m : 0.053 mg/L 7 m : 0.061 mg/L 13 m : 0.229 mg/L	Obj. met Obj. met Obj. not met
		July 3	1 1 1	1 m : 0.057 mg/L 5 m : 0.038 mg/L 10.5m: 0.125 mg/L	Obj. met Obj. met Obj. not met

TABLE 9 continued

CHARLIE LAKE WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total-P <0.050 mg/L av at spring overturn <0.075 mg/L av at all other times	0400390 Charlie L. centre	July 24	1 1 1	1 m : 0.080 mg/L 5 m : 0.055 mg/L 9.5m : 0.079 mg/L	Obj. not met Obj. met Obj. not met
		August 15	1 1 1	1 m : 0.224 mg/L 5 m : 0.040 mg/L 9.5m : 0.156 mg/L	Obj. not met Obj. met Obj. not met
		September 11	9	1-9m : 0.085-0.099 mg/L	Objective not met
		October 2	1 1 1	1 m : 0.083 mg/L 5 m : 0.083 mg/L 9 m : 0.073 mg/L	Obj. not met Obj. not met Obj. met
		October 25	9	1-10.5 m : 0.057 - 0.072 mg/L	Objective met
	E207459 Charlie L. north arm	May 15 (spring overturn)	1 1 1	1 m : 0.066 mg/L 4 m : 0.070 mg/L 7 m : 0.071 mg/L av = 0.069 mg/L	Objective not met
		June 12	3	1-7m : 0.063-0.068 mg/L	Objective met
		June 22	1 1 1	1 m : 0.032 mg/L 3 m : 0.041 mg/L 6 m : 0.035 mg/L	Obj. met Obj. met Obj. met
		July 3	1 1 1	1 m : 0.036 mg/L 4 m : 0.044 mg/L 6.5m : 0.199 mg/L	Obj. met Obj. met Obj. not met

TABLE 10

BULLMOOSE CREEK WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <10/100 mL 90th perc. (np)	West Bullmoose Creek: E206225 u/s sediment ponds	April 25, May 2,7,10	4	all <2/100 mL	Indefinite result
	E206226 d/s sediment pond 3	April 25,30, May 2,7,10	5	<2 - 3/100 mL	Objective met
	E206227 d/s sed. ponds 1 & 2	April 25,30, May 2,7,10	5	<2 - 4/100 mL	Objective met
	South Bullmoose Cr.: E206228 u/s plant	April 25,30, May 2,7,10	5	0 - 348/100 mL np = 50/100 mL	Objective not met
	E206229 d/s plant	April 25,30, May 2,7,10	5	<2 - 6/100 mL	Objective met
	Bullmoose Creek: 0410094 d/s tailing pond	April 25,30, May 2,7,10	5	<2 - 1/100 mL	Objective met
	E206232 20km d/s tailing pond	April 25,30, May 2,7,10	5	<2 - 7/100 mL	Objective met
Turbidity max increase: 5 NTU or 10%	West Bullmoose Creek South Bullmoose Cr. Bullmoose Creek	1990	0	no data collected	Objective not checked
Susp. Solids max increase: 10 mg/L or 10%	West Bullmoose Creek South Bullmoose Cr. Bullmoose Creek	1990	0	no data collected	Objective not checked
Substrate Sedimentation: no increase in particulate < 3 mm dia.	West Bullmoose Creek South Bullmoose Cr. Bullmoose Creek	1990	0	no data collected	Omitted 1990
Chlorophyll-a av <50 mg/m2	West Bullmoose Creek South Bullmoose Cr. Bullmoose Creek	1990	0	no data collected	Objective not checked

TABLE 10 continued

BULLMOOSE CREEK WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Ammonia-N <0.751 mg/L av 3.90 mg/L max at pH = 8.2 temp = 5 C	West Bullmoose Creek: E206225 u/s sediment ponds	April 25, May 2,7,10	4	<0.005 - 0.005mg/L	Max obj. met
	E206226 d/s sediment pond 3	April 25,30, May 2,7,10	5	<0.005 - 0.011mg/L	Objectives met
	E206227 d/s sed. ponds 1 & 2	April 25,30, May 2,7,10	5	<0.005 - 0.005mg/L	Objectives met
	South Bullmoose Cr.: E206228 u/s plant	April 25,30, May 2,7,10	5	<0.005 - 0.005mg/L	Objectives met
	E206229 d/s plant	April 25,30, May 2,7,10	5	<0.005 - 0.007mg/L	Objectives met
	Bullmoose Creek: 0410094 d/s tailing pond	April 25,30, May 2,7,10	5	<0.005 - 0.006mg/L	Objectives met
	E206232 20km d/s tailing pond	April 25,30, May 2,7,10	5	<0.005 - 0.006mg/L	Objectives met
Nitrite-N <0.02 mg/L av 0.06 mg/L max	West Bullmoose Creek: E206225 u/s sediment ponds	April 25, May 2,7,10	4	all <0.005 mg/L	Max obj. met
	E206226 d/s sediment pond 3	April 25,30, May 2,7,10	5	all <0.005 mg/L	Objectives met
	E206227 d/s sed. ponds 1 & 2	April 25,30, May 2,7,10	5	all <0.005 mg/L	Objectives met
	South Bullmoose Cr.: E206228 u/s plant	April 25,30, May 2,7,10	5	all <0.005 mg/L	Objectives met
	E206229 d/s plant	April 25,30, May 2,7,10	5	all <0.005 mg/L	Objectives met
	Bullmoose Creek: 0410094 d/s tailing pond	April 25,30, May 2,7,10	5	<0.005 - 0.005mg/L	Objectives met
	E206232 20km d/s tailing pond	April 25,30, May 2,7,10	5	all <0.005 mg/L	Objectives met

TABLE 10 continued

BULLMOOSE CREEK WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Nitrite + Nitrate-N 10 mg/L max	West Bullmoose Creek: E206225 u/s sediment ponds	April 25, May 2,7,10	4	0.03 - 0.06 mg/L	Objective met
	E206226 d/s sediment pond 3	April 25,30, May 2,7,10	5	1.25 - 4.60 mg/L	Objective met
	E206227 d/s sed. ponds 1 & 2	April 25, May 2,7,10	4	2.40 - 8.40 mg/L	Objective met
		April 30	1	10.40 mg/L	Obj. not met
	South Bullmoose Cr.: E206228 u/s plant	April 25,30, May 2,7,10	5	<0.02 - 0.09 mg/L	Objective met
	E206229 d/s plant	April 25,30, May 2,7,10	5	0.24 - 1.06 mg/L	Objective met
	Bullmoose Creek: 0410094 d/s tailing pond	April 25,30, May 2,7,10	5	1.60 - 6.80 mg/L	Objective met
	E206232 20km d/s tailing pond	April 25,30, May 2,7,10	5	0.81 - 1.78 mg/L	Objective met
Diss. Oxygen 7.75 mg/L min	West Bullmoose Creek: E206225 u/s sediment ponds	April 25, May 2	2	11.6 - 13.5 mg/L	Objective met
	E206226 d/s sediment pond 3	April 25, May 2	2	10.8 - 13.1 mg/L	Objective met
	E206227 d/s sed. ponds 1 & 2	April 25, May 2	2	11.0 - 11.2 mg/L	Objective met
	South Bullmoose Cr.: E206228 u/s plant	April 25, May 2	2	11.2 - 12.1 mg/L	Objective met
	E206229 d/s plant	April 25, May 2	2	11.4 - 12.4 mg/L	Objective met
	Bullmoose Creek: 0410094 d/s tailing pond	April 25, May 2	2	11.2 - 11.4 mg/L	Objective met
	E206232 20km d/s tailing pond	April 25, May 2	2	11.0 - 11.1 mg/L	Objective met

TABLE 10 continued

BULLMOOSE CREEK WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
pH 6.5 min	West Bullmoose Creek: E206225 u/s sediment ponds	April 25, May 2,7,10	4	7.9 - 8.2	Objective met
	E206226 d/s sediment pond 3	April 25,30, May 2,7,10	5	7.8 - 8.0	Objective met
	E206227 d/s sed. ponds 1 & 2	April 25,30, May 2,7,10	5	7.8 - 8.1	Objective met
	South Bullmoose Cr.: E206228 u/s plant	April 25,30, May 2,7,10	5	8.1 - 8.3	Objective met
	E206229 d/s plant	April 25,30, May 2,7,10	5	8.1 - 8.3	Objective met
	Bullmoose Creek: 0410094 d/s tailing pond	April 25,30, May 2,7,10	5	8.0 - 8.2	Objective met
	E206232 20km d/s tailing pond	April 25,30, May 2,7,10	5	8.0 - 8.3	Objective met

TABLE 11

NECHAKO RIVER WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <100/100 mL 90th perc. (np)	Nechako River: 0400629 200 m u/s Fort Fraser	Feb 22,27, Mar 5,8,12	5	<2 - 5/100 mL np = 4/100 mL	Objective met
		Sep 26, Oct 18,22	3	9 - 22/100 mL	Indefinite result
	0400631 200 m d/s Fort Fraser	Feb 22,Mar 5, 8,12	4	<2 - 5/100 mL	Indefinite result
		Sep 26, Oct 18,22	3	5 - 12/100 mL	Indefinite result
	0400449 u/s Vanderhoof	Feb 22,27, Mar 5,8,12	5	<2 - 1200/100mL np = 350/100 mL	Objective not met
		Sep 26, Oct 18,22	3	11 - 25/100 mL	Indefinite result
	0400450 100 m d/s Vanderhoof	Feb 22,27, Mar 5,8,12	5	2 - 40/100 mL np = 28/100 mL	Objective met
		Sep 26 Oct 18,22	3	89 - 380/100 mL	Indefinite result
	E207450 0.5 km d/s Vanderhoof	Feb 22,27, Mar 5,8,12	5	<2 - 7/100 mL np = 7/100 mL	Objective met
		Sep 26 Oct 11,18,22	4	12 - 37/100 mL	Indefinite result
	E207451 2 km d/s Vanderhoof	Feb 22,27, Mar 5,12	4	3 - 12/100 mL	Indefinite result
	Stuart River: 0400488 E bank at Highway 27	Oct 4,10,16, 24	4	5 - 19/100 mL	Indefinite result
	Chilako River	1990	0	no data collected	Obj not chkd
Fecal Coliforms <10/100 mL 90th perc. (np)	Stuart River: 0920101 W bank at Highway 27	Oct 4,10,16, 24	4	<2 - 7/100 mL	Indefinite result

TABLE 11 continued

NECHAKO RIVER WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <200/100 mL geom. mean (gm)	Necoslie River: 0400801 d/s Fort St. James 20 m u/s Highway 27	Sep 27, Oct 10,16,24	4	<2 - 6/100 mL	Indefinite result
Total Cl2 Res. 0.002 mg/L max	Nechako & Stuart rivers	1990	0	no data collected	Omitted 1990
Ammonia-N <1.95 mg/L av 10.1 mg/L max at pH = 7.7 temp = 5 C	Nechako River: 0400629 200 m u/s Fort Fraser	Feb 22,27, Mar 5,8,12	5	av = 0.006 mg/L max = 0.010 mg/L	Objectives met
		Sep 26, Oct 18,22	3	max = 0.007 mg/L	Max obj. met
	0400631 200 m d/s Fort Fraser	Feb 22,Mar 5, 8,12	4	<0.005 - 0.018mg/L	Max obj. met
		Sep 26, Oct 18,22	3	max = 0.008 mg/L	Max obj. met
	0400449 u/s Vanderhoof	Feb 22,27, Mar 5,8,12	5	av = 0.016 mg/L max = 0.059 mg/L	Objectives met
		Sep 26, Oct 18,22	3	max = 0.007 mg/L	Max obj. met
	0400450 100 m d/s Vanderhoof	Feb 22,27 Mar 5,8,12	5	av = 0.010 mg/L max = 0.028 mg/L	Objectives met
		Sep 26, Oct 18,22	3	max = 0.500 mg/L	Max obj. met
	E207450 0.5 km d/s Vanderhoof	Feb 22,27, Mar 5,8,12	5	av = 0.006 mg/L max = 0.010 mg/L	Objectives met
		Sep 26, Oct 11,18,22	4	max = 0.015 mg/L	Max obj. met
	E207451 2 km d/s Vanderhoof	Feb 22,27, Mar 5,12	4	max = 0.007 mg/L	Max obj. met
Ammonia-N <1.41 mg/L av 7.33 mg/L max at pH = 7.9 temp = 5 C	Stuart River: 0400488 E bank at Highway 27	Oct 4,10,16, 24	4	<0.005 - 0.020mg/L	Max obj. met Av not chkd.
	0920101 W bank at Highway 27	Oct 4,10,16, 24	4	<0.005 - 0.037mg/L	Max obj. met
Ammonia-N	Chilako River	1990	0	no data collected	Obj not chkd

TABLE 11 continued

NECHAKO RIVER WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Nitrite-N <0.02 mg/L av 0.06 mg/L max	Nechako River: 0400629 200 m u/s Fort Fraser	Feb 22,27 Mar 5,8,12	5	all < 0.005 mg/L	Objectives met
	0400631 200 m d/s Fort Fraser	Feb 22,27 Mar 5,8,12	5	all < 0.005 mg/L	Objectives met
	0400449 u/s Vanderhoof	Feb 22,27, Mar 5,8,12	5	all < 0.005 mg/L	Objectives met
	0400450 100 m d/s Vanderhoof	Feb 22,27, Mar 5,8,12	5	all < 0.005 mg/L	Objectives met
		Sep 26, Oct 18,22	3	max = 0.011 mg/L	Max obj. met
	E207450 0.5 km d/s Vanderhoof	Feb 22,27, Mar 5,8,12	5	all < 0.005 mg/L	Objectives met
	E207451 2 km d/s Vanderhoof	Feb 22,27, Mar 5,12	4	all < 0.005 mg/L	Max obj. met
	Stuart River: 0400488 E bank at Highway 27	Oct 4,10,16, 24	4	all < 0.005 mg/L	Max obj. met Av not chkd.
	0920101 W bank at Highway 27	Oct 4,10,16, 24	4	all < 0.005 mg/L	Max obj. met
	Chilako River	1990	0	no data collected	Obj not chkd
Chlorophyll-a <50 mg/m2 av	Nechako & Stuart rivers	1990	0	no data collected	Objective not checked
Chlorophyll-a <100 mg/m2 av	Chilako River	1990	0	no data collected	Objective not checked
Dissolved Oxygen 7.75-11.2 mg/L min, depending on fish egg stage	Nechako River: 0400629 200 m u/s Fort Fraser	Feb 22,27 Mar 5,8,12	5	14.0 - 15.0 mg/L	Objective met
	0400631 200 m d/s Fort Fraser	Feb 22,27 Mar 5,8,12	5	11.0 - 15.0 mg/L	Objective met
	0400449 u/s Vanderhoof	Feb 22,27, Mar 5,8,12	5	14.0 - 15.0 mg/L	Objective met
	0400450 100 m d/s Vanderhoof	Feb 22,27, Mar 5,8,12	5	12.0 - 14.0 mg/L	Objective met

TABLE 11 continued

NECHAKO RIVER WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Dissolved Oxygen 7.75-11.2 mg/L min, depending on fish egg stage	Nechako River: E207450 0.5 km d/s Vanderhoof	Feb 22,27, Mar 5,8,12	5	14.0 - 15.0 mg/L	Objective met
	E207451 2 km d/s Vanderhoof	Feb 22,27, Mar 5,8,12	5	14.0 - 15.0 mg/L	Objective met
	Stuart River: 0400488 E bank at Highway 27	Sep 27,Oct 4, 10,16,24	5	10.0 - 11.0 mg/L	Objective met
	0920101 W bank at Highway 27	Sep 27,Oct 4, 10,16,24	5	10.0 - 11.0 mg/L	Objective met
	Chilako River	1990	0	no data collected	Obj not chkd
pH 6.5 - 8.5	Nechako River: 0400629 200 m u/s Fort Fraser	Feb 22-Oct 22	8	7.2 - 7.7	Objective met
	0400631 200 m d/s Fort Fraser	Feb 22-Oct 22	7	7.5 - 7.6	Objective met
	0400449 u/s Vanderhoof	Feb 22-Oct 22	8	7.4 - 7.7	Objective met
	0400450 100 m d/s Vanderhoof	Feb 22-Oct 22	8	7.4 - 7.8	Objective met
	E207450 0.5 km d/s Vanderhoof	Feb 22-Oct 22	9	7.5 - 7.7	Objective met
	E207451 2 km d/s Vanderhoof	Feb 22-Mar 12	4	7.4 - 7.6	Objective met
	Stuart River: 0400488 E bank at Highway 27	Oct 4-Oct 24	4	all = 7.9	Objective met
	0920101 W bank at Highway 27	Oct 4-Oct 24	4	7.7 - 7.9	Objective met
	Chilako River	1990	0	no data collected	Obj not chkd
Temperature <15 C av ~ 100m d/s Cheslatta Falls	Nechako River: 10 km d/s Cheslatta Falls* (DFO's B. Irvine site)	Jan 1-Jul 3 Jul 4-Sep 25 Sep 26-Dec 31	184 84 96	0 - 14.8 C 15.1 - 18.9 C 0 - 14.5 C	Obj. met Obj. not met Obj. met

TABLE 11 continued

NECHAKO RIVER WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Temperature <20 C Jul-Aug <18 C Sep-Jun ~ 100m u/s Stuart River	Nechako River: E207451* 2 km d/s Vanderhoof ~ 40 km u/s Stuart R.	Feb 22-Mar 12	5	1.0 - 1.5 C	Objective met
		Sep 26-Oct 22	5	4.0 - 12.0 C	Objective met
Total Gas Pressure 109 % max	Nechako River: 0400629 200 m u/s Fort Fraser	Oct 18,22	2	105 %	Objective met
	0400631 200 m d/s Fort Fraser	Oct 18,22	2	105 - 106 %	Objective met
	0400449 u/s Vanderhoof	Oct 11,18,22	3	100 - 106 %	Objective met
	0400450 100 m d/s Vanderhoof	Oct 11,18,22	3	98 - 106 %	Objective met
	E207450 0.5 km d/s Vanderhoof	Oct 11,18,22	3	103 - 106 %	Objective met
	E207451 2 km d/s Vanderhoof	Oct 11,18,22	3	105 %	Objective met

*These sites are nearest to the ideal location and assumed to be representative

TABLE 12

PINE RIVER WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <10/100 mL 90th perc. (np)	Pine River u/s Chetwynd	1990	0	no data collected	Omitted 1990
Fecal Coliforms <200/100 mL geometric mean (gm)	E207956 d/s Murray R confl.,E	Jan 23,Feb 7, 13,19,26	5	<2 - 32/100 mL gm = 8/100 mL	Objective met
	E207957 d/s Murray R confl.,W	Jan 23,Feb 7, 13,19,26	5	4 - 21/100 mL gm = 10/100 mL	Objective met
Turbidity max increase: 5 NTU or 10%	E207956 d/s Murray R confl.,E	Feb 13,19,26, Mar 7	4	1.0 - 4.0 NTU	Objective met
		Jan 23,Feb 7, May 16,23,30, Jun 6	6	9.4 - 170.0 NTU	Indefinite result
	E207957 d/s Murray R confl.,W	Jan 23,Feb 7 19,26,Mar 7	5	1.0 - 3.0 NTU	Objective met
		Feb 13,May16, 23,30,Jun 6	5	11.0 - 150.0 NTU	Indefinite result
Susp. Solids max increase: 10 mg/L or 10%	E207956 d/s Murray R confl.,E	Feb 13,19,26, Mar 7	4	3 - 8 mg/L	Objective met
		Jan 23,Feb 7 May 16,23	4	41 - 445 mg/L	Indefinite result
	E207957 d/s Murray R confl.,W	Feb 7,19,26, Mar 7	4	3 - 8 mg/L	Objective met
		Jan 23,Feb 13 May 16,23,30	5	15 - 520 mg/L	Indefinite result
Total CL2 res. 0.002 mg/L max	Pine River d/s Chetwynd	1990	0	chlorination not occurring	no need to check obj.
Chlorophyll-a <50 mg/m2 av	Pine River	1990	0	no data collected	Objective not checked
Ammonia-N <0.467 mg/L av 2.43 mg/L max at pH = 8.4 temp = 8 C	E207956 d/s Murray R confl.,E	Jan 23-Feb 7, 13,19,26	5	av = 0.015 mg/L max = 0.030 mg/L	Objectives met
		Mar 3-Jun 6	5	<0.005 - 0.005mg/L	Max obj. met
	E207957 d/s Murray R confl.,W	Jan 23,Feb 7, 13,19,26	5	av = 0.015 mg/L max = 0.023 mg/L	Objectives met

TABLE 12 continued

PINE RIVER WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Ammonia-N <0.467 mg/L av 2.43 mg/L max at pH = 8.4 temp = 8 C	E207957 d/s Murray R confl.,W	Mar 7-Jun 6	5	<0.005 - 0.013mg/L	Max obj. met
Nitrite-N <0.02 mg/L av 0.06 mg/L max	E207956 d/s Murray R confl.,E	Feb 19-Jun 6	7	<0.005 - 0.007mg/L	Max obj. met Av not chkd.
	E207957 d/s Murray R confl.,W	Feb 19-Jun 6	7	<0.005 - 0.007mg/L	Max obj. met
Dissolved Oxygen 7.75 mg/L min	Pine River	1990	0	no data collected	Objective not checked

TABLE 13

POUCE COUPE RIVER AND DAWSON CREEK WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <200/100 mL geometric mean (gm)	Pouce Coupe River: E206705 u/s mun. discharge	Mar 1,7,8,12, 15	5	5 - 217/100 mL	Indefinite result
	E206959 1.7km d/s D.Cr confl.	Mar 1,7,8,12, 15	5	<2 - 105/100 mL	Indefinite result
Turbidity max increase: 5 NTU or 10%	Pouce Coupe River: E206705 u/s mun. discharge	Mar 1,7,8,12, 15	5	16 - 50 NTU	Control site
	E206959 1.7km d/s D.Cr confl.	Mar 1,7,8,12, 15	5	increase = 9 - 94 NTU	Objective not met
	Dawson Creek	1990	0	no data collected	Obj not chkd
Susp. Solids max increase: 10 mg/L or 10%	Pouce Coupe River: E206705 u/s mun. discharge	Mar 1,7,8,12, 15	5	14 - 30 mg/L	Control site
	E206959 1.7km d/s D.Cr confl.	May 3 - 24	5	increase = 12 - 52 mg/L	Objective not met
	Dawson Creek:	1990	0	no data collected	Obj not chkd
Tot. Cl2 Res. <0.01 mg/L max	Pouce Coupe River & Dawson Creek	1990	0	no chlorination occurring	no need to check obj.
Chlorophyll-a <50 mg/m2 av	Pouce Coupe River	1990	0	no data collected	Obj not chkd
Ammonia-N <0.89 mg/L av 4.61 mg/L max at pH = 8.1 temp = 12 C	Pouce Coupe River: E206705 u/s mun. discharge	Mar 1,7,8,12, 15	5	0.008 - 0.127 mg/L	Max obj. met Av not chkd.
	E206959 1.7km d/s D.Cr confl.	Mar 1,7,8,12, 15	5	0.620 - 2.700 mg/L	Max obj. met
	Dawson Creek:	1990	0	no data collected	Obj not chkd
Nitrite-N 0.06 mg/L max	Pouce Coupe River: E206705 u/s mun. discharge	Mar 1,7,8,12, 15	5	0.006 - 0.012 mg/L	Objective met
	E206959 1.7km d/s D.Cr confl.	Jan 25-May 24	8	0.015 - 0.042 mg/L	Objective met
	Dawson Creek:	1990	0	no data collected	Obj not chkd

TABLE 13 continued

POUCE COUPE RIVER AND DAWSON CREEK WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Dissolved Oxygen 5.5 mg/L min	Pouce Coupe River Dawson Creek	1990	0	no data collected	Obj not chkd

TABLE 14

PEACE RIVER MAINSTEM WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <100/100 mL 90th perc. (np)	Peace River: 0400134 3.2km u/s Ft. St John (N side)	Sep 12,25,27, Oct 1,4	5	1 - 3/100 mL np = 3/100 mL	Objective met
	0400492 100 m d/s Ft. St John	Sep 12,25,27, Oct 1,4	5	1 - 79/100 mL np = 20/100 mL	Objective met
	0410018 500 m d/s Ft. St John	Sep 12,25,27, Oct 1,4	5	1 - 27/100 mL np = 18/100 mL	Objective met
	0400138 u/s Petro-Canada (N side)	Sep 12,25,27, Oct 1,4	5	1 - 6/100 mL np = 5/100 mL	Objective met
	0410053 100m u/s Petro-Canada	Sep 12,25,27, Oct 1,4	5	1 - 16/100 mL np = 10/100 mL	Objective met
	0410054 100m d/s Petro-Canada	Sep 12,25,27, Oct 1,4	5	2 - 8/100 mL np = 7/100 mL	Objective met
	E207631 200 m d/s Fibreco	Sep 12,25,27, Oct 1,4	5	5 - 925/100 mL np = 430/100 mL	Objective not met
	E207965 1 km d/s Fibreco	Sep 12,25,27, Oct 1,4	5	17 - 515/100 mL np = 350/100 mL	Objective not met
	0400142 5 km d/s Petro-Canada (N side)	Sep 12,25,27, Oct 1,4	5	21 - 108/100 mL np = 95/100 mL	Objective met
	0400143 5 km d/s Petro-Canada (midstream)	Sep 25,27, Oct 1,4	4	<2 - 5/100 mL	Indefinite result
Fecal Coliforms <200/100 mL geometric mean	Beatton River	1990	0	no data collected	Objective not checked
Turbidity max increase: 5 NTU or 10%	Peace River: 0400134 3.2km u/s Ft. St John (N side)	Sep 12,25,27, Oct 1,4	5	2.0 - 3.0 NTU	Control site
	0400492 100 m d/s Ft. St John	Sep 12,25,27, Oct 4	4	2.0 - 4.0 NTU max inc = 1.0 NTU	Objective met
		Oct 1	1	430 NTU max inc = 427 NTU	Objective not met

TABLE 14 continued

PEACE RIVER MAINSTEM WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Turbidity max increase: 5 NTU or 10%	Peace River: 0410018 500 m d/s Ft. St John	Sep 12,25,27, Oct 4	4	2.0 - 4.0 NTU max inc = 1.0 NTU	Objective met
		Oct 1	1	44 NTU max inc = 42 NTU	Objective not met
	0400138 u/s Petro-Canada (N side)	Sep 12,25,27, Oct 1,4	5	2.5 - 4.5 NTU	Control site
	0410053 100m u/s Petro-Canada	Sep 12,25,27, Oct 1,4	5	3.0 - 12 NTU	Control site
	0410054 100m d/s Petro-Canada	Sep 12,25,27, Oct 1,4	5	4.0 - 15 NTU max inc = 3.0 NTU	Objective met
	E207631 200 m d/s Fibreco	Sep 12,25,27, Oct 1,4	5	4.0 - 8.0 NTU max inc = 2.0 NTU	Objective met
	E207965 1 km d/s Fibreco	Sep 12,25,27, Oct 1,4	5	3.0 - 9.0 NTU max inc = 2.5 NTU	Objective met
	0400142 5 km d/s Petro-Canada (N side)	Seo 25,27, Oct 1,4	4	4.0 - 5.0 NTU max inc = 1.0 NTU	Objective met
		Sep 12	1	15.0 NTU max inc = 8.5 NTU	Objective not met
	0400143 5 km d/s Petro-Canada (midstream)	Sep 25,27, Oct 1,4	4	2.0 - 5.0 NTU max inc = 0 NTU	Objective met
	Beatton River	1990	0	no data collected	Objective not checked
Suspended Solids max increase: 10 mg/L or 10%	Peace River: 0400134 3.2km u/s Ft. St John (N side)	Sep 12,25,27, Oct 1,4	5	4 - 20 mg/L	Control site
	0400492 100 m d/s Ft. St John	Sep 12,25,27, Oct 4	4	4 - 10 mg/L max inc = 4 mg/L	Objective met
		Oct 1	1	1300 mg/L max inc = 1286mg/L	Objective not met
	0410018 500 m d/s Ft. St John	Sep 12,27, Oct 4	3	6 - 24 mg/L max inc = 4 mg/L	Objective met

TABLE 14 continued

PEACE RIVER MAINSTEM WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Suspended Solids max increase: 10 mg/L or 10%	Peace River: 0410018 500 m d/s Ft. St John	Sep 25,Oct 1	2	18 - 122 mg/L max inc = 108 mg/L	Objective not met
	0400138 u/s Petro-Canada (N side)	Sep 12,25,27, Oct 1,4	5	3 - 26 mg/L	Control site
	0410053 100m u/s Petro-Canada	Sep 12,25,27, Oct 1,4	5	4 - 56 mg/L	Control site
	0410054 100m d/s Petro-Canada	Sep 25,27, Oct 1	3	6 - 52 mg/L max inc = 6 mg/L	Objective met
		Sep 12,Oct 4	2	32 - 72 mg/L max inc = 20 mg/L	Objective not met
	E207631 200 m d/s Fibreco	Sep 12,25,27, Oct 1,4	5	8 - 66 mg/L max inc = 10 mg/L	Objective met
	E207965 1 km d/s Fibreco	Sep 25,27, Oct 4	3	10 - 20 mg/L max inc = 8 mg/L	Objective met
		Sep 12,Oct 1	2	30 - 98 mg/L max inc = 42 mg/L	Objective not met
	0400142 5 km d/s Petro-Canada (N side)	Sep 25,27, Oct 4	3	2 - 26 mg/L max inc = 0 mg/L	Objective met
		Sep 12,Oct 1	2	22 - 86 mg/L max inc = 36 mg/L	Objective not met
	0400143 5 km d/s Petro-Canada (midstream)	Sep 25,27, Oct 1,4	4	8 - 20 mg/L max inc = 8 mg/L	Objective met
	Beatton River: E207448 u/s Ft St Jn dischge.	May 18,24,31, June 8,15	5	76 - 692 mg/L	Control site
	E207449 d/s Ft St Jn dischge.	May 18,24, June 8,15	4	67 - 727 mg/L max inc = 9%	Objective met
		May 31	1	625 mg/L max inc = 39%	Objective not met
Tot Cl2 Res. 0.002 mg/L max	Peace River	1990	0	no data collected	Objective not checked

TABLE 14 continued

PEACE RIVER MAINSTEM WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Dissolved Fluoride 1.0 mg/L max	Peace River: 0410053 100m u/s Petro-Canada	Sep 12,25,27, Oct 1,4	5	all <0.1 mg/L	Objective met
	0410054 100m d/s Petro-Canada	Sep 12,25,27, Oct 1,4	5	all <0.1 mg/L	Objective met
	E207631 200 m d/s Fibreco	Sep 12,25,27, Oct 1,4	5	all <0.1 mg/L	Objective met
	E207965 1 km d/s Fibreco	Sep 12,25,27, Oct 1,4	5	all <0.1 mg/L	Objective met
	0400142 5 km d/s Petro-Canada (N side)	Sep 12,25,27, Oct 1,4	5	all <0.1 mg/L	Objective met
	0400143 5 km d/s Petro-Canada (midstream)	Sep 25,27, Oct 1,4	4	all <0.1 mg/L	Objective met
WAD - CN <0.005 mg/L av 0.01 mg/L max	Peace River: 0410053 100m u/s Petro-Canada	Sep 12,25,27, Oct 1,4	5	all <0.005 mg/L	Objectives met
	0410054 100m d/s Petro-Canada	Sep 12,25,27, Oct 1,4	5	all <0.005 mg/L	Objectives met
	E207631 200 m d/s Fibreco	Sep 12,25,27, Oct 1,4	5	all <0.005 mg/L	Objectives met
	E207965 1 km d/s Fibreco (midstream)	Sep 12,25,27, Oct 1,4	5	all <0.005 mg/L	Objectives met
	0400142 5 km d/s Petro-Canada (N side)	Sep 12,25,27, Oct 1,4	5	all <0.005 mg/L	Objectives met
	0400143 5 km d/s Petro-Canada	Sep 25,27, Oct 1,4	4	all <0.005 mg/L	Max obj. met
Chlorophyll-a < 50 mg/m2 av	Peace River	1990	0	no data collected	Objective not checked
	Beatton River	1990	0	no data collected	Omitted 1990

TABLE 14 continued

PEACE RIVER MAINSTEM WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Ammonia-N <0.709 mg/L av at pH = 8.2 temp = 12 C	Peace River: 0400134 3.2km u/s Ft. St John (N side)	Sep 12,25,27, Oct 1,4	5	<0.005-0.006 mg/L av = 0.005 mg/L	Objective met
	0400492 100 m d/s Ft. St John	Sep 12,25,27, Oct 1,4	5	<0.005-0.006 mg/L av = 0.005 mg/L	Objective met
	0410018 500 m d/s Ft. St John	Sep 12,25,27, Oct 1,4	5	<0.005-0.005 mg/L av = 0.005 mg/L	Objective met
	0400138 u/s Petro-Canada (N side)	Sep 12,25,27, Oct 1,4	5	<0.005-0.008 mg/L av = 0.006 mg/L	Objective met
	0410053 100m u/s Petro-Canada	Sep 12,25,27, Oct 1,4	5	<0.005-0.006 mg/L av = 0.005 mg/L	Objective met
	0410054 100m d/s Petro-Canada	Sep 12,25,27, Oct 1,4	5	<0.005-0.006 mg/L av = 0.005 mg/L	Objective met
	E207631 200 m d/s Fibreco	Sep 12,25,27, Oct 1,4	5	<0.005-0.005 mg/L av = 0.005 mg/L	Objective met
	E207965 1 km d/s Fibreco	Sep 12,25,27, Oct 1,4	5	<0.005-0.005 mg/L av = 0.005 mg/L	Objectives met
	0400142 5 km d/s Petro-Canada (N side)	Sep 12,25,27, Oct 1,4	5	<0.005-0.005 mg/L av = 0.005 mg/L	Objective met
	0400143 5 km d/s Petro-Canada (midstream)	Sep 25,27, Oct 1,4	4	<0.005-0.007 mg/L	Indefinite result
	Beatton River	1990	0	no data collected	Obj not chkd
Nitrite-N <0.02 mg/L av 0.06 mg/L max	Peace River: 0400134 3.2km u/s Ft. St John (N side)	Sep 12,25,27, Oct 1,4	5	av = 0.005 mg/L max = 0.006 mg/L	Objectives met
	0400492 100 m d/s Ft. St John	Sep 12,25,27, Oct 1,4	5	av < 0.006 mg/L max = 0.008 mg/L	Objectives met
	0410018 500 m d/s Ft. St John	Sep 12,25,27, Oct 1,4	5	all < 0.005 mg/L	Objectives met
	0400138 u/s Petro-Canada (N side)	Sep 12,25,27, Oct 1,4	5	av < 0.005 mg/L max = 0.005 mg/L	Objectives met

TABLE 14 continued

PEACE RIVER MAINSTEM WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Nitrite-N <0.02 mg/L av 0.06 mg/L max	Peace River: 0410053 100m u/s Petro-Canada	Sep 12,25,27, Oct 1,4	5	all < 0.005 mg/L	Objectives met
	0410054 100m d/s Petro-Canada	Sep 12,25,27, Oct 1,4	5	all < 0.005 mg/L	Objectives met
	E207631 200 m d/s Fibreco	Sep 12,25,27, Oct 1,4	5	all < 0.005 mg/L	Objectives met
	E207965 1 km d/s Fibreco	Sep 12,25,27, Oct 1,4	5	av < 0.005 mg/L max = 0.005 mg/L	Objectives met
	0400142 5 km d/s Petro-Canada (N side)	Sep 12,25,27, Oct 1,4	5	all < 0.005 mg/L	Objectives met
	0400143 5 km d/s Petro-Canada (midstream)	Sep 25,27, Oct 1,4	4	all < 0.005 mg/L	Max obj. met
	Beatton River:	1990	0	no data collected	Obj not chkd
Dissolved Oxygen 7.25 mg/L min	Peace River: 0400134 3.2km u/s Ft. St John (N side)	Sep 12,25,27, Oct 1,4	5	8.6 - 11.4 mg/L	Objective met
	0400492 100 m d/s Ft. St John	Sep 12,25,27, Oct 1,4	5	10.0 - 13.0 mg/L	Objective met
	0410018 500 m d/s Ft. St John	Sep 12,25,27, Oct 1,4	5	10.0 - 13.0 mg/L	Objective met
	0400138 u/s Petro-Canada (N side)	Sep 12,25,27, Oct 1,4	5	10.0 - 13.0 mg/L	Objective met
	0410053 100m u/s Petro-Canada	Sep 12,25, Oct 1,4	4	9.4 - 11.2 mg/L	Objective met
	0410054 100m d/s Petro-Canada	Sep 12,25, Oct 1,4	4	10.4 - 10.8 mg/L	Objective met
	E207631 200 m d/s Fibreco	Sep 12,25, Oct 1,4	4	9.9 - 10.8 mg/L	Objective met
	E207965 1 km d/s Fibreco	Aug 16,28, Sep 6,11	4	9.9 - 10.4 mg/L	Objective met

TABLE 14 continued

PEACE RIVER MAINSTEM WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Dissolved Oxygen 7.25 mg/L min	Peace River: 0400142 5 km d/s Petro-Canada (N side)	Sep 12,25, Oct 1,4	4	10.0 - 10.4 mg/L	Objective met
	0400143 5 km d/s Petro-Canada (midstream)	Sep 12,25, Oct 1,4	4	10.0 - 10.3 mg/L	Objective met
	Beatton River	1990	0	no data collected	Objective not checked
Total Dissolved Gas 110% max	Peace River: 0400134 3.2km u/s Ft. St John (N side)	Oct 1,4	2	100 - 103 %	Objective met
	0400492 100 m d/s Ft. St John	Sep 25,27, Oct 1,4	4	101 - 103 %	Objective met
	0410018 500 m d/s Ft. St John	Sep 25,27, Oct 1,4	4	101 - 103 %	Objective met
	0400138 u/s Petro-Canada (N side)	Sep 25,27, Oct 1	3	102 - 103 %	Objective met
	0410053 100m u/s Petro-Canada	Sep 25,Oct 1, 4	3	100 - 103 %	Objective met
	0410054 100m d/s Petro-Canada	Sep 25,Oct 1, 4	3	101 - 103 %	Objective met
	E207631 200 m d/s Fibreco	Sep 25,Oct 1, 4	3	100 - 103 %	Objective met
	E207965 1 km d/s Fibreco	Oct 1,4	2	100 - 103 %	Objective met
	0400142 5 km d/s Petro-Canada (N side)	Sep 25,Oct 1, 4	3	100 - 103 %	Objective met
	0400143 5 km d/s Petro-Canada (midstream)	Sep 25,Oct 1, 4	3	100 - 103 %	Objective met
pH 6.5 - 9.0	Peace River: 0400134 3.2km u/s Ft. St John (N side)	Sep 12,25,27, Oct 1,4	5	8.1 - 8.2	Objective met

TABLE 14 continued

PEACE RIVER MAINSTEM WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
pH 6.5 - 9.0	Peace River: 0400492 100 m d/s Ft. St John	Sep 12,25,27, Oct 1,4	5	8.1 - 8.2	Objective met
	0410018 500 m d/s Ft. St John	Sep 12,25,27, Oct 1,4	5	8.1 - 8.2	Objective met
	0400138 u/s Petro-Canada (N side)	Sep 12,25,27, Oct 1,4	5	8.1 - 8.2	Objective met
	0410053 100m u/s Petro-Canada	Sep 12,25,27, Oct 1,4	5	8.1 - 8.2	Objective met
	0410054 100m d/s Petro-Canada	Sep 12,25,27, Oct 1,4	5	8.1 - 8.2	Objective met
	E207631 200 m d/s Fibreco	Sep 12,25,27, Oct 1,4	5	8.1 - 8.3	Objective met
	E207965 1 km d/s Fibreco	Sep,12,25,27, Oct 1,4	5	8.1 - 8.2	Objective met
	0400142 5 km d/s Petro-Canada (N side)	Sep 12,25,27, Oct 1,4	5	8.1 - 8.3	Objective met
	0400143 5 km d/s Petro-Canada (midstream)	Sep 25,27, Oct 1,4	4	8.1 - 8.2	Objective met
	Beatton River: E207448 u/s Ft St Jn dischge.	May 18,24,31, June 8,15	5	7.4 - 7.9	Objective met
	E207449 d/s Ft St Jn dischge.	May 18,24,31, June 8,15	5	7.3 - 8.0	Objective met
Temperature max increase: 1 C	Peace River: 0400134 3.2km u/s Ft. St John (N side)	Sep 12,25,27, Oct 1,4	5	10.5 - 13.0 C	Control site
	0400492 100 m d/s Ft. St John	Sep 12,25,27, Oct 1,4	5	10.0 - 13.0 C max inc = 0.2 C	Objective met
	0410018 500 m d/s Ft. St John	Sep 12,25,27, Oct 1,4	5	10.0 - 13.0 C max inc = 0 C	Objective met

TABLE 14 continued

PEACE RIVER MAINSTEM WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Temperature max increase: 1 C	Peace River: 0400138 u/s Petro-Canada (N side)	Sep 12,25,27, Oct 1,4	5	10.0 - 13.0 C	Control site
	0410053 100m u/s Petro-Canada	Sep 12,25, Oct 1,4	4	10.0 - 13.0 C	Control site
	0410054 100m d/s Petro-Canada	Sep 12,25	2	12.0 - 13.3 C max inc = 0.3 C	Objective met
		Oct 1,4	2	11.5 - 12.5 C max inc = 2.5 C	Objective not met
	E207631 200 m d/s Fibreco	Sep 12,25, Oct 4	3	10.0 - 12.5 C max inc = 0.5 C	Objective met
		Oct 1	1	11.5 C inc = 1.5 C	Objective not met
	E207965 1 km d/s Fibreco	Sep 12,25, Oct 4	3	10.8 - 13.0 C max inc = 1.0 C	Objective met
		Oct 1	1	11.5 C inc = 1.5 C	Objective not met
	0400142 5 km d/s Petro-Canada (N side)	Sep 12,25, Oct 1,4	4	10.5 - 13.0 C max inc = 1.0 C	Objective met
	0400143 5 km d/s Petro-Canada (midstream)	Sep 12,25, Oct 1,4	4	10.5 - 12.5 C max inc = 0.5 C	Objective met
Total Copper <0.004 mg/L av 0.011 mg/L max at hardness 100 mg/L or 20% increase	Peace River: 0400134 3.2km u/s Ft. St John (N side)	Sep 12,25,27, Oct 1,4	5	<0.001 - 0.004mg/L	Control site
	0400492 100 m d/s Ft. St John	Sep 12,25,27	3	<0.001 - 0.007mg/L	Max obj. met
	0410018 500 m d/s Ft. St John	Sep 12,25,27, Oct 1,4	5	av = 0.002 mg/L max = 0.004 mg/L	Objectives met
	0400138 u/s Petro-Canada (N side)	Sep 12,25,27, Oct 1,4	5	<0.001 - 0.004mg/L	Control site
	0410053 100m u/s Petro-Canada	Sep 12,25,27, Oct 1,4	5	0.001 - 0.003 mg/L	Control site

TABLE 14 continued

PEACE RIVER MAINSTEM WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Copper <0.004 mg/L av 0.011 mg/L max at hardness 100 mg/L or 20% increase	Peace River: 0410054 100m d/s Petro-Canada	Sep 12,25,27, Oct 1,4	5	av = 0.003 mg/L max = 0.010 mg/L	Objectives met
	E207631 200 m d/s Fibreco	Sep 12-Oct 4 Sep 12-Oct 1 Oct 4	5 4 1	av = 0.003 mg/L <0.001 - 0.002mg/L 0.012 mg/L	Av obj. met Max obj. met Max not met
	E207965 1 km d/s Fibreco	Sep 12,25,27, Oct 1	4	<0.001 - 0.002mg/L	Max obj. met
	0400142 5 km d/s Petro-Canada (N side)	Sep 12,25,27, Oct 1	4	0.001 - 0.004 mg/L	Max obj. met
	0400143 5 km d/s Petro-Canada (midstream)	Sep 25,27, Oct 4	3	<0.001 - 0.002mg/L	Max obj. met
Chlorophenols (tri + tetra + penta) 0.0002mg/L max	Peace River: 0410053 100m u/s Petro-Canada	Sep 12,25,27, Oct 1,4	5	all < 0.0001 mg/L for each homologue	Objective met
	0410054 100m d/s Petro-Canada	Aug 16,22,28, Sep 6,11	5	all < 0.0001 mg/L except 3 tri-clphl values=0.0001 mg/L	Objective met
	E207631 200 m d/s Fibreco	Sep 12,25,27, Oct 1,4	5	all < 0.0001 mg/L except 1 tet-clphl value=0.0001 mg/L	Objective met
	E207965 1 km d/s Fibreco	Sep 12,25,27, Oct 1,4	5	all < 0.0001 mg/L except 2 tet-clphl values=0.0001 mg/L	Objective met
	0400142 5 km d/s Petro-Canada (N side)	Sep 12,25,27, Oct 1,4	5	all < 0.0001 mg/L except 2 tet-clphl values=0.0001 mg/L	Objective met
	0400143 5 km d/s Petro-Canada (midstream)	Sep 25,27, Oct 1,4	4	all < 0.0001 mg/L except 2 tet-clphl values=0.0001 mg/L	Objective met
Total Chromium 0.002 mg/L max or 20% increase	Peace River: 0400134 3.2km u/s Ft. St John (N side)	Sep 12,25,27, Oct 1,4	5	all < 0.005 mg/L	Control site
	0400492 100 m d/s Ft. St John	Sep 12,25,27, Oct 4	4	all < 0.005 mg/L	Objective met

TABLE 14 continued

PEACE RIVER MAINSTEM WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Chromium 0.002 mg/L max or 20% increase	Peace River: 0410018 500 m d/s Ft. St John	Sep 12,25,27, Oct 1,4	5	all < 0.005 mg/L	Objective met
	0400138 u/s Petro-Canada (N side)	Sep 12,25,27, Oct 1,4	5	all < 0.005 mg/L	Control site
	0410053 100m u/s Petro-Canada	Sep 12,25,27, Oct 4	4	all < 0.005 mg/L	Objective met
		Oct 1	1	0.007 mg/L	Obj. not met
	0410054 100m d/s Petro-Canada	Sep 12,25,27, Oct 1,4	5	all < 0.005 mg/L	Objective met
	E207631 200 m d/s Fibreco	Sep 12,25 27, Oct 4	4	all < 0.005 mg/L	Objective met
		Oct 1	1	0.005 mg/L	Indef result
	E207965 1 km d/s Fibreco	Sep 12,25,27, Oct 1,4	5	all < 0.005 mg/L	Objective met
	0400142 5 km d/s Petro-Canada (N side)	Sep 12,25,27, Oct 1,4	5	all < 0.005 mg/L	Objective met
	0400143 5 km d/s Petro-Canada (midstream)	Sep 25,27, Oct 4	3	all < 0.005 mg/L	Objective met
		Oct 1	1	0.007 mg/L	Obj. not met
Total Lead <0.006 mg/L av 0.082 mg/L max at hardness 100 mg/L or 20% increase	Peace River: 0400134 3.2km u/s Ft. St John (N side)	Sep 12,25,27, Oct 1,4	5	<0.001 - 0.002mg/L	Control site
	0400492 100 m d/s Ft. St John	Sep 12,25,27, Oct 4	4	<0.001 - 0.001mg/L	Max obj. met
	0410018 500 m d/s Ft. St John	Sep 12,25,27, Oct 1,4	5	av < 0.001 mg/L max = 0.001 mg/L	Objectives met
	0400138 u/s Petro-Canada (N side)	Sep 12,25,27, Oct 1,4	5	<0.001 - 0.001mg/L	Control site
	0410053 100m u/s Petro-Canada	Sep 12,25,27, Oct 1,4	5	<0.001 - 0.001mg/L	Control site

TABLE 14 continued

PEACE RIVER MAINSTEM WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Lead <0.006 mg/L av 0.082 mg/L max at hardness 100 mg/L or 20% increase	Peace River: 0410054 100m d/s Petro-Canada	Sep 12,25,27, Oct 1,4	5	av = 0.001 mg/L max = 0.002 mg/L	Objectives met
	E207631 200 m d/s Fibreco	Sep 12,25,27, Oct 1,4	5	av < 0.001 mg/L max = 0.001 mg/L	Objectives met
	E207965 1 km d/s Fibreco	Sep 12,25,27, Oct 1,4	5	av < 0.001 mg/L max = 0.001 mg/L	Objectives met
	0400142 5 km d/s Petro-Canada (N side)	Sep 12,25,27, Oct 1,4	5	av < 0.001 mg/L max = 0.001 mg/L	Objectives met
	0400143 5 km d/s Petro-Canada (midstream)	Sep 25,27, Oct 1,4	4	<0.001 - 0.001mg/L	Max obj. met
Total Nickel 0.065 mg/L max at hardness 100 mg/L	Peace River: 0400134 3.2km u/s Ft. St John (N side)	Sep 12,25,27, Oct 1,4	5	0.002 - 0.003 mg/L	Objective met
	0400492 100 m d/s Ft. St John	Sep 12,25,27, Oct 4	4	0.002 - 0.003 mg/L	Objective met
	0410018 500 m d/s Ft. St John	Sep 12,25,27, Oct 1,4	5	0.002 - 0.005 mg/L	Objective met
	0400138 u/s Petro-Canada (N side)	Sep 12,25,27, Oct 1,4	5	0.002 - 0.003 mg/L	Objective met
	0410053 100m u/s Petro-Canada	Sep 12,25,27, Oct 1,4	5	0.002 - 0.003 mg/L	Objective met
	0410054 100m d/s Petro-Canada	Sep 12,25,27, Oct 1,4	5	0.002 - 0.003 mg/L	Objective met
	E207631 200 m d/s Fibreco	Sep 12,25,27, Oct 1,4	5	0.002 - 0.003 mg/L	Objective met
	E207965 1 km d/s Fibreco	Sep 12,25,27, Oct 1,4	5	0.002 - 0.003 mg/L	Objective met
	0400142 5 km d/s Petro-Canada (N side)	Sep 12,25,27, Oct 1,4	5	0.002 - 0.003 mg/L	Objective met

TABLE 14 continued

PEACE RIVER MAINSTEM WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Nickel 0.065 mg/L max at hardness 100 mg/L	Peace River: 0400143 5 km d/s Petro-Canada (midstream)	Sep 25,27, Oct 1,4	4	0.002 - 0.003 mg/L	Objective met
Total Zinc 0.03 mg/L max or 20% increase	Peace River: 0400134 3.2km u/s Ft. St John (N side)	Sep 12,25,27, Oct 1,4	5	<0.005 - 0.050mg/L	Control site
	0400492 100 m d/s Ft. St John	Sep 12,25,27, Oct 1,4	5	<0.005 - 0.008mg/L	Objective met
	0410018 500 m d/s Ft. St John	Sep 12,25,27, Oct 1,4	5	<0.005 - 0.024mg/L	Objective met
	0400138 u/s Petro-Canada (N side)	Sep 12,25,27, Oct 1,4	5	all < 0.005 mg/L	Control site
	0410053 100m u/s Petro-Canada (midstream)	Sep 12,25,27, Oct 1,4	5	<0.005 - 0.240mg/L	Control site
	0410054 100m d/s Petro-Canada	Sep 12,25,27, Oct 1,4	5	<0.005 - 0.008mg/L	Objective met
	E207631 200 m d/s Fibreco	Sep 12,25,27, Oct 1,4	5	<0.005 - 0.030mg/L	Objective met
	E207965 1 km d/s Fibreco	Sep 12,25,27, Oct 1,4	5	<0.005 - 0.012mg/L	Objective met
	0400142 5 km d/s Petro-Canada (N side)	Sep 12,25,27, Oct 1,4	5	<0.005 - 0.100mg/L	Objective met
	0400143 5 km d/s Petro-Canada (midstream)	Sep 25,27, Oct 1,4	4	<0.005 - 0.005mg/L	Objective met
Phenol <0.002 mg/L av or 20% increase	Peace River: 0410053 100m u/s Petro-Canada	Sep 12,25,27, Oct 1,4	5	<0.002 - 0.003mg/L av = 0.0024 mg/L	Control site
	0410054 100m d/s Petro-Canada	Sep 12,25,27, Oct 1,4	5	<0.002 - 0.003mg/L av = 0.0022 mg/L	Objective met
	E207631 200 m d/s Fibreco	Sep 12,25,27, Oct 1,4	5	<0.002 - 0.003mg/L av = 0.0026 mg/L	Objective met

TABLE 14 continued

PEACE RIVER MAINSTEM WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Phenol <0.002 mg/L av or 20% increase	Peace River: E207965 1 km d/s Fibreco	Sep 12,25,27, Oct 1,4	5	<0.002 - 0.003mg/L av = 0.0024 mg/L	Objective met
	0400142 5 km d/s Petro-Canada (N side)	Sep 12,25,27, Oct 1,4	5	<0.002 - 0.003mg/L av = 0.0022 mg/L	Objective met
	0400143 5 km d/s Petro-Canada (midstream)	Sep 25,27, Oct 1,4	4	<0.002 - 0.004mg/L	Indefinite result
Sulfide 0.002 mg/L max or 20% increase	Peace River	1990	0	no data collected	Objective not checked
2,4-D (ester) 0.004 mg/L max	Peace River	1990	0	no data collected	Objective not checked

TABLE 15

WILLIAMS LAKE WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliform <10/100 mL 90th perc. (np) at water intakes	Williams Lake water intake sites	1990	0	no data collected	Omitted 1990
Fecal Coliform <200/100 mL geometric mean (gm) <400/100 mL 90th perc. (np) at beaches	Scout Island beach	Jun 26	1	5/100 mL	Indefinite result
	Russet Bluff beach	Jul 16,25,30, Aug 8,13	5	<5 - 80/100 mL gm = 9/100 mL np = 20/100 mL	Objectives met
Turbidity <1 NTU av 5 NTU max	0603019 at lake centre	Apr 19-Oct 22	11	0.8 - 2.5 NTU (0 - 18 m)	Max obj. met Av not chkd.
Total P <0.020 mg/L av at spring overturn	0603019 at lake centre	Apr 19	1 1 1 1 1	0.5m : 0.064 mg/L 5 m : 0.074 mg/L 10 m : 0.068 mg/L 15 m : 0.069 mg/L 18 m : 0.068 mg/L av = 0.069 mg/L	Objective not met
Chlorophyll-a <5 ug/L av May - August	0603019 at lake centre	May 23,Jun 26 Jul 31,Aug 17	4	12.3 - 64.8 ug/L av = 27.9 ug/L	Objective not met
Diss. Oxygen 4 mg/L min 5m above sed.	0603019 at lake centre (sediments at 20 m)	Apr 19 May 23	1 1	7.2 mg/L at 15m 7.2 mg/L at 15m	Objective met
		Jun 26 Jul 31 Aug 23	1 1 1	1.55mg/L at 15 m 0.15mg/L at 15 m 0.1 mg/L at 15 m	Objective not met
Water Clarity 1.2m min Secchi reading	0603019 at lake centre	Apr 19	1	1.0 m	Obj. not met
		May 23-Aug 23	4	1.75 - 2.25 m	Obj. met

TABLE 16

BONAPARTE RIVER WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <100/100 mL 90th perc. (np)	Bonaparte River: 0600017 u/s Clinton Creek	Jul 30,Aug 7, 13,20,27	5	6 - 13/100 mL np = 12/100 mL	Objective met
	E207297 d/s Loon Creek	Jul 30,Aug 7, 13,20,27	5	4 - 17/100 mL np = 16/100 mL	Objective met
	0600508 d/s Cache Creek STP	Jul 30,Aug 7, 13,20,27	5	305 - 1150/100 mL np = 880/100 mL	Objective not met
	Clinton Creek:	1990	0	no data collected	Omitted 1990
	Loon Creek: 0600297 u/s trout hatchery	Jul 30,Aug 7, 13,20,27	5	23 - 164/100 mL np = 155/100 mL	Objective not met
	E206110 d/s trout hatchery	Jul 30,Aug 7, 13,20,27	5	49 - 159/100 mL np = 140/100 mL	Objective not met
Fecal Coliforms <10/100 mL 90th perc. at water intakes	Loon Lake	1990	0	no data collected	Omitted 1990
Fecal Coliform <200/100 mL gm at beaches	Loon Lake	1990	0	no data collected	Omitted 1990
Suspended Solids max increase: 10 mg/L or 10%	Bonaparte River: 0600017 u/s Clinton Creek	Jul 30,Aug 7, 13,20,27	5	3 - 17 mg/L	Control site
	E207297 d/s Loon Creek	Jul 30,Aug 7, 13,20,27	5	max inc. = 1 mg/L	Objective met
	0600508 d/s Cache Creek STP	Jul 30-Aug 13 Aug 20,27	3 2	inc. = 11-27 mg/L inc. = 0-10 mg/L	Obj. not met Obj. met
	Clinton Creek	1990	0	no data collected	Omitted 1990
	Loon Creek: 0600297 u/s trout hatchery	Jul 30,Aug 7, 13,20,27	5	<1 - 20 mg/L	Control site
	E206110 d/s trout hatchery	Jul 30,Aug 7, 13,20,27	5	inc. = 0-10 mg/L	Objective met

TABLE 16 continued

BONAPARTE RIVER WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Turbidity max increase: 5 NTU or 10%	Bonaparte River: 0600017 u/s Clinton Creek	Jul 30,Aug 7, 13,20,27	5	0.9 - 1.1 NTU	Control site
	E207297 d/s Loon Creek	Jul 30,Aug 7, 13,20,27	5	0.8 - 1.8 NTU	Objective met
	0600508 d/s Cache Creek STP	Jul 30-Aug 27 Aug 7	4 1	max inc. = 4.3 NTU inc. = 6.3 NTU	Obj. met Obj. not met
	Clinton Creek:	1990	0	no data collected	Omitted 1990
	Loon Creek: 0600297 u/s trout hatchery	Jul 30,Aug 7, 13,20,27	5	0.8 - 1.7 NTU	Control site
	E206110 d/s trout hatchery	Jul 30,Aug 7, 13,20,27	5	0.7 - 1.5 NTU	Objective met
Diss. Solids 500 mg/L max	Clinton Creek	1990	0	no data collected	Omitted 1990
Tot Cl2 Res. 0.002 mg/L max	Bonaparte River Clinton Creek	1990	0	chlorination not occurring	no need to check obj.
Ammonia-N <0.365 mg/L av 1.90 mg/L max at pH = 8.5 temp = 15 C	Bonaparte River: 0600017 u/s Clinton Creek	Jul 30,Aug 7, 13,20,27	5	all < 0.005 mg/L	Objectives met
	E207297 d/s Loon Creek	Jul 30,Aug 7, 13,20,27	5	<0.005 - 0.009mg/L	Objectives met
	0600508 d/s Cache Creek STP	Jul 30,Aug 7, 13,20,27	5	<0.005 - 0.024mg/L	Objectives met
	Clinton Creek:	1990	0	no data collected	Omitted 1990
	Loon Creek: 0600297 u/s trout hatchery	Jul 30,Aug 7, 13,20,27	5	all < 0.005 mg/L	Objectives met
	E206110 d/s trout hatchery	Jul 30,Aug 7, 13,20,27	5	<0.005 - 0.013mg/L	Objectives met
Nitrite-N <0.02 mg/L av 0.06 mg/L max	Bonaparte River: 0600017 u/s Clinton Creek	Jul 30,Aug 7, 13,20,27	5	all < 0.005 mg/L	Objectives met
	E207297 d/s Loon Creek	Apr 24,May 1, 8,15,23	5	<0.005 - 0.009mg/L	Objectives met

TABLE 16 continued

BONAPARTE RIVER WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Nitrite-N <0.02 mg/L av 0.06 mg/L max	Bonaparte River: 0600508 d/s Cache Creek STP	Jul 30,Aug 7, 13,20,27	5	<0.005 - 0.005mg/L	Objectives met
	Clinton Creek:	1990	0	no data collected	Omitted 1990
Chlorophyll-a <50 mg/m2 av	Bonaparte River	1990	0	no data collected	Objective not checked
Chlorophyll-a <100 mg/m2 av or 20% increase	Clinton Creek	1990	0	no data collected	Omitted 1990
Diss. Oxygen 7.75-11.2 mg/L min depending on fish egg stage	Bonaparte River Clinton Creek Loon Creek	1990	0	no data collected	Objective not checked
Diss. Oxygen 5 mg/L min, 5m above bottom	Loon Lake 0603050 above deepest point	May 17	4	4.83 - 5.07 mg/L av = 4.9 mg/L at 25 m	Objective not met
pH 6.5 - 8.5	Bonaparte River: 0600017 u/s Clinton Creek	Jul 30,Aug 7, 13,20,27	5	8.2 - 8.5	Objective met
	E207297 d/s Loon Creek	Jul 30,Aug 7, Aug 13,20,27	2 3	8.5 8.6 - 8.7	Obj. met Obj. not met
	Clinton Creek:	1990	0	no data collected	Omitted 1990
pH 6.5 - 9.0	Bonaparte River: 0600508 d/s Cache Creek STP	Jul 30,Aug 7, 13,20,27	5	8.3 - 8.5	Objective met
	Loon Creek: 0600297 u/s trout hatchery	Jul 30,Aug 7, 13,20,27	5	8.6 - 8.7	Objective met
	E206110 d/s trout hatchery	Jul 30,Aug 7, 13,20,27	5	8.6 - 8.7	Objective met

TABLE 17

OKANAGAN VALLEY LAKES WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total-P <0.040 mg/L av at spring overturn (short-term)	Wood Lake 0500848 lake centre	March 28	1 1 1	1-10m: 0.038 mg/L 15m: 0.030 mg/L 20-30m: 0.033 mg/L av = 0.034 mg/L	Objective met
Total-P <0.008 mg/L av at spring overturn	Kalamalka Lake: 0500246 south end	March 15	1 1 1	1-10m: 0.007 mg/L 15m: 0.006 mg/L 20-45m: 0.007 mg/L av = 0.007 mg/L	Objective met
	0500461 north end	March 15	1 1 1	1-10m: 0.006 mg/L 15m: 0.009 mg/L 20-30m: 0.007 mg/L av = 0.007 mg/L	Objective met
Total-P <0.010 mg/L av at spring overturn	Okanagan Lake: 0500239 Armstrong Arm	March 28	1 1 1	1-10m: 0.013 mg/L 15m: 0.005 mg/L 20-45m: 0.016 mg/L	Indefinite result
	0500238 Vernon Arm	March 14	1 1 1	1-10m: 0.005 mg/L 15m: 0.004 mg/L 18m: 0.004 mg/L	Objective met
	0500730 north basin	March 14	1 1 1	1-10m: 0.006 mg/L 15m: 0.005 mg/L 20-45m: 0.006 mg/L	Objective met
	0500236 central basin	March 5	1 1 1	1-10m: 0.005 mg/L 15m: 0.005 mg/L 20-45m: 0.005 mg/L	Objective met
	0500729 south basin	February 28	1 1 1	1-10m: 0.003 mg/L 15m: 0.004 mg/L 20-45m: 0.005 mg/L	Objective met
Total-P <0.015 mg/L av at spring overturn	Skaha Lake 0500615 lake centre	February 26	1 1	1-10m: 0.018 mg/L 20-45m: 0.014 mg/L av = 0.016 mg/L	Objective not met
	Osoyoos Lake 0500249 north end	March 19	1 1	1-10m: 0.025 mg/L 15m: 0.022 mg/L 20-32m: 0.024 mg/L av = 0.024 mg/L	Objective not met

TABLE 18

SIMILKAMEEN RIVER WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <10/100 mL 90th perc. (np)	Similkameen River: 0500725 d/s Princeton STP	Jan 15-Nov 27	5	<2 - 5/100 mL	Indefinite result
	E207461 u/s Hedley	Jun 19,25, Jul 11,18	4	5 - 8/100 mL	Indefinite result
	E207462 d/s Hedley	Jun 19,25, Jul 4,11,18	5	2 - 14/100 mL np = 9/100 mL	Objective met
	E207463 d/s Candorado	Jun 19,25, Jul 4,11,19	5	3 - 1020/100 mL np = 600/100 mL	Objective not met
	0500692 u/s Keremeos STP	Sep 19	1	<2/100 mL	Indefinite result
	0500693 d/s Keremeos STP	Apr 11-Nov 7	3	<2 - 7/100 mL	Indefinite result
	0500073 near U.S. border	Jan 2-Dec 18	27	<2 - 21/100 mL	Indefinite result
	Allison, Missezula & Osprey lakes	1990	0	no data collected	Omitted 1990
E. Coli <10/100 mL 90th perc.	Similkameen River: Princeton to border	1990	0	no data collected	Omitted 1990
Enterococci <3/100 mL 90th perc.	Similkameen River: Princeton to border	1990	0	no data collected	Omitted 1990
Suspended Solids max increase: 10 mg/L or 10%	Similkameen River: E207461 u/s Hedley	Jun 19,25, Jul 11,18	4	6 - 21 mg/L	Control site
	E207462 d/s Hedley	Jun 19,25, Jul 11,18	4	2 - 14 mg/L max inc. = 0 mg/L	Objective met
	E207463 d/s Candorado	Jun 19,25, Jul 11,18	4	8 - 23 mg/L max inc. = 4 mg/L	Objective met
	Hedley Creek: 0500032 u/s Candorado	Jun 19, Jul 4,11,18	4	1 - 4 mg/L	Control site
	E207464 at the mouth	Jun 19, Jul 4,11,18	4	1 - 7 mg/L max inc. = 0 mg/L	Objective met

TABLE 18 continued

SIMILKAMEEN RIVER WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Substrate Sedimentation: no increase in weight of particles <3 mm dia	Similkameen River: Princeton to border & Hedley Creek	1990	0	no data collected	Omitted 1990
Turbidity max increase: 1-5 NTU or 10%	Similkameen River: E207461 u/s Hedley	Jun 19,25, Jul 11,18	4	1.3 - 6.0 NTU	Control site
	E207462 d/s Hedley	Jun 19,25, Jul 11,18	4	0.6 - 5.1 NTU max inc. = 0.2 NTU	Objective met
	E207463 d/s Candorado	Jun 19,25, Jul 11,18	4	1.4 - 7.5 NTU max inc. = 1.0 NTU	Objective met
	Hedley Creek: 0500032 u/s Candorado	Jun 19,25, Jul 4,11,18	5	0.3 - 9.8 NTU	Control site
	E207464 at the mouth	Jun 19, Jul 4,11,18	4	0.3 - 1.0 NTU max inc. = 0.3 NTU	Objective met
Tot. Cl2 Res. 0.002 mg/L max	Similkameen River : Princeton to border	1990	0	no data collected	Omitted 1990
WAD-CN <0.005 mg/L av 0.010 mg/L max	Similkameen River: E207461 u/s Hedley	Jun 19,25, Jul 11,18	4	all <0.005 mg/L	Max obj. met
	E207462 d/s Hedley	Jun 19,25, Jul 4,11,18	5	all <0.005 mg/L	Objectives met
	E207463 d/s Candorado	Jun 19,25, Jul 4,11,18	5	all <0.005 mg/L	Objectives met
WAD-CN <0.005 mg/L av 0.010 mg/L max or 20% increase	Hedley Creek: 0500032 u/s Candorado	Jun 19,25, Jul 4,11,18	5	all <0.005 mg/L	Control site
	E207464 at the mouth	Jun 19,25, Jul 4,11,18	5	<0.005 - 0.005mg/L	Objectives met

TABLE 18 continued

SIMILKAMEEN RIVER WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
SAD-CN + Thiocyanate as CN 0.20 mg/L max	Similkameen River: E207461 u/s Hedley	Jun 19,25, Jul 11,18	4	all <0.030 mg/L	Objective met
	E207462 d/s Hedley	Jun 19,25, Jul 4,11,18	5	all <0.030 mg/L	Objective met
	E207463 d/s Candorado	Jun 19,25, Jul 4,11,18	5	all <0.030 mg/L	Objective met
SAD-CN + Thiocyanate as CN 0.20 mg/L max or 20% increase	Hedley Creek: 0500032 u/s Candorado	Jun 19,25, Jul 4,11,18	5	all <0.032 mg/L	Control site
	E207464 at the mouth	Jun 19,25, Jul 4,11,18	5	all <0.031 mg/L	Objective met
Cyanate as CN 0.45 mg/L max	Similkameen River: E207461 u/s Hedley	Jun 19,25, Jul 11,18	4	all <0.050 mg/L	Objective met
	E207462 d/s Hedley	Jun 19,25, Jul 4,11,18	5	all <0.050 mg/L	Objective met
	E207463 d/s Candorado	Jun 19,25, Jul 4,11,18	5	all <0.050 mg/L	Objective met
Cyanate as CN 0.45 mg/L max or 20% increase	Hedley Creek: 0500032 u/s Candorado	Jun 19,25, Jul 4,11,18	5	all <0.050 mg/L	Control site
	E207464 at the mouth	Jun 19,25, Jul 4,11,18	5	all <0.050 mg/L	Objective met
Total Arsenic 0.05 mg/L max or 20% increase	Similkameen River: E207461 u/s Hedley	Jun 19,25, Jul 11,18	4	<0.001 - 0.001mg/L	Control site
	E207462 d/s Hedley	Jun 19,25, Jul 4,11,18	5	0.001 - 0.006 mg/L	Objective met
	E207463 d/s Candorado	Jun 19,25, Jul 4,11,18	5	<0.001 - 0.002mg/L	Objective met
Total Arsenic 0.05 mg/L max	Hedley Creek: 0500032 u/s Candorado	Jun 19,25, Jul 4,11,18	5	all <0.001 mg/L	Objective met
	E207464 at the mouth	Jun 19,25, Jul 4,11,18	5	0.005 - 0.016 mg/L	Objective met

TABLE 18 continued

SIMILKAMEEN RIVER WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Ammonia-N <1.09 mg/L av 5.68 mg/L max at pH = 8.0 temp = 15 C	Similkameen River: 0500725 d/s Princeton STP	Jan 15-Nov 27	5	<0.005 - 0.007mg/L	Max obj. met
	E207461 u/s Hedley	Jun 19,25, Jul 11,18	4	all <0.005 mg/L	Max obj. met
	E207462 d/s Hedley	Jun 19,25, Jul 4,11,18	5	av = 0.006 mg/L max = 0.008 mg/L	Objectives met
	E207463 d/s Candorado	Jun 19,25, Jul 4,11,19	5	av = 0.007 mg/L max = 0.011 mg/L	Objectives met
	0500692 u/s Keremeos STP	Sep 19	1	<0.005 mg/L	Max obj. met
	0500693 d/s Keremeos STP	Apr 11-Nov 7	3	<0.005 - 0.007mg/L	Max obj. met
	0500073 near U.S. border	Jan 2-Dec 18	38	<0.005 - 0.011mg/L	Max obj. met
	Hedley Creek: 0500032 u/s Candorado	Jun 19,25, Jul 4	3	<0.005 - 0.011mg/L	Max obj. met
	E207464 at the mouth	Jun 19,25, Jul 4,11,18	5	av = 0.006 mg/L max = 0.011 mg/L	Objectives met
Total-P <0.020 mg/L av at spring overturn	Missezula Lake 0500928	May 9	3	1-6 m: 0.026 mg/L 15 m: 0.026 mg/L 20-45m: 0.030 mg/L 45 m: 0.038 mg/L av = 0.030 mg/L	Objective not met
	Allison Lake Osprey Lake	1990	0	no data collected	Omitted 1990
Chlorophyll-a <50 mg/m2 av	Similkameen River: Princeton to border	1990	0	no data collected	Objective not checked
Chlorophyll-a <100 mg/m2 av	Hedley Creek	1990	0	no data collected	Objective not checked
Diss. Oxygen 8-11 mg/L min	Similkameen River: Princeton to border	1990	0	no data collected	Objective not checked

TABLE 18 continued

SIMILKAMEEN RIVER WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
pH 6.5 - 8.5	Similkameen River: 0500725 d/s Princeton STP	Jan 15 Nov 27	5	7.7 - 8.1	Objective met
	E207461 u/s Hedley	Jun 19,25, Jul 11,18	4	7.8 - 8.1	Objective met
	E207462 d/s Hedley	Jun 19,25, Jul 4,11,18	5	7.5 - 8.0	Objective met
	E207463 d/s Candorado	Jun 19, Jul 4,11,19	4	7.7 - 8.0	Objective met
	0500692 u/s Keremeos STP	Sep 19	1	8.2	Objective met
	0500693 d/s Keremeos STP	Apr 11-Nov 7	4	7.8 - 8.2	Objective met
	0500073 near U.S. border	Jan 2-Dec 18	27	7.6 - 8.3	Objective met
	Hedley Creek: 0500032 u/s Candorado	Jun 19,25, Jul 4,11,18	5	7.4 - 7.7	Objective met
	E207464 at the mouth	Jun 19,25, Jul 4,11,18	5	7.4 - 7.7	Objective met
Dissolved Al <0.05 mg/L av 0.10 mg/L max or 20% increase	Similkameen River: E207461 u/s Hedley	Jun 19,25, Jul 11,18	4	0.02 - 0.06 mg/L	Control site
	E207462 d/s Hedley	Jun 19,25, Jul 4,11,18	5	av = 0.06 mg/L max = 0.08 mg/L	Av indef. Max obj. met
	E207463 d/s Candorado	Jun 19,25, Jul 4,11,18	5	av = 0.04 mg/L max = 0.06 mg/L	Objectives met
	Hedley Creek: 0500032 u/s Candorado	Jun 19,25, Jul 4,11,18	5	0.02 - 0.09 mg/L av = 0.07 mg/L	Control site
	E207464 at the mouth	Jun 19-Jul 18 June 19 Jun 25-Jul 18	5 1 4	av = 0.07 mg/L 0.11 mg/L 0.01 - 0.08 mg/L	Av obj. met Max not met Max obj. met

TABLE 18 continued

SIMILKAMEEN RIVER WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Cr <0.002 mg/L av 0.02 mg/L max or 20% increase	Similkameen River: 0500725 d/s Princeton	Jan 15-Nov27	5	all <0.01 mg/L	Max obj. met
	E207461 u/s Hedley	Jun 19,25, Jul 11,18	4	all <0.01 mg/L	Control site
	E207462 d/s Hedley	Jun 19,25, Jul 4,11,18	5	all <0.01 mg/L	Max obj. met Av indef.
	E207463 d/s Candorado	Jun 19,25, Jul 4,11,18	5	<0.01 - 0.01 mg/L	Max obj. met Av indef.
	Hedley Creek: 0500032 u/s Candorado	Jun 19,25, Jul 4,11,18	5	all <0.01 mg/L	Control site
	E207464 at the mouth	Jun 19,25, Jul 4,11,18	5	all <0.01 mg/L	Max obj. met Av indef.
Total Cu <0.002 mg/L av 0.006 mg/L max or 20% increase hardness = 41	Similkameen River: 0500725 d/s Princeton	Jan 15-Nov 27	5	<0.01 - 0.02 mg/L	Indefinite results
	E207461 u/s Hedley	Jun 19,25, Jul 11,18	4	<0.001 - 0.002mg/L	Control site
	E207462 d/s Hedley	Jun 19,25, Jul 4,11,18	5	av = 0.001 mg/L max = 0.003 mg/L	Objectives met
	E207463 d/s Candorado	Jun 19,25, Jul 4,11,18	5	av = 0.001 mg/L max = 0.002 mg/L	Objectives met
Total Cu <0.002 mg/L av 0.003 mg/L max or 20% increase hardness = 15	Hedley Creek: 0500032 u/s Candorado	Jun 19,25, Jul 4,11,18	5	<0.001 - 0.002mg/L	Control site
	E207464 at the mouth	Jun 19,25, Jul 4,11,18	5	av = 0.001 mg/L max = 0.002 mg/L	Objectives met
Total Fe 0.3 mg/L max or 20% increase	Similkameen River: 0500725 d/s Princeton	Jan 15-Sep 18 Nov 27	4 1	0.06 - 0.12 mg/L 0.49 mg/L	Obj. met Indef result
	E207461 u/s Hedley	Jun 19,25, Jul 11,18	4	0.13 - 0.64 mg/L	Control site
	E207462 d/s Hedley	Jun 19,25, Jul 4,11,18	5	0.07 - 0.37 mg/L	Objective met

TABLE 18 continued

SIMILKAMEEN RIVER WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Fe 0.3 mg/L max or 20% increase	Similkameen River: E207463 d/s Candorado	Jun 19-Jul 11 Jul 18	4 1	0.14 - 0.57 mg/L 0.47 mg/L	Obj. met Obj. not met
	Hedley Creek: 0500032 u/s Candorado	Jun 19,25, Jul 4,11,18	5	0.11 - 0.17 mg/L	Control site
	E207464 at the mouth	Jun 19,25, Jul 4,11,18	5	0.10 - 0.17 mg/L	Objective met
Total Pb <0.004 mg/L av 0.026 mg/L max or 20% increase hardness = 41	Similkameen River: 0500725 d/s Princeton	Jan 15-Nov 27	5	all <0.1 mg/L	Indefinite results
	E207461 u/s Hedley	Jun 19,25, Jul 11,18	4	<0.001 - 0.002mg/L	Control site
	E207462 d/s Hedley	Jun 19,25, Jul 4,11,18	5	av = 0.002 mg/L max = 0.004 mg/L	Objectives met
	E207463 d/s Candorado	Jun 19,25, Jul 4,11,18	5	av = 0.003 mg/L max = 0.005 mg/L	Objectives met
Total Pb <0.004 mg/L av 0.007 mg/L max or 20% increase hardness = 15	Hedley Creek: 0500032 u/s Candorado	Jun 19,25, Jul 4,11,18	5	0.001 - 0.006 mg/L	Control site
	E207464 at the mouth	Jun 19,25, Jul 4,11,18	5	av = 0.001 mg/L max = 0.002 mg/L	Objectives met
Total Pb 0.8ug/g wet wt max in fish muscle	Similkameen River: Princeton to border & Hedley Creek	1990	0	no data collected	Objective not checked
Total Mn 0.05 mg/L max or 20% increase	Similkameen River: 0500725 d/s Princeton	Jan 15-Nov 27	5	all <0.01 mg/L	Objective met
	E207461 u/s Hedley	Jun 19,25, Jul 11,18	4	<0.01 - 0.02 mg/L	Control site
	E207462 d/s Hedley	Jun 19,25, Jul 4,11,18	5	<0.01 - 0.01 mg/L	Objective met
	E207463 d/s Candorado	Jun 19,25, Jul 4,11,18	5	<0.01 - 0.02 mg/L	Objective met

TABLE 18 continued

SIMILKAMEEN RIVER WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Mn 0.05 mg/L max or 20% increase	Hedley Creek: 0500032 u/s Candorado	Jun 19,25, Jul 4,11,18	5	all <0.01 mg/L	Control site
	E207464 at the mouth	Jun 19,25, Jul 4,11,18	5	all <0.01 mg/L	Objective met
Total Hg <0.02 ug/L av 0.1 ug/L max	Similkameen River: E207461 u/s Hedley	Jun 19,25, Jul 11,18	4	all <0.05 ug/L	Max obj. met
	E207462 d/s Hedley	Jun 19,25, Jul 4,18	4	all <0.05 ug/L	Max obj. met
	E207463 d/s Candorado	Jun 19,25, Jul 4,11,18	5	all <0.05 ug/L	Max obj. met Av indef.
	Hedley Creek: 0500032 u/s Candorado	Jun 19,25, Jul 4,11,18	5	all <0.05 ug/L	Max obj. met Av indef.
	E207464 at the mouth	Jun 19,25, Jul 4,11,18	5	all <0.05 ug/L	Max obj. met Av indef.
Total Hg 0.5ug/g wet wt max in fish muscle	Similkameen River: Princeton to border & Hedley Creek	1990	0	no data collected	Objective not checked
Total Mo <0.01 mg/L av 0.05 mg/L max May - Sep	Similkameen River: 0500725 d/s Princeton	May 1-Sep 18	3	all <0.01 mg/L	Max obj. met
	E207461 u/s Hedley	Jun 19,25, Jul 11,18	4	all <0.01 mg/L	Max obj. met
	E207462 d/s Hedley	Jun 19,25, Jul 4,11,18	5	all <0.01 mg/L	Objectives met
	E207463 d/s Candorado	Jun 19,25, Jul 4,11,18	5	all <0.01 mg/L	Objectives met
	Hedley Creek: 0500032 u/s Candorado	Jun 19,25, Jul 4,11,18	5	all <0.01 mg/L	Objectives met
	E207464 at the mouth	Jun 19,25, Jul 4,11,18	5	all <0.01 mg/L	Objectives met

TABLE 18 continued

SIMILKAMEEN RIVER WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Ni 0.025 mg/L max or 20% increase hardness <65	Similkameen River: 0500725 d/s Princeton	Jan 15-Nov 27	5	all <0.05 mg/L	Indefinite result
	E207461 u/s Hedley	Jun 19,25, Jul 11,18	4	all <0.05 mg/L	Control site
	E207462 d/s Hedley	Jun 19,25, Jul 4,11,18	5	all <0.05 mg/L	Indefinite result
	E207463 d/s Candorado	Jun 19,25, Jul 4,11,18	5	all <0.05 mg/L	Indefinite result
	Hedley Creek: 0500032 u/s Candorado	Jun 19,25, Jul 4,11,18	5	all <0.05 mg/L	Control site
	E207464 at the mouth	Jun 19,25, Jul 4,11,18	5	all <0.05 mg/L	Indefinite result
Total U <0.01 mg/L av 0.10 mg/L max or 20% increase	Similkameen River: E207461 u/s Hedley	Jun 19,25, Jul 11,18	4	<0.0002-0.0010mg/L	Control site
	E207462 d/s Hedley	Jun 19,25, Jul 4,11,18	5	av = 0.0005 mg/L max = 0.0008 mg/L	Objectives met
	E207463 d/s Candorado	Jun 19,25, Jul 4,11,18	5	av = 0.0004 mg/L max = 0.0008 mg/L	Objectives met
	Hedley Creek: 0500032 u/s Candorado	Jun 19,25, Jul 4,11,18	5	<0.0002-0.0007mg/L	Control site
	E207464 at the mouth	Jun 19,25, Jul 4,11,18	5	av = 0.0005 mg/L max = 0.0010 mg/L	Objectives met
Total Zn <0.01 mg/L av 0.03 mg/L max or 20% increase	Similkameen River: 0500725 d/s Princeton	Jan 15-Nov 27	5	<0.01 - 0.02 mg/L	Max obj. met
	E207461 u/s Hedley	Jun 19,25, Jul 11,18	4	all <0.005 mg/L	Control site
	E207462 d/s Hedley	Jun 19,25, Jul 4,11,18	5	av = 0.006 mg/L max = 0.009 mg/L	Objectives met
	E207463 d/s Candorado	Jun 19,25, Jul 4,11,18	5	av = 0.006 mg/L max = 0.010 mg/L	Objectives met

TABLE 18 continued

SIMILKAMEEN RIVER WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Zn <0.01 mg/L av 0.03 mg/L max or 20% increase	Hedley Creek: 0500032 u/s Candorado	Jun 19,25, Jul 4,11,18	5	<0.005 - 0.015mg/L	Control site
	E207464 at the mouth	Jun 19-Jul 18 Jul 18 Jun 19-Jul 11	5 1 4	av = 0.018 mg/L 0.070 mg/L max = 0.006 mg/L	Av not met Max not met Max obj. met

The Similkameen River from Manning Park to Princeton, Allison Creek, and Wolfe Creek were not monitored in 1990.

TABLE 19

CAHILL CREEK AND TRIBUTARIES WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Susp. Solids max increase: 10 mg/L or 10%	Red Top Gulch at Hwy. E206638	June 25 July 4	1 1	326 mg/L 7 mg/L	Indef result Obj. met
	Cahill Cr. at Highway E206637	Jun 19-Jul 18	5	4 - 9 mg/L	Objective met
Susp. solids max increase: 20 mg/L or 10%	Cahill Cr d/s tailing Nickel Plate Mine Cr. Sunset Creek	1990	0	no data collected	Omitted 1990
Turbidity max increase: 5 NTU or 10%	Red Top Gulch at Hwy. E206638	June 25 July 4	1 1	75 NTU 2.4 NTU	Indef result Obj. met
	Cahill Cr. at Highway E206637	Jun 19-Jul 18	5	1.0 - 2.0 NTU	Objective met
Turbidity max increase: 10 NTU or 20%	Cahill Cr d/s tailing Nickel Plate Mine Cr. Sunset Creek	1990	0	no data collected	Omitted 1990
Diss. Solids 500 mg/L max	Red Top Gulch at Hwy. E206638	Jun 25,Jul 4	2	322 - 378 mg/L	Objective met
	Cahill Cr. at Highway E206637	Jun 19-Jul 18	5	170 - 226 mg/L	Objective met
	Cahill Cr d/s tailing Nickel Plate Mine Cr.	1990	0	no data collected	Omitted 1990
Sulphate < 50 mg/L av 150 mg/L max	Red Top Gulch at Hwy. E206638	Jun 25,Jul 4	2	54.1 - 101 mg/L	Max obj. met Av not chkd.
	Cahill Cr. at Highway E206637	Jun 19,25, Jul 4,11,18	5	av = 21.2 mg/L max = 31.0 mg/L	Objectives met
	Cahill Cr d/s tailing Nickel Plate Mine Cr.	1990	0	no data collected	Omitted 1990
WAD-CN <0.005 mg/L av 0.010 mg/L max	Red Top Gulch at Hwy. E206638	Apr 4,Jun 25, Jul 4	3	<0.005 - 0.009mg/L	Max obj. met Av not chkd.
	Cahill Cr. at Highway E206637	Jun 19,25, Jul 4,11,18,	5	all < 0.005 mg/L	Objectives met
		Apr 4,Aug 21, 29	3	<0.005 - 0.006mg/L	Max obj. met

TABLE 19 continued

CAHILL CREEK AND TRIBUTARIES WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
SAD-CN + Thiocyanate as CN 0.20 mg/L max	Red Top Gulch at Hwy. E206638	Apr 4,Jun 25, Jul 4	3	<0.034-<0.039 mg/L	Objective met
	Cahill Cr. at Highway E206637	Apr 4-Aug 29	8	<0.031-<0.061 mg/L	Objective met
Cyanate as CN 0.45 mg/L max	Red Top Gulch at Hwy. E206638	Jun 25,Jul 4	2	both < 0.050 mg/L	Objective met
	Cahill Cr. at Highway E206637	Jun 19,25, Jul 4,11,18	5	all < 0.050 mg/L	Objective met
Total As 0.05 mg/L max	Red Top Gulch Creek Cahill Creek	1990	0	no data collected	Omitted 1990
Total As 0.5 mg/L max	Nickel Plate Mine Cr.	1990	0	no data collected	Omitted 1990
Ammonia-N <1.130 mg/L av 5.86 mg/L max at pH = 8.0 temp = 10 C	Red Top Gulch at Hwy. E206638	Jun 25,Jul 4	2	<0.005 - 0.010mg/L	Max obj. met Av not chkd.
	Cahill Cr. at Highway E206637	Jun 19,25, Jul 4,11 18	5	av = 0.007 mg/L max = 0.010 mg/L	Objectives met
Nitrite-N <0.02 mg/L av 0.06 mg/L max	Red Top Gulch at Hwy. E206638	Jun 25,Jul 4	2	<0.005 - 0.006mg/L	Max obj. met Av not chkd.
	Cahill Cr. at Highway E206637	Jun 19,25, Jul 4,11,18	5	av = 0.006 mg/L max = 0.009 mg/L	Objectives met
Nitrite-N 1 mg/L max	Cahill Cr d/s tailing	1990	0	no data collected	Omitted 1990
Nitrite-N 10 mg/L max	Nickel Plate Mine Cr.	1990	0	no data collected	Omitted 1990
Nitrate-N 10 mg/L max	Red Top Gulch at Hwy. E206638	Jun 25,Jul 4	2	2.47 - 2.70 mg/L	Objective met
	Cahill Cr. at Highway E206637	Jun 19,25, Jul 4,11,18	5	3.30 - 4.60 mg/L	Objective met
Nitrate-N 100 mg/L max	Nickel Plate Mine Cr.	1990		no data collected	Omitted 1990
pH 6.5 - 8.5	Red Top Gulch at Hwy. E206638	Jun 25,Jul 4	3	7.6 - 8.3	Objective met
	Cahill Cr. at Highway E206636	Jun 19-Jul 18	8	7.3 - 8.2	Objective met

TABLE 19 continued

CAHILL CREEK AND TRIBUTARIES WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
pH 6.5 - 8.5	Nickel Plate Mine Cr.	1990	0	no data collected	Omitted 1990
Total Al 0.3 mg/L max or 20% increase at pH > 7	Red Top Gulch at Hwy. E206638	June 25 July 4	1 1	8.31 mg/L 0.11 mg/L	Indef result Obj. met
	Cahill Cr. at Highway E206637	June 19 Jun 25-Jul 18	1 4	0.33 mg/L 0.17 - 0.20 mg/L	Indef result Obj. met
Total Cd 0.0002 mg/L max	Red Top Gulch at Hwy. E206638	Jun 25,Jul 4	2	both <0.0005 mg/L	Indefinite result
	Cahill Cr. at Highway E206637	June 19 Jun 25-Jul 18	1 4	0.0007 mg/L all <0.0005 mg/L	Obj. not met Indef result
Total Cd 0.005 mg/L max	Cahill Cr d/s tailing	1990	0	no data collected	Omitted 1990
Total Cd 0.02 mg/L max	Nickel Plate Mine Cr.	1990	0	no data collected	Omitted 1990
Total Cu <0.005 mg/L av 0.007 mg/L max or 20% increase	Red Top Gulch at Hwy. E206638	June 25 July 4	1 1	0.030 mg/L 0.001 mg/L	Indef result Max obj. met
	Cahill Cr. at Highway E206637	Jun 19,25, Jul 4,11,18	5	av = 0.002 mg/L max = 0.003 mg/L	Objectives met
Total Cu 0.2 mg/L max	Cahill Cr d/s tailing	1990	0	no data collected	Omitted 1990
Total Cu 0.3 mg/L max	Nickel Plate Mine Cr.	1990	0	no data collected	Omitted 1990
Dissolved Fe 0.3 mg/L max	Red Top Gulch at Hwy. E206638	June 25 July 4	1 1	17.00 mg/L Tot Fe 0.22 mg/L Tot Fe	Indef result Obj. met
	Cahill Cr. at Highway E206637	Jun 19,25, Jul 4,11,18	5	0.13 - 0.30 mg/L Tot Fe	Objective met
	Nickel Plate Mine Cr.	1990	0	no data collected	Omitted 1990
Total Pb <0.005 mg/L av 0.007 mg/L max or 20% increase	Red Top Gulch at Hwy. E206638	Jun 25,Jul 4	2	0.001 - 0.002 mg/L	Max obj. met Av not chkd.
	Cahill Cr. at Highway E206637	Jun 19-Jul 18 July 11 Jun 19-Jul 18	5 1 4	av = 0.003 mg/L 0.009 mg/L <0.001 - 0.003mg/L	Av obj. met Indef result Max obj. met
Total Pb 0.05 mg/L max	Cahill Cr d/s tailing	1990	0	no data collected	Omitted 1990

TABLE 19 continued

CAHILL CREEK AND TRIBUTARIES WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Pb 0.3 mg/L max	Nickel Plate Mine Cr.	1990	0	no data collected	Omitted 1990
Total Hg 0.0001mg/L max	Red Top Gulch at Hwy. E206638	Jun 25,Jul 4	2	both <0.00005 mg/L	Objective met
	Cahill Cr. at Highway E206637	Jun 19,25, Jul 4,11,18	5	all < 0.00005 mg/L	Objective met
Total Hg 0.001 mg/L max	Cahill Cr d/s tailing	1990	0	no data collected	Omitted 1990
Total Hg 0.003 mg/L max	Nickel Plate Mine Cr.	1990	0	no data collected	Omitted 1990
Total Hg in fish 0.5 ug/g wet wt. (muscle) max	Red Top Gulch at Hwy. and Cahill Cr. at Highway	1990	0	no data collected	Omitted 1990
Total Mo <0.01 mg/L av 0.05 mg/L max or 20% increase (May-Sep)	Red Top Gulch at Hwy. E206638	Jun 25,Jul 4	2	both <0.01 mg/L	Max obj. met Av not chkd.
	Cahill Cr. at Highway E206637	Jun 19,25, Jul 4,11,18	5	all < 0.01 mg/L	Objectives met
Total Mo 0.05 mg/L max	Nickel Plate Mine Cr.	1990	0	no data collected	Omitted 1990
Total Se 0.001 mg/L max or 20% increase	Red Top Gulch at Hwy. E206638	Jun 25,Jul 4	2	both < 0.005 mg/L	Indefinite result
	Cahill Cr. at Highway E206637	Jun 19-Jul 18	5	<0.005 - 0.005mg/L	Indef result
Total Se 0.01 mg/L max	Cahill Cr d/s tailing	1990	0	no data collected	Omitted 1990
Total Se 0.05 mg/L max	Nickel Plate Mine Cr.	1990	0	no data collected	Omitted 1990
Total Ag 0.0001mg/L max or 20% increase	Red Top Gulch at Hwy. and Cahill Cr. at Highway	1990	0	no data collected	Objective not checked

TABLE 19 continued

CAHILL CREEK AND TRIBUTARIES WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Ag 0.05 mg/L max or 20% increase	Cahill Cr d/s tailing and Nickel Plate Mine Cr.	1990	0	no data collected	Omitted 1990
Total Zn 0.05 mg/L max	Red Top Gulch at Hwy. E206638	June 25,Jul 4	2	<0.01 - 0.04 mg/L	Objective met
	Cahill Cr. at Highway E206637	Jun 19,25, Jul 4,11,18	5	<0.01 - 0.01 mg/L	Objective met
	Nickel Plate Mine Cr.	1990	0	no data collected	Omitted 1990

TABLE 20

BESSETTE CREEK WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <100/100 mL 90th perc. (np) 200/100 mL max	Bessette Creek: 0500293 u/s Lumby	Jul 12-Aug 22 Jul 26 Jul 12-Aug 22	5 1 4	np = 210/100 mL 240/100 mL 78 - 193/100 mL	np not met Max not met Max obj. met
	0500697 d/s Lumby	Jul 12,19,26, Aug 2	4	39 - 131/100 mL	Max obj. met
	Lawson Creek: 0500645 u/s Riverside mill	Jan 30	1	205/100 mL	Max not met np not chkd.
	0500646 d/s Riverside mill	Jan 30,Jul 26 Jul 19,Aug 2	2 2	32 - 47/100 mL 229 - 336/100 mL	Max obj. met Max not met
	Spider Creek	1990	0	no data collected	Omitted 1990
E. Coli <100/100 mL 90th perc. 200/100 mL max	Bessette Creek Lawson Creek Spider Creek	1990	0	no data collected	Omitted 1990
Enterococci <25/100 mL 90th perc. 50/100 mL max	Bessette Creek Lawson Creek Spider Creek	1990	0	no data collected	Omitted 1990
Diss. Solids 500 mg/L max or 20% increase	Lawson Creek: 0500645 u/s Riverside mill	Jan 30	1	546 mg/L	Control site
	0500646 d/s Riverside mill	Jan 30 Jul 19-Aug 2	1 3	540 mg/L 434 - 472 mg/L	Obj. met Obj. met
	Spider Creek	1990	0	no data collected	Omitted 1990
Susp. Solids 10 mg/L or 10% max increase	Bessette Creek: 0500293 u/s Lumby	Jul 12-Aug 9	5	1 - 10 mg/L	Control site
	0500697 d/s Lumby	Jul 19-Aug 9 Jul 12	4 1	max inc.=10 mg/L max inc.=13 mg/L	Obj. met Obj. not met
	Lawson Creek: 0500645 u/s Riverside mill	Jan 30	1	11 mg/L	Control site
	0500646 d/s Riverside mill	Jan 30 Jul 19-Aug 2	1 3	max inc.= 2 mg/L 1 - 2 mg/L	Obj. met Obj. met
	Harris & Spider Crks.	1990	0	no data collected	Omitted 1990

TABLE 20 continued

BESSETTE CREEK WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Substrate Sedimentation: no increase in weight of particles <3 mm dia	Bessette Creek Lawson Creek Spider Creek Harris Creek	1990	0	no data collected	Omitted 1990
Turbidity 5 NTU or 10% max increase	Bessette Creek: 0500293 u/s Lumby	Jul 12-Aug 22	6	0.3 - 2.5 NTU	Control site
	0500697 d/s Lumby	Jul 19-Aug 9	5	0.9 - 4.2 NTU	Objective met
	Lawson Creek 0500646 d/s Riverside mill	Jul 19-Aug 2	3	all 0.9 NTU	Objective met
	Harris & Spider Crks.	1990	0	no data collected	Omitted 1990
Ammonia-N <1.09 mg/L av 5.68 mg/L max at pH = 8.0 temp = 15 C	Bessette Creek: 0500293 u/s Lumby	Jul 12,19,26, Aug 2,22	5	av = 0.006 mg/L max = 0.007 mg/L	Objectives met
	0500697 d/s Lumby	Jul 12,19,26, Aug 2	4	<0.005 - 0.027mg/L	Max obj. met Av not chkd.
	Lawson Creek: 0500645 u/s Riverside mill	Jan 30	1	0.153 mg/L	Max obj. met Av not chkd.
	0500646 d/s Riverside mill	Jan 30-Aug 2	4	0.085 - 0.140 mg/L	Max obj. met Av not chkd.
	Harris Creek Spider Creek	1990	0	no data collected	Omitted 1990
Nitrite-N <0.04 mg/L av 0.12 mg/L max Cl = 2-4 mg/L	Bessette Creek: 0500293 u/s Lumby	Jul 12,19,26, Aug 2,22	5	all < 0.005 mg/L	Objectives met
	0500697 d/s Lumby	Jul 12,19,26, Aug 2	4	all < 0.005 mg/L	Max obj. met Av not chkd.
	Lawson Creek: 0500646 d/s Riverside mill	Jul 19-Aug 2	3	0.016 - 0.035 mg/L	Max obj. met Av not chkd.
	Harris Creek Spider Creek	1990	0	no data collected	Omitted 1990

TABLE 20 continued

BESSETTE CREEK WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Nitrate-N 10 mg/L max	Bessette Creek: 0500293 u/s Lumby	Jul 12,19,26, Aug 2,22	5	0.03 - 0.08 mg/L	Objective met
	0500697 d/s Lumby	Jul 12,19,26, Aug 2	4	0.04 - 0.10 mg/L	Objective met
	Lawson Creek: 0500646 d/s Riverside mill	Jul 19-Aug 2	3	0.37 - 0.77 mg/L	Objective met
	Harris Creek Spider Creek	1990	0	no data collected	Omitted 1990
Chlorophyll-a 100 mg/m2 max	Bessette Creek Lawson Creek Spider Creek Harris Creek	1990	0	no data collected	Omitted 1990
Colour 15 TCU max or 20% increase	Harris Creek Spider Creek	1990	0	no data collected	Omitted 1990
Temperature 1 C max increase	Duteau Creek	1990	0	no data collected	Objective not checked
pH 6.5 - 8.5 or 0.2 max increase at pH >8.5	Bessette Creek: 0500293 u/s Lumby	Jul 12-Aug 22	5	7.7 - 8.5	Control site
	0500697 d/s Lumby	Jul 19-Aug 2	4	7.9 - 8.2	Objective met
pH 6.5 - 8.5	Lawson Creek: 0500645 u/s Riverside mill	Jan 30	1	7.8	Objective met
	0500646 d/s Riverside mill	Jan 30-Aug 2	4	7.8 - 8.0	Objective met
	Harris Creek Spider Creek	1990	0	no data collected	Omitted 1990
Diss. Oxygen 8-11 mg/L min	Bessette Creek Lawson Creek	1990	0	no data collected	Objectives not checked
	Spider Creek Harris Creek	1990	0	no data collected	Omitted 1990

TABLE 20 continued

BESSETTE CREEK WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Resin Acids DHA: 0.013 mg/L max Total: 0.052 mg/L max at pH = 8.0	Lawson Creek: 0500645 u/s Riverside mill	Jan 30,Aug 9 Jan 30,Aug 9	2 2	all <0.001mg/L DHA all <0.007mg/L Tot	Objectives met
	0500646 d/s Riverside mill	Jan 30,Jul 26 Jan 30,Jul 26	2 2	all <0.001mg/L DHA all <0.007mg/L Tot	Objectives met
	Harris Creek Spider Creek	1990	0	no data collected	Omitted 1990
Total Chlorophenols in sediments: 0.005 ug/g max dry weight	Harris Creek: E209072 u/s Bell Pole	Aug 16	1	0.045 ug/g	Objective not met
	E210219 at Bell Pole	Aug 16	1	>0.039 ug/g	Objective not met
Total Chlorophenols in fish: 0.1 ug/g max wet weight	Harris Creek	1990	0	no data collected	Omitted 1990
Mono-CP 0.5 ug/L max	Harris Creek	1990	0	no data collected	Omitted 1990
Di-CP 0.1 ug/L max	Harris Creek	1990	0	no data collected	Omitted 1990
Tri-CP 0.05 ug/L max	Harris Creek: E209072 u/s Bell Pole	Aug 16,Sep 19	2	all <0.1 ug/L	Indefinite result
	E206608 d/s Weyhsr. runoff	Feb 1	1	<0.1 ug/L	Indefinite result
	E210219 at Bell Pole	Aug 16,Sep 19	2	all <0.1 ug/L	Indefinite result
	E208042 d/s Bell Pole	Feb 1,Sep 19	2	all <0.1 ug/L	Indefinite result
Tetra-CP 0.1 ug/L max	Harris Creek: E209072 u/s Bell Pole	Aug 16,Sep 19	2	<0.1 - 0.1 ug/L	Objective met
	E206608 d/s Weyhsr. runoff	Feb 1	1	<0.1 ug/L	Objective met
	E210219 at Bell Pole	Aug 16,Sep 19	2	0.3 - 1.2 ug/L	Objective not met

TABLE 20 continued

BESSETTE CREEK WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Tetra-CP 0.1 ug/L max	Harris Creek: E208042 d/s Bell Pole	Feb 1,Sep 19	2	0.2 - 1.0 ug/L	Objective not met
Penta-CP 0.05 ug/L max	Harris Creek: E209072 u/s Bell Pole	Aug 16,Sep 19	2	all <0.1 ug/L	Indefinite result
	E206608 d/s Weyhsr. runoff	Feb 1	1	<0.1 ug/L	Indefinite result
	E210219 at Bell Pole	Aug 16,Sep 19	2	1.2 - 4.4 ug/L	Objective not met
	E208042 d/s Bell Pole	Feb 1,Sep 19	2	0.5 - 3.3 ug/L	Objective not met

TABLE 21

TRIBUTARIES TO OKANAGAN LAKE NEAR WESTBANK WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Diss. Solids 500 mg/L max	Peachland Creek: 0500355 d/s Brenda Mine	Jun 26-Jul 24	4	90 - 116 mg/L	Objective met
	0500056 at the mouth	Jun 26-Jul 24	4	132 - 170 mg/L	Objective met
	Trepanier Creek: 0500362 near source	Jun 26-Jul 24 Jul 5	4 1	82 - 92 mg/L 686 mg/L	Obj. met Obj. not met
	0500078 at the mouth	Jun 26-Jul 24	5	100 - 158 mg/L	Objective met
Sodium 64 mg/L max at creek mouths May - Sep hard. = 97mg/L 270 mg/L max at other times and elsewhere at all times	Peachland Creek: 0500355 d/s Brenda Mine	Jun 26-Jul 17	4	2.8 - 3.9 mg/L	Objective met
	0500056 at the mouth	Jun 26-Jul 24	4	3.9 - 5.0 mg/L	Objective met
	Trepanier Creek: 0500362 near source	Jun 26-Jul 24	5	2.1 - 2.8 mg/L	Objective met
	0500078 at the mouth	Jun 26-Jul 24	5	3.0 - 9.2 mg/L	Objective met
Ammonia-N <0.700 mg/L av 3.64 mg/L max at pH = 8.2 temp = 15 C	Peachland Creek: 0500355 d/s Brenda Mine	Jun 26,Jul 5, 10,17,24	5	<0.005 - 0.005mg/L	Objectives met
	0500056 at the mouth	Jun 26,Jul 5, 17,24	4	all <0.005 mg/L	Max obj. met
	Westbank Creek	1990	0	no data collected	Omitted 1990
Nitrite-N <0.02 mg/L av 0.06 mg/L max	Peachland Creek: 0500355 d/s Brenda Mine	Jun 26,Jul 5, 10,17,24	5	all <0.005 mg/L	Objectives met
	0500056 at the mouth	Jun 26,Jul 5, 17,24	4	all <0.005 mg/L	Max obj. met
	Westbank Creek	1990	0	no data collected	Omitted 1990

TABLE 21 continued

TRIBUTARIES TO OKANAGAN LAKE NEAR WESTBANK WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Nitrate-N 10 mg/L max	Peachland Creek: 0500355 d/s Brenda Mine	Jun 26,Jul 5, 10,17,24	5	0.02 - 0.10 mg/L	Objective met
	0500056 at the mouth	Jun 26,Jul 5, 17,24	4	0.07 - 0.15 mg/L	Objective met
	Westbank Creek	1990	0	no data collected	Omitted 1990
Chlorophyll-a <100 mg/m2 av	Peachland Creek	1990	0	no data collected	Objective not checked
	Westbabk Creek	1990	0	no data collected	Omitted 1990
Diss. Oxygen 8-11 mg/L min	Westbank Creek	1990	0	no data collected	Objective not checked
pH 6.5 - 9.0	Peachland Creek: 0500355 d/s Brenda Mine	Jun 26,Jul 5, 10,17,24	5	7.9 - 8.1	Objective met
	0500056 at the mouth	Jun 26,Jul 5, 17,24,24	5	8.0 - 8.3	Objective met
pH 6.5 - 8.5	Trepanier Creek: 0500362 near source	Jun 26,Jul 5, 10,17,24	5	8.0 - 8.1	Objective met
	0500078 at the mouth	Jun 12,26,Jul 5,10,17,24,24	7	7.8 - 8.4	Objective met
Diss. Al <0.05 mg/L av 0.1 mg/L max or 20% increase	Peachland Creek: 0500355 d/s Brenda Mine	Jun 26,Jul 5, 10,17,24	5	av = 0.03 mg/L max = 0.10 mg/L	Objectives met
	0500056 at the mouth	Jun 26,Jul 5, 17,24	4	<0.01 - 0.01 mg/L	Max obj. met
Diss. Al <0.05 mg/L av 0.1 mg/L max	Trepanier Creek: 0500362 near source	Jun 26,Jul 5, 10,17,24	5	av = 0.01 mg/L max = 0.02 mg/L	Objectives met
	0500078 at the mouth	Jun 26,Jul 5, 10,17,24	5	av = 0.02 mg/L max = 0.03 mg/L	Objectives met
	Westbank Creek	1990	0	no data collected	Omitted 1990

TABLE 21 continued

TRIBUTARIES TO OKANAGAN LAKE NEAR WESTBANK WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Cu <0.003 mg/L av 0.010 mg/L max hard. = 82mg/L or 20% increase	Peachland Creek: 0500355 d/s Brenda Mine	Jun 26-Jul 24 Jul 24 Jun 26-Jul 17	5 1 4	av = 0.007 mg/L 0.030 mg/L <0.001 - 0.002mg/L	Av indef. Max indef. Max obj. met
	0500056 at the mouth	Jun 26,Jul 5, 17,24	4	0.001 - 0.003 mg/L	Max obj. met
Total Cu (depends on hardness)	Westbank Creek	1990	0	no data collected	Omitted 1990
Total Mo <0.01 mg/L av 0.05 mg/L max or 20% increase (May - Sep)	Peachland Creek: 0500355 d/s Brenda Mine	Jun 26,Jul 5, 10,17,24	5	0.01 - 0.02 mg/L av = 0.02 mg/L	Max obj. met Av indef.
	0500056 at the mouth	Jun 26,Jul 5, 17,24	4	0.02 - 0.03 mg/L	Max obj. met
Total Mo 0.25 mg/L max	Trepanier Creek: 0500362 near source	Jun 26,Jul 5, 10,17,24	5	all <0.01 mg/L	Objective met
Total Mo <0.01 mg/L av 0.05 mg/L max (May - Sep)	Trepanier Creek: 0500078 at the mouth	Jun 26,Jul 5, 10,17,24	5	all <0.01 mg/L	Objectives met
Total Fe 0.3 mg/L max	Westbank Creek	1990	0	no data collected	Omitted 1990
Total Zn 0.03 mg/L max	Westbank Creek	1990	0	no data collected	Omitted 1990

TABLE 22

TRIBUTATARIES TO OKANAGAN LAKE NEAR KELOWNA WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <100/100 mL 90th perc. (np)	Mission Creek 0500046 at the mouth	Jul 5,10,17, 24	4	9 - 575/100 mL np > 100/100 mL	Objective not met
	Kelowna Creek 0500039 at the mouth	Jul 5,10,17, 24	4	169 - 565/100 mL np > 400/100 mL	Objective not met
E. Coli <100/100 mL 90th perc. (np)	Mission Creek 0500046 at the mouth	Jul 5,10,17, 24	4	10 - 547/100 mL np > 350/100 mL	Objective not met
	Kelowna Creek 0500039 at the mouth	Jul 5,10,17, 24	4	141 - 540/100 mL np > 400/100 mL	Objective not met
Enterococci <25/100 mL 90th perc. (np)	Mission Creek 0500046 at the mouth	Jul 5,10,17, 24	4	11 - 250/100 mL np > 100/100 mL	Objective not met
	Kelowna Creek 0500039 at the mouth	Jul 5,10,17, 24	4	12 - 290/100 mL np > 200/100 mL	Objective not met
Specific Conductivity 1200 uS/cm max (May - Sep)	Brandt's Creek 0500009 at the mouth	Jun 12-Oct 17	3	710 - 940 uS/cm	Objective met
Ammonia-N <0.700 mg/L av 3.64 mg/L max at pH = 8.2 temp = 15 C	Mission Creek 0500046 at the mouth	Jun 12,Jul 5, 10,17,24	5	av = 0.006 mg/L max = 0.007 mg/L	Objectives met
	Kelowna Creek 0500039 at the mouth	Jun 12,Jul 5, 10,10,17,24	6	av = 0.012 mg/L max = 0.022 mg/L	Objectives met
Nitrite-N <0.02 mg/L av 0.06 mg/L max Cl < 2 mg/L	Mission Creek 0500046 at the mouth	Jun 12,Jul 5, 10,17,24	5	all < 0.005 mg/L	Objectives met
Nitrite-N <0.20 mg/L av 0.60 mg/L max Cl > 10 mg/L	Kelowna Creek 0500039 at the mouth	Jun 12,Jul 5, 10,10,17,24	6	av = 0.009 mg/L max = 0.014 mg/L	Objectives met
Chlorophyll-a <100 mg/m2 av	Mission Creek Kelowna Creek	1990	0	no data collected	Objective not checked

TABLE 22 continued

TRIBUTATARIES TO OKANAGAN LAKE NEAR KELOWNA WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Diss. Oxygen 8-11 mg/L min	Mission Creek Kelowna Creek	1990	0	no data collected	Objective not checked
pH 6.5 - 9.0	Mission Creek 0500046 at the mouth	Jun 12,Jul 5, 10,17,24,24	6	7.6 - 8.0	Objective met
pH 6.5 - 8.5	Kelowna Creek 0500039 at the mouth	Jun 12-Jul 24	7	7.8 - 8.4	Objective met
Diss. Al 0.1 mg/L max or 20% increase	Kelowna Creek 0500039 at the mouth	Jul 5,10,10, 17,24	5	<0.01 - 0.03 mg/L	Objective met
Total Cu <0.007 mg/L av 0.019 mg/L max or 20% increase hard.= 181mg/L	Kelowna Creek 0500039 at the mouth	Jul 5,10,10, 17,24	5	av = 0.002 mg/L max = 0.003 mg/L	Objectives met
Total Pb <0.010 mg/L av 0.173 mg/L max or 20% increase hard.= 181mg/L	Kelowna Creek 0500039 at the mouth	Jul 5,10,10, 17,24	5	0.001 - <0.10 mg/L	Max obj. met Av not chkd.
Total Pb 0.8ug/g wet wt max in fish muscle	Kelowna Creek	1990	0	no data collected	Objective not checked
Total Zn 0.1 mg/L max or 20% increase	Kelowna Creek 0500039 at the mouth	Jul 5,10,10, 17,24	5	<0.005 - <0.01mg/L	Objective met

TABLE 23

COLUMBIA AND WINDERMERE LAKES WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <10/100 mL 90th perc (np) near water intakes	Windermere Lake water intake sites	1990	0	no data collected	Objective not checked
	Columbia Lake E207486 Columere	Jul 5,10,16, 19,25	5	all < 2/100 mL	Objective met
Fecal Coliforms <200/100 mL geometric mean (gm) at beaches	Windermere Lake: E207054 Akiskinook	Jul 5,10,16, 19,25	5	<2 - 2/100 mL gm = 2/100 mL	Objective met
	E207050 Invermere	Jul 5,10,16, 19,25	5	1 - <2/100 mL gm < 2/100 mL	Objective met
	E207051 Athalmer	Jul 5,10,16, 19,25	5	1 - 7/100 mL gm = 2/100 mL	Objective met
	Columbia Lake E207487 Columere	Jul 5,10,16, 19,25	5	all < 2/100 mL	Objective met
Turbidity <1 NTU av 5 NTU max during non-freshet	Windermere Lake Columbia Lake water intake sites	1990	0	no data collected	Omitted 1990
Total-P <0.010 mg/L av at spring overturn	Windermere Lake: 0200051 centre	April 25	1 1 1	0.5 m : 0.003 mg/L 1.5 m : 0.005 mg/L 2.2 m : 0.005 mg/L av = 0.004 mg/L	Objective met
	0200052 north	April 25	1 1 1	0.5 m : 0.004 mg/L 2.5 m : 0.004 mg/L 4.5 m : 0.003 mg/L av = 0.004 mg/L	Objective met
Total-P <0.008 mg/L av at spring overturn	Columbia Lake: 0200433 south	April 25	1 1 1	0.5 m : 0.004 mg/L 2.0 m : 0.003 mg/L 3.0 m : 0.005 mg/L av = 0.004 mg/L	Objective met
	0200434 north	April 25	1 1 1	0.5 m : 0.004 mg/L 2.0 m :<0.003 mg/L 3.5 m : 0.004 mg/L av = 0.004 mg/L	Objective met

TABLE 24

UPPER COLUMBIA RIVER WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <10/100 mL 90th perc. (np)	Columbia River: 0200232 u/s Radium	Jul 5, Sep 18	2	1 - 2/100 mL	Indefinite result
Fecal Coliforms <200/100 mL geometric mean (gm) <400/100 mL 90th perc. (np)	Columbia River: 0200233 d/s Radium	Jul 5, Sep 18	2	6 - 7/100 mL	Indefinite results

TABLE 25

FRASER RIVER (KANAKA CREEK TO THE MOUTH) WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <1000/100 mL geometric mean (gm) 4000/100 mL max Apr - Oct	Main Stem: GVRD 15 Sapperton Channel	May 4-Sep 20	10	<20 - 300/100 mL	Max obj. met
	GVRD 14 nr. Brunette R confl.	May 4-Sep 20	10	20 - 500/100 mL	Max obj. met
	GVRD 13 u/s Pattullo Bridge	May 4-Sep 20	10	20 - 130/100 mL	Max obj. met
	0300005 at Pattullo Bridge	Aug 6,13,20, 27,Sep 3	5	25 - 45/100 mL gm = 34/100 mL	Objectives met
	GVRD 12 d/s Pattullo Bridge	May 4-Sep 20	10	20 - 170/100 mL	Max obj. met
	Main Arm: GVRD 1 u/s Annacis	Apr 25-Oct 16	4	110 - 300/100 mL	Max obj. met
	0301308 u/s Annacis	Aug 6,13,20, 27,Sep 3	5	28 - 755/100 mL gm = 82/100 mL	Objectives met
	GVRD 2 d/s Annacis	Apr 25-Aug 30 Oct 16	3 1	80 - 2200/100 mL 5000/100 mL	Max obj. met Max not met
	0301311 d/s Annacis	Aug 6,13,20, 27,Sep 3	5	35 - 1220/100 mL gm = 113/100 mL	Objectives met
	GVRD 3 12 km d/s Annacis	Apr 25-Oct 16	4	230 - 3000/100 mL	Max obj. met
	GVRD 4 d/s Lulu	Jun 5-Oct 16 Apr 25	3 1	800 - 1700/100 mL 8000/100 mL	Max obj. met Max not met
	GVRD 5 d/s Steveston	Jun 5-Oct 16 Apr 25	3 1	230 - 2200/100 mL 8000/100 mL	Max obj. met Max not met
	North Arm: E207398 u/s Scott Paper	Aug 6,13,20, 27,Sep 3	5	57 - 153/100 mL gm = 77/100 mL	Objectives met
	GVRD 11 Queensborough Bridge	May 4-Sep 20	10	20 - 130/100 mL	Max obj. met
	GVRD 10 ~5 km d/s Belkin	May 4-Sep 20	10	40 - 230/100 mL	Max obj. met
	GVRD 9 Mitchell Island	May 4-Sep 20	10	20 - 230/100 mL	Max obj. met

TABLE 25 continued

FRASER RIVER (KANAKA CREEK TO THE MOUTH) WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <1000/100 mL geometric mean (gm) 4000/100mL max Apr - Oct	North Arm: GVRD 7 Oak Street Bridge	May 4-Sep 20	10	20 - 1300/100 mL	Max obj. met
	0300002 Oak Street Bridge	Aug 6,13,20, 27,Sep 3	5	39 - 615/100 mL gm = 101/100 mL	Objectives met
	GVRD 6 Sea Island-east	May 4-Sep 20	10	40 - 3000/100 mL	Max obj. met
	GVRD 5 Sea Island-west	May 4-Sep 20	10	70 - 1300/100 mL	Max obj. met
	GVRD 1,2,3,4 North Arm jetty	May 4-Sep 20	40	<20 - 1100/100 mL	Max obj. met
	Middle Arm: GVRD 8 at North Arm entrance	May 4-Sep 20	10	40 - 800/100 mL	Max obj. met
	E207601 100 m d/s North Arm	Aug 6,13,20, 27,Sep 3	5	29 - 163/100 mL gm = 71/100 mL	Objectives met
	E207600 at Dinsmore Bridge	Aug 6,13,20, 27,Sep 3	5	63 - 90/100 mL gm = 75/100 mL	Objectives met
Fecal Coliforms <200/100 mL geometric mean (gm) Jun - Aug at beaches	Iona Beach: every 1.5 km along jetty, east to west GVRD 4	Jun 14-Jul 12 Jul 26-Aug 27	5 6	gm = 23/100 mL gm = 20/100 mL	Obj. met Obj. met
	GVRD 6	Jun 4-Jul 6 Jul 26-Aug 27	6 6	gm = 20/100 mL gm = 22/100 mL	Obj. met Obj. met
	GVRD 8	Jul 26-Aug 27	6	gm = 20/100 mL	Obj. met
	GVRD 10	Jun 4-Jul 6 Jul 12-Aug 13	6 6	gm = 22/100 mL gm = 20/100 mL	Obj. met Obj. met
	GVRD 12	Jun 8-Jul 6 Jul 12-Aug 13	5 6	gm = 20/100 mL gm < 20/100 mL	Obj. met Obj. met
	GVRD 14	Jun 28-Jul 26 Jul 26-Aug 27	5 6	gm = 20/100 mL gm < 25/100 mL	Obj. met Obj. met
	Tsawwassen Beach: MOH 11 3rd Avenue	Jun 5-Jul 4 Jul 10-Aug 8	5 5	gm = 29/100 mL gm = 81/100 mL	Obj. met Obj. met
	MOH 12 Causeway-south	Jun 5 Jul 4 Jul 10-Aug 7	5 5	gm = 5/100 mL gm = 25/100 mL	Obj. met Obj. met

TABLE 25 continued

FRASER RIVER (KANAKA CREEK TO THE MOUTH) WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliform <200/100 mL geo. mean (gm)	Tsawwassen Beach: MOH 13 Causeway-north	Jun 5-Jul 4 Jul 10-Aug 8	5 5	gm = 20/100 mL gm = 8/100 mL	Obj. met Obj. met
Susp. Solids max increase: 10 mg/L or 10%	North Arm Middle Arm	1990	0	no data collected	to be chkd. March 1991
Total Cl2 Res. 0.002 mg/L max	Main Arm	1990	0	no data collected	Omitted 1990-91
Ammonia-N <1.09 mg/L av 5.7 mg/L max at pH = 8.0 temp = 15 C	Main Arm: GVRD 1 u/s Annacis	Feb 27-Nov 14	6	<0.02 - 0.12 mg/L	Max obj. met Av not chkd.
	GVRD 2 d/s Annacis	Feb 27-Nov 14	6	<0.02 - 0.10 mg/L	Max obj. met
	GVRD 3 12 km d/s Annacis	Feb 27-Nov 14	6	0.02 - 0.10 mg/L	Max obj. met
	GVRD 4 d/s Lulu	Feb 27-Nov 14	6	<0.02 - 0.12 mg/L	Max obj. met
	GVRD 5 d/s Steveston	Feb 27-Nov 14	6	0.02 - 0.12 mg/L	Max obj. met
	North Arm Middle Arm	1990	0	no data collected	to be chkd. March 1991
	Sturgeon Bank Roberts Bank	1990	0	no data collected	Omitted 1990-91
Dissolved Oxygen 7.75 mg/L min	Main Stem: GVRD 15 Sapperton Channel	May 22-Sep 13	5	8.8 - 11.2 mg/L	Objective met
	GVRD 14 nr. Brunette R confl.	May 4-Sep 20	5	9.1 - 11.6 mg/L	Objective met
	GVRD 13 u/s Pattullo Bridge	May 22-Sep 13	5	9.0 - 11.1 mg/L	Objective met
	GVRD 12 d/s Pattullo Bridge	May 4-Sep 20	5	8.9 - 11.5 mg/L	Objective met
	Main Arm: GVRD 1 u/s Annacis	Feb 27-Nov 14	5	9.3 - 12.7 mg/L	Objective met

TABLE 25 continued

FRASER RIVER (KANAKA CREEK TO THE MOUTH) WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Dissolved Oxygen 7.75 mg/L min	Main Arm: GVRD 2 d/s Annacis	Feb 27-Nov 14	5	9.4 - 12.6 mg/L	Objective met
	GVRD 3 12 km d/s Annacis	Feb 27-Nov 14	5	9.3 - 12.3 mg/L	Objective met
	GVRD 4 d/s Lulu	Feb 27-Nov 14	5	8.2 - 12.6 mg/L	Objective met
	GVRD 5 d/s Steveston	Feb 27-Nov 14	4	8.6 - 12.2 mg/L	Objective met
	North Arm: GVRD 11 Queensborough Bridge	May 22-Sep 13	5	8.9 - 10.8 mg/L	Objective met
	GVRD 10 ~5 km d/s Belkin	May 4-Sep 20	5	8.7 - 11.5 mg/L	Objective met
	GVRD 9 Mitchell Island	May 22-Sep 13	5	8.8 - 11.1 mg/L	Objective met
	GVRD 7 Oak Street Bridge	May 22-Sep 13	5	8.5 - 11.0 mg/L	Objective met
	GVRD 6 Sea Island-east	May 4-Sep 20	5	8.6 - 11.2 mg/L	Objective met
	GVRD 5 Sea Island-west	May 22-Sep 13	5	8.5 - 11.0 mg/L	Objective met
	Middle Arm: GVRD 8 at North Arm entrance	Jun 21-Sep 20	4	8.7 - 10.5 mg/L	Objective met
Diss. Oxygen 9.0 mg/L min	Sturgeon Bank Roberts Bank	1990	0	no data collected	Omitted 1990-91
pH 6.5 - 8.5	Main Arm: GVRD 1 u/s Annacis	Feb 27-Nov 14	6	6.9 - 8.1	Objective met
	GVRD 2 d/s Annacis	Feb 27-Nov 14	6	7.5 - 8.1	Objective met
	GVRD 3 12 km d/s Annacis	Feb 27-Nov 14	6	7.2 - 8.1	Objective met
	GVRD 4 d/s Lulu	Feb 27-Nov 14	6	7.4 - 8.1	Objective met

TABLE 25 continued

FRASER RIVER (KANAKA CREEK TO THE MOUTH) WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
pH 6.5 - 8.5	Main Arm: GVRD 5 d/s Steveston	Feb 27-Nov 14	6	7.3 - 8.1	Objective met
	Main Stem, North Arm, Middle Arm	1990	0	no data collected	to be chkd. March 1991
Total Cu <0.004 mg/L av 0.006 mg/L max at hardness > 35 or 20% increase	Main Arm: GVRD 1 u/s Annacis	Feb 27-Nov 14	6	<0.001 - 0.002mg/L (Dissolved Cu)	Control site
	GVRD 2 d/s Annacis	Feb 27-Nov 14	6	<0.001 - 0.002mg/L (Dissolved Cu)	Indefinite results
	GVRD 3 12 km d/s Annacis	Feb 27-Nov 14	6	<0.001 - 0.005mg/L (Dissolved Cu)	Indefinite results
	GVRD 4 d/s Lulu	Feb 27-Nov 14	6	<0.001 - 0.001mg/L (Dissolved Cu)	Indefinite results
	GVRD 5 d/s Steveston	Feb 24-Oct 25	5	<0.001 - 0.003mg/L (Dissolved Cu)	Indefinite results
	North Arm Middle Arm	1990	0	no data collected	to be chkd. March 1991
Total Pb <0.003 mg/L av 0.010 mg/L max	Main Arm: GVRD 1 u/s Annacis	Feb 27-Nov 14	6	all < 0.001 mg/L (Dissolved Pb)	Indefinite results
	GVRD 2 d/s Annacis	Feb 2&-Nov 14	6	all < 0.001 mg/L (Dissolved Pb)	Indefinite results
	GVRD 3 12 km d/s Annacis	Feb 27-Nov 14	6	all < 0.001 mg/L (Dissolved Pb)	Indefinite results
	GVRD 4 d/s Lulu	Feb 24-Dec 5	6	all < 0.001 mg/L (Dissolved Pb)	Indefinite results
	GVRD 5 d/s Steveston	Feb 24-Dec 5	6	all < 0.001 mg/L (Dissolved Pb)	Indefinite results
	North Arm Middle Arm	1990	0	no data collected	to be chkd. March 1991
Total-Zn <0.050 mg/L av 0.100 mg/L max	Main Arm: GVRD 1 u/s Annacis	Feb 27-Nov 14	6	all < 0.001 mg/L (Dissolved Zn)	Indefinite results
	GVRD 2 d/s Annacis	Feb 27-Nov 14	6	all < 0.001 mg/L (Dissolved Zn)	Indefinite results

TABLE 25 continued

FRASER RIVER (KANAKA CREEK TO THE MOUTH) WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Zn <0.050 mg/L av 0.100 mg/L max	Main Arm: GVRD 3 12 km d/s Annacis	Feb 27-Nov 14	6	all < 0.001 mg/L (Dissolved Zn)	Indefinite results
	GVRD 4 d/s Lulu	Feb 27-Nov 14	6	all < 0.001 mg/L (Dissolved Zn)	Indefinite results
	GVRD 5 d/s Steveston	Feb 27-Nov 14	5	all < 0.001 mg/L (Dissolved Zn)	Indefinite results
	North Arm Middle Arm	1990	0	no data collected	to be chkd. March 1991
Chlorophenols (tri + tetra + penta) in water 0.0002mg/L max	Main Stem Main Arm North Arm	1990	0	no data collected	to be chkd. March 1991
	Middle Arm	1990	0	no data collected	Omitted 1990-91
Chlorophenols (tri + tetra + penta) in sediments 0.01 ug/g max (dry weight)	Main Stem E206965 Barnston Island	June	3	all < 0.005 ug/g for each homologue	Objective met
	Main Arm E206970 Ewen Slough	June	3	all < 0.005 ug/g for each homologue	Objective met
	North Arm E206967 d/s Belkin	June	3	all < 0.005 ug/g for each homologue	Objective met
	Middle Arm Sturgeon Bank Roberts Bank	1990	0	no data collected	Omitted 1990
Chlorophenols (tri + tetra + penta) in fish 0.10 ug/g max (wet weight)	Main Stem Main Arm North Arm	1990	0	no data collected	Omitted 1990-91

TABLE 25 continued

FRASER RIVER (KANAKA CREEK TO THE MOUTH) WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
PCBs in sediments 0.03 ug/g max (dry weight)	Main Stem E206965 Barnston Island	June	3	all < 0.010 ug/g	Objective met
	Main Arm E206970 Ewen Slough	June	3	all < 0.010 ug/g	Objective met
	North Arm E206967 d/s Belkin	June	3	all < 0.010 ug/g	Objective met
	Middle Arm	1990	0	no data collected	Omitted 1990
PCBs in fish 0.50 ug/g max (wet weight)	Main Arm: d/s Annacis	Aug 21	1	13-year sturgeon: 0.024 ug/g	Objective met
		Aug 21	1	24-year sturgeon: 0.575 ug/g	Objective not met
	Main Stem, North Arm, Middle Arm	1990	0	no data collected	Omitted 1990-91

TABLE 26

BOUNDARY BAY WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <200/100 mL geometric mean (gm) <400/100 mL 90th perc. (np) April-October	Boundary Bay: GVRD 27 Balsam Street White Rock	Jun 15,22,29, Jul 13,20	5	70 - 800/100 mL gm = 228/100 mL np = 650/100 mL	Objectives not met
		Aug 24,31, Sep 14,21,28	5	<20 - 300/100 mL gm = 34/100 mL np = 120/100 mL	Objectives met
	MOH 4 Vidal Street White Rock	June 5,11,18, 25, July 3	5	15 - 365/100 mL gm = 76/100 mL np = 240/100 mL	Objectives met
		July 3,9,16, 21,30	5	10 - 115/100 mL gm = 41/100 mL np = 105/100 mL	Objectives met
		Aug 7,13,22, 27, Sep 4	5	<5 - 40/100 mL gm = 16/100 mL np = 40/100 mL	Objectives met
	GVRD 29 Oxford Street White Rock	May 18,Jun 1, 8,15,22	5	40 - 170/100 mL gm = 104/100 mL np = 170/100 mL	Objectives met
		Aug 24,31, Sep 14,21,28	5	<20 - 300/100 mL gm = 57/100 mL np = 180/100 mL	Objectives met
	MOH 5 High Street White Rock	June 5,11,18, 25, July 3	5	10 - 35/100 mL gm = 20/100 mL np = 32/100 mL	Objectives met
		July 9,16,21, 30, Aug 7	5	<5 - 550/100 mL gm = 49/100 mL np = 280/100 mL	Objectives met
		Aug 7,13,22, 27, Sep 4	5	50 - 1200/100 mL gm = 219/100 mL np = 900/100 mL	Objectives not met
	GVRD 30 High Street White Rock	May 18,Jun 1, 8,15,22	5	<20 - 230/100 mL gm = 60/100 mL np = 210/100 mL	Objectives met
		Aug 3,17,24, 31, Sep 14	5	<20 - 220/100 mL gm = 62/100 mL np = 180/100 mL	Objectives met

TABLE 26 continued

BOUNDARY BAY WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <200/100 mL geometric mean (gm) <400/100 mL 90th perc. (np) April-October	Boundary Bay: MOH 8 Centennial Beach concession	Jun 25,Jul 4, 10,17,22	5	<5 - 1100/100 mL gm = 28/100 mL np = 400/100 mL	Objectives met
		Aug 8,14,22, 27, Sep 6	5	<5 - 190/100 mL gm = 36/100 mL np = 140/100 mL	Objectives met
	MOH 9 Centennial Beach 3rd Avenue	June 5,11,18, 25, July 4	5	<5 - 5/100 mL gm < 5/100 mL np = 5/100 mL	Objectives met
		July 10,17, 22,31, Aug 7	5	<5 - 500/100 mL gm = 41/100 mL np = 220/100 mL	Objectives met
		Aug 7,14,20, 27, Sep 6	5	<5 - 100/100 mL gm = 13/100 mL np = 45/100 mL	Objectives met
	MOH 10 Centennial Beach 1st Avenue	June 5,11,18, 25, July 4	5	<5 - 60/100 mL gm = 15/100 mL np = 45/100 mL	Objectives met
		Jul 10,17,22, 31, Aug 7	5	<5 - 180/100 mL gm = 30/100 mL np = 90/100 mL	Objectives met
		Aug 7,14,20, 27, Sep 6	5	<5 - 100/100 mL gm = 18/100 mL np = 50/100 mL	Objectives met
	Little Campbell R.: 0300066 near source	Sep 25,Oct 3, 10,15,22	5	9 - 251/100 mL gm = 63/100 mL np = 220/100 mL	Objectives met
	0300065 near mouth	Sep 25,Oct 3, 10,15,22	5	26 - 530/100 mL gm = 199/100 mL np = 510/100 mL	gm obj. met np not met
Coliforms <1000/100 mL geometric mean (gm) <4000/100 mL max April-October	Nicomekl River: 0300062 near source	Oct 4 Sep 25-Oct 22 Sep 25-Oct 22	1 5 4	18400/100 mL gm = 895/100 mL 340 - 485/100 mL	Max not met Av obj. met Max obj. met
	0300060 near mouth	Sep 25,Oct 3, 10,15,22	5	71 - 1200/100 mL gm = 249/100 mL	Objectives met
	Murray Creek: E207031 near source	Oct 3,5 Sep 25-Oct 22 Sep 25-Oct 22	2 5 3	5000-10500/100/ mL gm = 926/100 mL 40 - 780/100 mL	Max not met Av obj. met Max obj. met

TABLE 26 continued

BOUNDARY BAY WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <1000/100 mL geometric mean (gm) <4000/100 mL max April-October	Murray Creek: 0300064 near mouth	Sep 25,Oct 3, 10,15,22	5	64 - 1000/100 mL gm = 226/100 mL	Objectives met
	Anderson Creek: E207028 near source	Oct 10,15,22	3	120 - 935/100 mL	Max obj. met
	0300063 near mouth	Sep 25,Oct 3, 10,15,22	5	78 - 555/100 mL gm = 179/100 mL	Objectives met
	Serpentine River: 0300059 near source	Sep 26,Oct 4, 11,16,23	5	7 - 43/100 mL gm = 17/100 mL	Objectives met
	0300057 near mouth	Sep 26,Oct 4, 11,16,23	5	53 - 700/100 mL gm = 244/100 mL	Objectives met
	Latimer Creek: E207720 near source	Oct 4 Sep 26-Oct 23 Sep 26-Oct 23	1 5 4	11100/100 mL gm = 1444/100 mL 92 - 1370/100 mL	Max not met Av not met Max obj. met
	E207716 near mouth	Oct 4 Sep 26-Oct 23 Sep 26-Oct 23	1 5 2	18800/100 mL gm = 1193/100 mL 320 - 2290/100 mL	Max not met Av not met Max obj. met
	Mahood Creek: E207717 near source	Oct 4 Sep 26-Oct 23 Sep 26-Oct 23	1 5 4	5000/100 mL gm = 364/100 mL 108 - 315/100 mL	Max not met Av obj. met Max obj. met
	0300056 near mouth	Oct 4 Sep 26-Oct 23 Sep 26-Oct 23	1 5 4	4250/100 mL gm = 382/100 mL 131 - 665/100 mL	Max not met Av obj. met Max obj. met
	Hyland Creek: E207718 near source	Oct 4 Sep 26-Oct 23 Sep 26-Oct 23	1 5 4	30200/100 mL gm = 1258/100 mL 144 - 1390/100 mL	Max not met Av not met Max obj. met
	E207719 near mouth	Oct 4 Sep 26-Oct 23 Sep 26-Oct 23	1 5 4	31200/100 mL gm = 1477/100 mL 163 - 3900/100 mL	Max not met Av not met Max obj. met
Suspended Solids max increase: 10 mg/L or 10%	Boundary Bay	1989	0	no data collected near discharges	Objective not checked
	Little Campbell R.: 0300066 near source	Sep 25,Oct 3, 10,15,22	5	2 - 19 mg/L	Control site

TABLE 26 continued

BOUNDARY BAY WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Suspended Solids max increase: 10 mg/L or 10%	Little Campbell R.: 0300065 near mouth	Sep 25,Oct 3	2	21 - 23 mg/L inc.= 3 - 4 mg/L	Objective met
		Oct 10,15,22	3	17 - 30 mg/L inc.= 14 - 27 mg/L	Objective not met
	Nicomekl River: 0300062 near source	Sep 25,Oct 4, 10,15,22	5	4 - 188 mg/L	Control site
	0300060 near mouth	Oct 22	1	18 mg/L inc. = 9 mg/L	Objective met
		Sep 25, Oct 10,15	3	11 - 12 mg/L inc.= 11 - 12 mg/L	Objective not met
	Murray Creek: E207031 near source	Sep 25,Oct 3, 10,15,22	5	7 - 14 mg/L	Control site
	0300064 near mouth	Sep 25,Oct 3, 10,15,22	5	1 - 9 mg/L max inc. = 0 mg/L	Objective met
	Anderson Creek: E207028 near source	Oct 10,15,22	3	2 - 5 mg/L	Control site
	0300063 near mouth	Oct 10,15,22	3	1 - 9 mg/L max inc. = 0 mg/L	Objective met
	Serpentine River: 0300059 near source	Sep 26,Oct 4, 11,16,23	5	18 - 55 mg/L	Control site
	0300057 near mouth	Sep 26,Oct 4, 11,16,23	5	12 - 27 mg/L inc.= 0 - 7 mg/L	Objective met
	Latimer Creek: E207720 near source	Sep 26,Oct 4, 11,16,23	5	2 - 44 mg/L	Control site
	E207716 near mouth	Sep 26, Oct 11,16,23	4	4 - 8 mg/L inc.= 2 - 6 mg/L	Objective met
	Mahood Creek: E207717 near source	Sep 26,Oct 4, 11,16,23	5	1 - 212 mg/L	Control site
	0300056 near mouth	Sep 25,Oct 4, 11,16,23	5	3 - 113 mg/L inc.= 0 - 4 mg/L	Objective met

TABLE 26 continued

BOUNDARY BAY WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Suspended Solids max increase: 10 mg/L or 10%	Hyland Creek: E207718 near source	Sep 25-Dec 11	7	3 - 197 mg/L	Control site
	E207719 near mouth	Sep 26,Oct 4, 11,16, Nov 21,Dec 11	6	2 - 37 mg/L inc.= 0 - 9 mg/L	Objective met
		Oct 23	1	84 mg/L inc. = 80 mg/L	Objective not met
Turbidity max increase: 5 NTU or 10%	Boundary Bay	1989	0	no data collected near discharges	Objective not checked
	Little Campbell R.: 0300066 near source	Sep 25,Oct 3, 10,15,22	5	0.6 - 7.0 NTU	Control site
	0300065 near mouth	Sep 25,Oct 3, 10,15,22	5	2.5 - 7.8 NTU inc.= 0 - 3.5 NTU	Objective met
	Nicomekl River: 0300062 near source	Sep 25,Oct 4, 10,15,22	5	3.3 - 45.0 NTU	Control site
	0300060 near mouth	Sep 25	1	4.0 NTU inc. = 0.7 NTU	Objective met
		Oct 10,15,22	3	all 15.0 NTU inc = 9.5-10.8 NTU	Objective not met
	Murray Creek: E207031 near source	Sep 25,Oct 3, 10,15,22	5	3.0 - 7.5 NTU	Control site
	0300064 near mouth	Sep 25,Oct 3, 10,15,22	5	0.8 - 8.0 NTU inc.= 0 - 4.0 NTU	Objective met
	Anderson Creek: E207028 near source	Oct 10,15,22	3	1.1 - 4.0 NTU	Control site
	0300063 near mouth	Oct 10,15,22	3	0.7 - 3.2 NTU max inc. = 0 NTU	Objective met
	Serpentine River: 0300059 near source	Sep 26,Oct 4, 11,16,23	5	7.0 - 43.0 NTU	Control site

TABLE 26 continued

BOUNDARY BAY WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Turbidity max increase: 5 NTU or 10%	Serpentine River: 0300057 near mouth	Sep 26,Oct 4, 11,16,23	5	3.5 - 25.0 NTU inc.= 0 - 5 NTU	Objective met
	Latimer Creek: E207720 near source	Sep 26,Oct 4, 11,16,23	5	1.0 - 30.0 NTU	Control site
	E207716 near mouth	Oct 4,11,16, 23	4	6.0 - 35.0 NTU inc.= 3.0 - 5.0NTU	Objective met
		Sep 26	1	7.0 NTU inc. = 6.0 NTU	Objective not met
	Mahood Creek: E207717 near source	Sep 26,Oct 4, 11,16,23	5	1.0 - 70.0 NTU	Control site
	0300056 near mouth	Sep 26,Oct 4, 11,16,23	5	3.0 - 52.0 NTU inc.= 0 - 2.0 NTU	Objective met
	Hyland Creek: E207718 near source	Sep 26-Dec 11	7	1.5 - 55.0 NTU	Control site
	E207719 near mouth	Sep 26,Oct 4, 11,16, Nov 21,Dec 11	6	1.0 - 25.0 NTU inc.= 0 - 2.0 NTU	Objective met
		Oct 23	1	35.0 NTU inc. = 32.5 NTU	Objective not met
Substrate Sedimentation no increase in weight of particles <3 mm dia	Nicomekl River: 0300062 near source	Nov 22-Dec 20	3	av = 772 g <3 mm	Control site
	0300060 near mouth	1990	0	no data collected	Sampler lost Indef result
	Murray Creek: E207031 near source	Nov 22-Jan 17	3	av = 1146 g <3 mm	Control site
	0300064 near mouth	Nov 22-Dec 20	2	av = 1377 g <3 mm	Objective not met
	Anderson Creek: E207028 near source	Nov 22-Jan 17	1	1297 g <3 mm	Control site

TABLE 26 continued

BOUNDARY BAY WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Substrate Sedimentation no increase in weight of particles <3 mm dia	Anderson Creek: 0300063 near mouth	1990	0	no data collected	Sampler lost Indef result
	Serpentine River: Tynehead, near source	Nov 20-Dec 19	3	av = 1391 g <3 mm	Control site
	Tynehead u/s Latimer	Nov 20-Dec 19	2	av = 1082 g <3 mm	Objective met
	Latimer Creek: E207720 near source	Nov 21-Dec 20	2	av = 958 g <3 mm	Control site
	E207716 near mouth	Nov 21-Dec 20	3	av = 498 g <3 mm	Objective met
	Hyland Creek: E207718 near source	Nov 21-Dec 20	2	av = 1026 g <3 mm	Control site
	E207719 near mouth	Nov 21-Dec 20	1	851 g <3 mm	Objective met
	Little Campbell River Mahood Creek	1990	0	no data collected	Sampler lost Indef result
Ammonia-N <1.23 mg/L av 13.5 mg/L max at pH = 7.4 temp = 20 C	Little Campbell R.: 0300066 near source	Sep 25,Oct 3, 10,15,22	5	av = 0.010 mg/L max = 0.025 mg/L	Objectives met
	0300065 near mouth	Sep 25,Oct 3, 10,15,22	5	av = 0.020 mg/L max = 0.038 mg/L	Objectives met
	Nicomekl River: 0300062 near source	Sep 25,Oct 4, 10,15,22	5	av = 0.023 mg/L max = 0.072 mg/L	Objectives met
	0300060 near mouth	Sep 25,Oct 3, 10,15,22	5	av = 0.114 mg/L max = 0.149 mg/L	Objectives met
	Murray Creek: E207031 near source	Sep 25,Oct 3, 10,15,22	5	av = 1.327 mg/L max = 3.520 mg/L	Av not met Max obj. met
	0300064 near mouth	Sep 25,Oct 3, 10,15,22	5	av = 0.011 mg/L max = 0.025 mg/L	Objectives met

TABLE 26 continued

BOUNDARY BAY WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Ammonia-N <1.23 mg/L av 13.5 mg/L max at pH = 7.4 temp = 20 C	Anderson Creek: E207028 near source	Oct 10,15,22	3	0.008 - 0.013 mg/L	Max obj. met
	0300063 near mouth	Sep 25,Oct 3, 10,15,23	5	av < 0.005 mg/L max = 0.005 mg/L	Objectives met
	Serpentine River: 0300059 near source	Sep 26,Oct 4, 11,16,23	5	av = 0.229 mg/L max = 0.455 mg/L	Objectives met
	0300057 near mouth	Sep 26,Oct 4, 11,16,23	5	av = 0.493 mg/L max = 1.060 mg/L	Objectives met
	Latimer Creek: E207720 near source	Sep 26,Oct 4, 11,16,23	5	av = 0.010 mg/L max = 0.028 mg/L	Objectives met
	E207716 near mouth	Sep 26,Oct 4, 11,16,23	5	av = 0.085 mg/L max = 0.186 mg/L	Objectives met
	Mahood Creek: E207717 near source	Sep 26,Oct 4, 11,16,23	5	av = 0.008 mg/L max = 0.019 mg/L	Objectives met
	0300056 near mouth	Sep 26,Oct 4, 11,16,23	5	av = 0.006 mg/L max = 0.012 mg/L	Objectives met
	Hyland Creek: E207718 near source	Sep 26,Oct 4, 11,16,23	5	av = 0.007 mg/L max = 0.811 mg/L	Objectives met
	E207719 near mouth	Sep 26,Oct 4, 11,16,23	5	av = 0.056 mg/L max = 0.250 mg/L	Objectives met
Nitrite-N <0.02 mg/L av 0.06 mg/L max	Little Campbell R.: 0300066 near source	Sep 25,Oct 3, 10,15,22	5	av = 0.005 mg/L max = 0.007 mg/L	Objectives met
	0300065 near mouth	Sep 25,Oct 3, 10,15,22	5	av = 0.016 mg/L max = 0.023 mg/L	Objectives met
	Nicomekl River: 0300062 near source	Sep 25,Oct 4, 10,15,22	5	av = 0.022 mg/L max = 0.034 mg/L	Av not met Max obj. met
	0300060 near mouth	Sep 25,Oct 3, 10,15,22 Oct 10 Sep 25-Oct 22	5 1 4	av = 0.036 mg/L 0.061 mg/L 0.025 - 0.037 mg/L	Av not met Max not met Max obj. met

TABLE 26 continued

BOUNDARY BAY WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Nitrite-N <0.02 mg/L av 0.06 mg/L max	Murray Creek: E207031 near source	Sep 25,Oct 3, 10,15,22	5	av = 0.283 mg/L	Av not met
		Oct 22	1	0.032 mg/L	Max obj. met
		Sep 25-Oct 15	4	0.094 - 0.690 mg/L	Max not met
	0300064 near mouth	Sep 25,Oct 3, 10,15,22	5	av = 0.010 mg/L max = 0.022 mg/L	Objectives met
	Anderson Creek: E207028 near source	Oct 10,15,22	3	<0.005 - 0.036mg/L	Max obj. met
	0300063 near mouth	Sep 25,Oct 3, 10,15,22	5	av = 0.007 mg/L max = 0.013 mg/L	Objectives met
	Serpentine River: 0300059 near source	Sep 26,Oct 4, 11,16,23	5	av = 0.044 mg/L	Av not met
		Sep 26	1	0.094 mg/L	Max not met
		Oct 4-Oct 23	4	0.019 - 0.041 mg/L	Max obj. met
	0300057 near mouth	Sep 26,Oct 4, 11,16,23	5	av = 0.042 mg/L	Av not met
		Oct 11	1	0.083 mg/L	Max not met
		Sep 26-Oct 23	4	0.024 - 0.038 mg/L	Max obj. met
	Latimer Creek: E207720 near source	Sep 26,Oct 4, 11,16,23	5	av = 0.010 mg/L max = 0.028 mg/L	Objectives met
	E207716 near mouth	Sep 26,Oct 4, 11,16,23	5	av = 0.023 mg/L max = 0.033 mg/L	Av not met Max obj. met
	Mahood Creek: E207717 near source	Sep 26,Oct 4, 11,16,23	5	av = 0.010 mg/L max = 0.017 mg/L	Objectives met
	0300056 near mouth	Sep 26,Oct 4, 11,16 23	5	av = 0.011 mg/L max = 0.017 mg/L	Objectives met
	Hyland Creek: E207718 near source	Sep 26,Oct 4, 11,16,23	5	av = 0.010 mg/L max = 0.014 mg/L	Objectives met
	E207719 near mouth	Sep 26,Oct 4, 11,16,23	5	av = 0.009 mg/L max = 0.017 mg/L	Objectives met
Chlorophyll-a 50 mg/m2 av	Little Campbell River	1990	0	no data collected	Objective not checked

TABLE 26 continued

BOUNDARY BAY WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Chlorophyll-a 100 mg/m2 av	Nicomekl River: 0300062 near source	Oct 10	3	22.0 - 38.9 mg/m2 av = 27.8 mg/m2	Objective met
	Murray Creek: E207031 near source	Oct 3	3	24.0 - 25.6 mg/m2 av = 24.8 mg/m2	Objective met
	Latimer Creek: E207720 near source	Oct 11	3	9.3 - 36.5 mg/m2 av = 20.3 mg/m2	Objective met
	Mahood Creek: E207717 near source	Oct 11	3	9.2 - 19.1 mg/m2 av = 15.3 mg/m2	Objective met
	Anderson Creek Sepentine River Hyland Creek	1990	0	no data collected	Objective not checked
Dissolved Oxygen 6.5 mg/L min 9.0 mg/L min (long-term)	Boundary Bay: 0300070 East	Sep 26	8	0.3 - 7 m: 8.1 - 12.0 mg/L	Objective met
		Oct 10	2	0.2 - 1 m: 6.6 - 6.7 mg/L	Objective met
			6	2 - 7 m: 5.7 - 6.2 mg/L	Objective not met
		Oct 15	4	0.2 - 4 m: all 8.3 mg/L	Objective met
		Oct 22	6	0.2 - 5 m: 8.2 - 9.2 mg/L	Objective met
Dissolved Oxygen 6.0 mg/L min Jun - Oct 11.0 mg/L min Nov - May	Little Campbell River 0300066 near source	Sep 25,Oct 3, 10,15,22	5	1.6 - 4.6 mg/L	Objective not met
	0300065 near mouth	Sep 25,Oct 3, 10,15,22	5	8.6 - 9.8 mg/L	Objective met
	Nicomekl River: 0300062 near source	Sep 25,Oct 4, 10,15,22	5	8.0 - 10.3 mg/L	Objective met
	0300060 near mouth	Sep 25,Oct 3, 10,15,22	5	7.7 - 10.8 mg/L	Objective met

TABLE 26 continued

BOUNDARY BAY WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Diss. Oxygen 6.0 mg/L min Jun - Oct 11.0 mg/L min Nov - May	Serpentine River: 0300059 near source	Sep 26-Oct 23 Oct 16	4 1	7.6 - 9.2 mg/L 5.8 mg/L	Obj. met Obj. not met
	0300057 near mouth	Sep 26,Oct 4, 11,16,23	5	7.8 - 9.6 mg/L	Objective met
Dissolved Oxygen 8.0 mg/L min Jun - Oct 11.0 mg/L min Nov - May	Murray Creek E207031 near source	Oct 3,10,15, 22	4	9.3 - 10.7 mg/L	Objective met
	0300064 near mouth	Sep 25,Oct 3, 10,15,22	5	10.5 - 13.2 mg/L	Objective met
	Anderson Creek: E207028 near source	Oct 10,15,22	3	9.0 - 9.7 mg/L	Objective met
	0300063 near mouth	Sep 25,Oct 3, 10,15,22	5	9.6 - 11.6 mg/L	Objective met
	Latimer Creek: E207720 near source	Oct 4-Oct 23 Sep 26	4 1	10.6 - 10.8 mg/L 5.1 mg/L	Obj. met Obj. not met
	E207716 near mouth	Sep 26,Oct 4, 11,16,23	5	8.6 - 10.8 mg/L	Objective met
	Mahood Creek: E207717 near source	Sep 26,Oct 4, 11,16,23	5	9.1 - 11.3 mg/L	Objective met
	0300056 near mouth	Sep 26,Oct 4, 11,16,23	5	9.7 - 13.2 mg/L	Objective met
	Hyland Creek: E207718 near source	Sep 26,Oct 4, 11,16,23	5	8.4 - 10.7 mg/L	Objective met
	E207719 near mouth	Sep 26,Oct 4, 11,16,23	5	8.6 - 10.6 mg/L	Objective met
pH 6.5 - 8.5	Little Campbell River 0300066 near source	Sep 25-Oct 22	5	6.6 - 7.5	Objective met
	0300065 near mouth	Sep 25-Oct 22	5	7.4 - 7.8	Objective met

TABLE 26 continued

BOUNDARY BAY WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
pH 6.5 - 8.5 or 0.2 max increase	Nicomekl River 0300062 near source	Sep 25-Oct 22	5	7.1 - 7.8	Objective met
	0300060 near mouth	Sep 25-Oct 22	5	7.1 - 7.9	Objective met
	Murray Creek: E207031 near source	Sep 25-Oct 22	5	7.2 - 7.6	Objective met
	0300064 near mouth	Sep 25-Oct 22	5	7.4 - 7.7	Objective met
	Anderson Creek: E207028 near source	Oct 10-Oct 22	3	7.2 - 7.5	Objective met
	0300063 near mouth	Sep 25-Oct 22	5	7.6 - 7.9	Objective met
	Serpentine River: 0300059 near source	Sep 26-Oct 23	5	6.5 - 7.1	Objective met
	0300057 near mouth	Sep 26-Oct 23	5	6.7 - 7.7	Objective met
	Latimer Creek: E207720 near source	Oct 4-Oct 23	4	7.0 - 7.4	Obj. met
		Sep 26	1	6.3	Obj. not met
	E207716 near mouth	Sep 26-Oct 23	5	6.7 - 7.6	Objective met
	Mahood Creek: E207717 near source	Sep 26-Oct 23	5	7.0 - 7.7	Objective met
	0300056 near mouth	Sep 26-Oct 23	5	6.9 - 7.9	Objective met
	Hyland Creek: E207718 near source	Sep 26-Oct 23	5	6.8 - 7.6	Objective met
	E207719 near mouth	Sep 26-Oct 16	4	6.5 - 7.4	Obj. met
		Oct 23	1	5.4	Obj. not met

TABLE 26 continued

BOUNDARY BAY WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Lead <0.005 mg/L av 0.010 mg/L max	Nicomekl River: 0300062 near source	Sep 25,Oct 4, 10,15,22	5	av = 0.001 mg/L max = 0.002 mg/L	Objectives met
	0300060 near mouth	Sep 25,Oct 3, 10,15,22	5	av = 0.001 mg/L max = 0.002 mg/L	Objectives met
PCBs in water 0.001 ug/L max	Serpentine River 0300057 near mouth	Sep 26	1	<0.4 ug/L	Indefinite result
	Latimer Creek E207716 near mouth	Sep 26	1	<0.4 ug/L	Indefinite result
	Mahood Creek 0300056 near mouth	Sep 26	1	<0.4 ug/L	Indefinite result
	Hyland Creek E207718 near source	Sep 26	1	<0.4 ug/L	Indefinite result
PCBs in sediments <0.03 ug/g av	Boundary Bay: E207870 Semiahmoo Bay	June	3	all <0.01 ug/g	Objective met
	Serpentine River 0300057 near mouth	Sep 26	3	all <0.02 ug/g	Objective met
	Latimer Creek E207716 near mouth	Sep 26	3	all <0.02 ug/g	Objective met
	Mahood Creek 0300056 near mouth	Sep 26	3	all <0.02 ug/g	Objective met
	Hyland Creek E207718 near source	Sep 26	3	all <0.02 ug/g	Objective met
PCBs in fish <0.1 - 0.5ug/g wet weight	Serpentine River Latimer Creek Mahood Creek Hyland Creek	1990	0	no data collected	Objective not checked

TABLE 27

BURRARD INLET WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <200/100 mL geometric mean (gm) May - Oct	Port Moody Arm: GVRD 1 Barnett Pk.,E of pier	Jun 15-Jul 20	5	<20 - 300/100 mL gm = 56/100 mL	Objective met
		Aug 24-Sep 21	5	<20 - 110/100 mL gm = 28/100 mL	Objective met
	GVRD 2 Barnett Pk.,Sandy Bch	Jun 1-Jun 29	5	<20 - 230/100 mL gm = 63/100 mL	Objective met
		Aug 3 - Sep 4	5	<20 - 40/100 mL gm = 23/100 mL	Objective met
	Indian Arm: GVRD 35 Deep Cove Beach, N	Jun 12-Jul 12	22	40 - 5000/100 mL gm = 381/100 mL	Objective not met
		Jul 13-Aug 13	23	<20 - 3000/100 mL gm = 92/100 mL	Objective met
	GVRD 39 Deep Cove Beach, S	Jun 18-Jul 18	22	<20 - 16000/100mL gm = 620/100 mL	Objective not met
		Jul 19-Aug 20	16	<20 - 800/100 mL gm = 60/100 mL	Objective met
	2nd Narrows-Roche Pt. GVRD 36 Cates Park Beach	Jun 25-Jul 23	6	<20 - 130/100 mL gm = 31/100 mL	Objective met
		Aug 29-Sep 25	7	<20 - 300/100 mL gm = 29/100 mL	Objective met
	GVRD 29 Cates Park, boat ramp	Jun 22-Jul 23	7	20 - 300/100 mL gm = 66/100 mL	Objective met
		Aug 10-Sep 12	8	<20 - 170/100 mL gm = 26/100 mL	Objective met
	1st-2nd Narrows: GVRD 5 1 km W Brockton Pt.	May 16-Jun 19	7	40 - 800/100 mL gm = 114/100 mL	Objective met
		Aug 20-Sep 19	9	20 - 1100/100 mL gm = 54/100 mL	Objective met
	GVRD 1 1.5 km W Brockton Pt.	Jun 11-Jul 11	8	40 - 2400/100 mL gm = 354/100 mL	Objective not met
		Aug 1-Aug 30	10	80 - >16000/100mL gm > 998/100 mL	Objective not met

TABLE 27 continued

BURRARD INLET WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms <200/100 mL geometric mean (gm) May - Oct	Outer Burrard: GVRD 14 Ambleside Beach	Jun 26-Jul 27	6	<20 - 170/100 mL gm = 40/100 mL	Objective met
		Aug 10-Sep 12	6	<20 - 170/100 mL gm = 36/100 mL	Objective met
	GVRD 101 3rd Beach	Jun 7 - Jul 9	10	20 - 170/100 mL gm = 46/100 mL	Objective met
		Aug 10-Sep 10	10	<20 - 80/100 mL gm = 26/100 mL	Objective met
	GVRD 200 2nd Beach	Jul 9 - Aug 8	9	<20 - 500/100 mL gm = 84/100 mL	Objective met
		Aug 29-Sep 25	10	<20 - 170/100 mL gm = 36/100 mL	Objective met
	GVRD 304 English Bay Beach	Jun 27-Aug 1	10	<20 - 300/100 mL gm = 56/100 mL	Objective met
		Sep 19-Oct 18	7	<20 - 5000/100 mL gm = 94/100 mL	Objective met
	GVRD 703 Locarno Beach	Jun 11-Jul 11	10	20 - 130/100 mL gm = 49/100 mL	Objective met
		Sep 11-Oct 12	7	<20 - 300/100 mL gm = 39/100 mL	Objective met
	False Creek: GVRD 16 at the mouth	Jun 5 - Jul 3	5	20 - 300/100 mL gm = 90/100 mL	Objective met
		Jul 24-Aug 20	5	20 - 130/100 mL gm = 38/100 mL	Objective met
Enterococci <20/100 mL geometric mean (gm) May - Oct	Indian Arm: GVRD 35 Deep Cove Beach, N	May 31-Jun 29	18	1 - 290/100 mL gm = 31/100 mL	Objective not met
		Jul 20-Aug 20	21	<1 - 420/100 mL gm = 20/100 mL	Objective met
	2nd Narrows-Roche Pt. GVRD 36 Cates Park Beach	Jun 22-Jul 23	7	5 - 220/100 mL gm = 30/100 mL	Objective not met
		Aug 31-Oct 3	7	2 - 200/100 mL gm = 11/100 mL	Objective met

TABLE 27 continued

BURRARD INLET WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Enterococci <20/100 mL geometric mean (gm) May - Oct	Outer Burrard: GVRD 14 Ambleside Beach	Jun 6 - Jul 4	6	6 - 28/100 mL gm = 18/100 mL	Objective met
		Sep 4 - Oct 3	6	5 - 31/100 mL gm = 17/100 mL	Objective met
	GVRD 101 3rd Beach	May 28-Jun 27	10	2 - 110/100 mL gm = 9/100 mL	Objective met
		Jul 9 - Aug 8	9	<1 - 49/100 mL gm = 5/100 mL	Objective met
	GVRD 200 2nd Beach	Jun 21-Jul 23	10	1 - 140/100 mL gm = 19/100 mL	Objective met
		Aug 8 - Sep 5	10	<1 - 68/100 mL gm = 5/100 mL	Objective met
	GVRD 304 English Bay Beach	Jun 11-Jul 11	10	1 - 46/100 mL gm = 6/100 mL	Objective met
		Aug 8 - Sep 5	10	<1 - 73/100 mL gm = 7/100 mL	Objective met
	GVRD 703 Locarno Beach	Jun 19-Jul 17	8	3 - 77/100 mL gm = 11/100 mL	Objective met
		Sep 24-Oct 24	7	<1 - 43/100 mL gm = 10/100 mL	Objective met
	Port Moody Arm 1st-2nd Narrows False Creek	1990	0	no data collected	Omitted 1990
Suspended Solids 10 mg/L max increase	Indian Arm 0300080 3 km E of Deep Cove	Aug 28 Sep 5 Sep 18	2 2 2	8,9 mg/L at 0,9 m 12,8mg/L at 0,15 m 4,8 mg/L at 0,15 m	Control Site
	Port Moody Arm: E207698 50 m E Pacific Coast	Aug 28-Sep 19	8	4 - 14 mg/L max inc. = 7 mg/L	Objective met
	E207823 100m off Ioco disch.	Aug 28-Sep 19 Aug 28	7 1	max inc. = 10 mg/L (9m)inc. = 33 mg/L	Obj. met Obj. not met
	2nd Narrows-Roche Pt: E207821 50m off Chevron disch	Aug 28-Sep 18	8	4 - 13 mg/L max inc. = 5 mg/L	Objective met

TABLE 27 continued

BURRARD INLET WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Suspended Solids 10 mg/L max increase	2nd Narrows-Roche Pt: E207820 100m S Can-Occ. disch	Aug 28-Sep 18	8	4 - 13 mg/L max inc. = 7 mg/L	Objective met
	1st-2nd Narrows: E207819 mid-harbour(L-K bank)	Aug 28-Sep 18	8	<1 - 11 mg/L max inc. = 7 mg/L	Objective met
	E207818 off Clark Drive CSO	Aug 28-Sep 18 Sep 13	7 1	max inc. = 6 mg/L 22 mg/L at 0 m	Obj. met Indef result
	E207816 100-500m E Vn Wharves	Aug 28-Sep 18	8	4 - 14 mg/L max inc. = 8 mg/L	Objective met
	E207813 100m off Coal Hbr CSO	Aug 28-Sep 18	8	3 - 12 mg/L max inc. = 8 mg/L	Objective met
	Outer Burrard: E207812 off Locarno Park CSO	Aug 27-Sep 17 Sep 11	5 1	4 - 6 mg/L 15 mg/L at 8 m	Obj. met Indef result
	0300076 English Bay	Aug 27-Sep 17 Sep 17	5 1	4 - 10 mg/L 11 mg/L at 13 m	Obj. met Indef result
	False Creek: E207814 100m E Science World	Aug 27-Sep 17	6	4 - 8 mg/L	Objective met
	E207815 at mid-point	Aug 27-Sep 17	6	5 - 10 mg/L	Objective met
Turbidity 5 NTU max increase	Indian Arm 0300080 3 km E of Deep Cove	Aug 28 Sep 5 Sep 18	2 2 2	0.6-0.5 NTU,0-9 m 0.9 NTU at 0-15 m 0.6 NTU at 0-15 m	Control Site
	Port Moody Arm: E207698 50 m E Pacific Coast	Aug 28-Sep 19	8	0.5 - 0.9 NTU	Objective met
	E207823 100m off Ioco disch.	Aug 28-Sep 19 Aug 28	7 1	0.5 - 0.8 NTU (9m)inc.=14.5 NTU	Obj. met Obj. not met
	2nd Narrows-Roche Pt: E207821 50m off Chevron disch	Aug 28-Sep 18	8	0.3 - 0.8 NTU	Objective met
	E207820 100m S Can-Occ. disch	Aug 28-Sep 18	8	0.4 - 1.0 NTU	Objective met

TABLE 27 continued

BURRARD INLET WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Turbidity 5 NTU max increase	1st-2nd Narrows: E207819 mid-harbour(L-K bank)	Aug 28-Sep 18	8	0.2 - 1.0 NTU	Objective met
	E207818 off Clark Drive CSO	Aug 28-Sep 18	8	0.3 - 1.7 NTU	Objective met
	E207816 100-500m E Vn Wharves	Aug 28-Sep 18	8	0.4 - 1.4 NTU	Objective met
	E207813 100m off Coal Hbr CSO	Aug 28-Sep 18	8	0.4 - 1.2 NTU	Objective met
	Outer Burrard: E207812 off Locarno Park CSO	Aug 27-Sep 17	6	0.3 - 2.0 NTU	Objective met
	0300076 English Bay	Aug 27-Sep 17	6	0.2 - 1.2 NTU	Objective met
	False Creek: E207814 100m E Science World	Aug 27-Sep 17	6	0.2 2.0 NTU	Objective met
	E207815 at mid-point	Aug 27-Sep 17	6	0.6 - 1.5 NTU	Objective met
Cl2-Produced Oxidants 3 ug/L av	2nd Narrows-Roche Pt.	1990	0	no data collected	Omitted 1990
Ammonia-N <1.0 mg/L av 2.5 mg/L max	Port Moody Arm: E207698 50 m E Pacific Coast	Aug 28-Sep 19	8	0.006 - 0.134 mg/L (0 - 10 m)	Max obj. met Av not chkd.
	E207823 100m off Ioco disch.	Aug 28-Sep 19	8	0.006 - 0.167 mg/L (0 - 10 m)	Max obj. met
	2nd Narrows-Roche Pt: E207821 50m off Chevron disch	Aug 28-Sep 18	8	0.006 - 0.024 mg/L (0 - 9 m)	Max obj. met Av not chkd.
	E207820 100m S Can-Occ. disch	Aug 28-Sep 18	8	0.006 - 0.030 mg/L (0 - 13 m)	Max obj. met
	1st-2nd Narrows: E207819 mid-harbour(L-K bank)	Aug 28-Sep 18	8	0.006 - 0.022 mg/L (0 - 15 m)	Max obj. met Av not chkd.
	E207818 off Clark Drive CSO	Aug 28-Sep 18	8	0.009 - 0.270 mg/L (0 - 15 m)	Max obj. met

TABLE 27 continued

BURRARD INLET WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Ammonia-N <1.0 mg/L av 2.5 mg/L max	2nd Narrows-Roche Pt: E207816 100-500m E Vn Wharves	Aug 28-Sep 18	8	0.009 - 0.087 mg/L (0 - 11 m)	Max obj. met
	E207813 100m off Coal Hbr CSO	Aug 28-Sep 18	8	0.032 - 0.100 mg/L (0 - 11 m)	Max obj. met
	False Creek: E207814 100m E Science World	Aug 27-Sep 17	6	0.009 - 0.104 mg/L (0 - 6 m)	Max obj. met Av not chkd.
	E207815 at mid-point	Aug 27-Sep 17	6	<0.005 - 0.070mg/L (0 - 5 m)	Max obj. met
Dissolved Oxygen 6.5 mg/L min	Indian Arm 0300080 3 km E of Deep Cove	Aug 21-Sep 18	10	6.8 - 11.2 mg/L (0 - 15 m)	Objective met
	Outer Burrard: E207812 off Locarno Park CSO	Aug 20-Sep 17	10	7.3 - 10.2 mg/L (0 - 8 m)	Objective met
	0300076 English Bay	Aug 20-Sep 17	10	7.8 - 11.6 mg/L (0 - 15 m)	Objective met
	False Creek: E207814 100m E Science World	Aug 20-Sep 17	11	6.8 - 11.2 mg/L (0 - 6 m)	Objective met
		Sep 17	1	5.7 mg/L (2.25 m)	Obj. not met
	E207815 at mid-point	Aug 20-Sep 17	11	7.2 - 10.8 mg/L (0 - 5 m)	Objective met
		Sep 17	1	5.7 mg/L (3.35 m)	Obj. not met
Dissolved Oxygen 6.5 mg/L min (long-term)	Port Moody Arm: E207698 50 m E Pacific Coast	Aug 21-Sep 19	12	6.5 - 11.0 mg/L (0 - 10 m)	Objective met
	E207823 100m off Ioco disch.	Aug 21-Sep 19	11	7.3 - 10.8 mg/L (0 - 9 m)	Objective met
		Sep 19	1	6.0 mg/L (8 m)	Obj. not met
	2nd Narrows-Roche Pt: E207821 50m off Chevron disch	Aug 21-Sep 18	12	7.0 - 10.7 mg/L (0 - 9 m)	Objective met
	E207820 100m S Can-Occ. disch	Aug 21-Sep 18	12	6.6 - 8.6 mg/L (0 - 13 m)	Objective met

TABLE 27 continued

BURRARD INLET WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Dissolved Oxygen 6.5 mg/L min (long-term)	1st-2nd Narrows: E207819 mid-harbour(L-K bank)	Aug 21-Sep 18	12	6.6 - 8.6 mg/L (0 - 15 m)	Objective met
	E207818 off Clark Drive CSO	Aug 21-Sep 18	12	7.0 - 9.8 mg/L (0 - 15 m)	Objective met
	E207816 100-500m E Vn Wharves	Aug 21-Sep 18	12	6.8 - 9.5 mg/L (0 - 13 m)	Objective met
	E207813 100m off Coal Hbr CSO	Aug 21-Sep 18	12	6.6 - 9.6 mg/L (0 - 6 m)	Objective met
WAD-CN 0.001 mg/L max	Port Moody Arm: E207698 50 m E Pacific Coast	Aug 27-Sep 19	9	all <0.005 mg/L (0 - 10 m)	Objective met
		Sep 19	1	0.005 mg/L (0 m)	Obj. not met
	E207823 100m off Ioco disch.	Aug 27-Sep 19	10	all <0.005 mg/L (0 - 10 m)	Objective met
H2S 0.002 mg/L max	Port Moody Arm 1st-2nd Narrows	1990	0	no data collected	Objective not checked
pH 6.5 - 8.5	2nd Narrows-Roche Pt: E207821 50m off Chevron disch	Aug 28-Sep 18	8	7.7 - 8.0 (0 - 9 m)	Objective met
	E207820 100m S Can-Occ. disch	Aug 28-Sep 18	8	7.8 - 7.9 (0 - 13 m)	Objective met
Total As 0.010 mg/L max	2nd Narrows-Roche Pt. 1st-2nd Narrows	1990	0	no data collected	Objective not checked
Total As <20 ug/g av in sediment (long-term)	Port Moody Arm: E207823 100m off Ioco disch.	Aug 16	1	<25 ug/g	Indefinite result
	1st-2nd Narrows: E207813 100m off Coal Hbr CSO	Aug 14	3	all <25 ug/g av <25 ug/g	Indefinite result
	False Creek: E207814 100m E Science World	Aug 13	1	<25 ug/g	Indefinite result
Total As <20 ug/g av in sediment	2nd Narrows-Roche Pt: E207821 50m off Chevron disch	Aug 16	3	all <25 ug/g av <25 ug/g	Indefinite result

TABLE 27 continued

BURRARD INLET WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total As <20 ug/g av in sediment	Outer Burrard: E207812 off Locarno Park CSO	Aug 13	1	<25 ug/g	Indefinite result
Total Ba 0.5 mg/L max	2nd Narrows-Roche Pt: E207821 50m off Chevron disch	Sep 5-Sep 13	4	all <0.5 mg/L (0 - 7 m)	Objective met
	E207820 100m S Can-Occ. disch	Sep 5-Sep 13	4	all <0.5 mg/L (0 - 10 m)	Objective met
Total Cd <0.009 mg/L av 0.043 mg/L max	Indian Arm 0300080 3 km E of Deep Cove	Aug 28-Sep 18	6	all <0.0005 mg/L (0 - 15 m)	Max obj. met Av not chkd.
	Port Moody Arm: E207698 50 m E Pacific Coast	Aug 28-Sep 19	8	all <0.0005 mg/L (0 - 10 m)	Max obj. met Av not chkd.
	E207823 100m off Ioco disch.	Aug 28-Sep 19	8	all <0.0005 mg/L (0 - 10 m)	Max obj. met
	2nd Narrows-Roche Pt: E207821 50m off Chevron disch	Aug 28-Sep 18	8	all <0.0005 mg/L (0 - 9 m)	Max obj. met Av not chkd.
	E207820 100m S Can-Occ. disch	Aug 28-Sep 18	8	all <0.0005 mg/L (0 - 13 m)	Max obj. met
	1st-2nd Narrows: E207819 mid-harbour(L-K bank)	Aug 28-Sep 18	8	all <0.0005 mg/L (0 - 15 m)	Max obj. met Av not chkd.
	E207818 off Clark Drive CSO	Aug 28-Sep 18	8	all <0.0005 mg/L (0 - 15 m)	Max obj. met
	E207816 100-500m E Vn Wharves	Aug 28-Sep 18	8	all <0.0005 mg/L (0 - 11 m)	Max obj. met
	E207813 100m off Coal Hbr CSO	Aug 28-Sep 18	8	all <0.0005 mg/L (0 - 11 m)	Max obj. met
	False Creek: E207814 100m E Science World	Aug 27-Sep 17	6	all <0.0005 mg/L (0 - 6 m)	Max obj. met Av not chkd.
	E207815 at mid-point	Aug 27-Sep 17	6	all <0.0005 mg/L (0 - 5 m)	Max obj. met

TABLE 27 continued

BURRARD INLET WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Cd <1.0 ug/g av in sediment (long-term)	Port Moody Arm: E207823 100m off Ioco disch.	Aug 16	1	<1.0 ug/g	Objective met
	1st-2nd Narrows: E207813 100m off Coal Hbr CSO	Aug 14	3	all <1.0 ug/g av <1.0 ug/g	Objective met
	False Creek: E207814 100m E Science World	Aug 13	1	<1.0 ug/g	Objective met
Total Cd <1.0 ug/g av in sediment	2nd Narrows-Roche Pt: E207821 50m off Chevron disch	Aug 16	3	all 1.0 ug/g av = 1.0 ug/g	Objective met
	Outer Burrard: E207812 off Locarno Park CSO	Aug 13	1	<1.0 ug/g	Objective met
Total Cr 0.050 mg/L max	Port Moody Arm 2nd Narrows-Roche Pt. False Creek	1990	0	no data collected	Objective not checked
Total Cr <60 ug/g av in sediment	Port Moody Arm: E207823 100m off Ioco disch.	Aug 16	1	40 ug/g	Objective met
	2nd Narrows-Roche Pt: E207821 50m off Chevron disch	Aug 16	3	24 - 27 ug/g av = 26 ug/g	Objective met
	1st-2nd Narrows: E207813 100m off Coal Hbr CSO	Aug 14	3	33 - 34 ug/g av = 33 ug/g	Objective met
	Outer Burrard: E207812 off Locarno Park CSO	Aug 13	1	26 ug/g	Objective met
Total Cr <60 ug/g av in sediment (long-term)	False Creek: E207814 100m E Science World	Aug 13	1	29 ug/g	Objective met
Total Cu <0.002 mg/L av 0.003 mg/L max (long-term)	Port Moody Arm: E207698 50 m E Pacific Coast	Aug 28-Sep 19	8	<0.001 - 0.003mg/L (0 - 10 m)	Max obj. met Av not chkd.
	E207823 100m off Ioco disch.	Aug 28-Sep 19	7	<0.001 - 0.001mg/L (0 - 10 m)	Max obj. met

TABLE 27 continued

BURRARD INLET WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Cu <0.002 mg/L av 0.003 mg/L max (long-term)	Port Moody Arm: E207823 100m off Ioco disch.	Aug 28	1	0.004 mg/L (9 m)	Max not met
	Indian Arm 0300080 3 km E of Deep Cove	Aug 28-Sep 18	6	<0.001 - 0.001mg/L (0 - 15 m)	Max obj. met Av not chkd.
	2nd Narrows-Roche Pt: E207821 50m off Chevron disch	Aug 28-Sep 18	8	<0.001 - 0.001mg/L (0 - 9 m)	Max obj. met Av not chkd.
	E207820 100m S Can-Occ. disch	Aug 28-Sep 18	7	<0.001 - 0.001mg/L (0 - 13 m)	Max obj. met
		Sep 5	1	0.065 mg/L (0 m)	Max not met
	1st-2nd Narrows: E207819 mid-harbour(L-K bank)	Aug 28-Sep 18	7	<0.001 - 0.001mg/L (0 - 15 m)	Max obj. met Av not chkd.
		Sep 5	1	0.061 mg/L (0 m)	Max not met
	E207818 off Clark Drive CSO	Aug 28-Sep 18	7	all <0.001 mg/L (0 - 15 m)	Max obj. met
		Sep 5	1	0.004 mg/L (14 m)	Max not met
	E207816 100-500m E Vn Wharves	Aug 28-Sep 18	7	<0.001 - 0.003mg/L (0 - 11 m)	Max obj. met
		Sep 5	1	0.006 mg/L (9 m)	Max not met
	E207813 100m off Coal Hbr CSO	Aug 28-Sep 18	7	0.001 - 0.003 mg/L (0 - 11 m)	Max obj. met
		Sep 5	1	0.004 mg/L (5 m)	Max not met
	Outer Burrard: E207812 off Locarno Park CSO	Aug 27-Sep 17	6	<0.001 - 0.001mg/L (0 - 8 m)	Max obj. met Av not chkd.
	0300076 English Bay	Aug 27-Sep 17	6	all <0.001 mg/L (0 - 15 m)	Max obj. met
	False Creek: E207814 100m E Science World	Aug 27-Sep 17	6	<0.001 - 0.002mg/L (0 - 6 m)	Max obj. met Av not chkd.
	E207815 at mid-point	Aug 27-Sep 17	6	<0.001 - 0.002mg/L (0 - 5 m)	Max obj. met

TABLE 27 continued

BURRARD INLET WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Cu <100 ug/g av in sediment	Port Moody Arm: E207823 100m off Ioco disch.	Aug 16	1	111 ug/g	Objective not met
Total Cu <100 ug/g av in sediment (long-term)	2nd Narrows-Roche Pt: E207821 50m off Chevron disch	Aug 16	3	100 - 160 ug/g av = 123 ug/g	Objective not met
	1st-2nd Narrows: E207813 100m off Coal Hbr CSO	Aug 14	3	173 - 206 ug/g av = 188 ug/g	Objective not met
	Outer Burrard: E207812 off Locarno Park CSO	Aug 13	1	34 ug/g	Objective met
	False Creek: E207814 100m E Science World	Aug 13	1	185 ug/g	Objective not met
Total Fe 0.3 mg/L max (long-term)	Port Moody Arm: E207698 50 m E Pacific Coast	Aug 28-Sep 19	8	<0.005 - 0.238mg/L (0 - 10 m)	Objective met
	E207823 100m off Ioco disch.	Aug 28-Sep 19	7	<0.005 - 0.244mg/L (0 - 10 m)	Objective met
		Aug 28	1	1.050 mg/L (9 m)	Obj. not met
	False Creek: E207814 100m E Science World	Aug 27-Sep 17	4	<0.005 - 0.256mg/L (0 - 6 m)	Objective met
		Aug 27-Sep 11	2	0.306 - 0.443 mg/L (5 - 6 m)	Objective not met
	E207815 at mid-point	Aug 27-Sep 17	6	0.014 - 0.277 mg/L (0 - 5 m)	Objective met
Total Fe 0.3 mg/L max	Indian Arm 0300080 3 km E of Deep Cove	Aug 28-Sep 18	6	<0.005 - 0.018mg/L (0 - 15 m)	Objective met
	1st-2nd Narrows: E207819 mid-harbour(L-K bank)	Aug 28-Sep 18	8	<0.005 - 0.049mg/L (0 - 15 m)	Objective met
	E207818 off Clark Drive CSO	Aug 28-Sep 18	8	0.008 - 0.046 mg/L (0 - 15 m)	Objective met

TABLE 27 continued

BURRARD INLET WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Fe 0.3 mg/L max	1st-2nd Narrows: E207816 100-500m E Vn Wharves	Aug 28-Sep 18	8	<0.005 - 0.051mg/L (0 - 11 m)	Objective met
	E207813 100m off Coal Hbr CSO	Aug 28-Sep 18	8	<0.005 - 0.080mg/L (0 - 11 m)	Objective met
	Outer Burrard: E207812 off Locarno Park CSO	Aug 27-Sep 17	5	<0.005 - 0.253mg/L (0 - 8 m)	Objective met
		Sep 11	1	0.411 mg/L (8 m)	Obj. not met
	0300076 English Bay	Aug 27-Sep 17	5	<0.005 - 0.277mg/L (0 - 15 m)	Objective met
		Sep 17	1	0.303 mg/L (13 m)	Obj. not met
Total Pb <0.002 mg/L av (long-term) 0.140 mg/L max	Port Moody Arm: E207698 50 m E Pacific Coast	Aug 28-Sep 19	8	all <0.001 mg/L (0 - 10 m)	Max obj. met Av not chkd.
	E207823 100m off Ioco disch.	Aug 28-Sep 19	8	<0.001 - 0.006mg/L (0 - 10 m)	Max obj. met
	Indian Arm 0300080 3 km E of Deep Cove	Aug 28-Sep 18	6	<0.001 - 0.002mg/L (0 - 15 m)	Max obj. met Av not chkd.
	2nd Narrows-Roche Pt: E207821 50m off Chevron disch	Aug 28-Sep 18	8	<0.001 - 0.005mg/L (0 - 9 m)	Max obj. met Av not chkd.
	E207820 100m S Can-Occ. disch	Aug 28-Sep 18	8	<0.001 - 0.003mg/L (0 - 13 m)	Max obj. met
	1st-2nd Narrows: E207819 mid-harbour(L-K bank)	Aug 28-Sep 18	8	<0.001 - 0.007mg/L (0 - 15 m)	Max obj. met Av not chkd.
	E207818 off Clark Drive CSO	Aug 28-Sep 18	8	<0.001 - 0.002mg/L (0 - 15 m)	Max obj. met
	E207816 100-500m E Vn Wharves	Aug 28-Sep 18	8	<0.001 - 0.008mg/L (0 - 11 m)	Max obj. met
	E207813 100m off Coal Hbr CSO	Aug 28-Sep 18	8	all <0.001 mg/L (0 - 11 m)	Max obj. met

TABLE 27 continued

BURRARD INLET WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Pb <0.002 mg/L av (long-term) 0.140 mg/L max	Outer Burrard: E207812 off Locarno Park CSO	Aug 27-Sep 17	6	all <0.001 mg/L (0 - 8 m)	Max obj. met Av not chkd.
	0300076 English Bay	Aug 27-Sep 17	6	all <0.001 mg/L (0 - 15 m)	Max obj. met
	False Creek: E207814 100m E Science World	Aug 27-Sep 17	6	<0.001 - 0.001mg/L (0 - 6 m)	Max obj. met Av not chkd.
	E207815 at mid-point	Aug 27-Sep 17	6	all <0.001 mg/L (0 - 5 m)	Max obj. met
Total Pb <30 ug/g av in sediment (long-term)	Port Moody Arm: E207823 100m off Ioco disch.	Aug 16	1	246 ug/g	Objective not met
	2nd Narrows-Roche Pt: E207821 50m off Chevron disch	Aug 16	3	62 - 97 ug/g av = 77 ug/g	Objective not met
	1st-2nd Narrows: E207813 100m off Coal Hbr CSO	Aug 14	3	<10 - 19 ug/g av = 13 ug/g	Objective met
	Outer Burrard: E207812 off Locarno Park CSO	Aug 13	1	<10 ug/g	Objective met
	False Creek: E207814 100m E Science World	Aug 13	1	270 ug/g	Objective not met
Total Pb 0.8 ug/g max wet weight in fish tissue	Port Moody Arm Indian Arm 2nd Narrows-Roche Pt. 1st-2nd Narrows Outer Burrard False Creek	1990	0	no data collected	Omitted 1990
Total Hg <0.02 ug/L av 2.0 ug/L max	1st-2nd Narrows: E207819 mid-harbour(L-K bank)	Aug 28-Sep 18	8	all <0.05 ug/L (0 - 15 m)	Max obj. met Av not chkd.
	E207818 off Clark Drive CSO	Aug 28-Sep 18	8	all <0.05 ug/L (0 - 15 m)	Max obj. met
	E207816 100-500m E Vn Wharves	Aug 28-Sep 18	8	all <0.05 ug/L (0 - 11 m)	Max obj. met

TABLE 27 continued

BURRARD INLET WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Hg <0.02 ug/L av 2.0 ug/L max	1st-2nd Narrows: E207813 100m off Coal Hbr CSO	Aug 28-Sep 18	8	all <0.05 ug/L (0 - 11 m)	Max obj. met
	Outer Burrard: E207812 off Locarno Park CSO	Aug 27-Sep 17	6	all <0.05 ug/L (0 - 8 m)	Max obj. met Av not chkd.
	0300076 English Bay	Aug 27-Sep 17	6	all <0.05 ug/L (0 - 15 m)	Max obj. met
	False Creek: E207814 100m E Science World	Aug 27-Sep 17	6	all <0.05 ug/L (0 - 6 m)	Max obj. met Av not chkd.
	E207815 at mid-point	Aug 27-Sep 17	6	all <0.05 ug/L (0 - 5 m)	Max obj. met
	2nd Narrows-Roche Pt.	1990	0	no data collected	Omitted 1990
Total Hg 0.5 ug/g max wet weight in fish tissue	2nd Narrows-Roche Pt. 1st-2nd Narrows Outer Burrard False Creek	1990	0	no data collected	Omitted 1990
Total Hg <0.15 ug/g av in sediment	Port Moody Arm: E207823 100m off Ioco disch.	Aug 16	1	0.50ug/g	Objective not met
	2nd Narrows-Roche Pt:	1990	0	no data collected	Omitted 1990
Total Hg <0.15 ug/g av in sediment (long-term)	1st-2nd Narrows: E207813 100m off Coal Hbr CSO	Aug 14	3	0.60 - 0.77 ug/g av = 0.67 ug/g	Objective not met
	Outer Burrard: E207812 off Locarno Park CSO	Aug 13	1	0.06 ug/g	Objective met
	False Creek: E207814 100m E Science World	Aug 13	1	0.50 ug/g	Objective not met
Total Ni <0.008 mg/L av 0.075 mg/L max	2nd Narrows-Roche Pt: E207821 50m off Chevron disch	Aug 28-Sep 18	8	all <0.01 mg/L (0 - 9 m)	Max obj. met Av not chkd.
	E207820 100m S Can-Occ. disch	Aug 28-Sep 18	8	all <0.01 mg/L (0 - 13 m)	Max obj. met

TABLE 27 continued

BURRARD INLET WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Ni <0.008 mg/L av 0.075 mg/L max	1st-2nd Narrows: E207819 mid-harbour(L-K bank)	Aug 28-Sep 18	8	all <0.01 mg/L (0 - 15 m)	Max obj. met Av not chkd.
	E207818 off Clark Drive CSO	Aug 28-Sep 18	8	all <0.01 mg/L (0 - 15 m)	Max obj. met
	E207816 100-500m E Vn Wharves	Aug 28-Sep 18	8	all <0.01 mg/L (0 - 11 m)	Max obj. met
	E207813 100m off Coal Hbr CSO	Aug 28-Sep 18	8	all <0.01 mg/L (0 - 11 m)	Max obj. met
	False Creek: E207814 100m E Science World	Aug 27-Sep 11	4	all <0.01 mg/L (0 - 6 m)	Max obj. met Av not chkd.
	E207815 at mid-point	Aug 27-Sep 11	4	all <0.01 mg/L (0 - 5 m)	Max obj. met
Total Ni <45 ug/g av in sediment	Port Moody Arm: E207823 100m off Ioco disch.	Aug 16	1	23 ug/g	Objective met
	2nd Narrows-Roche Pt: E207821 50m off Chevron disch	Aug 16	3	12 - 18 ug/g av = 15 ug/g	Objective met
	1st-2nd Narrows: E207813 100m off Coal Hbr CSO	Aug 14	3	35 - 39 ug/g av = 36 ug/g	Objective met
	Outer Burrard: E207812 off Locarno Park CSO	Aug 13	1	30 ug/g	Objective met
	False Creek: E207814 100m E Science World	Aug 13	1	41 ug/g	Objective met
Total Zn <0.086 mg/L av 0.095 mg/L max	Port Moody Arm: E207698 50 m E Pacific Coast	Aug 28-Sep 19	8	<0.005 - 0.006mg/L (0 - 10 m)	Max obj. met Av not chkd.
	E207823 100m off Ioco disch.	Aug 28-Sep 19	8	all <0.005 mg/L (0 - 10 m)	Max obj. met
	Indian Arm 0300080 3 km E of Deep Cove	Aug 28-Sep 18	6	<0.005 - 0.007mg/L (0 - 15 m)	Max obj. met Av not chkd.

TABLE 27 continued

BURRARD INLET WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Zn <0.086 mg/L av 0.095 mg/L max	2nd Narrows-Roche Pt: E207821 50m off Chevron disch	Aug 28-Sep 18	8	<0.005 - 0.007mg/L (0 - 9 m)	Max obj. met Av not chkd.
	E207820 100m S Can-Occ. disch	Aug 28-Sep 18	8	all <0.005 mg/L (0 - 13 m)	Max obj. met
	1st-2nd Narrows: E207819 mid-harbour(L-K bank)	Aug 28-Sep 18	8	all <0.005 mg/L (0 - 15 m)	Max obj. met Av not chkd.
	E207818 off Clark Drive CSO	Aug 28-Sep 18	8	all <0.005 mg/L (0 - 15 m)	Max obj. met
	E207816 100-500m E Vn Wharves	Aug 28-Sep 18	8	<0.005 - 0.031mg/L (0 - 11 m)	Max obj. met
	E207813 100m off Coal Hbr CSO	Aug 28-Sep 18	8	all <0.005 mg/L (0 - 11 m)	Max obj. met
	Outer Burrard: E207812 off Locarno Park CSO	Aug 27-Sep 17	6	all <0.005 mg/L (0 - 8 m)	Max obj. met Av not chkd.
	0300076 English Bay	Aug 27-Sep 17	6	all <0.005 mg/L (0 - 15 m)	Max obj. met
	False Creek: E207814 100m E Science World	Aug 27-Sep 17	6	<0.005 - 0.011mg/L (0 - 6 m)	Max obj. met Av not chkd.
	E207815 at mid-point	Aug 27-Sep 17	6	all <0.005 mg/L (0 - 5 m)	Max obj. met
Total Zn <150ug/g av in sediment	Port Moody Arm: E207823 100m off Ioco disch.	Aug 16	1	231 ug/g	Objective not met
	2nd Narrows-Roche Pt: E207821 50m off Chevron disch	Aug 16	3	110 - 130 ug/g av = 120 ug/g	Objective met
	1st-2nd Narrows: E207813 100m off Coal Hbr CSO	Aug 14	3	178 - 208 ug/g av = 193 ug/g	Objective not met
	Outer Burrard: E207812 off Locarno Park CSO	Aug 13	1	79 ug/g	Objective met

TABLE 27 continued

BURRARD INLET WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Zn <150ug/g av in sediment	False Creek: E207814 100m E Science World	Aug 13	1	565 ug/g	Objective not met
Chlorophenols (tri + tetra + penta) 0.2 ug/L max <0.1 ug/g av in sediment 0.1 ug/g max wet weight in fish	1st-2nd Narrows	1990	0	no data collected	Omitted 1990
PCBs <0.03 ug/g av in sediments 0.5 ug/g max wet weight in fish	Port Moody Arm 2nd Narrows-Roche Pt. 1st-2nd Narrows Outer Burrard False Creek	1990	0	no data collected	Omitted 1990
TBT 10 ng/L max	1st-2nd Narrows False Creek	1990	0	no data collected	Objective not checked
	Port Moody Arm Indian Arm Outer Burrard	1990	0	no data collected	Omitted 1990
Ethylene Dichloride <0.2 mg/L av 2.0 mg/L max	1st-2nd Narrows	1990	0	no data collected	Objective not checked
Phenols	2nd Narrows-Roche Pt.	1990	0	no data collected	Obj not chkd
1 ug/L max	Port Moody Arm	1990	0	no data collected	Omitted 1990
Styrene 0.05 mg/L max	Port Moody Arm	1990	0	no data collected	Omitted 1990
Total LPAH <0.5 ug/g av in sediments Total HPAH <1.2 ug/g av in sediments (long-term)	Port Moody Arm 2nd Narrows-Roche Pt. 1st-2nd Narrows Outer Burrard False Creek	1990	0	no data collected	Objective not checked

TABLE 28

NORTH SHORE LOWER FRASER TRIBUTARIES WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliforms 200/100 mL max (short-term) <100/100 mL 90th perc (np) (long-term)	Kanaka Creek: 0300025 112 Ave (mid-length)	Sep 23,30,Oct 8,15,21 Oct 21 Sep 23-Oct 15	5 1 4	35 - 665/100 mL np = 210/100 mL 665/100 mL 35 - 94/100 mL	np not met Max not met Max obj. met
	0300024 near mouth	Sep 23,30,Oct 8,15,21 Oct 21 Sep 23-Oct 15	5 1 4	66 - 1850/100 mL np = 500/100 mL 1850/100 mL 66 - 151/100 mL	np not met Max not met Max obj. met
	Pitt River 0300012 near mouth	Jun 26,Jul 4, 11,16,24	5	10 - 116/100 mL np = 55/100 mL	Objectives met
	Alouette River: 0300015 232 St (u/s Haney)	Jun 26,Jul 4, 11,16,24	5	24 - 75/100 mL np = 67/100 mL	Objectives met
	0300014 208 St (d/s Haney)	Jun 26,Jul 4, 11,16,24	5	11 - 26/100 mL np = 22/100 mL	Objectives met
Fecal Coliforms <10/100 mL 90th perc. (np)	Pitt Lake 0300013 near outlet	Jul 5,11,16, 24,31	5	<2 - 5/100 mL np = 2/100 mL	Objective met
	Alouette Lake 0300016 near outlet	Jul 5,11,16, 24,31	5	all < 2/100 mL	Objective met
	Or Creek 1189002 near mouth	Sep 23,30, Oct 8,15,21	5	<2 - 9/100 mL np = 7/100 mL	Objective met
Fecal Coliforms <100/100 mL 90th perc. (np)	North Alouette River: 0300018 u/s Haney	Jun 26,Jul 4, 11,16	4	<2 - 46/100 mL	Indefinite result
	0300017 near mouth	Jun 26,Jul 4, 11,16,24	5	8 - 97/100 mL np = 50/100 mL	Objective met
	Coquitlam River 0300019 d/s Or Creek	Sep 23,30,Oct 8,15,21	5	1 - 13/100 mL np = 4/100 mL	Objective met
Fecal Coliforms <200/100 mL geometric mean (gm)	Coquitlam River 0300010 near mouth	Sep 23,30,Oct 8,15,21	5	41 - 665/100 mL gm = 110/100 mL	Objective met
	Scott Creek 1189007 d/s Hoy Creek	Sep 23,30,Oct 8,15,21	5	100 - 1190/100 mL gm = 580/100 mL	Objective not met

TABLE 28 continued

NORTH SHORE LOWER FRASER TRIBUTARIES WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Fecal Coliform <200/100 mL geometric mean	Hoy Creek	1990	0	no data collected	Omitted 1990
Fecal Coliforms <200/100 mL geometric mean (gm) <400/100 mL 90th perc (np)	Burnaby Lake 0300009 near outlet	Sep 23,30,Oct 8,16,21	5	136 - 890/100 mL gm = 280/100 mL np = 600/100 mL	Objectives not met
	Deer Lake	1990	0	no data collected	Omitted 1990
E. Coli 200/100 mL max (short-term) <100/100 mL 90th perc (np) (long-term)	Kanaka Creek: 0300025 112 Ave (mid-length)	Sep 23,30,Oct 8,15,21	5	42 - 665/100 mL np = 280/100 mL	np not met
		Oct 21	1	665/100 mL	Max not met
		Sep 23-Oct 15	4	42 - 98/100 mL	Max obj. met
	0300024 near mouth	Sep 23,30,Oct 8,15,21	5	57 - 875/100 mL np = 400/100 mL	np not met
		Oct 21	1	875/100 mL	Max not met
		Sep 23-Oct 15	4	57 - 140/100 mL	Max obj. met
E. Coli <77/100 mL geometric mean (gm) (short-term) <100/100 mL 90th perc (np) (long-term)	Pitt River 0300012 near mouth	Jun 26,Jul 4, 11,16,24	5	gm = 24/100 mL np = 45/100 mL	Objectives met
	Alouette River: 0300015 232 St (u/s Haney)	Jun 26,Jul 4, 11,16,24	5	gm = 47/100 mL np = 62/100 mL	Objectives met
	0300014 208 St (d/s Haney)	Jun 26,Jul 4, 11,16,24	5	gm = 12/100 mL np = 14/100 mL	Objectives met
E. Coli <10/100 mL 90th perc. (np)	Pitt Lake 0300013 near outlet	Jul 5,11,16, 24,31	5	1 - <2/100 mL	Objective met
	Alouette Lake 0300016 near outlet	Jul 5,11,16, 24,31	5	all < 2/100 mL	Objective met
	Or Creek 1189002 near mouth	Sep 23,30, Oct 8,15,21	5	<2 - 21/100 mL np = 8/100 mL	Objective met
E. Coli <100/100 mL 90th perc (np)	North Alouette River: 0300018 u/s Haney	Jun 26,Jul 4, 11,16	4	3 - 31/100 mL	Indefinite result

TABLE 28 continued

NORTH SHORE LOWER FRASER TRIBUTARIES WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
E. Coli <100/100 mL 90th perc. (np)	North Alouette River: 0300017 near mouth	Jun 26,Jul 4, 11,16,24	5	8 - 80/100 mL np = 55/100 mL	Objective met
	Coquitlam River 0300019 d/s Or Creek	Sep 23,30,Oct 8,15,21	5	2 - 13/100 mL np = 9/100 mL	Objective met
E. Coli <77/100 mL geometric mean (gm)	Coquitlam River 0300010 near mouth	Sep 23,30,Oct 8,15,21	5	29 - 715/100 mL gm = 88/100 mL	Objective not met
	Scott Creek 1189007 d/s Hoy Creek	Sep 23,30,Oct 8,15,21	5	215 - 740/100 mL gm = 385/100 mL	Objective not met
	Hoy Creek	1990	0	no data collected	Omitted 1990
E. Coli <77/100 mL geometric mean (gm) (long-term)	Burnaby Lake 0300009 near outlet	Sep 23,30,Oct 8,16,21	5	77 - 635/100 mL gm = 208/100 mL	Objectives not met
	Deer Lake	1990	0	no data collected	Omitted 1990
Enterococci 50/100 mL max (short-term) <25/100 mL 90th perc (np) (long-term)	Kanaka Creek: 0300025 112 Ave (mid-length)	Sep 23,30,Oct 8,15,21 Oct 21 Sep 23-Oct 15	5 1 4	11 - 505/100 mL np = 100/100 mL 505/100 mL 11 - 35/100 mL	 np not met Max not met Max obj. met
	0300024 near mouth	Sep 23,30,Oct 8,15,21 Sep 30-Oct 21 Sep 23,Oct 8	5 3 2	7 - 2400/100 mL np = 400/100 mL 52 - 2400/100 mL 7 - 23/100 mL	 np not met Max not met Max obj. met
Enterococci <200/100 mL geometric mean (gm) (short-term) <25/100 mL 90th perc (np) (long-term)	Pitt River 0300012 near mouth	Jun 26,Jul 4, 11,16,24	5	gm = 10/100 mL np = 28/100 mL	gm obj. met np not met
	Alouette River: 0300015 232 St (u/s Haney)	Jun 26,Jul 4, 11,16,24	5	gm = 14/100 mL np = 22/100 mL	Objectives met
	0300014 208 St (d/s Haney)	Jun 26,Jul 4, 11,16,24	5	gm = 8/100 mL np = 50/100 mL	gm obj. met np not met
Enterococci <3/100 mL 90th perc (np)	Pitt Lake 0300013 near outlet	Jul 5,11,16, 24,31	5	1 - <2/100 mL	Objective met

TABLE 28 continued

NORTH SHORE LOWER FRASER TRIBUTARIES WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Enterococci <3/100 mL 90th perc (np)	Alouette Lake 0300016 near outlet	Jul 5,11,16, 24,31	5	1 - <2/100 mL	Objective met
Enterococci <25/100 mL 90th perc. (np)	North Alouette River: 0300018 u/s Haney	Jun 26,Jul 4, 11,16	4	<2 - 8/100 mL	Indefinite result
	0300017 near mouth	Jun 26,Jul 4, 11,16,24	5	2 - 20/100 mL np = 16/100 mL	Objective met
	Coquitlam River 0300019 d/s Or Creek	Sep 23,30,Oct 8,15,21	5	1 - 10/100 mL np = 6/100 mL	Objective met
	Or Creek 1189002 near mouth	Sep 23,30, Oct 8,15,21	5	<2 - 10/100 mL np = 5/100 mL	Objective met
Enterococci <20/100 mL geometric mean (gm)	Coquitlam River 0300010 near mouth	Sep 23,30,Oct 8,15,21	5	3 - 735/100 mL gm = 32/100 mL	Objective not met
	Scott Creek 1189007 d/s Hoy Creek	Sep 23,30,Oct 8,15,21	5	40 - 545/100 ml gm = 132/100 mL	Objective not met
	Hoy Creek	1990	0	no data collected	Omitted 1990
Enterococci <20/100 mL geometric mean (gm) (long-term)	Burnaby Lake 0300009 near outlet	Sep 23,30,Oct 8,16,21	5	13 - 340/100 mL gm = 49/100 mL	Objective not met
	Deer Lake	1990	0	no data collected	Omitted 1990
Pseudomonas aeruginosa <2/100 mL 75th perc.	Coquitlam R. d/s Park Scott Creek Hoy Creek Burnaby Lake Deer Lake	1990	0	no data collected	Omitted 1990
Suspended Solids max increase: 10 mg/L or 10%	Kanaka Creek: 0300025 112 Ave (mid-length)	Sep 23,30,Oct 8,15,21	5	<1 - 13 mg/L	Control site
	0300024 near mouth	Sep 23,30 Oct 8,15,21	2 3	inc. = 3 - 7 mg/L inc. = 14-34 mg/L	Obj. met Obj. not met

TABLE 28 continued

NORTH SHORE LOWER FRASER TRIBUTARIES WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Suspended Solids max increase: 10 mg/L or 10%	Pitt River 0300012 near mouth	Jun 26,Jul 4, 11,16,24	5	25 - 74 mg/L	Indef result (no control)
	Alouette River: 0300015 232 St (u/s Haney)	Jun 26,Jul 4, 11,16,24	5	1 - 4 mg/L	Control site
	0300014 208 St (d/s Haney)	Jul 11,16 Jun 26-Jul 24	2 3	inc. = 1 - 5 mg/L inc. = 11-59 mg/L	Obj. met Obj. not met
	North Alouette River: 0300018 u/s Haney	Jun 26,Jul 4, 11,16	4	1 - 6 mg/L	Control site
	0300017 near mouth	Jun 26,Jul 4, 11,16	4	inc. = 1 - 10 mg/L	Objective met
	Coquitlam River 0300019 d/s Or Creek	Sep 23,30,Oct 8,15,21	5	<1 - 4 mg/L	Control site
	0300010 near mouth	Sep 23,Oct 15 Sep 30-Oct 21	2 3	inc. = 5 - 9 mg/L inc. = 13-29 mg/L	Obj. met Obj. not met
	Or Creek 1189002 near mouth	Sep 23,30, Oct 8,15,21	5	<1 - 5 mg/L	Objective met
	Scott Creek 1189007 d/s Hoy Creek	Sep 23-Oct 15 Oct 21	4 1	1 - 6 mg/L 61 mg/L	Obj. met Indef result
	Still Creek 0300008 near Burnaby L. inlet	Sep 30,Oct 8, 16,21	4	5 - 7 mg/L	Objective met
	Burnaby Lake 0300009 near outlet	Sep 23,30,Oct 8,16,21	5	16 - 61 mg/L	Indef result (no control)
	Brunette River 0300111 near mouth	Sep 30 Sep 23-Oct 21	1 4	6 mg/L 17 - 32 mg/L	Obj. met Indef result
	Pitt Lake Alouette Lake Deer Lake Hoy Creek	1990	0	no data collected	Omitted 1990

TABLE 28 continued

NORTH SHORE LOWER FRASER TRIBUTARIES WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Turbidity max increase: 1NTU, u/s <5 5NTU, u/s <50 or 10%	Kanaka Creek: 0300025 112 Ave (mid-length)	Sep 23,30,Oct 8,15,21	5	1.0 - 4.0 NTU	Control site
	0300024 near mouth	Sep 23,30 Oct 8,15,21	5	2.2 - 23.0 NTU inc.=1.2-19.0 NTU	Objective not met
	Pitt River 0300012 near mouth	Jun 26,Jul 4, 11,16,24	5	5.8 - 38.0 NTU	Indef result (no control)
	Alouette River: 0300015 232 St (u/s Haney)	Jun 26,Jul 4, 11,16,24	5	0.4 - 1.0 NTU	Control site
	0300014 208 St (d/s Haney)	Jul 16 Jun 26-Jul 24	1 4	inc. = 0.6 NTU inc.=1.1-15.3 NTU	Obj. met Obj. not met
	North Alouette River: 0300018 u/s Haney	Jun 26,Jul 4, 11,16	4	0.3 - 1.4 NTU	Control site
	0300017 near mouth	Jun 26,Jul 11 Jul 4,16	2 2	inc.=0.5-0.9 NTU inc.=1.5-1.7 NTU	Obj. met Obj. not met
	Coquitlam River 0300019 d/s Or Creek	Sep 23,30,Oct 8,15,21	5	0.3 - 1.0 NTU	Control site
	0300010 near mouth	Sep 23,30,Oct 8,15,21	5	3.0 - 32.0 NTU inc.=2.5-31.0 NTU	Objective not met
	Or Creek 1189002 near mouth	Sep 23,30, Oct 8,15,21	5	0.2 - 0.8 NTU	Objective met
	Scott Creek 1189007 d/s Hoy Creek	Sep 23,30,Oct 8,15,21	5	1.5 - 28.0 NTU	Indef result (no control)
	Still Creek 0300008 near Burnaby L. inlet	Sep 30,Oct 8, 16,21	4	3.5 - 5.0 NTU	Indef result (no control)
	Burnaby Lake 0300009 near outlet	Sep 23,30,Oct 8,16,21	5	4.5 - 17.0 NTU	Indef result (no control)

TABLE 28 continued

NORTH SHORE LOWER FRASER TRIBUTARIES WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Turbidity max increase: 1NTU, u/s <5 5NTU, u/s <50 or 10%	Brunette River 0300111 near mouth	Sep 23,30,Oct 8,16,21	5	3.0 - 9.0 NTU	Indef result (no control)
	Pitt Lake Alouette Lake Deer Lake Hoy Creek	1990	0	no data collected	Omitted 1990
Substrate Sedimentation increase in weight of particles <3 mm dia: 10% max	Brunette River: E208821 Hume Park	Dec 2 - Jan 6	1	540.1 g < 3mm	Control site
	0300111 near mouth	Dec 2 - Jan 6	1	1178.8 g < 3mm	Objective not met
	Kanaka Creek Pitt River Alouette River North Alouette River Coquitlam River Or Creek Scott Creek	1990	0	no data collected	Objective not checked
	Pitt Lake, Alouette Lake & Hoy Creek	1990	0	no data collected	Omitted 1990
Ammonia-N <1.79 mg/L av 9.31 mg/L max at pH = 7.7 temp = 15 C	Kanaka Creek: 0300025 112 Ave (mid-length)	Sep 23,30,Oct 8,15,21	5	av = 0.007 mg/L max = 0.013 mg/L	Objectives met
	0300024 near mouth	Sep 23,30,Oct 8,15,21	5	av = 0.010 mg/L max = 0.026 mg/L	Objectives met
	Pitt River 0300012 near mouth	Jun 26,Jul 4, 11,16,24	5	av = 0.006 mg/L max = 0.009 mg/L	Objectives met
	Alouette River: 0300015 232 St (u/s Haney)	Jun 26,Jul 4, 11,16,24	5	av = 0.009 mg/L max = 0.016 mg/L	Objectives met
	0300014 208 St (d/s Haney)	Jun 26,Jul 4, 11,16,24	5	av = 0.033 mg/L max = 0.054 mg/L	Objectives met
	North Alouette River: 0300018 u/s Haney	Jun 26,Jul 4, 11,16	4	<0.005 - 0.008mg/L	Max obj. met
	0300017 near mouth	Jun 26,Jul 4, 11,16,24	5	av = 0.026 mg/L max = 0.031 mg/L	Objectives met

TABLE 28 continued

NORTH SHORE LOWER FRASER TRIBUTARIES WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Ammonia-N <1.79 mg/L av 9.31 mg/L max at pH = 7.7 temp = 15 C	Coquitlam River 0300019 d/s Or Creek	Sep 23,30,Oct 8,15,21	5	all < 0.005 mg/L	Objectives met
	0300010 near mouth	Sep 23,30,Oct 8,15,21	5	av = 0.011 mg/L max = 0.026 mg/L	Objectives met
	Or Creek 1189002 near mouth	Sep 23,30, Oct 8,15,21	5	av = 0.005 mg/L max = 0.007 mg/L	Objectives met
	Scott Creek 1189007 d/s Hoy Creek	Sep 23,30,Oct 8,15,21	5	av = 0.011 mg/L max = 0.025 mg/L	Objectives met
	Still Creek 0300008 near Burnaby L. inlet	Sep 30,Oct 8, 16,21	4	0.096 - 0.242 mg/L	Max obj. met Av not chkd.
	Burnaby Lake 0300009 near outlet	Sep 23,30,Oct 8,16,21	5	av = 0.146 mg/L max = 0.215 mg/L	Objectives met
	Brunette River 0300111 near mouth	Sep 23,30,Oct 8,16,21	5	av = 0.063 mg/L max = 0.224 mg/L	Objectives met
	Pitt Lake Alouette Lake Deer Lake Hoy Creek	1990	0	no data collected	Omitted 1990
Nitrite-N <0.02 mg/L av 0.06 mg/L max	Kanaka Creek: 0300025 112 Ave (mid-length)	Sep 23,30,Oct 8,15,21	5	av = 0.006 mg/L max = 0.007 mg/L	Objectives met
	0300024 near mouth	Sep 23,30,Oct 8,15,21	5	av = 0.006 mg/L max = 0.009 mg/L	Objectives met
	Pitt River 0300012 near mouth	Jun 26,Jul 4, 11,16,24	5	all < 0.005 mg/L	Objectives met
	Alouette River: 0300015 232 St (u/s Haney)	Jun 26,Jul 4, 11,16,24	5	all < 0.005 mg/L	Objectives met
	0300014 208 St (d/s Haney)	Jun 26,Jul 4, 11,16,24	5	all < 0.005 mg/L	Objectives met

TABLE 28 continued

NORTH SHORE LOWER FRASER TRIBUTARIES WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Nitrite-N <0.02 mg/L av 0.06 mg/L max	North Alouette River: 0300018 u/s Haney	Jun 26,Jul 4, 11,16	4	all < 0.005 mg/L	Max obj. met
	0300017 near mouth	Jun 26,Jul 4, 11,16,24	5	av < 0.005 mg/L max = 0.005 mg/L	Objectives met
	Coquitlam River 0300019 d/s Or Creek	Sep 30,Oct 8, 15,21	4	<0.005 - 0.006mg/L	Max obj. met Av not chkd.
	0300010 near mouth	Sep 30,Oct 8, 15,21	4	<0.005 - 0.009mg/L	Max obj. met
	Or Creek 1189002 near mouth	Sep 30,Oct 8, 15,21	4	<0.005 - 0.006mg/L	Max obj. met Av not chkd.
	Scott Creek 1189007 d/s Hoy Creek	Sep 30,Oct 8, 15,21	4	<0.005 - 0.007mg/L	Max obj. met Av not chkd.
	Brunette River 0300111 near mouth	Sep 23,30,Oct 8,16,21	5	av = 0.010 mg/L max = 0.023 mg/L	Objectives met
	Pitt Lake Alouette Lake Deer Lake Hoy Creek	1990	0	no data collected	Omitted 1990
Nitrite-N <0.20 mg/L av 0.60 mg/L max at Cl > 10 mg/L	Still Creek 0300008 near Burnaby L. inlet	Sep 30,Oct 8, 16,21	4	0.016 - 0.063 mg/L	Max obj. met
	Burnaby Lake 0300009 near outlet	Sep 23,30,Oct 8,16,21	5	av = 0.017 mg/L max = 0.022 mg/L	Objectives met
Chlorophyll-a <50 mg/m2 av	Or Creek 1189002 near mouth	Sep 14	3	10.3 - 35.0 mg/m2 av = 25.3 mg/m2	Objective met
	Kanaka Creek Coquitlam River Scott Creek	1990	0	no data collected	Objective not checked
	Hoy Creek	1990	0	no data collected	Omitted 1990

TABLE 28 continued

NORTH SHORE LOWER FRASER TRIBUTARIES WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Chlorophyll-a <100 mg/m2 av	Alouette River: 0300015 232 St (u/s Haney)	Aug 1	1	13.5 mg/m2	Objective met
	North Alouette River: 0300018 u/s Haney	Aug 1	1	4.8 mg/m2	Objective met
	Pitt River Brunette River Still Creek	1990	0	no data collected	Objective not checked
Total-P <0.015 mg/L av Apr - Oct (long-term)	Burnaby Lake 0300009 near outlet	Sep 23,30,Oct 8,16,21	5	0.074 - 0.134 mg/L av = 0.094 mg/L	Indefinite result
Dissolved Oxygen 11.0 mg/L min Nov - Mar 8.0 mg/L min Apr - Oct	Kanaka Creek: 0300025 112 Ave (mid-length)	Sep 23,30,Oct 8,15,21	5	9.4 - 12.0 mg/L	Objective met
	0300024 near mouth	Sep 23-Oct 21 Sep 30	4 1	8.4 - 10.0 mg/L 7.4 mg/L	Obj. met Obj. not met
	Coquitlam River 0300019 d/s Or Creek	Sep 23,30 Oct 8,15,21	5	10.8 - 12.5 mg/L	Objective met
	0300011 u/s Coquitlam R. Park	Sep 23,30,Oct 8,15,21	5	8.0 - 12.6 mg/L	Objective met
	0300010 near mouth	Sep 30-Oct 21 Sep 23	4 1	9.2 - 11.0 mg/L 7.9 mg/L	Obj. met Obj. not met
	Or Creek 1189002 near mouth	Sep 23,30,Oct 8,15,21	5	8.4 - 11.7 mh/L	Objective met
	Scott Creek 1189007 d/s Hoy Creek	Sep 23,30,Oct 8,15,21	5	9.9 - 11.6 mg/L	Objective met
	Pitt River Alouette River North Alouette River	1990	0	no data collected	Objective not checked
	Hoy Creek	1990	0	no data collected	Omitted 1990

TABLE 28 continued

NORTH SHORE LOWER FRASER TRIBUTARIES WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Dissolved Oxygen 6.0 mg/L min (short-term) 8.0 mg/L min (long-term) 11.0 mg/L min Nov - Mar (long-term)	Still Creek 0300008 near Burnaby L. inlet	Sep 30,Oct 21 Sep 23	4 1	6.5 - 8.5 mg/L 5.2 mg/L	Obj. met Obj. not met
	Burnaby Lake 0300009 near outlet	Sep 23-Oct 16 Oct 21	4 1	6.2 - 7.4 mg/L 5.3 mg/L	Obj. met Obj. not met
	Deer Lake	1990	0	no data collected	Omitted 1990
Diss. Oxygen 8.0 mg/L min 11.0 mg/L min Nov - Mar (long-term)	Brunette River: E208821 Hume Park	Sep 23,Oct 8, 16,21	4	8.3 -11.0 mg/L	Objective met
	0300111 near mouth	Oct 16-Oct 21 Sep 23-Oct 8	2 3	9.2 - 9.4 mg/L 7.0 - 7.7 mg/L	Obj. met Obj. not met
pH 6.5 - 8.5 (long-term)	Kanaka Creek: 0300025 112 Ave (mid-length)	Sep 23,30,Oct 8,15,21	5	6.5 - 7.5	Objective met
	0300024 near mouth	Sep 23,30,Oct 8,15,21	5	6.9 - 7.5	Objective met
pH 6.5 - 8.5 or max change 0.2 if u/s pH <6.5	Pitt River 0300012 near mouth	Jun 26,Jul 4, 11,16,24	5	7.2 - 7.9	Objective met
	Alouette River: 0300015 232 St (u/s Haney)	Jun 26,Jul 4, 11,16,24	5	7.3 - 7.6	Objective met
	0300014 208 St (d/s Haney)	Jun 26,Jul 4, 11,16,24	5	6.6 - 7.4	Objective met
	North Alouette River: 0300018 u/s Haney	Jun 26,Jul 4, 11,16	4	6.9 - 7.7	Objective met
	0300017 near mouth	Jun 26, Jul 11,16,24 Jul 4	4 1	6.5 - 6.9 6.3	Objective met Obj. not met
	Coquitlam River 0300019 d/s Or Creek	Sep 23,30,Oct 8,15 Oct 21	4 1	7.0 - 7.4 6.4	Objective met Indef result

TABLE 28 continued

NORTH SHORE LOWER FRASER TRIBUTARIES WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
pH 6.5 - 8.5 or max change 0.2 if u/s pH <6.5	Coquitlam River 0300010 near mouth	Sep 23,30,Oct 8,15,21	5	7.0 - 7.7	Objective met
	Or Creek 1189002 near mouth	Sep 23,30,Oct 8,15 Oct 21	4 1	6.8 - 7.3 6.3	Objective met Indef result
	Scott Creek 1189007 d/s Hoy Creek	Sep 23,30,Oct 8,15,21	5	6.9 - 7.6	Objective met
	Hoy Creek	1990	0	no data collected	Omitted 1990
	Pitt Lake Alouette Lake	1990	0	no data collected	Objective not checked
pH 6.5 - 8.5	Still Creek 0300008 near Burnaby L. inlet	Sep 30,Oct 8, 16,21	4	7.0 - 7.2	Objective met
	Burnaby Lake 0300009 near outlet	Sep 23,30,Oct 8,16,21	5	6.9 - 7.3	Objective met
	Brunette River 0300111 near mouth	Sep 23,30,Oct 8,16,21	5	7.2 - 7.6	Objective met
	Deer Lake	1990	0	no data collected	Omitted 1990
Total Cr 0.020 mg/L max (long-term)	Still Creek 0300008 near Burnaby L. inlet	Sep 30,Oct 8, 16,21	4	<0.01 - 0.02 mg/L	Objective met
	Burnaby Lake 0300009 near outlet	Sep 23,30,Oct 8,16,21	5	all <0.010 mg/L	Objective met
	Brunette River 0300111 near mouth	Sep 23,30,Oct 8,16,21	5	all <0.010 mg/L	Objective met
	Deer Lake	1990	0	no data collected	Omitted 1990
Total Cu <0.002 mg/L av 0.005 mg/L max hard. >30 mg/L (long-term)	Still Creek 0300008 near Burnaby L. inlet	Sep 30,Oct 8, 16,21	4	0.012 - 0.030 mg/L	Max not met Av not chkd.

TABLE 28 continued

NORTH SHORE LOWER FRASER TRIBUTARIES WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Cu <0.002 mg/L av 0.005 mg/L max at hard. >30 mg/L (long-term)	Burnaby Lake 0300009 near outlet	Sep 23-Oct 21 Sep 23-Oct 16 Oct 21	5 4 1	av = 0.005 mg/L 0.001 - 0.005 mg/L 0.010 mg/L	Av not met Max obj. met Max not met
	Brunette River 0300111 near mouth	Sep 23-Oct 21 Sep 23-Oct 16 Oct 21	5 4 1	av = 0.004 mg/L <0.001 - 0.002mg/L 0.012 mg/L	Av not met Max obj. met Max not met
	Deer Lake	1990	0	no data collected	Omitted 1990
Total Cu <30 ug/g av in sediments (long-term)	Burnaby Lake 0300009 near outlet	Nov 18	3	44 - 87 ug/g av = 65 ug/g	Objective not met
	Brunette River 0300111 near mouth	Nov 18	3	42 - 52 ug/g av = 46 ug/g	Objective not met
	Still Creek	1990	0	no data collected	Obj not chkd
	Deer Lake	1990	0	no data collected	Omitted 1990
Total Pb <0.004 mg/L av 0.018 mg/L max (long-term)	Still Creek 0300008 near Burnaby L. inlet	Sep 30,Oct 8, 16,21	4	0.003 - 0.006 mg/L	Max obj. met Av not chkd.
	Brunette River 0300111 near mouth	Sep 23,30,Oct 8,16,21	5	<0.001 - 0.013mg/L av = 0.005mg/L	Max obj. met Av not met
Total Pb <0.004 mg/L av 0.012 mg/L max (long-term)	Burnaby Lake 0300009 near outlet	Sep 23-Oct 21 Sep 23-Oct 16 Oct 8,Oct 21	5 3 2	av = 0.010 mg/L 0.004 - 0.012 mg/L 0.013 - 0.016 mg/L	Av not met Max obj. met Max not met
	Deer Lake	1990	0	no data collected	Omitted 1990
Total Pb <5 ug/g av in sediments (long-term)	Burnaby Lake 0300009 near outlet	Nov 18	3	26 - 106 ug/g av = 68 ug/g	Objective not met
	Brunette River 0300111 near mouth	Nov 18	3	24 - 32 ug/g av = 28 ug/g	Objective not met
	Still Creek	1990	0	no data collected	Obj not chkd
	Deer Lake	1990	0	no data collected	Omitted 1990

TABLE 28 continued

NORTH SHORE LOWER FRASER TRIBUTARIES WATER QUALITY OBJECTIVES - 1990

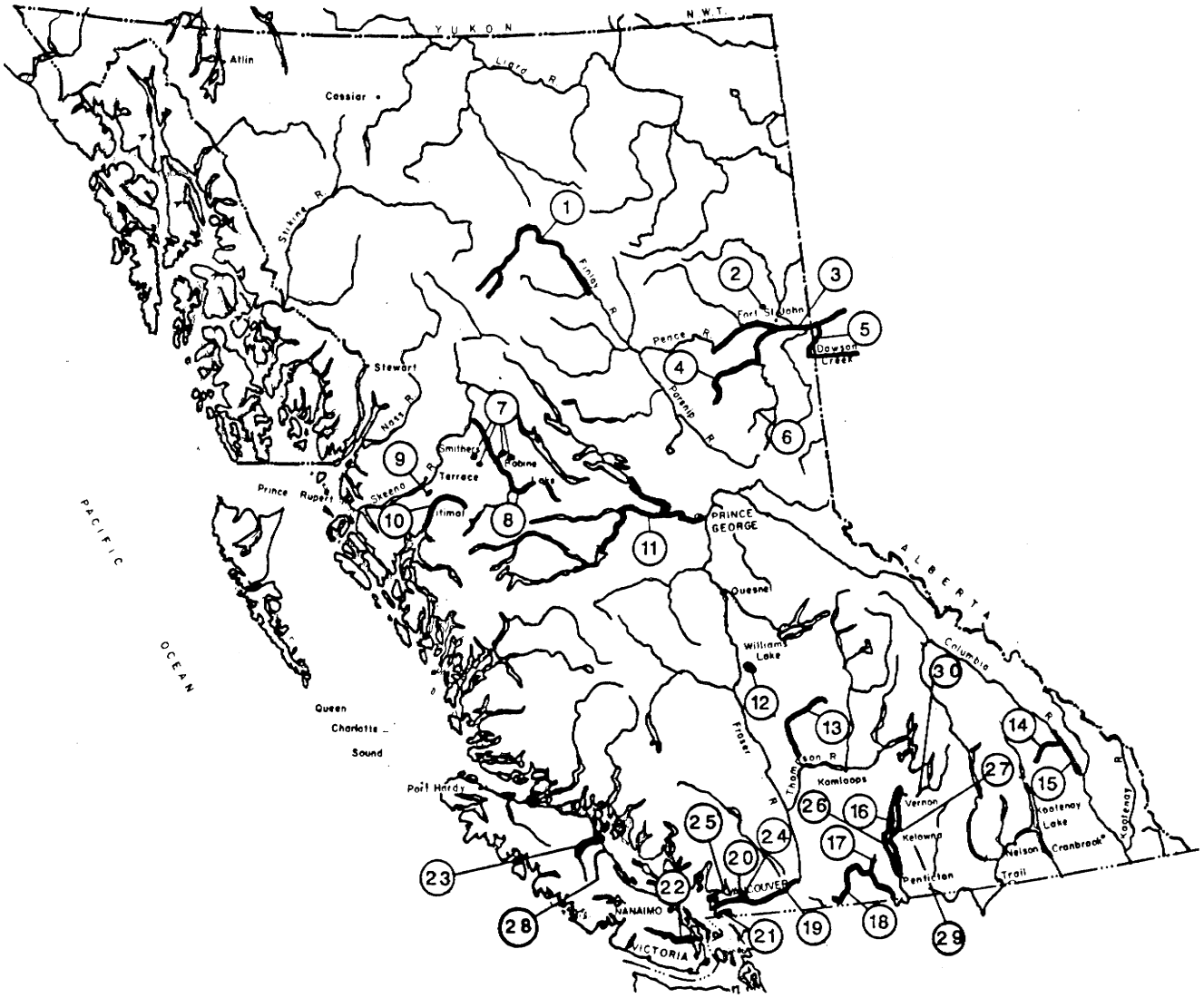
VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Pb 0.8 ug/g wet weight in fish muscle	Still Creek Burnaby Lake Brunette River	1990	0	no data collected	Objective not checked
	Deer Lake	1990	0	no data collected	Omitted 1990
Total Hg <0.02 ug/L av 0.1 ug/L max (long-term)	Still Creek 0300008 near Burnaby L. inlet	Sep 30,Oct 8, 16,21	4	all <0.05 ug/L	Max obj. met Av not chkd.
	Burnaby Lake 0300009 near outlet	Sep 23,30,Oct 8,16,21	5	all <0.05 ug/L	Max obj. met Av indef.
	Brunette River 0300111 near mouth	Sep 23,30,Oct 8,16,21	5	all <0.05 ug/L	Max obj. met Av indef.
	Deer Lake	1990	0	no data collected	Omitted 1990
Total Hg <0.07 ug/g av in sediments (long-term)	Burnaby Lake 0300009 near outlet	Nov 18	3	0.07 - 0.16 ug/g av = 0.12 ug/g	Objective not met
	Brunette River 0300111 near mouth	Nov 18	3	0.05 - 0.07 ug/g av = 0.06 ug/g	Objective met
	Still Creek	1990	0	no data collected	Obj not chkd
	Deer Lake	1990	0	no data collected	Omitted 1990
Total Hg 0.05 ug/g wet weight in fish muscle	Still Creek Burnaby Lake Brunette River	1990	0	no data collected	Objective not checked
	Deer Lake	1990	0	no data collected	Omitted 1990
Total Zn 0.03 mg/L max (long-term)	Still Creek 0300008 near Burnaby L. inlet	Sep 30,Oct 8, 16,21	4	0.05 - 0.12 mg/L	Objective not met
	Burnaby Lake 0300009 near outlet	Oct 8,Oct 16 Sep 23-Oct 21	2 3	0.025 - 0.030 mg/L 0.035 - 0.100 mg/L	Obj. met Obj. not met
	Brunette River 0300111 near mouth	Oct 8,16,21 Sep 23,30	3 2	0.009 - 0.030 mg/L 0.050 - 0.080 mg/L	Obj. met Obj. not met
	Deer Lake	1990	0	no data collected	Omitted 1990

TABLE 28 continued

NORTH SHORE LOWER FRASER TRIBUTARIES WATER QUALITY OBJECTIVES - 1990

VARIABLE & OBJECTIVE	MEASUREMENT				CONCLUSION
	SITE	DATE	n	VALUE	
Total Zn <70 ug/g av in sediments (long-term)	Burnaby Lake 0300009 near outlet	Nov 18	3	145 - 265 ug/g av = 216 ug/g	Objective not met
	Brunette River 0300111 near mouth	Nov 18	3	124 - 147 ug/g av = 135 ug/g	Objective not met
	Still Creek	1990	0	no data collected	Obj not chkd
	Deer Lake	1990	0	no data collected	Omitted 1990
Chlorophenols (tri + tetra + penta) in water 0.0002mg/L max	Pitt River 0300012 near mouth	Jul 24	1	< 0.0001 mg/L for each homologue	Objective met
Chlorophenols (tri + tetra + penta) in sediments <0.01 ug/g av	Pitt River 0300012 near mouth	Aug 1	3	penta: 0.009-0.012 ug/g tetra: all <0.005 ug/g tri: <0.005-0.008 ug/g av sum=0.021 ug/g	Objective not met
Chlorophenols (tri + tetra + penta) in fish 0.10 ug/g max (wet weight)	Pitt River	1990	0	no data collected	Objective not checked

FIGURE 1
Water Basins Where Water Quality Objectives Have Been Set



1. Upper Finlay R.
2. Charlie L.
3. Peace R.
4. Pine R.
5. Pouce Coupe R.
6. Bullmoose Cr.
7. Kathlyn, Seymour, Round, and Tyhee L's.
8. Bulkley R.
9. Lakelse L.
10. Lower Kitimat R. and Arm
11. Nechako R.
12. Williams L.
13. Bonaparte R.
14. Toby Cr.
15. Columbia and Windermere L.
16. Okanagan Valley L.
17. Cahill Cr.
18. Similkameen R.
19. Lower Fraser R.
20. Lower Fraser R.
21. Boundary Bay
22. Cowichan – Koksilah R.
23. Quinsam R.
24. Lower Fraser R. tributaries
25. Burrard Inlet
26. Okanagan Tribs., Westbank
27. Okanagan Tribs., Kelowna
28. Oyster River
29. Hydraulic Creek
30. Bessette Creek

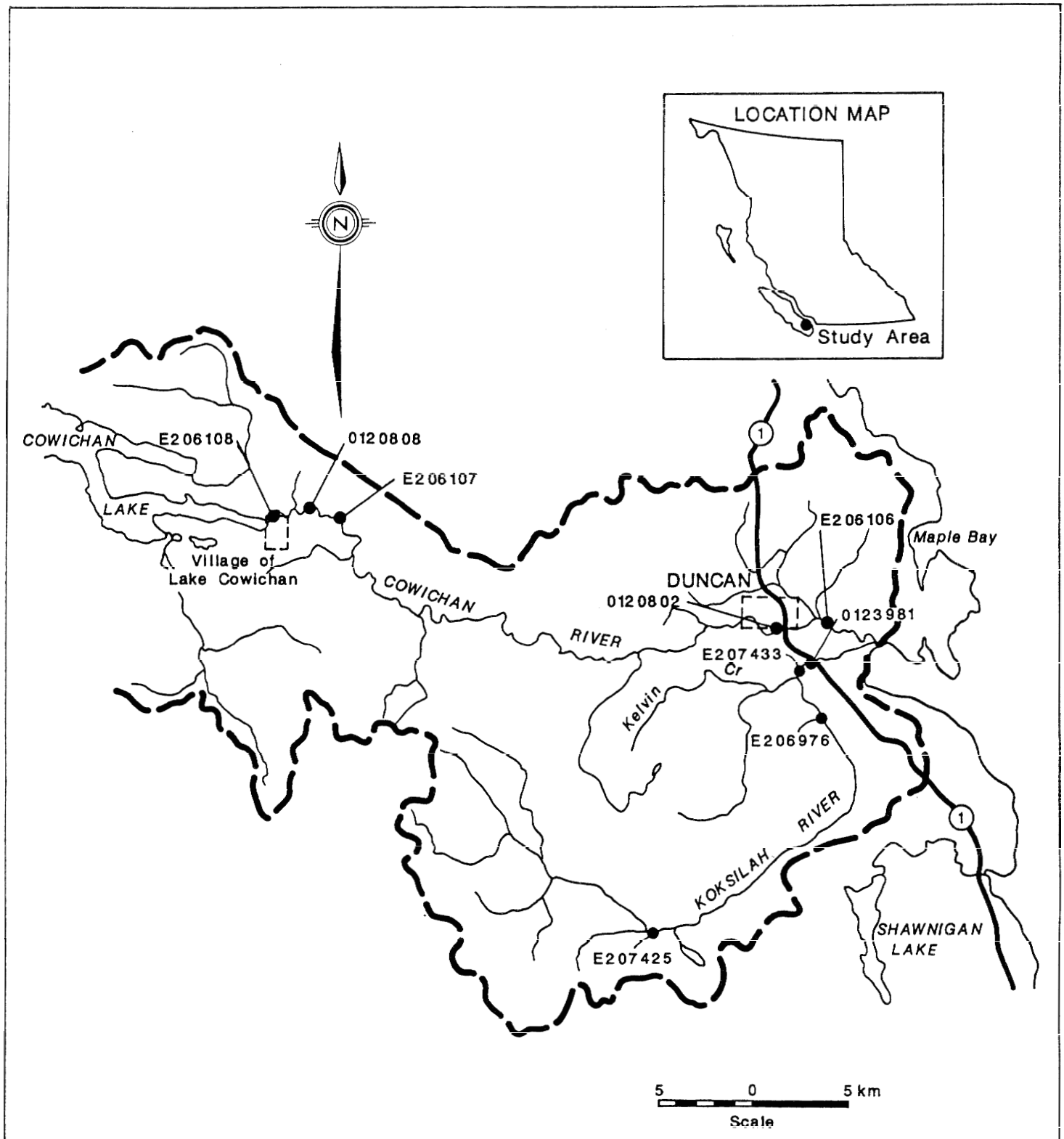


FIGURE 2 Cowichan – Koksilah Rivers

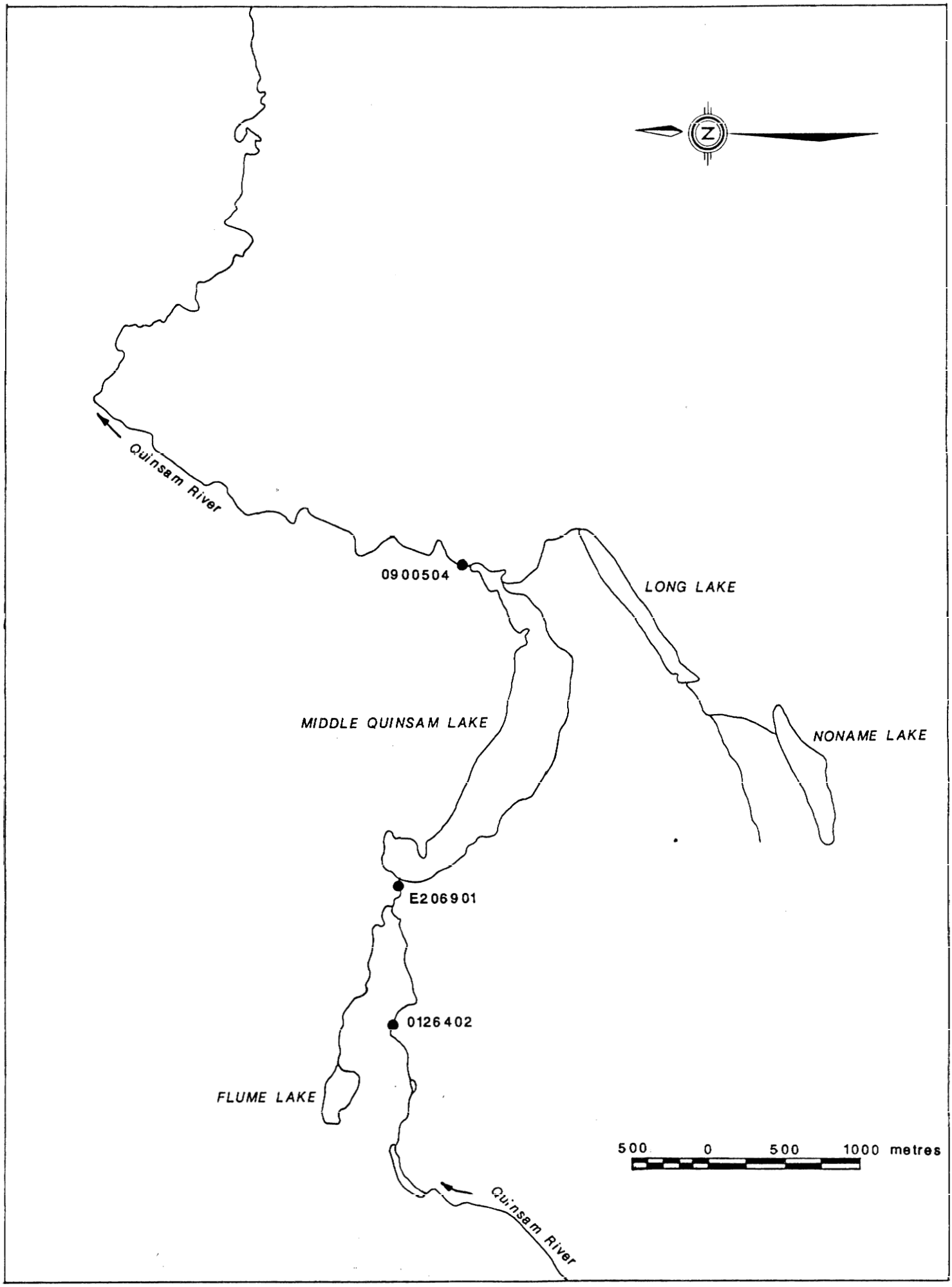


FIGURE 3 Middle Quinsam Lake

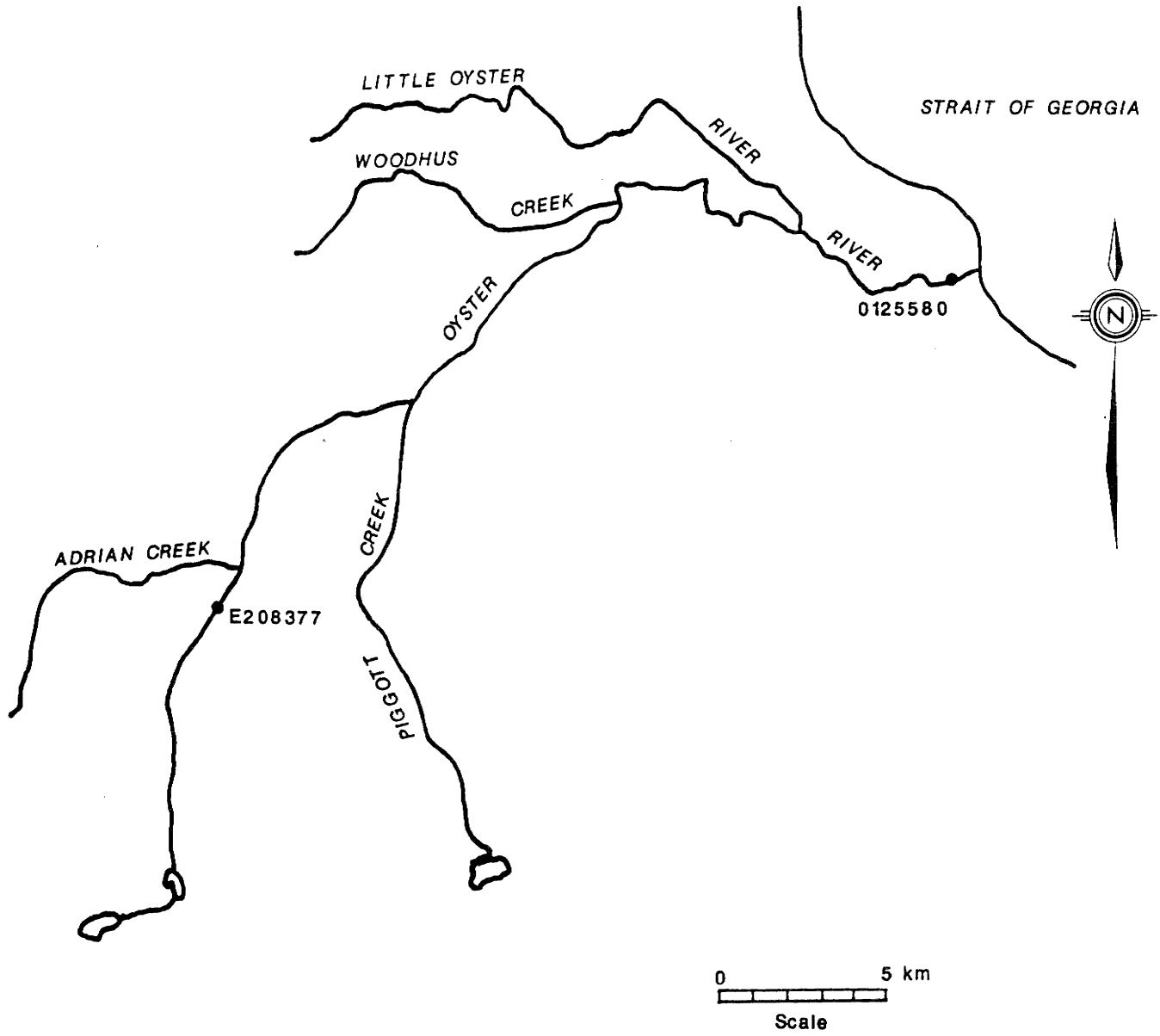


FIGURE 4 Oyster River

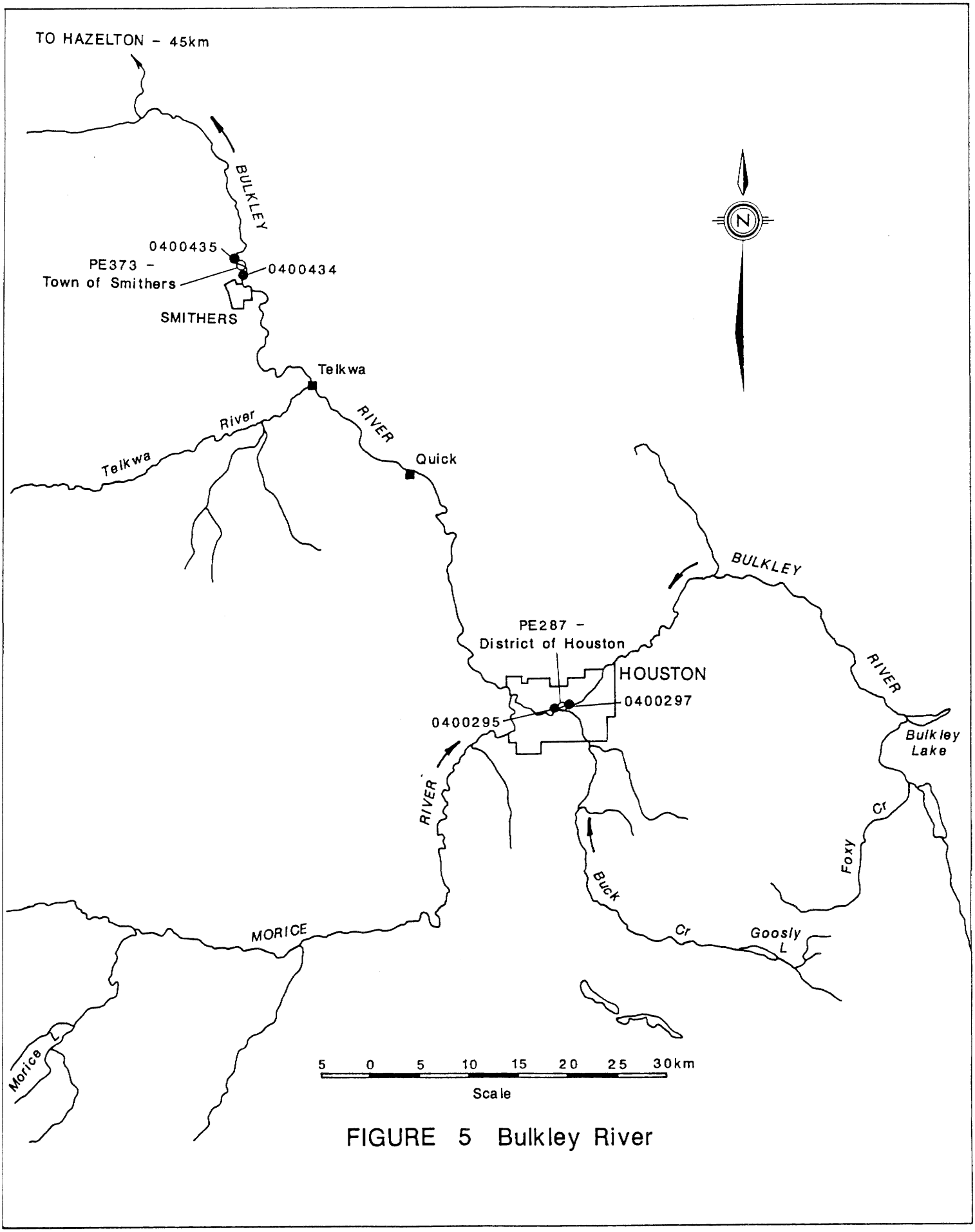


FIGURE 5 Bulkley River

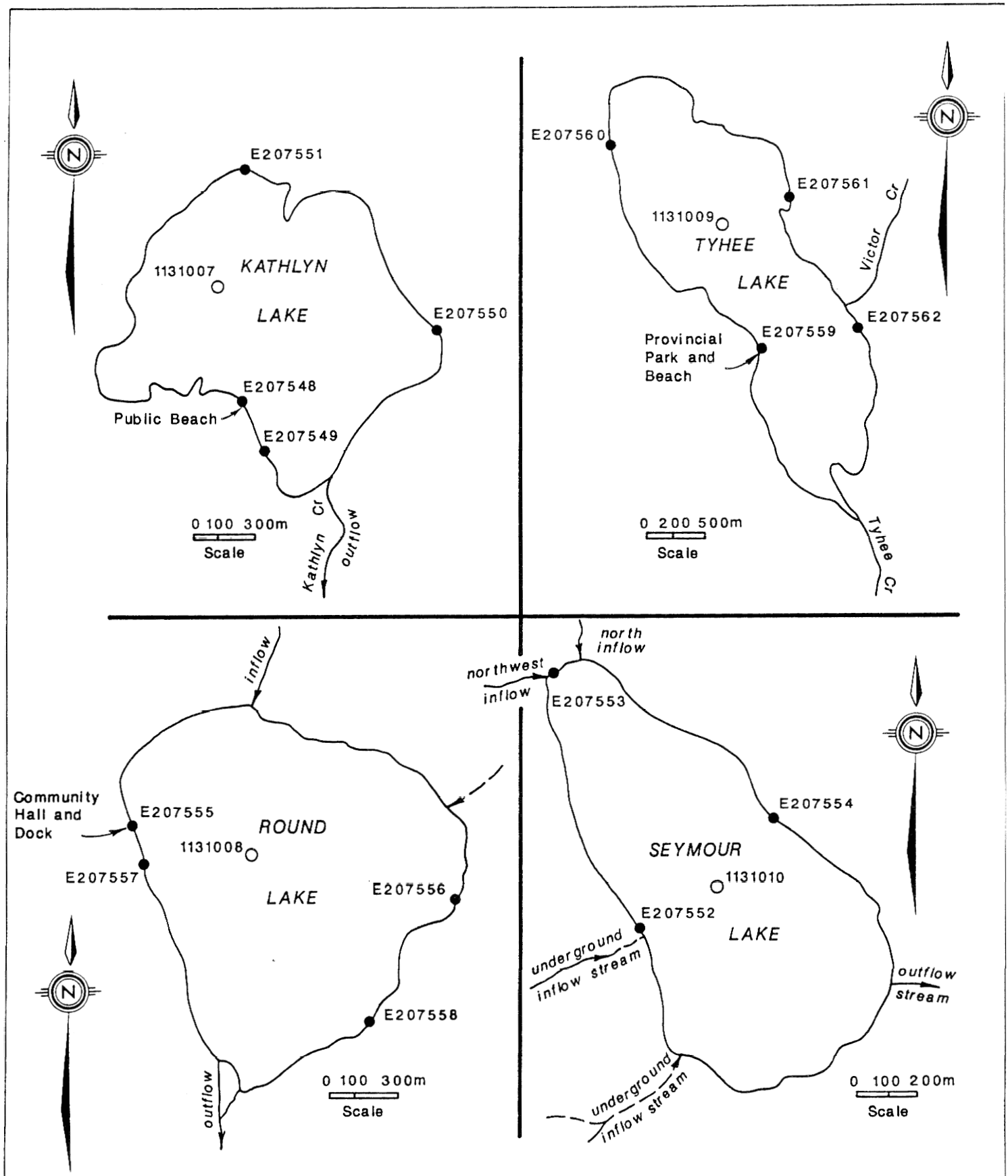


FIGURE 6 Kathlyn, Seymour, Round and Tyhee Lakes

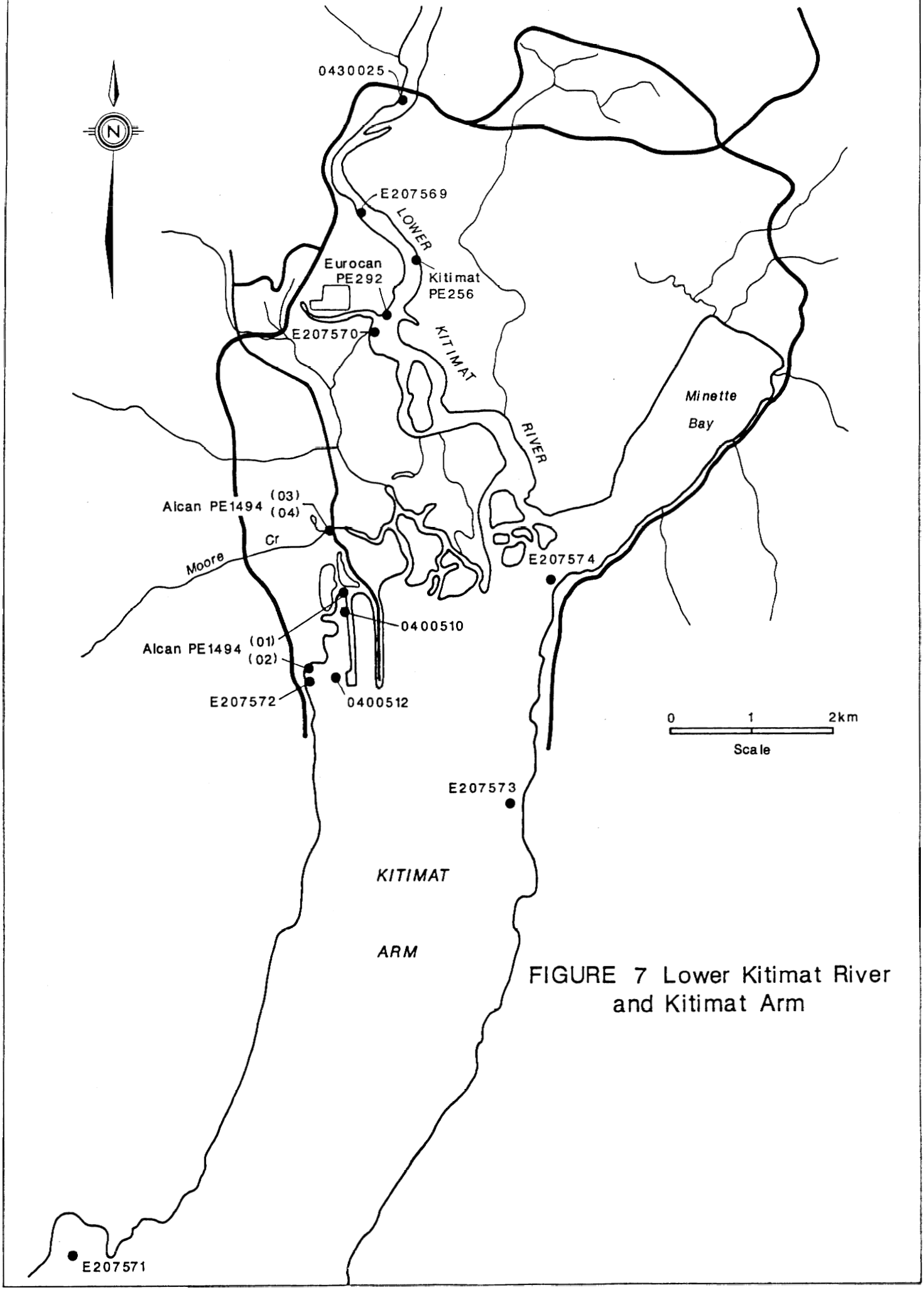


FIGURE 7 Lower Kitimat River and Kitimat Arm

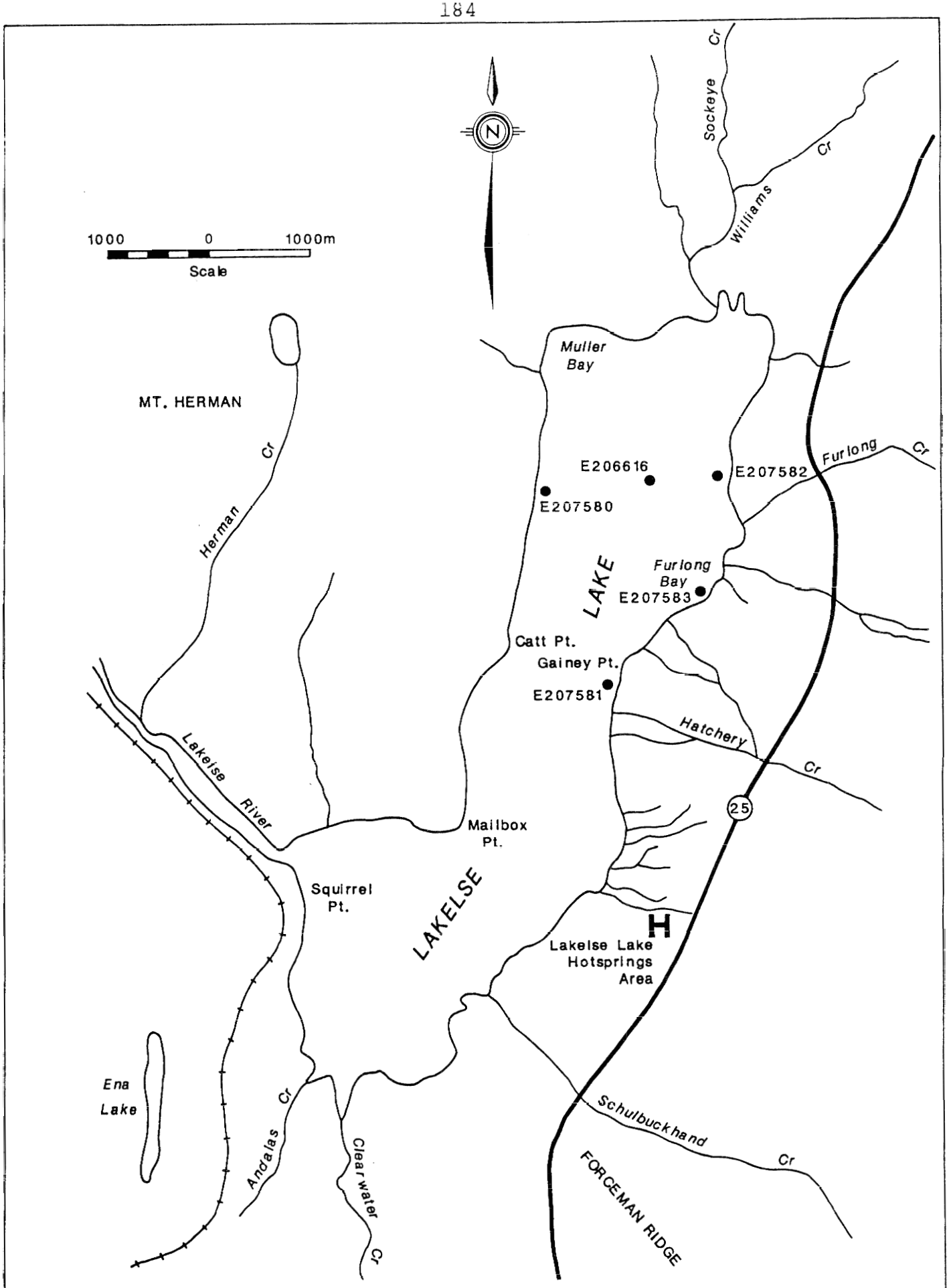


FIGURE 8 Lakelse Lake

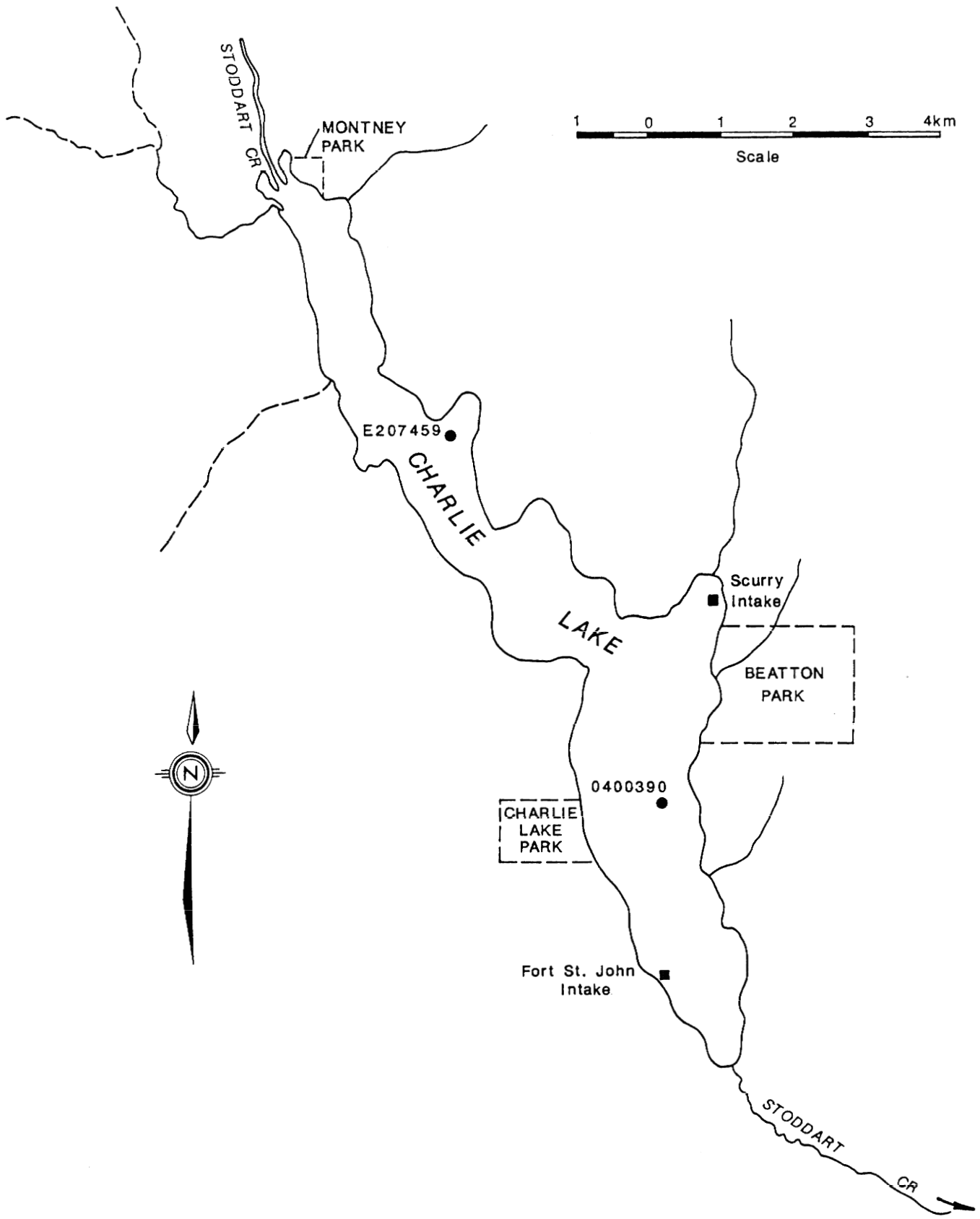


FIGURE 9 Charlie Lake

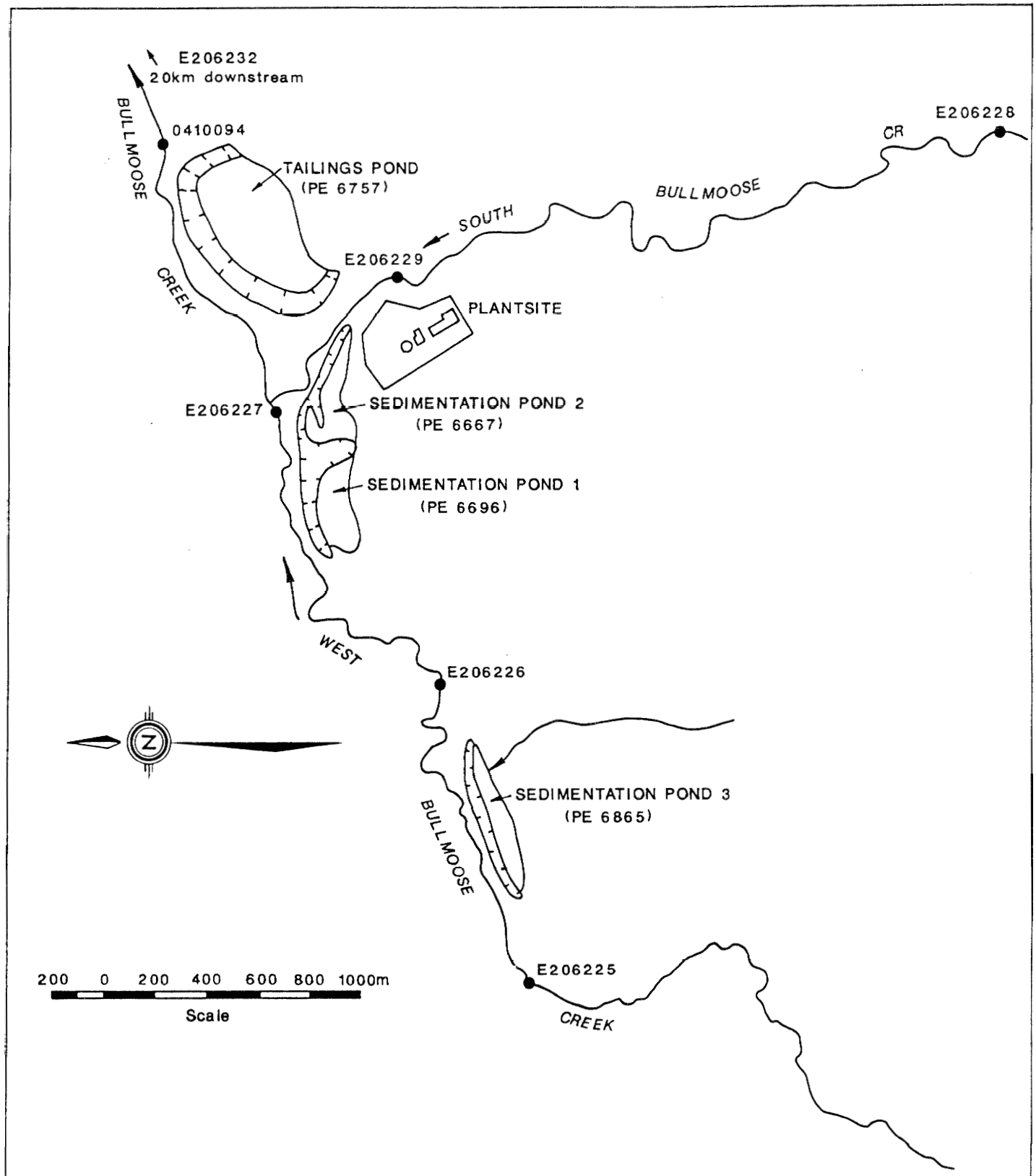


FIGURE 10 Bullmoose Creek

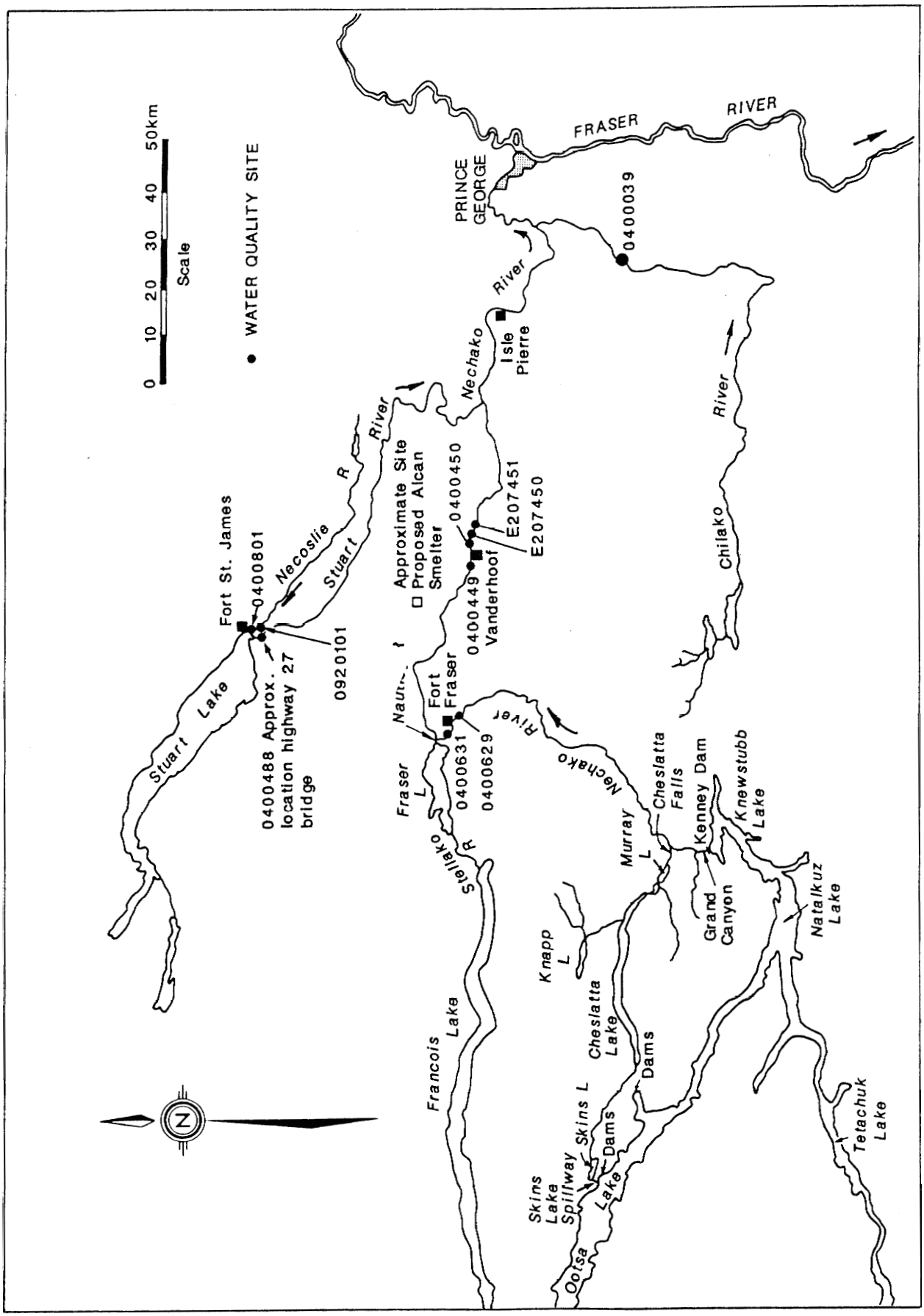


FIGURE 11 Nechako River

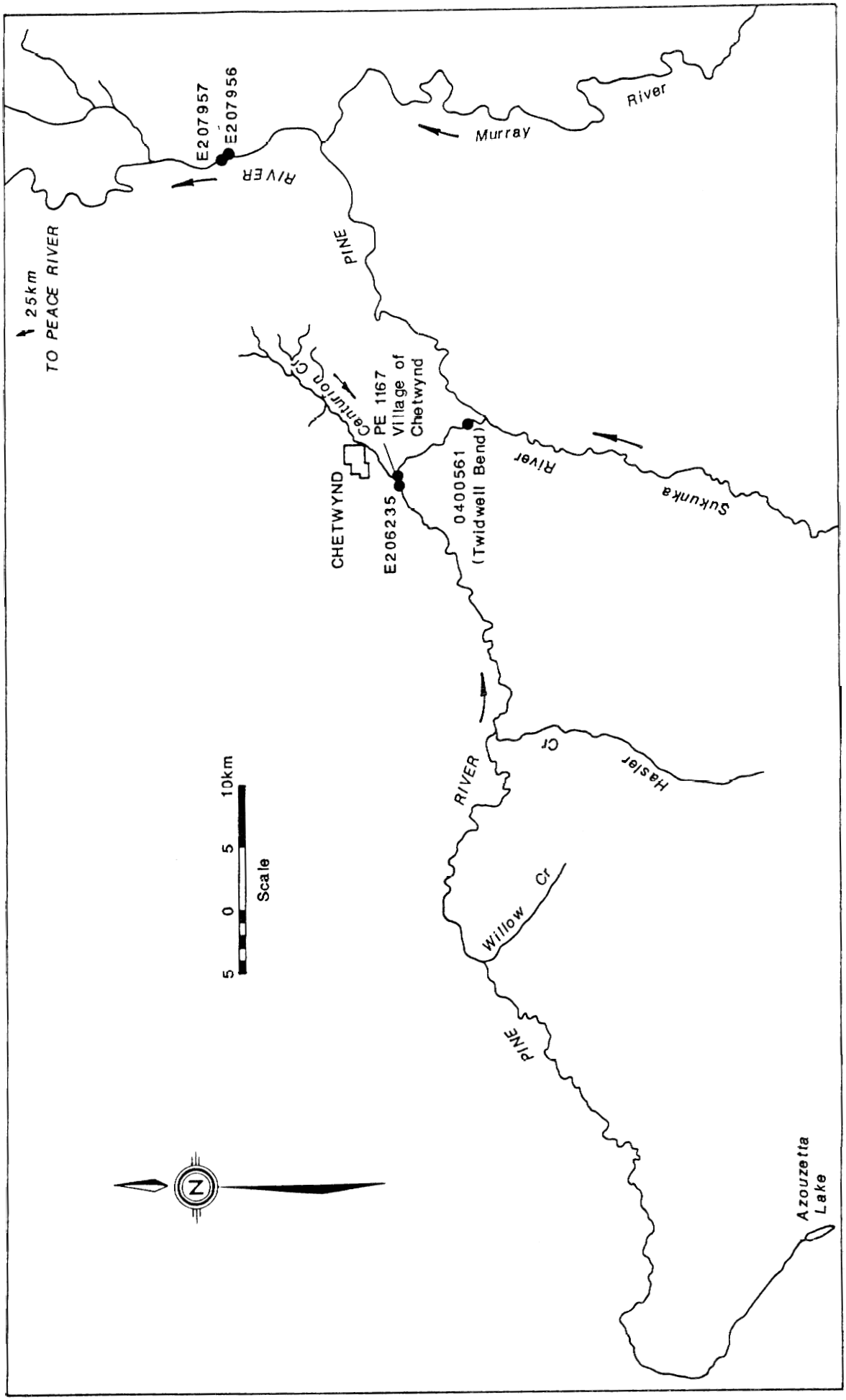


FIGURE 12 Pine River

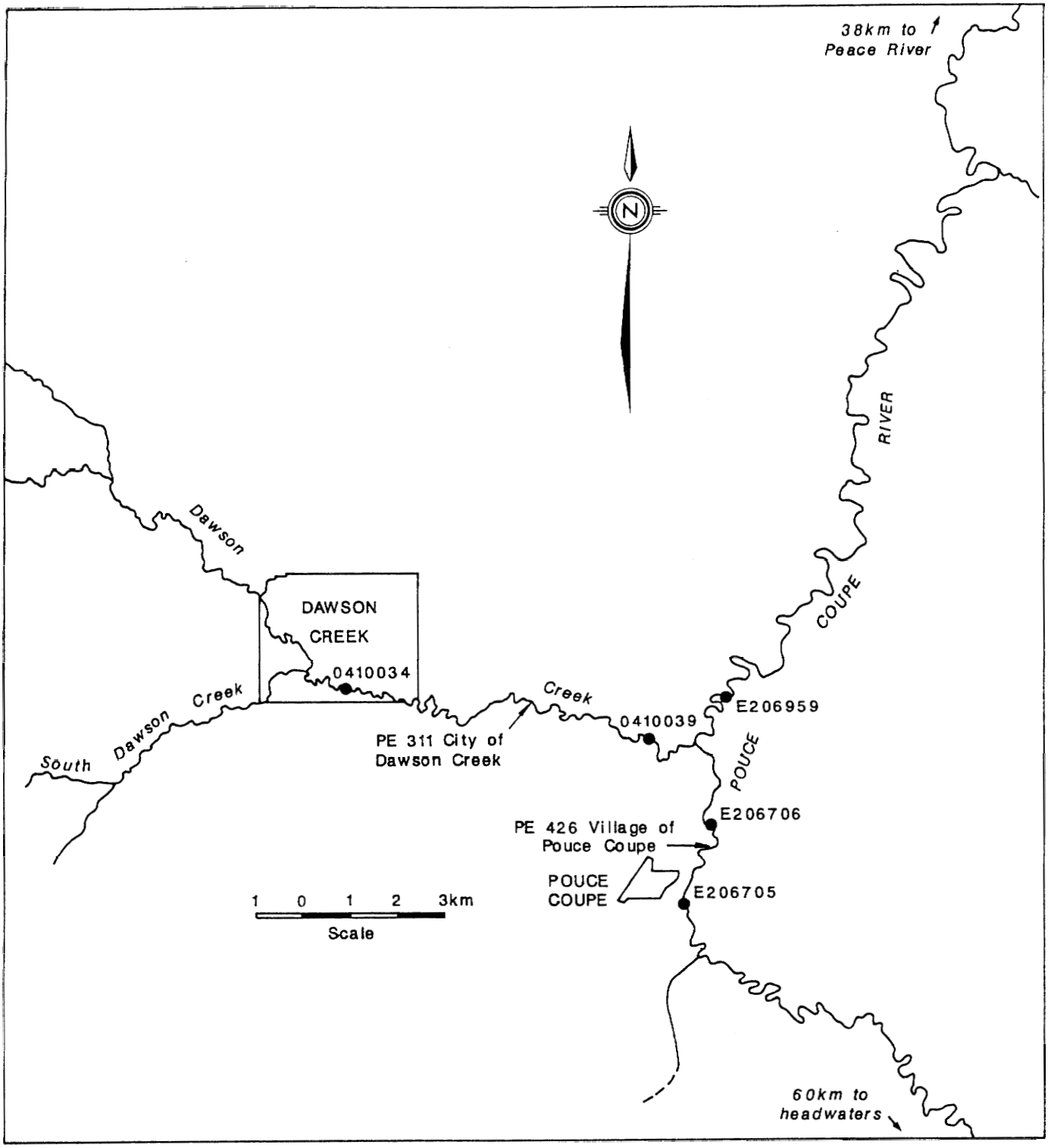


FIGURE 13 Pouce Coupe River

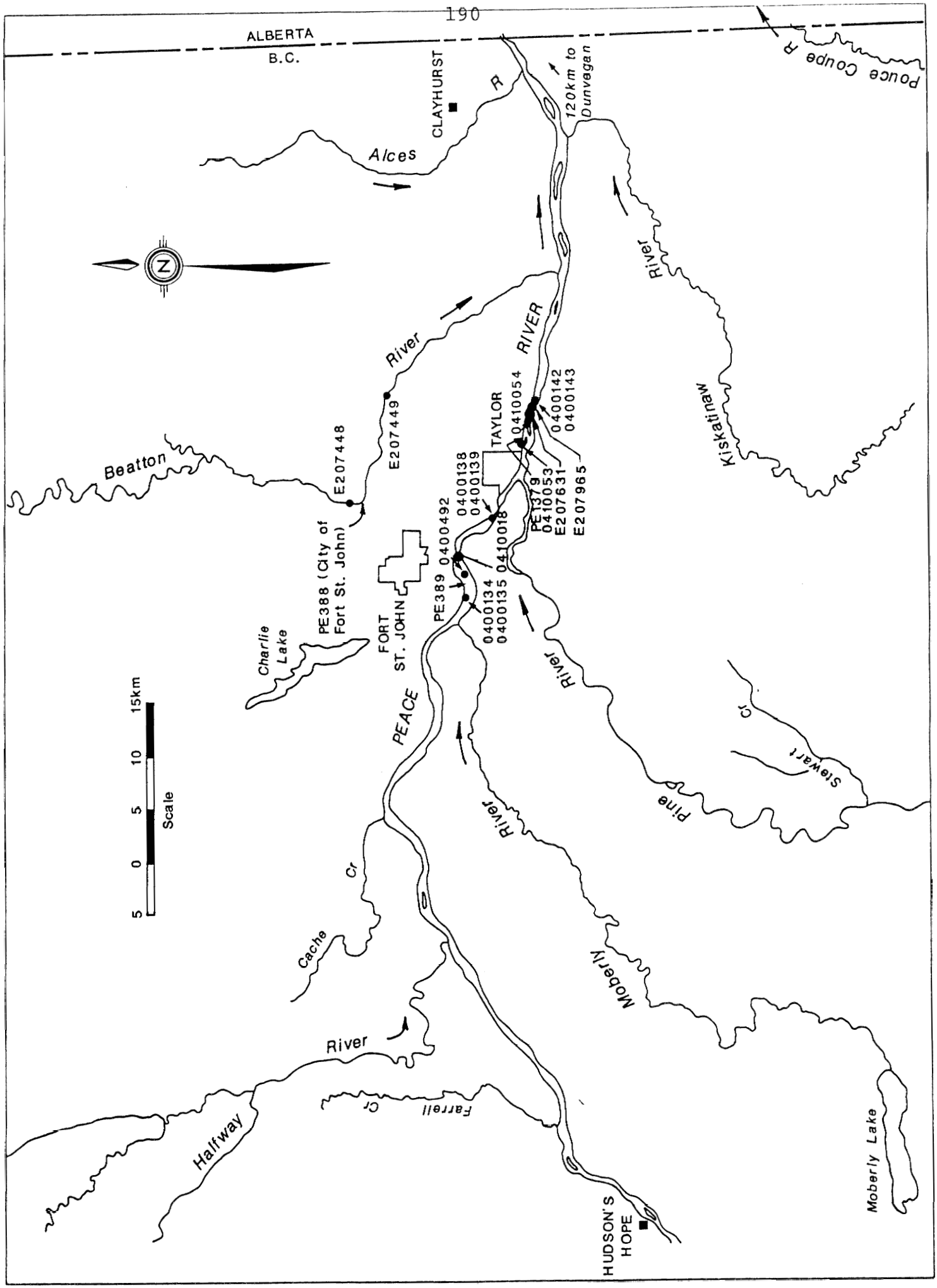


FIGURE 14 Peace River Mainstem

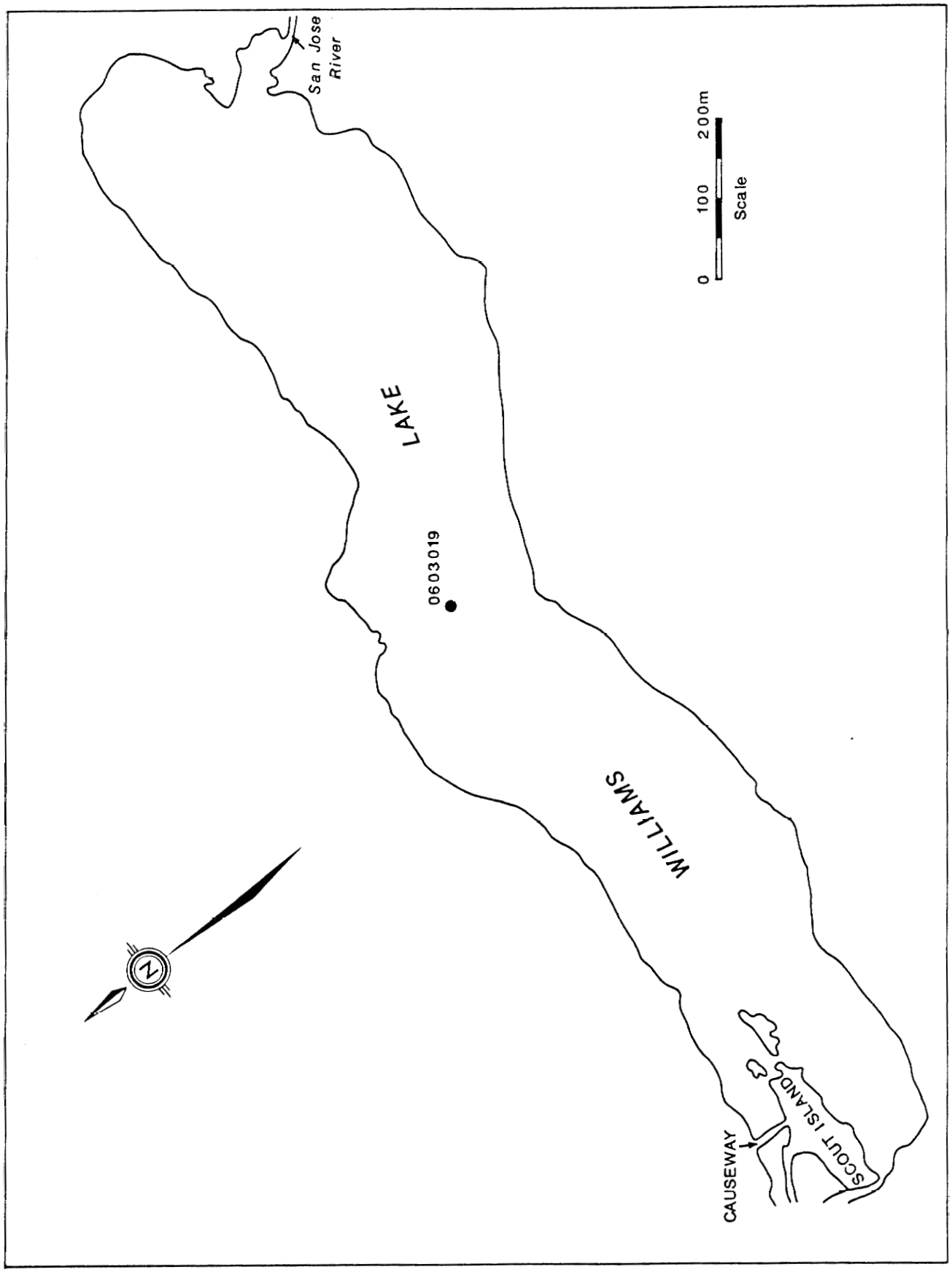


FIGURE 15 Williams Lake

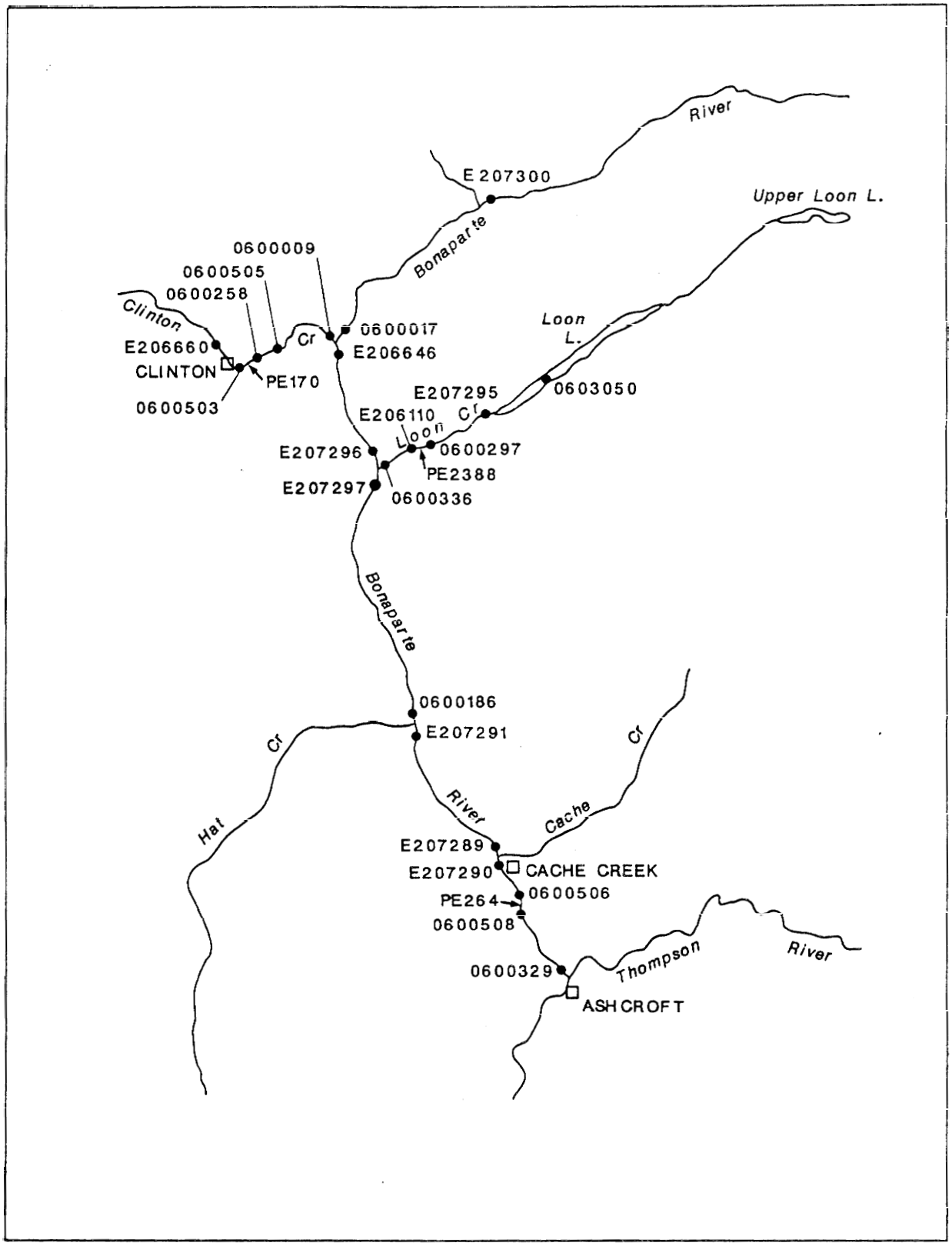


FIGURE 16 Bonaparte River

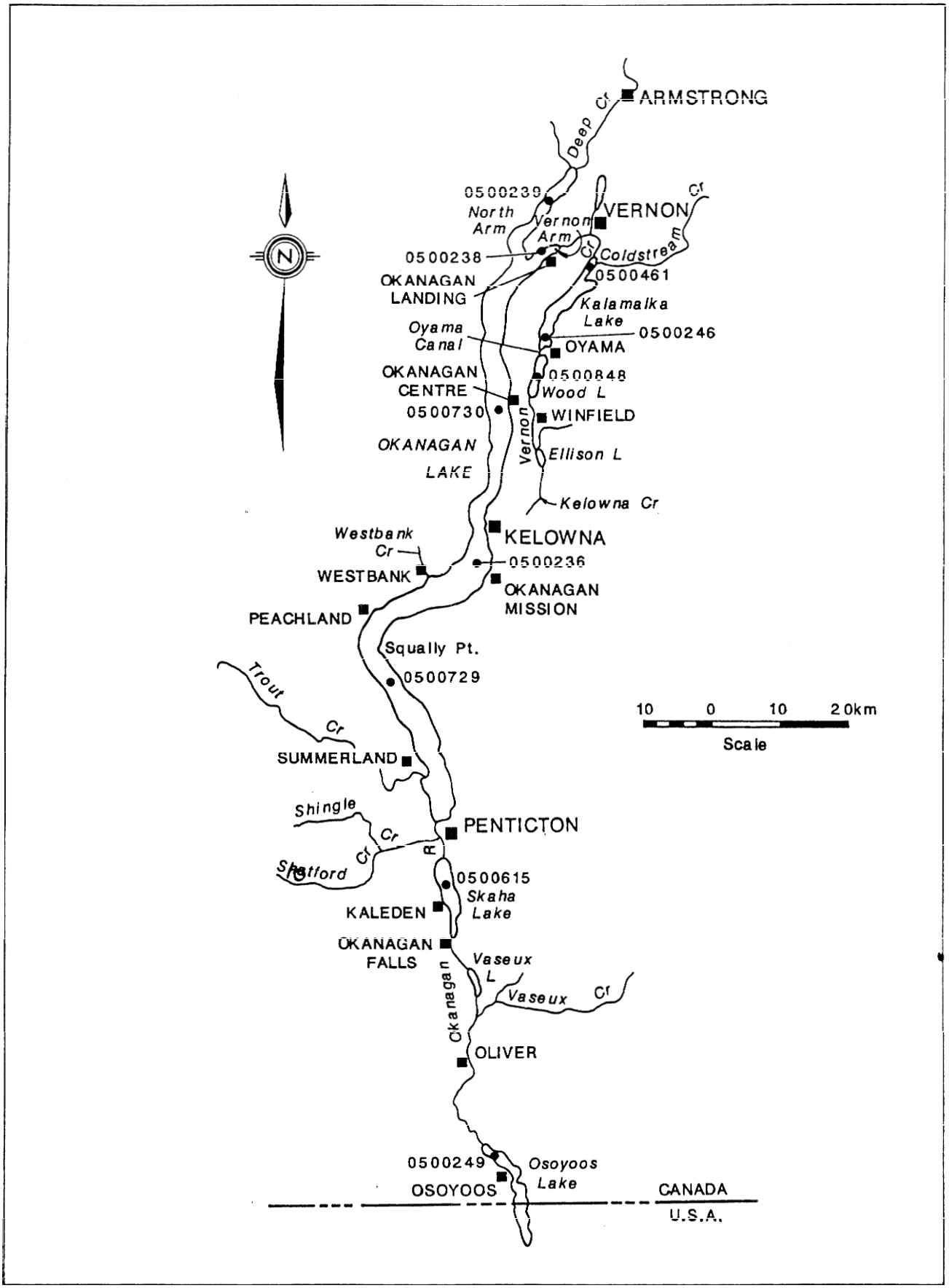


FIGURE 17 Okanagan Valley Lakes

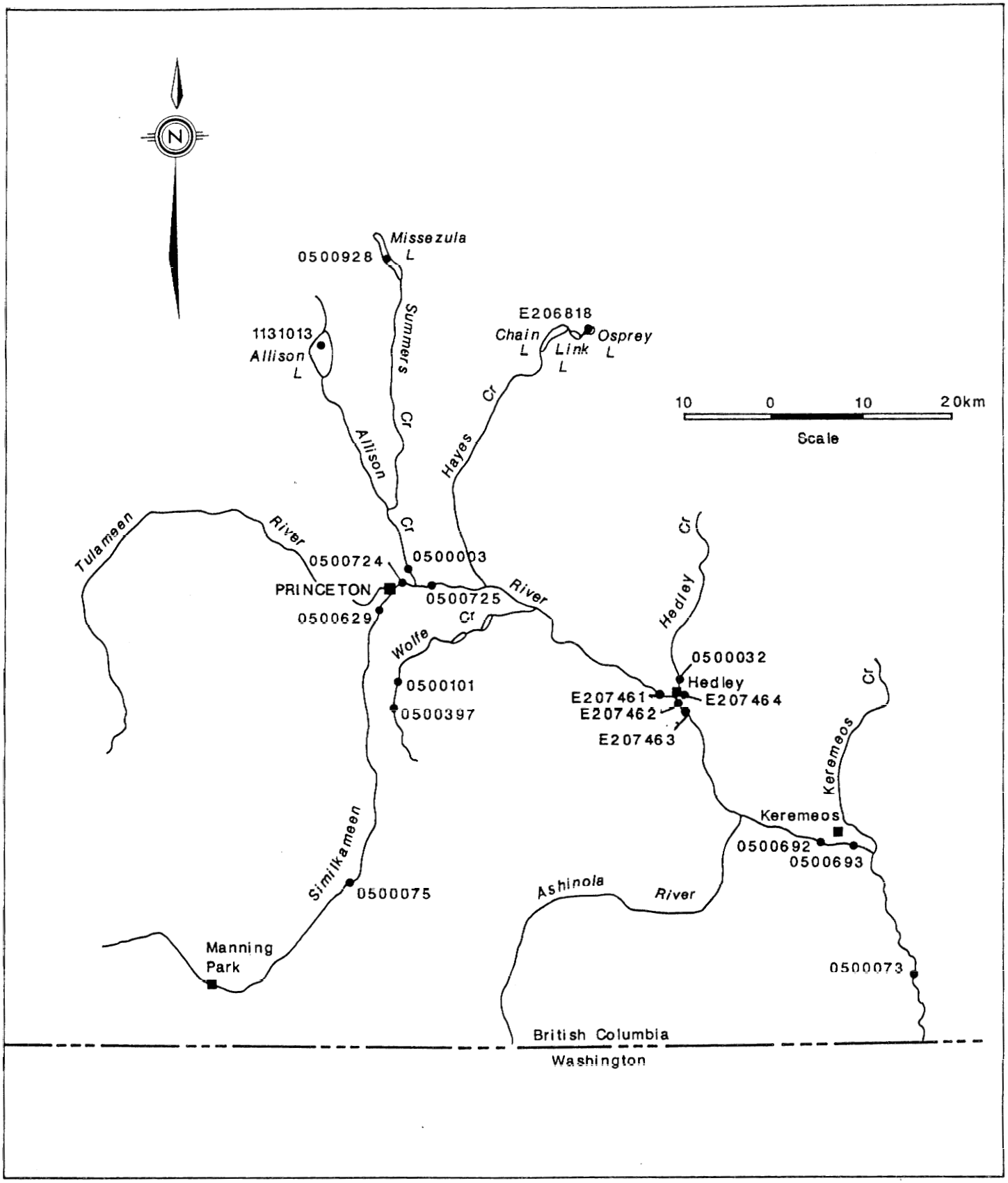


FIGURE 18 Similkameen River

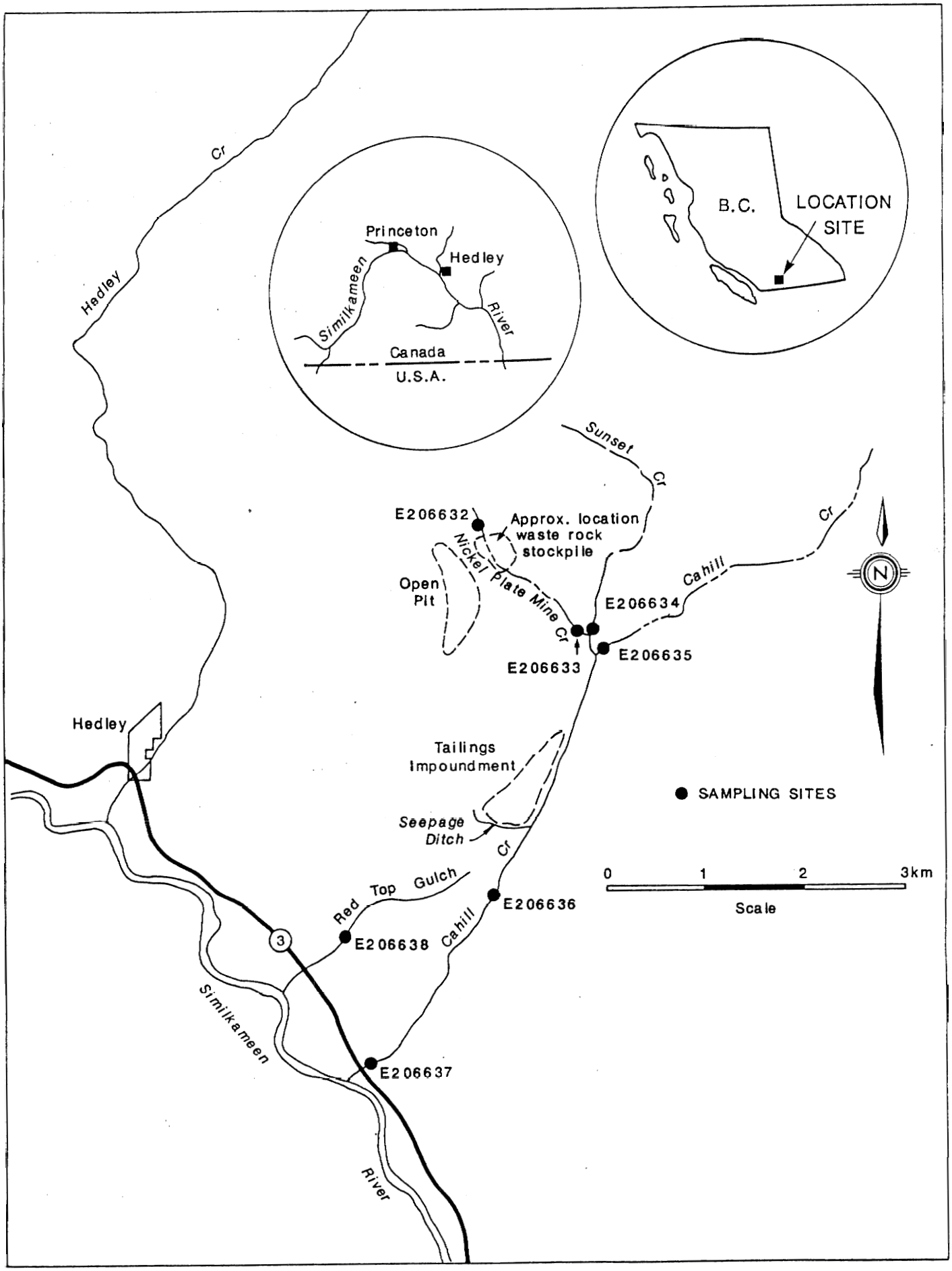


FIGURE 19 Cahill Creek

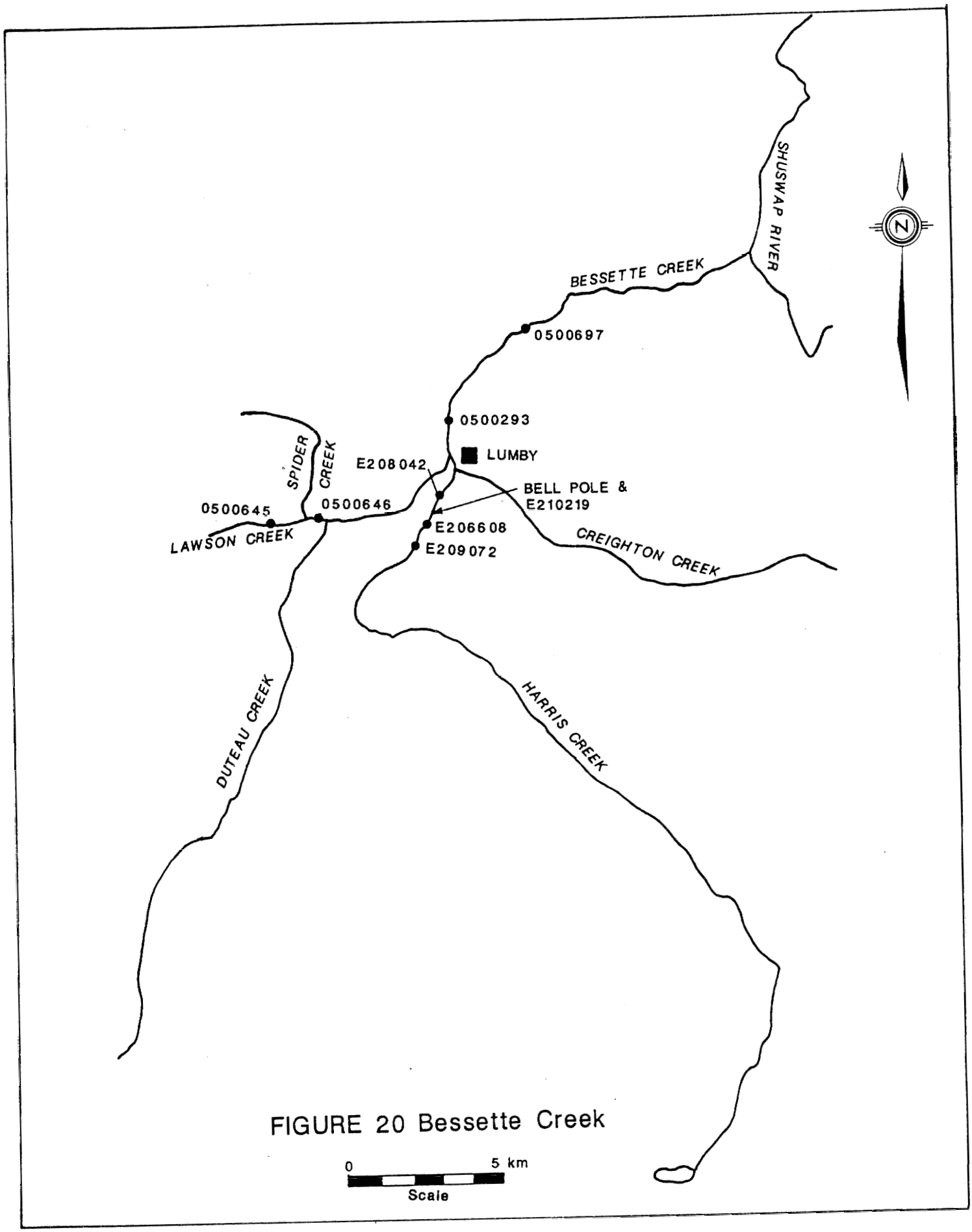


FIGURE 20 Bessette Creek

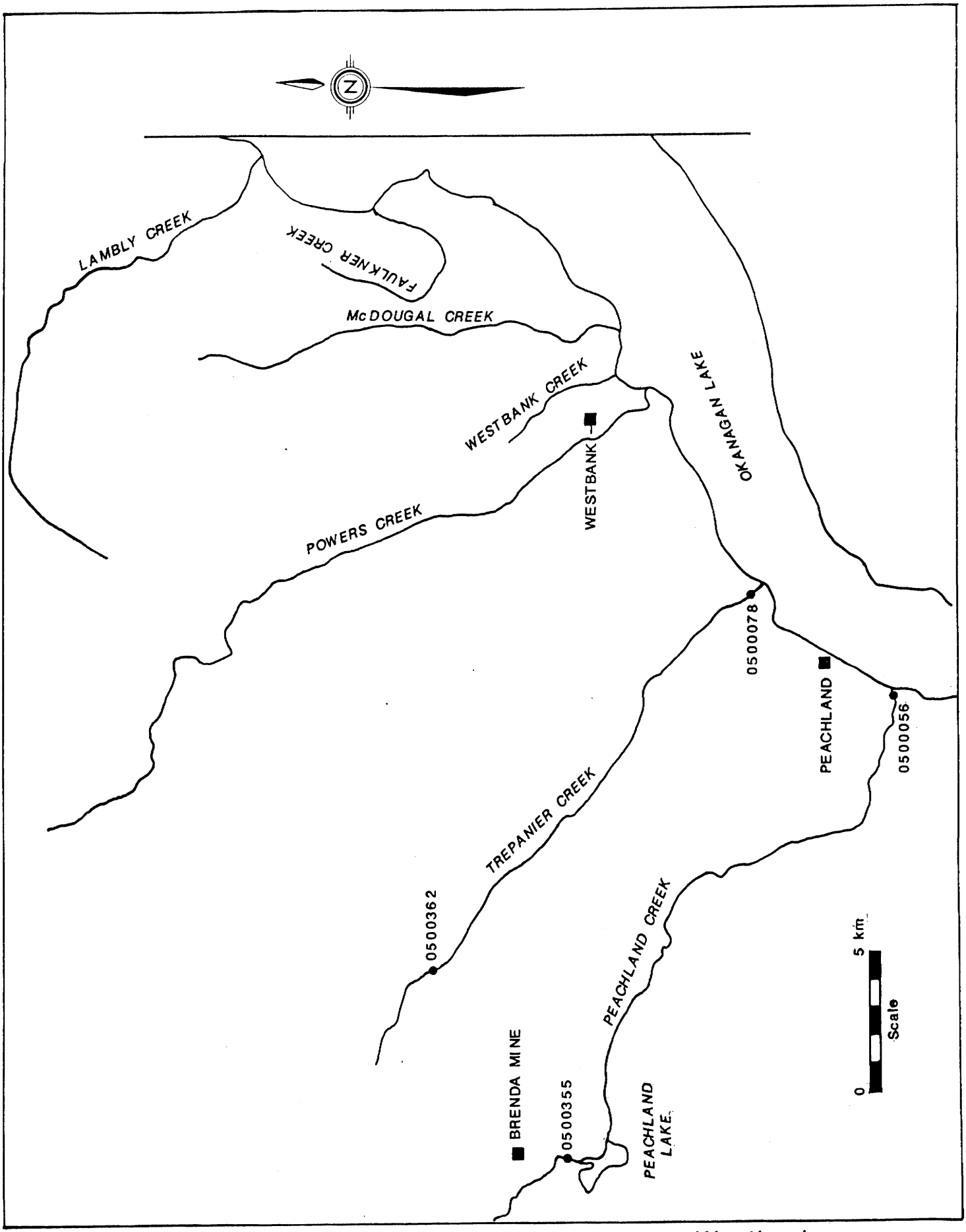


FIGURE 21 Tributaries to Okanagan Lake Near Westbank

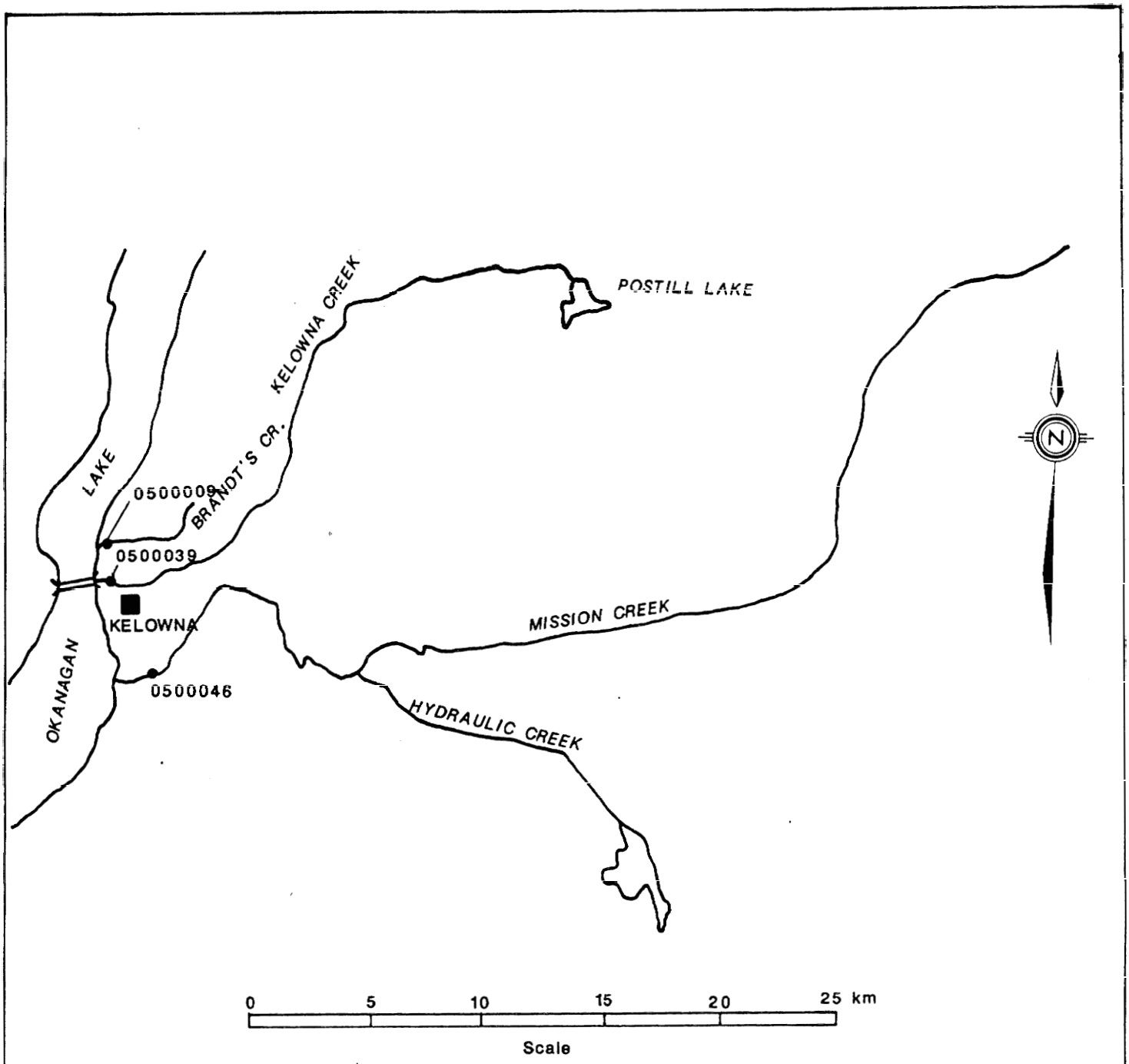


FIGURE 22 Tributaries to Okanagan Lake Near Kelowna

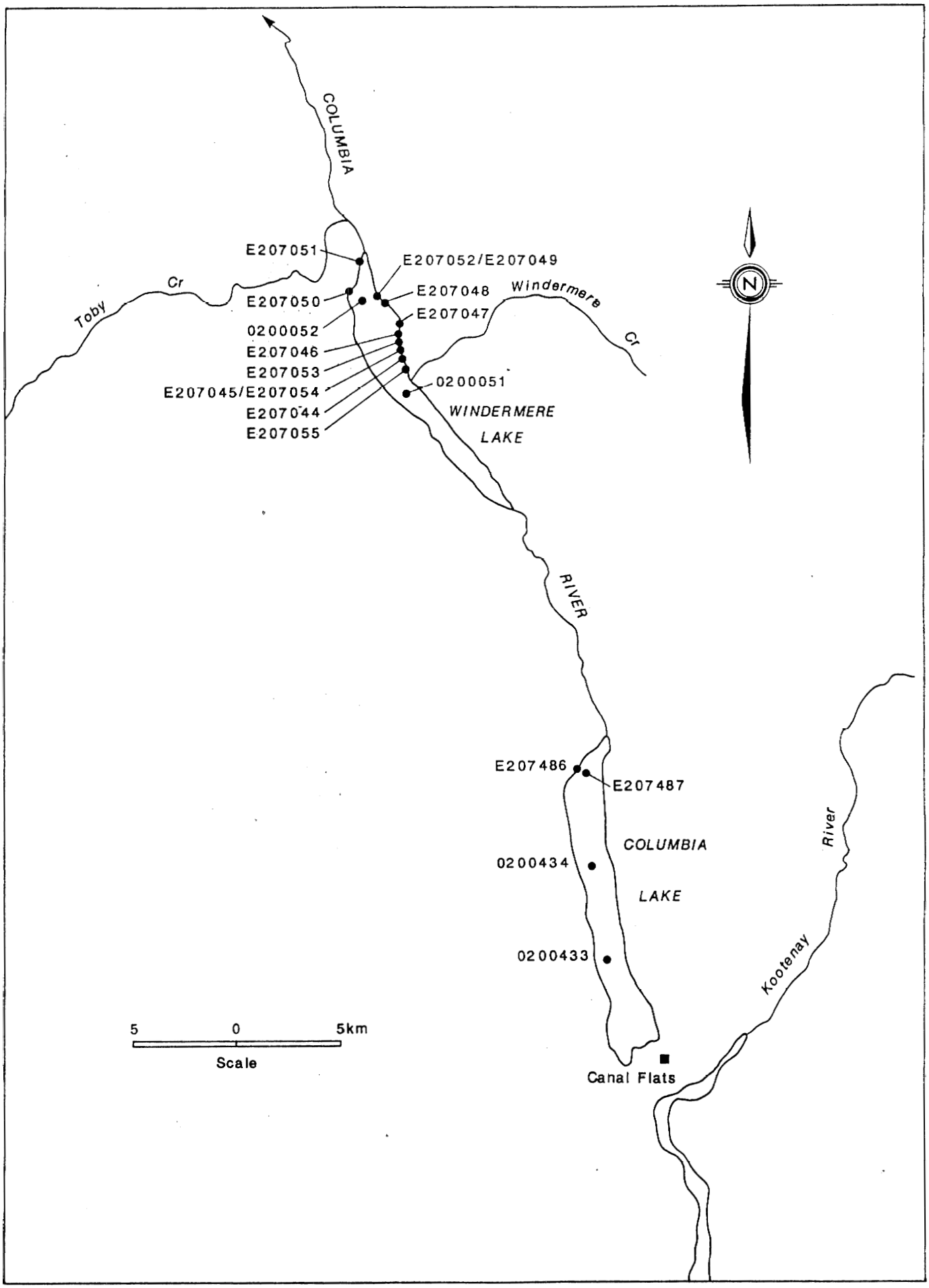


FIGURE 23 Columbia and Windermere Lakes

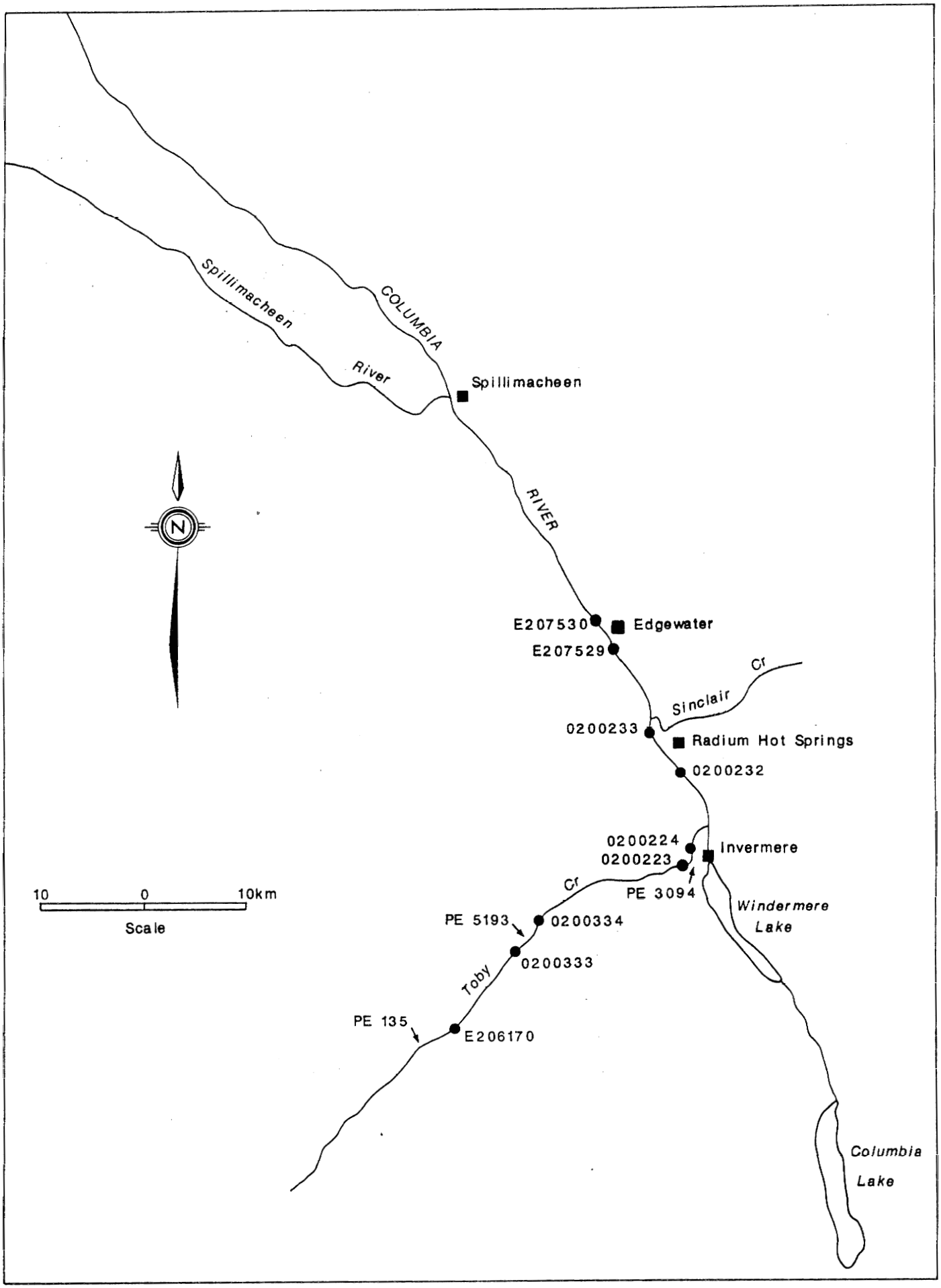


FIGURE 24 Toby Creek and the Upper Columbia River.

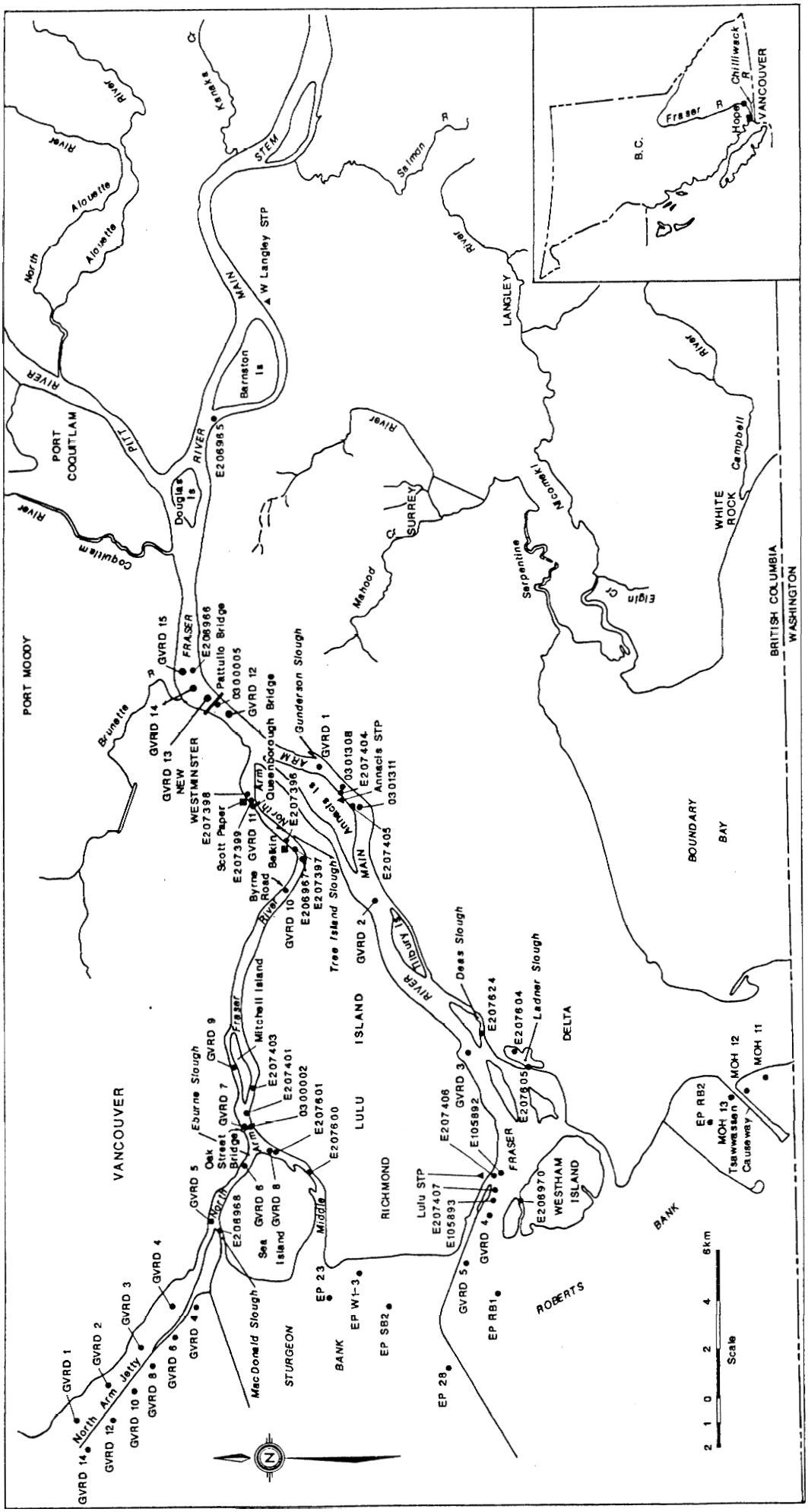


FIGURE 25 Fraser River From Kanaka Creek to the Mouth

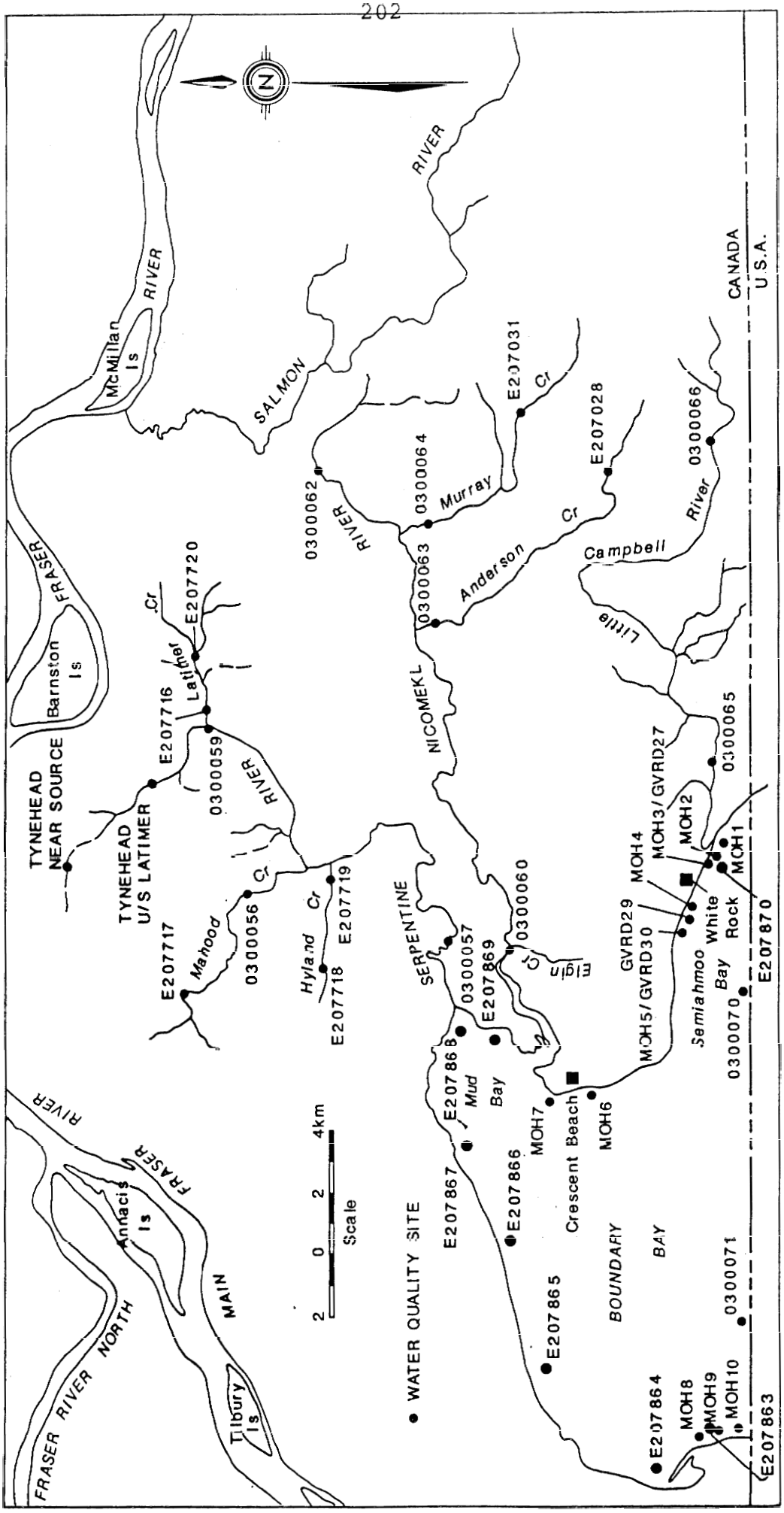


FIGURE 26 Boundary Bay

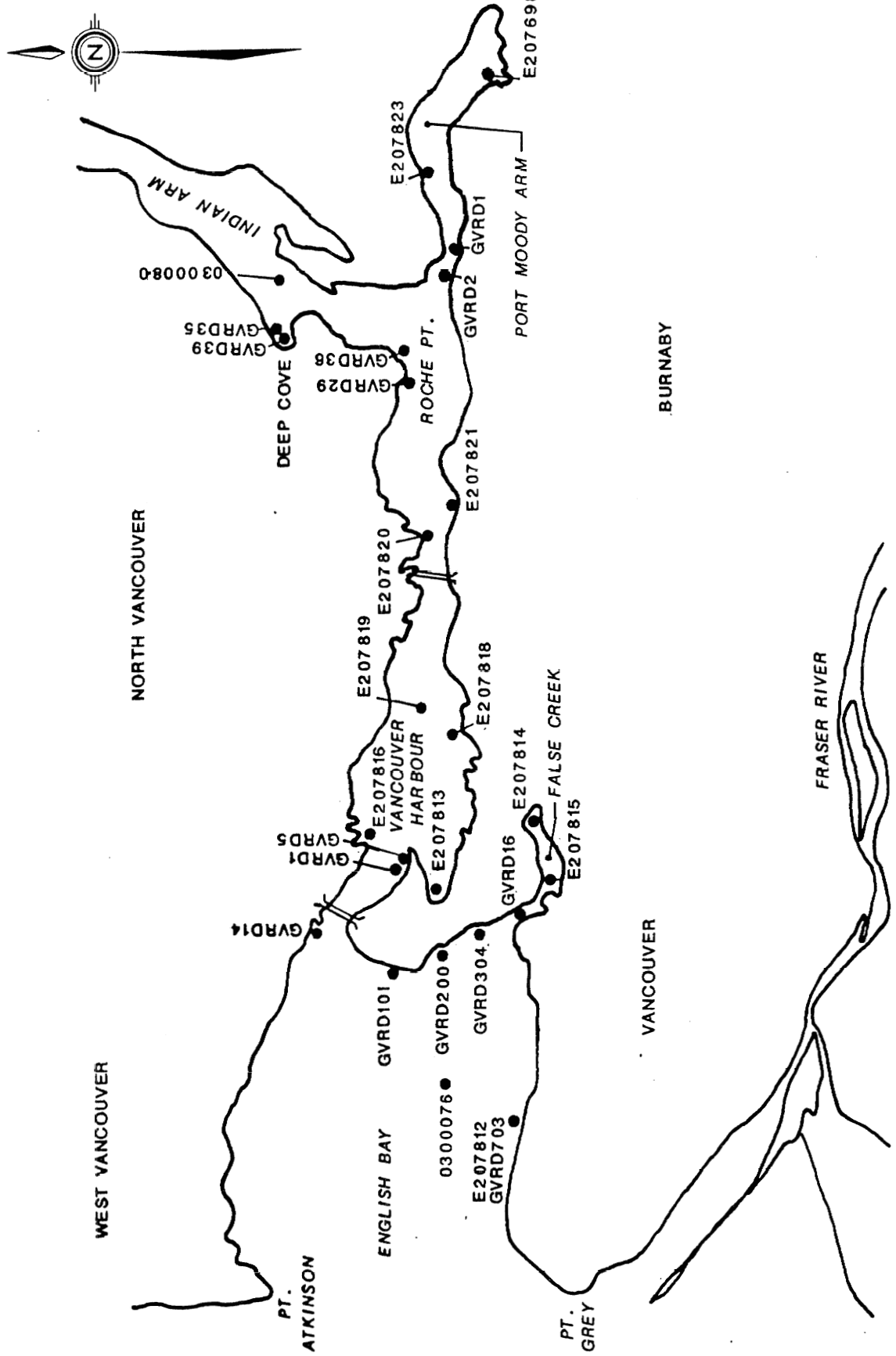


FIGURE 27 Burrard Inlet

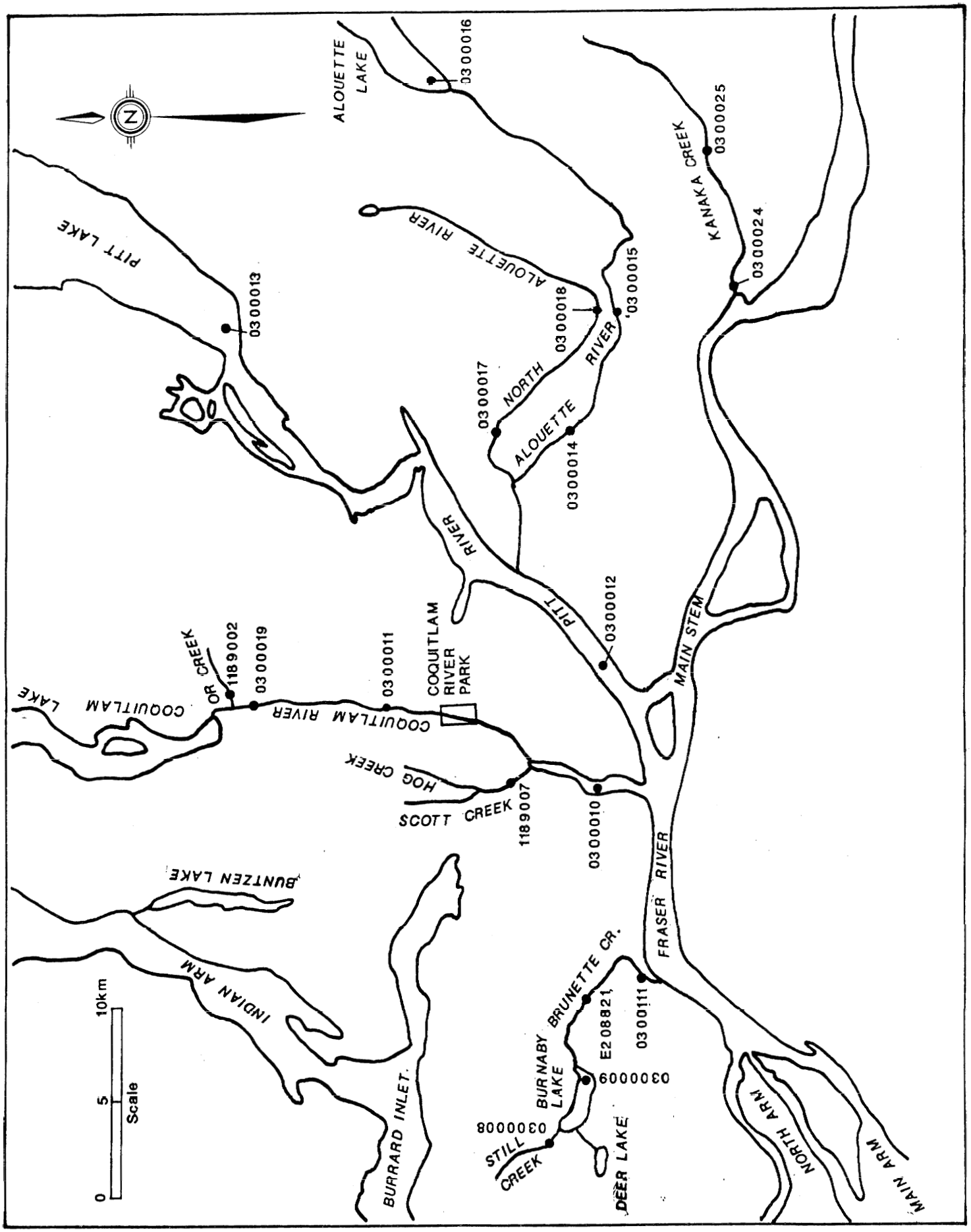


FIGURE 28 North Shore Tributaries to the Lower Fraser River