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ANNUAL REPORT

FOR THE YEAR ENDING MARCH 31, 1986



PRAIRIE PROVINCES WATER BOARD

CANADA ALBERTA SASKATCHEWAN MANITOBA

ANNUAL REPORT

FOR THE YEAR ENDING MARCH 31, 1986



PRAIRIE PROVINCES WATER BOARD

306 - 1901 VICTORIA AVENUE REGINA, SASKATCHEWAN S4P 3R4

CANADA

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SASKATCHEWAN

MANITOBA

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INTRODUCTION

On October 30, 1969 Canada and the Provinces of Manitoba, Saskatchewan and Alberta entered into an agreement to share the flow and to consider the quality of eastward flowing interprovincial streams. Under Schedule C of that Master Agreement on Apportionment, the Prairie Provinces Water Board was reconstituted and was given the responsibility to administer the Agreement.

The Board met twice in the last fiscal year; on June 11-12, 1985 in Winnipeg, Manitoba and on November 26-27, 1985 in Moose Jaw, Saskatchewan. There was one change in Board membership in 1985. Dr. W.B. Mountain retired from Government Service on July 31, 1985 and Ms. L. Goulet was appointed to serve as the member for Environment Canada on November 27, 1985. The Board Members noted their appreciation of the contribution that Dr. Mountain has made to Board activities during the past five years.

In the last fiscal year; the Committee on Hydrology met twice, the Committee on Water Quality met four times, the Committee on Interjurisdictional Agreements Administration did not meet, and the Committee on Groundwater met twice; a total of seven committee meetings.

This report summarizes the activities and the progress of the Prairie Provinces Water Board, its Committees, and the Secretariat for the period April 1, 1985 to March 31, 1986.

RECONSTITUTION OF BOARD ADMINISTRATION

The original Prairie Provinces Water Board was formed on July 28, 1948. During the next 22 years (1948 to 1969 inclusive), the Engineering Secretary to the Board was a Federal Government PFRA employee who served in this capacity as part of his regular duties. The support staff for studies and office accommodation during these 22 years were provided by the PFRA in Regina at no charge.

The Master Agreement on Apportionment was signed on October 30, 1969. Schedule C of that Agreement reconstituted the Prairie Provinces Water Board and provided for the necessary Board staff, accommodation and supplies to be jointly financed by the four governments party to the Agreement. Following the reconstitution of the PPWB the members also agreed to the establishment of a semi-autonomous Board Secretariat.

The Board's change in administration policy was implemented when an Executive Director was appointed on July 1, 1972. The Board, as shown in the organization chart on page 44, now operates through an Executive Director and his staff, supported by four committees. With the appointment of a permanent staff, the By-laws, Rules, and Procedures also became effective on July 1, 1972. The 1969 Master Agreement on Apportionment (as amended on July 5, 1984), the By-laws, and the Rules and Procedures are appended to this Annual Report.

The employees of the Secretariat, for administrative purposes, are classified as Federal Public Servants but receive their direction entirely from the Board and have no working connection with any part of the Federal Government. The Board directly controls the operation of the Secretariat through approval of an Annual Budget. It currently has Federal spending authority up to an annual maximum expenditure of \$625,000 from funds provided under the Canada Water Act. The Provincial Governments' shares of current expenditures are recovered after the current financial year is completed.

ADMINISTRATIVE DECISIONS

Several administrative decisions were made in the current fiscal year. They are summarized in the following sections:

Consideration of Interprovincial Groundwater Management

The Board directed the Committee on Groundwater to enter into a contract to prepare a report entitled "Hydrogeologic Profile Saskatchewan-Manitoba Boundary" using the same techniques as those developed initially for a similar report documenting groundwater conditions along the Alberta-Saskatchewan boundary.

The Board accepted, for information purposes, a report from the Committee on Groundwater entitled "A Report on Existing and Future Groundwater Concerns in the Prairie Provinces".

Scheduled Meetings With Board Committees

The Board met with the Committee on Water Quality in the Spring of 1985 and with the Committee on Hydrology in the Fall of 1985. They agreed to meet with the Committee on Water Quality in the Fall of 1986, following the regular Board meeting. A similar meeting sequence will be repeated with one of the Board's Committees meeting with the Board in the Fall of each subsequent year.

Interprovincial Implications of Proposed Projects

The Board has agreed that a statement of the impact that a major project would have on the quality and quantity of water crossing interprovincial boundaries should be submitted to the appropriate provincial members and reviewed by the Secretariat in consultation with Board Committees. The Board, in the past fiscal year, has been active in the consideration of two such projects.

1) The Cold Lake Oil Sands Project.

The Committees on Hydrology, Water Quality and Groundwater have maintained a watching brief on the development of the Cold Lake Oil Sands Project keeping the Board apprised of any plans that might affect the quantity and/or quality of water crossing the Alberta-Saskatchewan boundary. As part of this task, the Committee on Groundwater recommended that if a monitoring program was implemented to measure the dispersion of deepwell fluids at the Cold Lake development, it should include some consideration of the interprovincial

aspects of pollution. The Board directed the COG to recommend the type of monitoring program that would be needed to do this and to provide an estimate both of capital cost and of the annual operating costs.

Alberta Environment has developed a long term management plan for the Cold Lake area and long term industrial needs of oil sand plants will be met from a privately owned and operated pipeline diverting water from the North Saskatchewan River. This alternative should minimize interprovincial concerns. The Members agreed that because of the Board's interprovincial concerns regarding deepwell injection, the COG should prepare a report on the various past, present and proposed studies related to deepwell injection in the Cold Lake area for presentation to the Board at its next regular meeting in the Spring of 1986.

2) The Husky Oil Upgrader Project at Lloydminster, Saskatchewan

Some progress has been made in planning for a heavy oil upgrader plant in Lloydminster, Saskatchewan. Saskatchewan has agreed to keep the Board apprised of further developments. If there are considerations that affect quantity or quality of surface water or the groundwater resources in the area adjacent to the boundary, Saskatchewan will report these impacts to the Board for its further consideration.

Site Specific Water Quality Studies

The Board, in the Spring of 1985, agreed that the term "Site Specific Water Quality Indicators" should be used to define the water quality numbers being developed for PPWB sites. The Members noted that the term "indicators" is an appropriate term because the numbers indicate potential water quality concerns that should be reported by the Board to the appropriate agencies.

It was also agreed that a contract expenditure of \$16 500 in the fiscal year 1986-87 would be undertaken to provide a Detailed Rationale Document for the Beaver River. The Board further agreed that the Committee on Water Quality should ensure that a detailed record of time and expenditures involved in producing the first Detailed Rationale Document be maintained by the contractor, Water Quality Branch of Inland Waters Directorate, Western & Northern Region, Environment Canada.

The Board reviewed the Committee on Water Quality work plan to facilitate approval of Site Specific Water Quality Indicators at the eleven interprovincial water quality stations, noted that the work plan was "on time" and directed the Committee on Water Quality to test the equitability of water quality indicators at each of the eleven sites, using the format developed for the Beaver River at the Alberta-Saskatchewan boundary. The Board also agreed that the Site Specific Water Quality tests should include specific details regarding each excursion to the water quality indicators.

Monitoring on Cumberland Marshes Project

The Board, in June, 1985, reviewed the Cumberland Marshes report prepared by Environment Canada and approved the report's recommendations. The recommendations stated that the measures implemented by Ducks Unlimited to improve dissolved oxygen levels in Cut Beaver Lake, and to minimize entrapment of fish below the Cumberland Marshes project, be continued but that monitoring of the chemical characteristics of the inflow and outflow from the Cumberland Marshes project be discontinued.

Water Quality and Water Quantity Monitoring Program for 1986-87

The water quality and water quantity monitoring programs for 1986-87 were reviewed and approved with the provision that monitoring costs will not exceed the cost of the same monitoring programs in the fiscal year 1985-86. The Board also agreed that nine international hydrometric stations needed to calculate provincial apportionment on Lodge Creek, Battle Creek and Middle Creek be added to the PPWB hydrometric listings even though they are also required for the International Balance of Flow.

The Impact of Drainage on Downstream Watersheds

The Board approved a procedure to document drainage works that are being constructed on interprovincial streams. The procedure has been applied to drainage projects built in 1984. It was agreed that provincial COH members will annually provide the Secretariat with a listing of new projects on interprovincial streams and that the Secretariat will present that listing to the Board at each spring meeting. The first such list was presented in the Spring of 1985, and will be retained permanently in Secretariat files for future reference. Information on projects constructed prior to January 1, 1984 will be reported, on an ad hoc basis, by the provincial Committee on Hydrology Members as the information becomes available.

Natural Flow Study of the Birch (Saskeram) River at the Saskatchewan-Manitoba Boundary

The Board approved an expenditure of \$20 000 for the Saskatchewan Water Corporation to conduct a study of the Birch (Saskeram) River tributary to the Saskatchewan-Manitoba boundary.

Water Quality Monitoring Considerations

The Board accepted the recommendation of the Committee on Water Quality that no Annual Water Quality Monitoring report be published for the year 1985. They directed the Committee to ensure that the information that would have been contained in the 1985 report will be published as part of the 1986 Annual Water Quality Monitoring report.

The Board directed the Committee on Water Quality to establish a Task Force to develop a monitoring strategy that may be used to adequately monitor water quality parameters at the eleven PPWB monitoring stations.

Water Demand Update

The Board directed the Secretariat to prepare a report format that could be used to describe water use trends for the period since the Water Demand Study has been published. The Board agreed to defer any final decision on the preparation of a comprehensive water use update until they have reviewed the draft sample format. The Board also directed the Secretariat to continue to prepare a brief annual water use report tabulating the facts submitted by each of the provinces.

PPWB Budget for 1986-87

The Board approved a budget of \$389 000 for the fiscal year 1986-87. In accepting this budget, the Board Members agreed to enter into a contract with an individual to provide specific services to the Secretariat in the fiscal year 1986-87 for a sum not to exceed \$26 000. This contract will allow the Secretariat to retain the level of service previously provided by the Secretariat's Computation Technician. Two budget items, not under the control of Prairie Provinces Water Board staff, accounted for the increased budget. The Department of Public Works have increased the rental rate for accommodation in the Motherwell Building by \$14 000 as part of their new fiscal recovery program, and the auditor for the Prairie Provinces Water Board has recommended that a 9% surcharge on Secretariat salaries be made to cover fringe benefits pertaining to Board employees. The Board agreed that these additional charges would be implemented commencing April 1, 1986.

BOARD STUDIES

The Secretariat, under the direction of the Board and with the cooperation of several Board committees, is involved in several ongoing studies. The progress made on these studies in the fiscal year 1985-86 is described in this section.

Site Specific Water Quality Indicators Study

The Committee on Water Quality is systematically reviewing water quality data collected at the eleven PPWB monitoring sites. It has, at the end of the fiscal year 1985-86 prepared reports defining water quality indicators for each of the eleven interprovincial sites shown on the map on pages 66 and 67.

The Committee on Water Quality, as part of this same task, prepared a study plan for the Board's consideration at the Spring 1985 Meeting. The proposed work plan, as accepted by the Board, recommends that draft Site Specific Water Quality Indicators at all eleven PPWB monitoring sites be presented to the Board at the November 1986 Meeting.

The Secretariat, under the direction of the Committee on Water Quality, has also developed a method to partially test the equitability of these water quality indicators at each site. This test has been used for the Beaver River at the Alberta-Saskatchewan boundary and the Saskatchewan River at the Saskatchewan-Manitoba boundary. It will be used to test the equitability of the indicators at each of the remaining nine sites.

Interprovincial Groundwater Concerns at the Alberta-Saskatchewan and Saskatchewan-Manitoba Boundaries

A contract was awarded to Geoscience Consulting Ltd. of Edmonton to develop a Hydrogeologic Profile along the Alberta-Saskatchewan boundary from the International boundary to the northern edge of the Saskatchewan-Nelson Basin. The contractor's report was reviewed, printed and circulated in September, 1985.

Geoscience was awarded a similar contract to develop a Hydrogeologic Profile along the Saskatchewan-Manitoba boundary from the International boundary to the northern edge of the Saskatchewan-Nelson Basin. That contract was completed in September 1985, and a similar sequence of Committee review was followed to prepare a second report. The report will be published by the Secretariat in the summer of 1986.

Updating of PPWB Monthly Natural Streamflow Estimates

The Board has agreed that the Secretariat will assume the responsibility of updating the Saskatchewan-Nelson basin monthly natural streamflow estimates. The Secretariat has been instructed to bring these streamflow files up to date as soon as practical and to ensure that they are updated annually.

This activity coincides with an Alberta Environment Study to update monthly natural streamflow records for the South Saskatchewan River basin including the Red Deer River basin. Alberta Environment has updated streamflow in the South Saskatchewan River basin in Alberta to the end of 1982. This data has been added to the PPWB computerized data base and the Secretariat is updating the remaining monthly natural streamflow records for the Saskatchewan-Nelson Basin. The updating procedure, in subsequent years, will be a continuing process.

Water Quality Task Force

The Board, in fiscal year 1980-81, approved terms of reference for the Task Force on Water Quality Methodology. This Task Force, functioning under the direction of the Committee on Water Quality, reported to the Board in that fiscal year. In the fall of 1982, the Inland Waters Directorate provided support staff to work on this problem. Test samples have been circulated on a monthly basis since September 1982 to the three provincial and five federal laboratories involved with the Prairie Provinces Water Board. It was agreed that preparation of the Task Force report would be postponed until the winter of 1986-87 because of higher priority work needed to complete the development of water quality indicators.

Natural Flow Studies on Small Interprovincial Basins

At the June 10, 1975 meeting of the Board, the Members recommended that a continuing effort be made by the Secretariat to define natural flow on small interprovincial river basins. A list of streams that fell into this category was prepared and the Board agreed that the speed with which the studies were completed would depend on the availability of participating agencies.

Studies have been completed in previous years on Pipestone Creek, Antler Creek, Assiniboine River, Boxelder Creek, Mackay Creek, Graham Creek, Battle River, Gainsborough Creek, Eyehill Creek, Big Gully Creek and the Beaver River. Studies on Swan River and Woody River were completed in the current fiscal year, and the Saskatchewan Water Corporation is now working on a natural flow study of Birch (Saskeram) River.

PFRA has made a commitment to start natural flow studies on Overflowing River and Red Deer River, Saskatchewan in 1987, and the PPWB Secretariat has made a commitment to complete studies on Gopher Creek, Boss-hill Creek, Jackson Creek and Stony Creek in 1986-87 fiscal year. This leaves only Elm Creek of the original list of studies. The Committee on Hydrology has also agreed that a second report should be made on the natural flow of Pipestone Creek defining a more accurate method of calculating natur-

al flow. The report can not be prepared, however, until Canada Water Resources Branch has gathered some years of record on the new hydrometric stations established on Pipestone Creek.

The Impact of Drainage on Downstream Watersheds

The Board has accepted a specific reference from the Provinces of Saskatchewan and Manitoba to deal with a problem involving artificial drainage in a series of small interprovincial streams that affect the Rural Municipalities of Churchbridge, Langenburg, Shellmouth and Russell. A Task Force consisting of the Executive Director of the Secretariat and one member each from Saskatchewan and Manitoba has been formed. A report summarizing the effect of existing drainage works on the volume and intensity of flow at the affected boundary points and secondly the potential effect that future drainage might have on these same streams was forwarded to the Task Force Members by the Saskatchewan Water Corporation in March 1985. Manitoba will complete a report on the effect that these changes in flow will have on downstream areas in the Summer of 1986. The Task Force will then report their findings to the Committee on Hydrology and the Committee on Hydrology will make recommendations to the Board based on that report.

Monitoring Studies

In the fiscal year 1985-86, the Federal Water Resources Branch in Calgary completed a study of "Irrigation Return Flow From Irrigation - Southern Alberta" and has incorporated the information into an updated model describing the natural flow of the South Saskatchewan River at the Alberta-Saskatchewan boundary. The natural flow report was submitted to the Board in the Spring of 1985. It was accepted and the revised methodology is now used to calculate natural streamflow on the South Saskatchewan River at the Alberta-Saskatchewan boundary.

The SSARR (Streamflow Synthesis and Reservoir Regulation) model has been used to estimate natural flow in the Qu'Appelle River since 1976. A series of studies have been undertaken to update the model so that it will provide a more accurate estimate of natural flow in the Qu'Appelle River basin. The work of the ad hoc SSARR Sub-Committee was completed with publication of a report entitled "Estimating Minor Project Use in the Qu'Appelle River System at the Saskatchewan-Manitoba Boundary" in November of 1985, and the recommended changes have been implemented by Environment Canada, Water Resources Branch.

Groundwater Bibliography

The Committee on Groundwater has agreed to establish and maintain a bibliography of groundwater reports pertinent to interprovincial groundwater considerations. This continuing project utilizes the WATDOC facility in Ottawa to store report listings. No firm date has been set for completion of this study. The work is being done when time permits as it is not a high priority task.

Forest Management Study for Increased Water Yields

There has been considerable interest for several years in the Province of Alberta on the possibility of managing the Eastern Slopes of the Rockies to benefit water production, particularly if this can be done in an economical and environmentally acceptable fashion. Alberta Environment and the Alberta Forest Service have management responsibilities in the "Green Zone" and units of those agencies, in cooperation with the Canadian Forestry Service, have been studying the technical and economic factors involved in so-called "water harvesting". Through the Committee on Hydrology, the Board will be kept informed on the status and results of these studies.

Westward Flowing Tributaries of Eastward Flowing Streams

The Board, in previous meetings, had agreed to take no action on the Committee on Hydrology's report entitled "Westward Flowing Tributaries of Eastward Flowing Streams Apportionment Study" until the provinces involved have had sufficient opportunity to assess its implications. The Board discussed the above report with the Committee on Hydrology at the Fall 1985 Meeting, and directed the Committee on Hydrology to revise the report's recommendations and to submit the revised report to the Board in the Spring of 1986. The Board agreed to defer final approval of the report until these revisions have been made and reviewed by the Board Members. The Committee on Hydrology subsequently agreed to the wording of these revisions and the revised pages in the report were submitted to the Board for their consideration.

Pipestone Creek Studies

The Board Secretariat and the Committee on Hydrology have been involved in studies on Pipestone Creek in connection with the distribution of streamflow at the Saskatchewan-Manitoba boundary. As a result of these studies, the Committee on Hydrology has recommended and the Board has approved the establishment of one additional monitoring site on Pipestone Creek above Moosomin Reservoir. The Secretariat has also prepared a report describing the physical effect that Moosomin Reservoir storage would have on streamflow at the Saskatchewan-Manitoba boundary. This report has been prepared and submitted to the Saskatchewan and Manitoba Board Members for their review. The Board Members have also agreed that additional studies should not be conducted until PFRA and Saskatchewan have come to a final agreement on the acceptable operational procedure for Moosomin Dam.

The present method of calculating natural flow on Pipestone Creek at the Saskatchewan-Manitoba boundary provides only a rough approximation of the actual natural flow. When the Secretariat and the Committee on Hydrology have the advantage of having two or three years of hydrometric record from the new gauging sites on Pipestone Creek, they will be able to make better estimates as to what the natural flow balance is on this inter-provincial stream. At that time, a new and revised natural streamflow procedure should be developed for this creek.

BOARD COMMITTEES

The committees of the Board are responsible for providing technical advice on the various subjects of interprovincial interest to the Board. The Board Secretariat works with each of these committees to provide the Board with the technical information needed to make decisions related to interprovincial water management. This section describes the work of the four Board committees in fiscal year 1985-86.

Committee on Hydrology

The Committee on Hydrology met twice in the last fiscal year. The meetings were held on September 18-19, 1985 in Regina, Saskatchewan and on November 27-28, 1985 in Moose Jaw, Saskatchewan. At the September meeting, the Committee reviewed the existing list of PPWB Hydrometric Monitoring Stations and agreed that PPWB stations should be divided into three categories: stations needed for interprovincial apportionment purposes, stations used for interprovincial water management purposes, and stations used for international apportionment purposes besides being needed for interprovincial purposes. Four changes (one deletion and three additions) were made to the existing list and the proposed PPWB station list for 1986-87 was approved by the Board at its Fall, 1985 Board Meeting.

A study proposal, to develop new procedures to estimate return flow volumes from the Eastern, Western, and Bow River Irrigation Districts, was discussed at the September meeting. The Committee agreed that, because return flow patterns in the EID, WID and BRID have undergone significant changes in recent years, new procedures should be developed to more accurately estimate return flow from these irrigation districts. They approved the study proposal of the Canada Water Resources Branch and noted that the study would be conducted by the Calgary office of Environment Canada, Water Resources Branch.

The Committee also: discussed the three long term options for water supply and management for the proposed Cold Lake Oil Sands Project, reviewed the draft report entitled "Handbook for Small Interprovincial Streams - Natural Flow Procedures and Hydrometric Network" and approved a SSARR Sub-Committee report entitled "Estimating Minor Project Use in the Qu'Appelle River System at the Saskatchewan-Manitoba Boundary".

The Committee met with the Board on the morning of November 27, 1985 in Moose Jaw, Saskatchewan to discuss water quantity activities related to the COH. The Board reviewed the work of the COH in detail to ensure that it adequately dealt with all Board concerns. The topics discussed included a review of monitoring procedures for interprovincial streams;

municipal, industrial and irrigation water uses in Alberta portion of the South Saskatchewan River Basin; hydrologic forecasts and existing conditions reports in the Prairie Provinces and the progress of small interprovincial basin natural flow studies.

The Committee also discussed the Board's suggested revisions to the COH report entitled "Westward Flowing Tributaries of Eastward Flowing Streams Apportionment Study", and directed the Secretariat to prepare a draft of the revisions to the report for the Committee's consideration.

It was noted, in reviewing the monitoring procedures for the Qu'Appelle River Basin, that more than 100% of the natural flow of the Qu'Appelle River at the interprovincial boundary was passed to Manitoba in lower than normal years because the river's natural flow is supplemented by water from Lake Diefenbaker. Therefore, the frequency of reporting for the Qu'Appelle River, by agreement, was reduced from five times a year to twice a year (April 1st to June 30th and April 1st to March 31st of the year following), with the understanding that more frequent reports would be made available if required by the Board or the Provinces.

Committee on Water Quality

The Committee on Water Quality met four times in the last fiscal year; on May 1-2, 1985 in Regina, Saskatchewan; on June 12-13, 1985 in Winnipeg, Manitoba; on October 16-17, 1985 in Calgary, Alberta and on January 29-30, 1986 in Regina, Saskatchewan. The Committee, at the May 1-2, 1985 Meeting, discussed the Proposed Cold Lake Oil Sands Project, the Husky Oil Upgrading Project, and the Red Deer River (Saskatchewan) Silica Development Proposal. The Members reviewed the PPWB Cumberland Marshes Water Quality report and its recommendations for presentation to the Board, reviewed the Proposed PPWB Water Quality Indicators for the North Saskatchewan River (Alberta-Saskatchewan Boundary) and the Saskatchewan River (Saskatchewan-Manitoba Boundary), and approved these Indicators for Board and Agency review.

The Winnipeg meeting followed a half day meeting of the Committee with the Board. The Committee discussed the proposed Cold Lake Oil Sands Project and agreed that, based on the present development plan, no further action was needed by the Committee on Water Quality. They also noted that the Board agreed that it would be acceptable not to prepare a Water Quality Annual Report in 1985, that the recommendations of the Cumberland Marshes report prepared by WRB, Environment Canada were acceptable, and that a Task Force with specific terms of reference should be established to conduct a detailed review of the PPWB water quality monitoring program.

It was agreed that the Committee would present a proposed work plan to the Board recommending that the detailed rationale documents be written under contract by the Board and that additional Board funds be provided to pay for this documentation. The Committee discussed unreported spills on the South Saskatchewan River at Saskatoon and asked the Agencies to report such spills according to the PPWB Interprovincial Water Quality Contingency Plan.

The Committee, at the Calgary, Alberta meeting reviewed the Proposed Long Term Water Supply Options, Groundwater Concerns, and Monitoring of Deepwell Injection Sites for the Cold Lake Oil Sands Project. Spills on the South Saskatchewan River at Saskatoon were reviewed, and the downstream concerns of the town of The Pas were discussed. The COWQ also approved an updated reprint of the PPWB Water Quality Contingency Plan, and reviewed the reports on Water Quality Excursions and the PPWB First Order Water Quality Monitoring Network.

COWQ Members identified Agency representatives on the PPWB Water Quality Monitoring Task Force. COWQ Members discussed the Draft Terms of Reference prepared by Environment Canada, and agreed that the final Terms of Reference for the Task Force will be developed by the COWQ.

The Committee, at the January 29-31, 1986 Regina meeting, revised the station list for the first order PPWB Water Quality Network and instructed the Water Quality Monitoring Task Force to further investigate the necessity of intraprovincial monitoring sites identified in the network report. The COWQ reviewed the mandate of the Water Quality Monitoring Task Force and supplied specific direction to that Task Force for the development of the Task Force Draft Terms of Reference.

Water Quality Indicators for the Qu'Appelle River at the Saskatchewan-Manitoba Boundary and the Assiniboine River at the Saskatchewan-Manitoba Boundary were finalized at this meeting and the members reviewed Proposed Water Quality Indicators for the Battle River at the Alberta-Saskatchewan Boundary and the Churchill River at the Saskatchewan-Manitoba Boundary.

Committee on Groundwater

The Committee on Groundwater met twice in the last fiscal year; on July 16, 1985 in Winnipeg, Manitoba and on January 28, 1986 in Regina, Saskatchewan. The group welcomed two new COG Members to the Winnipeg Meeting: Mr. U. Roeper, representing Saskatchewan Water Corporation and Mr. D. McNaughton, representing Environment Canada.

The Committee reviewed the progress of the consultant study on "Hydrogeologic Profile Saskatchewan-Manitoba Boundary". They noted that the information contained in the first draft map sheet, prepared by the consultant, is adequate and agreed that the color coding system used for the Alberta-Saskatchewan report should be applied to this report to emphasize the compatibility of the two reports.

The Committee reviewed the letter report entitled "A Report on the Existing and Future Groundwater Concerns in the Prairie Provinces", that had been submitted to the Board. The questions raised by the Board, at the Spring 1985 Board Meeting, were discussed. A revised version of the report, with a letter answering the Board's questions was forwarded to the Board for its consideration.

The Committee also dealt with two Board requests concerning, respectively; 1) the effect that phases V and VI of the Esso Resources Cold Lake Oil Sands project would have on interprovincial groundwater resources

and, 2) the design of a groundwater monitoring proposal related to the same project. The Committee forwarded letters to the Board on these two subjects.

Mr. Grove of National Hydrology Research Institute tabled a draft study proposal. The proposal outlines the scope of work needed to design a field program that will provide adequate information on the overall impact of subsurface wastewater disposal from the Cold Lake Oil Sands project. The Committee felt that the proposal is directly related to the Board's concerns about deepwell injection and recommended that the Board be advised to await the results of this program. The results could be used to identify interprovincial concerns and to assist in designing a program to monitor the proposed wastewater injection wells related to the Cold Lake Oil Sands developments.

The COG, at the Regina Meeting, discussed the content of a second draft of the report entitled "Hydrogeologic Profile Saskatchewan-Manitoba Boundary" and suggested some changes to the report. They also suggested that the Secretariat consult with Mr. Tokarsky to clarify the technical concerns raised by the COG. Based on the COG's discussion and comments from Mr. Tokarsky, the final version of the report will be prepared for printing.

Joint Meeting of the Committee on Groundwater and the Committee on Water Quality

The two committees met jointly, as directed by the Board, on the morning of January 29, 1986. They discussed groundwater monitoring concerns at deepwell injection sites in the Cold Lake area and specific Committee responsibilities related to groundwater quality. The COWQ and COG agreed that there is a need to install observation wells to monitor the effect of deepwell injection on water quality as well as hydrostatic pressure in the Cold Lake area. The Committees further agreed that water samples from licensed wells in the Cold Lake area should be analyzed for water quality to ensure that the water in these wells has not been contaminated by deepwell injection.

The group then discussed which committee should be responsible for groundwater quality in the prairie provinces. They agreed that problems related to groundwater quality in the prairie provinces will be identified and dealt with by the COG with the COWQ providing technical support.

Committee on Interjurisdictional Agreements Administration

The Committee on Interjurisdictional Agreements Administration did not meet in the last fiscal year but a meeting was held in Medicine Hat, Alberta to discuss the status of interprovincial water management in the Boxelder-Mackay Creeks basin. Representatives from Alberta, Saskatchewan and PFRA attended the meeting and agreed that the recommendations of the COIAA were adequate to enable Alberta and Saskatchewan to make informed management decisions on future plans for the basin. The Secretariat will continue to report annually on water uses in the basin.

SECRETARIAT

Accommodation and Staff

The PPWB Secretariat is located in Room 306 of the Motherwell Building in Regina, Saskatchewan. The office is in the same building as the Western and Northern Regional Office of the Inland Waters Directorate of Environmental Conservation Services, Environment Canada and headquarters of Prairie Farm Rehabilitation Administration. Financial, Administrative and Personnel services are provided through the staff of the Inland Waters Directorate of the Environmental Conservation Services of Environment Canada.

There were no staff changes during the past fiscal year. The Secretariat hired a contractor, Mr. K.F. Born, from April 1985 to March 1986 to do the drafting and report preparation work required for Board purposes.

Reports

The following eight reports were published either by the Secretariat or under the direction of Board Committees.

- PPWB Report No. 45 - South Saskatchewan River Below Red Deer River - Natural Flow, User Manual Text. April 1985 (Prepared by Environment Canada, Water Resources Branch, Calgary Office).
- PPWB Report No. 75 - Estimating Minor Project Use in the Qu'Appelle River System at the Saskatchewan-Manitoba Boundary. November 1985 (Prepared by PPWB Secretariat).
- PPWB Report No. 76 - Moosomin Dam and Its Effect on the Apportionment of Pipestone Creek Flows. October 1985 (Prepared by the PPWB Secretariat).
- PPWB Report No. 78 - Hydrogeologic Profile Alberta-Saskatchewan Boundary. 1985 (Prepared by O. Tokarsky, Geoscience Consulting Ltd. for Prairie Provinces Water Board).
- PPWB Report No. 79 - Hydrogeologic Profile Saskatchewan-Manitoba Boundary. To be published shortly (Prepared by O. Tokarsky, Geoscience Consulting Ltd. for Prairie Provinces Water Board).

- PPWB Report No. 80 - Natural Flow Procedures and Hydrometric Networks - A Handbook for Small Interprovincial Streams, March 1986 (Prepared by Environment Canada, Water Resources Branch, Calgary office).
- PPWB Report No. 81 - Swan River at Saskatchewan-Manitoba Boundary - Natural Flow. December 1985 (Prepared by PFRA, Hydrology Division).
- PPWB Report No. 82 - Woody River at Saskatchewan-Manitoba Boundary - Natural Flow. December 1985 (Prepared by PFRA, Hydrology Division).

Information

The work of the Secretariat is primarily connected with the apportionment of streamflow and with Committee and Board studies. These activities are reported under other sections in this report and will not be repeated in this section.

Several spills occurred on the South Saskatchewan River at Saskatoon in the last fiscal year. Members Agencies were kept informed, through the PPWB Interprovincial Water Quality Contingency Plan, of the action taken in connect with these spills.

A summer student was hired to update the PPWB Water Demand basic data tables and the update process was completed for most consumptive uses to the end of 1983. This basic data is available from the Board upon request. The PPWB Water Demand data file has been accessed several times in the past year to obtain basic water use information.

A term employee was hired from January 1986 to March 1986 to put the results of the 1984 Recreation Survey into a computerized format. She completed this project in the three-month period and copies of the completed paper output were forwarded to the provincial coordinators and to Environment Canada, Western & Northern Region.

Natural flow has been previously estimated at ten small interprovincial basins as part of the PPWB natural flow program. Natural flows at ten boundary sites have been updated to December 1982 as part of the Secretariat's efforts to create a monthly natural flow data base for the period 1912 - 1982 inclusive. This data base will be an extension of the hydrometric data published in the 1972 SNBB report.

A final draft of the report entitled "Moosomin Dam and Its Effect on the Apportionment of Pipestone Creek Flows - PPWB Report No. 76" was completed in September 1985. The report, describing the effect that nine operational options with two different assumptions concerning the reservoir's operational FSL will have on both the balance of flow at the Saskatchewan-Manitoba boundary and the levels of Moosomin Lake, was forwarded to the Saskatchewan and Manitoba Members of the Board for further action.

The report entitled "Hydrogeologic Profile - Alberta-Saskatchewan Boundary - PPWB Report No. 78" was printed and distributed in September 1985. The report contains a hydrogeologic profile along the Alberta-Saskatchewan boundary from the international border to the edge of the Canadian Shield. It may be used to aid interprovincial groundwater management of all

eastward flowing streams. The Drafting Contractor started work on a similar document for the Saskatchewan-Manitoba boundary, and the Secretariat plans to circulate that report in July 1986.

The Secretariat has stripped and revised the correspondence files dealing with the Administrative, Board Relations and PPWB Organization matters of the PPWB. Stripping of the Board's Operation files will be completed in the 1986-87 fiscal year. When this has been done, all correspondence files will have been "stripped and revised" up to January 1985.

Mr. Dunn, the PPWB Water Quality Specialist, presented a paper entitled "An Approach used to Establish Water Quality Indicators on Inter-provincial Streams" to the Third International Symposium on Regulated Streams" in Edmonton, Alberta in August 1985. The Secretariat has also prepared two papers to be presented to the Canadian Hydrology Symposium, 1986. These papers, entitled, "Drought: A Surface Water Perspective" by R.B. Godwin and "Interprovincial Water Management in Drought Periods" by A.J. Chen and R.B. Godwin, have been forwarded to the Board for information purposes. Mr. Godwin also gave three talks on the role of the PPWB: one to the CWRB in Calgary, Alberta; one to the graduating class in Water Resource Technology at Kelsey Institute in Saskatoon; and one to the graduating engineering class in Water Resources Engineering at the University of Regina.

The Secretariat continued to work towards preparation of completed Site Specific Water Quality Indicators at all eleven PPWB sites. The statistics and Proposed Indicators for all sites have now been completed for the review of the COWQ. The Water Quality Specialist has also spent considerable time discussing, with Environment Canada staff, the previous work done on the preparation of a Detailed Rationale Document for the Beaver River.

Financial

Secretariat expenditures for the fiscal year 1985-86 are as shown on page 43. They indicate a total expenditure of \$376 830 of which \$230 765 was for salaries.

The audited accounts of the Prairie Provinces Water Board for the fiscal years 1982-83, 1983-84, and 1984-85 are shown on page 42. The cost of Board operations for the past three years may be checked using this statement as can total expenditures for previous years starting with the partial year of 1971-72.

MONITORING RESPONSIBILITIES

The 1969 Master Agreement on Apportionment directs "...that the Prairie Provinces Water Board shall monitor and report on the apportionment of waters set out in the provisions of the first and second agreement and ratified by this Master Agreement". In keeping with this, and with previous Board decisions, the following continuing action has been taken to monitor the quantity and quality of water at interprovincial boundaries.

Natural Flow Determination

The Water Resources Branch of Environment Canada continued to monitor streamflow at all hydrometric sites used to determine natural flow for apportionment purposes. Similarly, the Committee on Hydrology reviewed the list of hydrometric stations needed to determine natural flow for Board purposes in the fiscal year 1985-86 and that list was approved by the Board.

Quarterly Reports on natural flows, consumptive uses, and storage changes for the South Saskatchewan River Basin in Alberta and the Qu'Appelle River Basin in Saskatchewan, were prepared and distributed on a regular basis. The accumulated total annual recorded flow of 4 419 000 cubic decametres in the South Saskatchewan River below its junction with the Red Deer River is 66% of the total annual natural flow of 6 686 000 cubic decametres. Recorded discharge of the South Saskatchewan River at the apportionment point did not fall below 42.5 cubic metres per second or one-half of natural flow at any time during 1985, so the minimum flow criteria were met for the complete apportionment period. A summary of recorded and natural flows for 1985 at this site is shown on pages 28 and 29.

The natural flow of the Qu'Appelle River from April 1, 1985 to March 31, 1986 was 170 300 cubic decametres. Recorded flow, augmented by releases of 68 500 cubic decametres from Lake Diefenbaker and by "draw-down" water from lakes in the Qu'Appelle Valley, was 269 500 cubic decametres, 158% of natural flow. Recorded and natural flows covering the apportionment period of April 1985 to March 1986 are shown on page 31.

Natural flows on the South Saskatchewan River basin were calculated using the project depletion method and natural flows for the Qu'Appelle River basin were calculated using the Streamflow Synthesis and Reservoir Regulation (SSARR) model. Both procedures have been approved by the Board to calculate natural flow in these two specific basins. The SSARR model has been reviewed by a Sub-committee of the Committee on Hydrology, and the project depletion method has been updated by Environment Canada, Water

Resources Branch staff. Following these reviews, changes have been made to the calculations procedure used for both streams.

Natural flows were also calculated for the North Saskatchewan River, Battle Creek, Lodge Creek, Middle Creek, Saskatchewan River and the Churchill River at interprovincial boundaries. Monthly recorded and natural flows for the apportionment period at these six sites are shown on pages 30 and 31. Recorded flows for five additional boundary sites are also listed on the same two pages.

PPWB Water Quality Monitoring Program

The Water Quality Branch of Environment Canada continued to monitor monthly and quarterly data collected at eleven PPWB monitoring stations for the 93 parameters listed on page 26. These water quality monitoring stations correspond with the interprovincial hydrometric locations mapped on the last pages of this report. The monitoring program for 1985-86 has been reviewed by the Committee on Water Quality and approved by the Board.

This monitoring program started in April 1974 and has continued since that time. All data obtained at the eleven PPWB stations from April 1974 to December 31, 1983 has been validated and published in the PPWB Annual Water Quality Reports. The 1986 PPWB Water Quality Annual Report will include all water quality data from April 1974 to December 31, 1985.

Data from the PPWB monitoring stations is collected to define water quality characteristics of rivers crossing interprovincial boundaries and to estimate compliance with the "1973 PPWB Water Quality Objectives", and the "Interim PPWB Water Quality Requirements for the Beaver River at the Alberta-Saskatchewan Boundary" for the parameters marked with an asterisk on page 26. The Board, through the Secretariat, continually reviews Water Quality data from all eleven PPWB stations to identify present and potential water quality concerns. When site specific water quality indicators have been established they will be used for review purposes. Until that work is completed annual evaluations will be based on these objectives although the Board realizes that some may not be appropriate for prairie streams.

A review of the 1985 water quality data from PPWB monitoring stations indicates that the Water Quality Objectives were exceeded at least once at each site for one or more parameters. The PPWB station with the highest frequency of exceeded objectives was the Assiniboine River below Kamsack station, followed by the Carrot River near Turnberry, and the Qu'Appelle River near Welby stations.

The minimum dissolved oxygen level of 5.0 mg/L was maintained at most PPWB sites, but dissolved oxygen levels in the Red Deer River near Bindloss, the Carrot River, the Battle River, and the Beaver River at the interprovincial boundary dropped below this minimum level during the winter period. The objective for manganese was exceeded at 5 of 11 PPWB stations (39 times in the past year). The objective for total phosphorus as P was exceeded at 10 of the 11 PPWB stations (61 times during 1985). The total nitrogen objective was exceeded 83 times in the last year at 9 of the 11 PPWB sites. The Churchill River at the outlet of Wasawakasik Lake PPWB monitoring

site was the only PPWB station that experienced relatively low nutrient levels.

The Water Quality Objective for phenolic material (0.005 mg/L) was exceeded at least once at ten PPWB stations in 1985 (26 times in the past year). This is a slight increase over 1984 but a significant decrease over 1983 when the phenolic material requirement was exceeded a total of 42 times at 11 PPWB stations.

Persistent insecticides such as DDT, aldrin, dieldrin, endrin and heptachlor were not present, at detectable levels, at any of the eleven PPWB water quality monitoring stations in 1985.

Several herbicides were detected at PPWB Water Quality monitoring stations in 1985. Alpha BHC was detected in 79% of the samples collected between January, 1985, and December, 1985, and lindane was present in 38% of the samples. Thirty-three percent of the samples contained detectable levels of 2,4-D. The South Saskatchewan River at Highway 41 experienced the most number of biocide detections for the 1985 year, followed closely by the North Saskatchewan River near Deer Creek, the Assiniboine River and the Qu'Appelle River.

Other Reports Dealing with Monitoring

The Board has accepted three reports that deal with quantity of water monitoring responsibilities. They are entitled "Report on the Administration of Apportionment Agreement", "Guidelines For Negotiating Equitable Apportionment", and "Procedures For Interprovincial Apportionment of the Waters of Battle, Lodge, and Middle Creeks". Additional reports have been prepared to enable Canada Water Resources Branch to make better estimates of natural flow. The procedures described in these reports have been approved by the Committee on Hydrology and are being used to monitor stream-flow on the South Saskatchewan and Qu'Appelle Rivers and on the three tributaries to the Missouri River basin. Similar documents are being prepared to establish more precise water quality procedures and water quality indicators that can be used to more equitably monitor the quality of water passing from upstream to downstream provinces. These studies have been reported on in the section entitled "Board Studies". The information in these reports will be used in future years to administer the 1969 Apportionment Agreement.

The computer programs used to calculate natural flow of the North Saskatchewan, Saskatchewan and Churchill rivers have been revised by the Secretariat so they may be processed more effectively by the Secretariat's IBM-PC computer and the SASKCOMP computer using data received from Federal Water Resources Branch.

Irrigation water uses in the Boxelder Creek Basin were reported to the Secretariat in 1985 by the provinces of Alberta and Saskatchewan respectively. The total irrigation use in 1985 and an updated listing of all licenced water uses was reported to the Board after completion of the 1985 water use season.

PPWB WATER QUALITY MONITORING
1985 PARAMETER LIST

*Aldrin	*Lead, total
Alkalinity, phenol.	°Magnesium, diss.
Alkalinity, total	°/°**Malathion
Aluminum, extractable	MCPA
N-Alkanes	*Mercury, total
*Arsenic, diss.	P,P-methoxychlor
*Barium, total	Mirex
BHC-alpha	Nickel, total
BHC-gamma (Lindane)	Nitrogen, diss., NO ₃ +NO ₂
Bicarbonate, calc.	Nitrogen, particulate
*Boron, diss.	Nitrogen, total Ammonia as N
*Cadmium, total	°*Nitrogen, total, calc.
°Calcium, diss.	Nitrogen, total, diss.
Carbon, diss., organic	*Oxygen, diss., DO
Carbon, organic, particulate	PCB, Arochlor 1242
Carbonate, calc.	PCB, Arochlor 1254
Chlordane-alpha	PCB, Arochlor 1260
Chlordane-gamma	PCB, Arochlor total
°Chloride, diss.	°*pH
Chlorophyll A	°*Phenolics
°*Chromium, total	Phosphorus Ortho as P
Cobalt, total	Phosphorus, particulate calc.
Coliforms, fecal	*Phosphorus, total, diss.
Coliforms, total	*Phosphorus, total, as P
*Color, true	#Picloram (Tordon)
°*Copper, total	°Potassium, diss.
*Cyanide, total	Residue, fixed, nonfilterable
*P,P-DDD	°*Residue, nonfilterable
*P,P-DDE	*Selenium, diss.
*O,P-DDT	°Silica, reactive
*P,P-DDT	Silvex
**Dicamba	°*Sodium, diss.
**Dichlofopmethyl	°Solids, total diss., calc.
*Dieldrin	Specific Conductance
°/°**Dimethoate	°Sulfide
Endosulfan-alpha	°Sulphate, diss.
Endosulfan-beta	*Temperature
*Endrin	**Triallate
*Fluoride, diss.	**Trifluralin
Free CO ₂	*Turbidity
Hardness, non carbonate	Vanadium, total
°Hardness, total, CaCO ₃	*Zinc, total
*Heptachlor	2,4-D
*Heptachlor, expoxide	2,4-DB
Hexachloro-benzene	2,4-DP
Hydroxide, calc.	2,4,5-T
°*Iron, diss.	

Collected at 5 sites only

* 1973 PPWB Objectives

° 1979 Interim PPWB Requirements for the Beaver River

** Report only if detected

°/° Collected at 8 sites only during open water period

1985 FLOW DATA



**RECORDED AND NATURAL FLOWS,
CONSUMPTIVE USE, DIVERSION, AND STORAGE
(In Cubic Decametres)**

FOR THE YEAR 1985

SOUTH SASKATCHEWAN RIVER — ALBERTA-SASKATCHEWAN BOUNDARY

	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	TOTALS
RECORDED FLOW	138 000	131 000	279 000	323 000	362 000	471 000	101 000	109 000	238 000	284 000	318 000	260 000	3 014 000
CONSUMPTIVE USE	0	10	3 910	41 020	277 520	474 720	531 850	376 110	321 840	51 300	0	610	2 078 890
CHANGE IN RESERVOIRS	-62 570	-74 580	-76 970	28 590	180 130	198 890	-71 060	-37 040	89 260	124 620	-31 050	-80 910	187 310
DIVERSION FROM BASIN	0	0	0	0	11 180	39 680	37 840	35 780	23 300	10 210	2 290	0	160 280
NATURAL FLOW ALTA. BDY.	80 550	122 470	133 020	340 630	774 950	1 165 010	624 030	474 640	688 460	541 030	392 370	108 750	5 445 910

RED DEER RIVER — ALBERTA-SASKATCHEWAN BOUNDARY

	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	TOTALS
RECORDED DISCHARGES	35 000	31 100	83 600	310 000	105 000	113 000	80 000	136 000	209 000	122 000	46 200	36 400	1 307 300
CONSUMPTIVE USE	0	0	0	0	0	0	0	0	2 590	0	0	0	2 590
CHANGE IN RESERVOIRS	-31 260	-25 960	-15 530	7 010	49 200	31 280	26 600	1 430	-4 080	3 070	-14 370	-15 390	12 000
DIVERSION INTO BASIN	0	0	0	0	-11 180	-39 680	-37 840	-35 780	-23 300	-10 210	-2 290	0	-160 280
NATURAL FLOW ALTA. BDY.	3 800	4 930	64 180	315 570	126 930	119 200	71 950	101 140	184 210	114 150	34 890	18 440	1 159 390

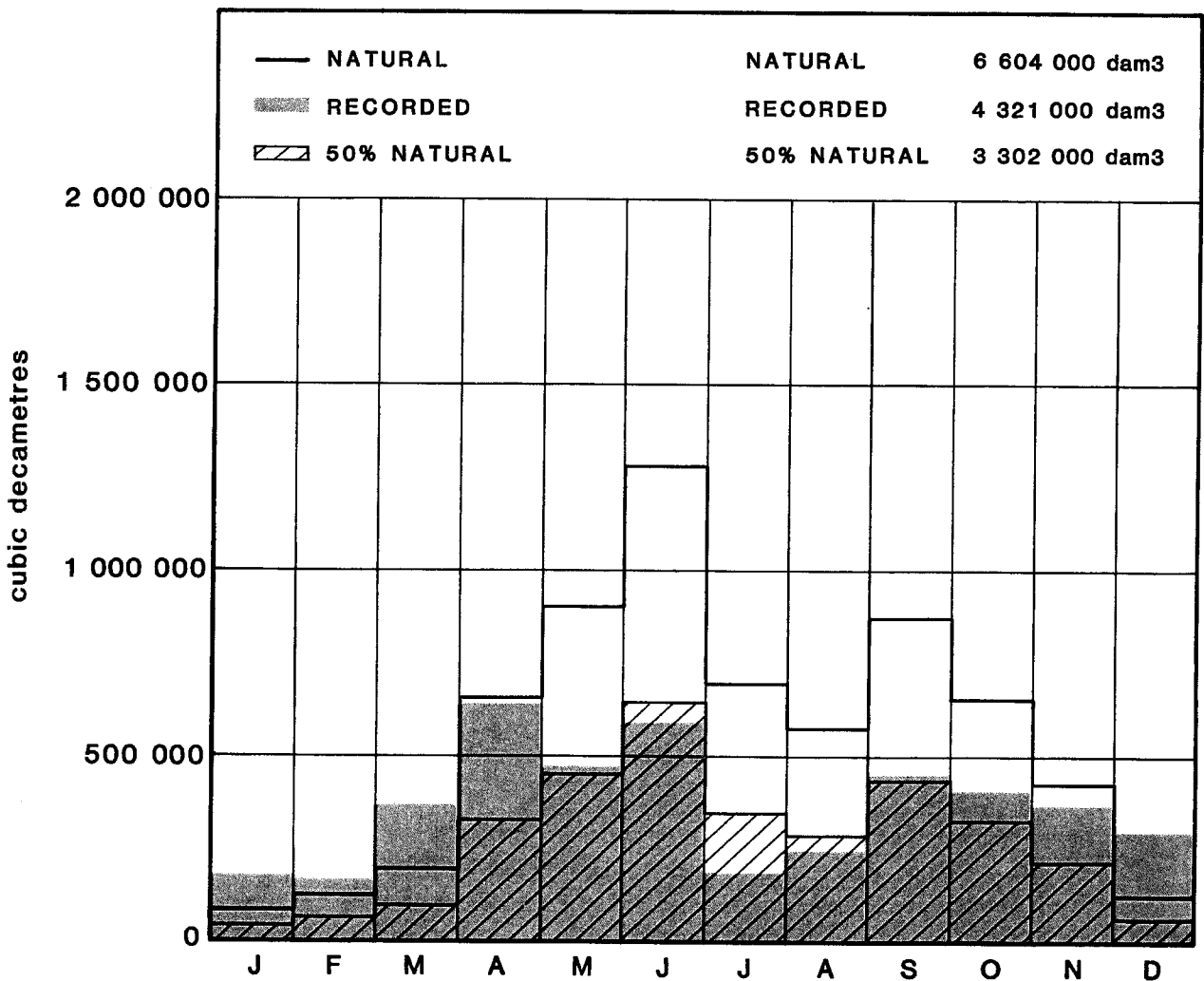
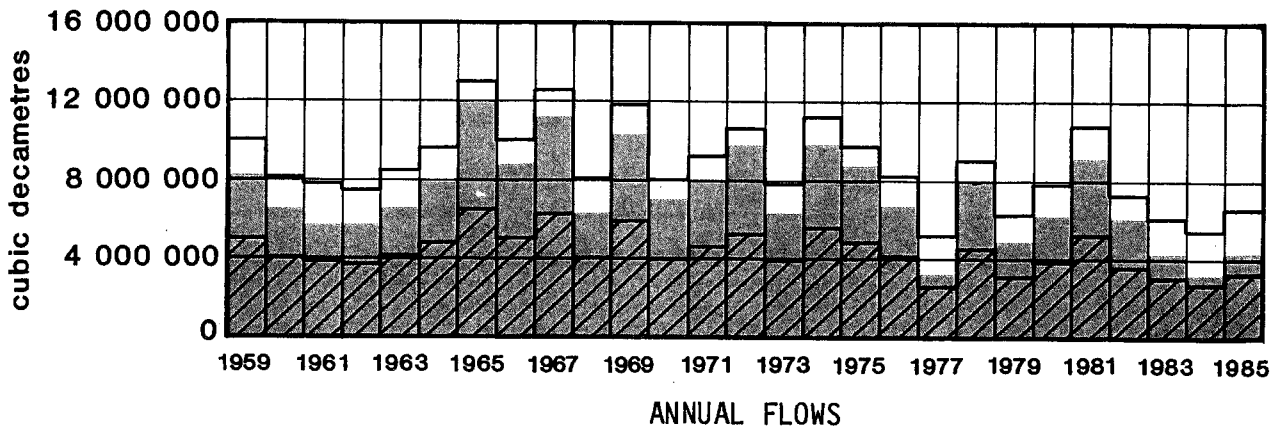
SOUTH SASKATCHEWAN RIVER — BELOW JUNCTION WITH RED DEER RIVER

	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	TOTALS
RECORDED DISCHARGES	173 000	162 000	363 000	633 000	467 000	584 000	181 000	245 000	447 000	406 000	364 000	296 000	4 321 000
NATURAL FLOW	84 000	127 000	197 000	656 000	902 000	1 284 000	696 000	576 000	873 000	655 000	427 000	127 000	6 604 000

Recorded flows for the years 1970 to 1978 inclusive are based on WSC's preliminary data.

Natural flows for the South Saskatchewan and Red Deer Rivers have been calculated using WSC's preliminary data and using the methodology described in "Natural Flow Report, South Saskatchewan River Below Red Deer River" March 1974 (PPWB Report No. 45).

Quantities shown in table have been routed to Alberta boundary.



SOUTH SASKATCHEWAN RIVER NEAR ALBERTA-SASKATCHEWAN BOUNDARY
(INCLUDES RED DEER RIVER)

1985 MONTHLY DATA

RECORDED AND NATURAL FLOWS - SUMMARY
SELECTED INTERPROVINCIAL STREAMS CROSSING ALBERTA-SASKATCHEWAN BOUNDARY
(Cubic Decimeters Rounded to Three Significant Figures)
FOR THE 1985 APPORTIONMENT PERIOD

	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	TOTALS
<u>NORTH SASKATCHEWAN -- ALBERTA-SASKATCHEWAN BOUNDARY (NEAR DEER CREEK)</u>													
RECORDED FLOW	256 000	308 000	445 000	1 040 000	591 000	591 000	441 000	449 000	612 000	429 000	342 000	390 000	5 850 000
NATURAL FLOW	35 200	47 800	167 000	821 000	580 000	777 000	888 000	877 000	852 000	449 000	131 000	128 000	5 750 000
<u>BATTLE CREEK -- ALBERTA-SASKATCHEWAN BOUNDARY</u>													
RECORDED FLOW	-	-	271	6 100	3 590	776	286	466	590	711	-	-	12 800
NATURAL FLOW	-	-	277	6 180	3 590	803	327	471	646	707	-	-	13 000
<u>LODGE CREEK -- ALBERTA-SASKATCHEWAN BOUNDARY</u>													
RECORDED FLOW	-	-	2 160	7 680	4 070	269	12	6	141	34	-	-	14 400
NATURAL FLOW	-	-	3 360	9 470	4 110	430	91	0	277	35	-	-	17 800
<u>MIDDLE CREEK --ALBERTA-SASKATCHEWAN BOUNDARY</u>													
RECORDED FLOW	-	-	484	3 840	1 360	63	40	21	20	11	-	-	5 840
NATURAL FLOW	-	-	476	4 900	1 530	40	0	0	14	3	-	-	6 960
<u>BEAVER RIVER -- ALBERTA-SASKATCHEWAN BOUNDARY (AT COLD LAKE)</u>													
RECORDED FLOW	7 250	5 520	7 730	94 800	208 000	58 500	24 800	8 590	5 990	8 120	5 170	2 650	437 000
<u>BATTLE RIVER -- ALBERTA-SASKATCHEWAN BOUNDARY (NEAR UNWIN)</u>													
RECORDED FLOW	2 230	1 290	12 600	146 000	82 300	19 700	6 350	4 170	4 390	4 090	1 120	866	289 000

RECORDED AND NATURAL FLOWS - SUMMARY
SELECTED STREAMS CROSSING THE SASKATCHEWAN - MANITOBA BOUNDARY
 (Cubic Decametres Rounded to Three Significant Figures)

FOR THE 1985-86 APPORTIONMENT PERIOD

APR. MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC. JAN. FEB. MAR. TOTALS

CHURCHILL RIVER -- SASKATCHEWAN-MANITOBA BOUNDARY (AT SANDY BAY)

RECORDED FLOW	1 570 000	2 030 000	1 900 000	2 090 000	1 730 000	1 560 000	1 470 000	1 640 000	1 840 000	1 990 000	1 810 000	1 960 000	21 600 000
NATURAL FLOW	1 360 000	2 550 000	2 700 000	3 220 000	2 610 000	2 160 000	1 850 000	1 640 000	1 670 000	1 670 000	1 470 000	1 580 000	24 500 000

SASKATCHEWAN RIVER -- SASKATCHEWAN-MANITOBA BOUNDARY

ESTIMATED FLOW	2 180 000	3 010 000	2 070 000	1 490 000	1 090 000	1 080 000	1 010 000	775 000	810 000	1 070 000	864 000	1 230 000	16 700 000
APPORTIONMENT FLOW	2 910 000	3 140 000	2 440 000	1 660 000	1 240 000	1 280 000	1 260 000	687 000	587 000	610 000	460 000	1 270 000	17 500 000

QU'APPELLE RIVER -- SASKATCHEWAN-MANITOBA BOUNDARY (NEAR MELBY)

RECORDED FLOW	96 900	18 100	10 200	10 300	5 630	11 600	16 000	22 900	15 400	11 700	10 400	40 400	270 000
NATURAL FLOW	99 600	19 500	5 680	1 740	98	0	0	0	0	0	0	43 700	170 000

CARROT RIVER -- SASKATCHEWAN-MANITOBA BOUNDARY (NEAR TURNBERRY)

RECORDED FLOW	183 000	460 000	149 000	64 800	44 700	29 700	48 300	19 400	5 010	5 950	4 940	6 240	1 020 000
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RED DEER RIVER -- SASKATCHEWAN-MANITOBA BOUNDARY (NEAR ERWOOD)

RECORDED FLOW	242 000	184 000	67 400	25 700	22 800	8 560	18 800	7 970	3 320	3 020	1 500	3 770	589 000
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ASSINIBOINE RIVER -- SASKATCHEWAN-MANITOBA BOUNDARY (AT KAMSACK)

RECORDED FLOW	199 000	75 400	17 000	3 880	1 110	832	1 360	1 400	1 010	1 000	1 040	5 260	308 000
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APPENDIX

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PPWB MEMBERS

Chairman	Dr. W.B. Mountain (Sept./80-July/85)	Assistant Deputy Minister Environmental Conservation Service Environment Canada
Chairman	Ms. L. Goulet (Appointed Nov./85)	Assistant Deputy Minister Environmental Conservation Service Environment Canada
	Dr. H.M. Hill	Director General Prairie Farm Rehabilitation Administration Agriculture Canada
	Mr. P.G. Melnychuk	Assistant Deputy Minister Water Resources Management Service Alberta Environment
	Mr. D.L. MacLeod	Vice President Resource Management Saskatchewan Water Corporation
	Mr. T.E. Weber	Director Water Resources Branch Manitoba Department of Natural Resources
<hr/>		
Secretary	Mr. G.W. Dunn	Water Quality Specialist PPWB Secretariat

ALTERNATE MEMBERS

<i>R.A. Halliday</i> <i>(April 1985 to June 1985)</i>	<i>Regional Director</i> <i>Western and Northern Region</i> <i>Inland Waters Directorate</i> <i>Environmental Conservation Service</i> <i>Environment Canada</i>
<i>D.A. Davis</i> <i>(July 1985 to date)</i>	<i>Director General</i> <i>Inland Waters Directorate</i> <i>Environment Canada</i>
<i>Mr. A.F. Lukey</i>	<i>Director</i> <i>Engineering Branch</i> <i>Prairie Farm Rehabilitation Administration</i> <i>Agriculture Canada</i>
<i>Mr. C.L. Primus</i>	<i>Director,</i> <i>Planning Division</i> <i>Alberta Environment</i>
<i>Mr. R.L. Kellow</i> <i>(Appointed June 1985)</i>	<i>Chief, Planning Division</i> <i>Resource Management</i> <i>Saskatchewan Water Corporation</i>
<i>Mr. N. Mudry</i>	<i>Chief</i> <i>Water Management</i> <i>Water Resources Branch</i> <i>Manitoba Department of Natural Resources</i>

COMMITTEE ON HYDROLOGY

Terms of Reference

At the request of, and under the direction of the PPWB, the Committee on Hydrology shall investigate, oversee, review, report and recommend on matters pertaining to hydrology of interprovincial or interjurisdictional basins.

The Committee may consider such things as natural flow; forecasting; network design; collection, processing and transmission of data; basin studies and other items of interprovincial interest involving hydrology.

Members

Chairman	R.B. Godwin	Executive Director Prairie Provinces Water Board
	G.H. Morton	Water Resources Branch Environment Canada
	F.R.J. Martin	Prairie Farm Rehabilitation Administration Agriculture Canada
	R.K. Deepröse	Environmental Engineering Support Services Alberta Environment
	V.M. Austford	Water Resources Branch Manitoba Department of Natural Resources
	A.B. Banga	Resource Management Saskatchewan Water Corporation
	R.F. Hopkinson	Atmospheric Environment Service Environment Canada
Secretary	A.J. Chen	Operations Engineer PPWB Secretariat

COMMITTEE ON WATER QUALITY

Terms of Reference

At the request of and under the direction of the Prairie Provinces Water Board, the Committee on Water Quality shall investigate, oversee, review, report and recommend on matters pertaining to water quality of inter-provincial and interjurisdictional basins.

Carrying out the above responsibilities may include such things as natural quality assessment; quality forecasting; network design; processing and dissemination of data; determination of implications of proposed projects that may significantly alter the water quality of interprovincial streams; consideration of special problems; establishment of procedures for emergency situations; and other items of interprovincial interest involving water quality.

Members

Chairman	R.B. Godwin	Executive Director Prairie Provinces Water Board
	W.D. Gummer	Water Quality Branch Environment Canada
	M. Morelli	Environmental Management Division Manitoba Department of Consumer and Corporate Affairs and the Environment
	D.A. Fast (Acting Member Sept./82 to June/85)	Water Pollution Control Branch Saskatchewan Environment
	R.G. Ruggles (Appointed June/85)	Water Pollution Control Branch Saskatchewan Environment
	P.G. Shewchuk	Standards and Approvals Division Alberta Environment
	M. Mowchenko (Acting Member June/80 to May/84)	Prairie Farm Rehabilitation Administration Agriculture Canada
	E.W. Allison (Appointed May/84)	Prairie Farm Rehabilitation Administration Agriculture Canada
Secretary	G.W. Dunn	Water Quality Specialist PPWB Secretariat

COMMITTEE ON GROUNDWATER

Terms of Reference

Recognizing the inter-relationship between surface and groundwater, the Committee on Groundwater shall, at the request of, and under the direction of the Prairie Provinces Water Board, investigate, oversee, review, report, and recommend on matters pertaining to quantity and quality of groundwater at or near interprovincial boundaries.

Responsibilities of the Committee will include: exchange of information; compilation and interpretation of existing data; recommendations on groundwater information and monitoring requirements; determination of implications of proposed projects which may impact the quantity and/or quality of waters at interprovincial boundaries; and other items of interjurisdictional interest involving groundwater.

Approved: November 18-19, 1981
PPWB Minute 26-25

Members

Chairman	R.B. Godwin	Executive Director Prairie Provinces Water Board
	J.A. Gilliland (Jan./81 to July/85)	National Hydrology Research Institute Environment Canada
	D. McNaughton (Appointed July/85)	Ground Water Division National Hydrology Research Institute
	D.H. Pollock	Prairie Farm Rehabilitation Administration Agriculture Canada
	H.A. Kerr	Earth Sciences Division Alberta Environment
	R.J. Stewart (Feb./81 to July/85)	Resource Management Saskatchewan Water Corporation
	U. Roeper (Appointed July/85)	Resource Management Saskatchewan Water Corporation
	L. Gray	Water Resources Branch Manitoba Department of Natural Resources
Secretary	A.J. Chen	Operations Engineer PPWB Secretariat

COMMITTEE ON INTERJURISDICTIONAL AGREEMENTS ADMINISTRATION

Terms of Reference

It was agreed that a committee consisting of the Executive Director, one member from Saskatchewan, one member from Alberta, and Mr. E.F. Durrant be struck to handle the problem of developing a methodology for the efficient administration of interjurisdictional agreements, particularly as regards Battle and Lodge Creek Basins.

PPWB Minute 8-35: March 20, 1973

Note: Mr. B.N. Johnson replaced Mr. Durrant as the member for Environment Canada in September 1977.

Members

Chairman	R.B. Godwin	Executive Director Prairie Provinces Water Board
	B.N. Johnson	Water Resources Branch Environment Canada
	T.K. Olson	Watershed Management Saskatchewan Water Corporation
	A.J. Ferrett	Surface Water Rights Branch Alberta Environment
<hr/>		
Secretary	A.J. Chen	Operations Engineer PPWB Secretariat

STATEMENT OF EXPENDITURES

AUDITED STATEMENT PREPARED BY ENVIRONMENT CANADA
FOR THE PERIOD APRIL 1, 1982 TO MARCH 31, 1985

	Submitted and Audited Amounts		
	1982-83	1983-84	1984-85
Salaries	\$210 458	\$213 330	\$218 174
Travel and removal	15 777	14 112	15 087
Postage, freight & express	1 069	503	437
Telephone & telegraph	5 921	3 867	5 299
Professional & special studies	20 552	38 755	30 963
Computing services	15 793	26 601	16 998
Stenographic & typing services	802	1 635	2 600
Miscellaneous special services	5 034	109	-
Accommodation rental	12 000	12 720	12 720
Computer equipment rentals	7 365	2 332	5 304
Photocopying & office equipment rentals	28	6 150	14 340
Furniture, fixtures and office equipment	(1 076)	301	11 432
Stationery, printed matter and office supplies	74 047	13 674	4 586
Miscellaneous	1 056	195	1 721
Special Services	-	-	25 600
Deduct miscellaneous revenue	-	-	2 593
	<u>\$368 826</u>	<u>\$337 284</u>	<u>\$362 668</u>
<u>Shares</u>			
Canada - one half	184 413	168 642	181 333
Alberta - one sixth	61 471	56 214	60 445
Manitoba - one sixth	61 471	56 214	60 445
Saskatchewan - one sixth	61 471	56 214	60 445

Previous Board Expenditures

Fiscal 1970-71	\$ 0
Fiscal 1971-72	105 174
Fiscal 1972-73	136 816
Fiscal 1973-74	158 274
Fiscal 1974-75	109 547
Fiscal 1975-76	143 805
Fiscal 1976-77	139 381
Fiscal 1977-78	163 008
Fiscal 1978-79	224 477
Fiscal 1979-80	500 387
Fiscal 1980-81	468 235
Fiscal 1981-82	436 785

FINAL CLAIM

For expenditures in accordance with the Prairie Provinces Water Board Agreement dated October 30, 1969 (See Section 10, Schedule C and Section 15 of the By-Laws).

FINANCIAL YEAR 1985-86

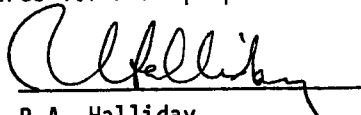
<u>ITEMS</u>	<u>BUDGET FOR 1985-1986</u>	<u>TOTAL EXPENDITURES</u>
Salaries	\$210 000	\$230 765
Computing Services	18 000	10 316
Natural Flow Reports and Studies	33 000	31 126
Consultant Studies	32 000	40 568
Personnel (Temporary replacements)	2 000	1 033
Transportation and Communications	20 500	13 347
Information - Printing	12 000	25 410
Rentals Office, etc.	20 000	18 641
Maintenance	500	1 262
Materials and Supplies	3 000	2 656
Acquisitions - Machine Equipment	1 000	2 171
 SUB-TOTAL	 \$352 000	 \$377 295
Less Revenue from Sale of Books		465
 TOTAL		 \$376 830

Each province's share of expenditures (one-sixth of \$376 830) = \$62 805

I hereby certify that, to the best of my knowledge and belief, the works in respect of which this claim is made have been satisfactorily performed and that the amount claimed is properly chargeable under the terms of the Prairie Provinces Water Board Agreement dated October 30, 1969.


Executive Director
Prairie Provinces Water Board

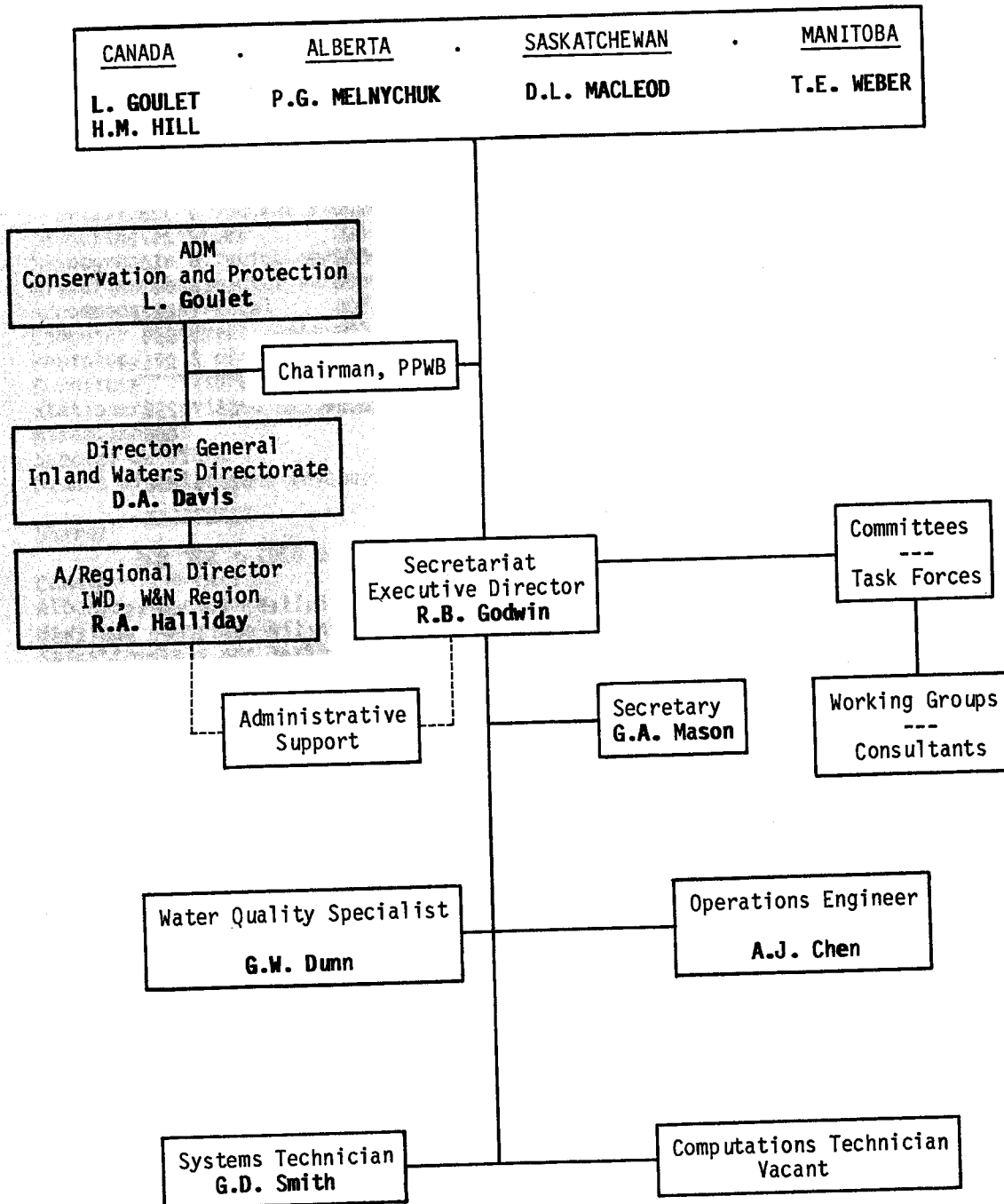
I hereby certify the amounts shown are appropriately documented by the Federal Department of Environment and represent expenditures for PPWB purposes.


R.A. Halliday
Regional Director
Inland Waters Directorate
Western & Northern Region
Environment Canada

ORGANIZATION CHART

ORGANIZATION CHART

PRAIRIE PROVINCES WATER BOARD



MASTER AGREEMENT ON APPORTIONMENT 

MASTER AGREEMENT ON APPORTIONMENT

THIS AGREEMENT is made in quadruplicate this THIRTIETH day of OCTOBER, 1969, A.D.

BETWEEN:

HER Majesty, the Queen, in right of Canada, represented herein by the Minister of Energy, Mines and Resources

(Hereinafter called "Canada")

- and -

HER Majesty, the Queen, in right of Alberta, represented herein by the Minister in charge of Water Resources for Alberta

(Hereinafter called "Alberta")

- and -

HER Majesty, the Queen, in right of Saskatchewan, represented herein by the Minister in charge of The Water Resources Commission Act of the said Province

(Hereinafter called "Saskatchewan")

- and -

HER Majesty, the Queen, in right of Manitoba, represented herein by the Minister in charge of The Water Control and Conservation Branch Act of the said Province

(Hereinafter called "Manitoba")

WHEREAS under natural conditions the waters of the watercourses hereinafter referred to arising in or flowing through the Province of Alberta would flow into the Province of Saskatchewan and under the said conditions the waters of some of the said watercourses arising in or flowing through the Province of Saskatchewan would flow into the Province of Manitoba;

AND WHEREAS the Governor-in-Council has authorized Canada to enter into this agreement by Order-in-Council P.C. 1969-8/2051 dated October 29, 1969, and the Lieutenant Governors-in-Council for Alberta, Manitoba and Saskatchewan, respectively, have authorized them to enter into this agreement by the following Orders-in-Council:

Alberta	- O.C. 2053/69
Manitoba	- O.C. 1359/69
Saskatchewan	- O.C. 1612/69

AND WHEREAS the parties hereto deem it to be in their mutual interest that an agreement be reached among the four parties as to the apportionment as described in the schedules attached hereto of such interprovincial waters among the three Provinces;

AND WHEREAS Alberta and Saskatchewan have entered into an agreement, which agreement is attached to this agreement as Schedule A, that permits the Province of Alberta to make a net depletion of one-half the natural flow of water arising in or flowing through the Province of Alberta and that permits the remaining one-half of the natural flow of each such watercourse to flow into the Province of Saskatchewan, subject to certain exceptions as are set forth in the said agreement;

AND WHEREAS Saskatchewan and Manitoba have entered into an agreement, which agreement is attached to this agreement as Schedule B, that permits the Province of Saskatchewan to make a net depletion of one-half the natural flow of water arising in, and one-half of the water flowing into the Province of Saskatchewan, and that permits the remaining one-half of the flow of each such watercourse to flow into the Province of Manitoba, subject to such conditions and agreements as therein contained;

AND WHEREAS the parties are desirous that the Prairie Provinces Water Board (referred to herein as the Board), reconstituted by this agreement will be responsible for the administration of this agreement;

AND WHEREAS the parties hereto recognize the continuing need for consultation and co-operation as between themselves with respect to the matters herein referred to so that the interests of all the parties are best served;

NOW THEREFORE, THIS AGREEMENT (hereinafter known as the Master Agreement) witnesseth that each party agrees as follows:

Interprovincial Agreements

1. Alberta and Saskatchewan agree that the agreement between them (hereinafter called the First Agreement), a copy of which is set out in Schedule A to the Master Agreement, will become binding upon them upon the date that the Master Agreement is executed.
2. Saskatchewan and Manitoba agree that the agreement between them (hereinafter called the Second Agreement), a copy of which is set out in Schedule B to the Master Agreement, will become binding upon them upon the date that the Master Agreement is executed.
3. The parties agree to the apportionment of water between Alberta and Saskatchewan and Manitoba as provided in the First and Second Agreements and each party agrees to be bound by the said agreements as they relate to apportionment as if it were a party thereto.
4. The parties agree that the First or Second Agreement, or both, may be altered by an agreement in writing among the four parties to the Master Agreement, but not otherwise.
5. The parties agree that the First and Second Agreements will continue in force and effect until cancelled by an agreement in writing among the four parties to the Master Agreement.

Water Quality

6. The parties mutually agree to consider water quality problems; to refer such problems to the Board; and to consider recommendations of the Board thereon.

Monitoring

7. The parties agree that the monitoring of the quantity and quality of waters as specified in the First and Second Agreements, the collection, compilation and publication of water quantity and quality data required for the implementation and maintenance of the provisions of this agreement shall be conducted by Canada, subject to provision of funds being voted by the Parliament of Canada.

Administration

8. The parties agree, subject to Clause 9 of this agreement that if at any time, any dispute, difference or question arises between the parties with respect to this agreement or the construction, meaning and effect thereof, or anything therein, or the rights and liabilities of the parties thereunder or otherwise in respect thereto, then every such dispute, difference or question will be referred for determination to the Exchequer Court under the provisions of the Exchequer Court Act of Canada and each of the parties hereto agrees to maintain or enact the necessary legislation to provide the Exchequer Court with jurisdiction to determine any such dispute, difference, or question in the manner provided under the Exchequer Court Act.
9. The parties also agree that the Board, with the consent of the parties in dispute, may cause to be prepared, a factual report of the dispute for consideration by the parties hereto prior to the referral of the dispute to the Exchequer Court.
10. The parties agree that the Prairie Provinces Water Board shall monitor and report on the apportionment of waters as set out in the provisions of the First and Second Agreements and ratified by this Master Agreement.
11. The parties agree to revoke the agreement dated July 28, 1948, establishing the Prairie Provinces Water Board and to reconstitute the

Prairie Provinces Water Board in the form of Schedule C hereto and the said Schedule shall form and become part of this Master Agreement.

12. Because the Orders-in-Council referred to in Schedule D hereto will become redundant upon the execution of this Master Agreement, the parties agree to take steps to have them revoked.
13. The parties agree for the future application of the provisions of the Master Agreement (and the First and Second Agreements thereunder), to work together and to cooperate to the fullest extent each with the other for the integrated development and use of water and related resources to support economic growth according to selected social goals and priorities and to participate in the formulation and implementation of comprehensive planning and development programs according to their national, regional and provincial interest and importance.
14. No Member of the Parliament of Canada or Member of the Legislative Assemblies of the Provinces party to this agreement shall hold, enjoy, or be admitted to any share or part of any contract, agreement, commission or benefit arising out of this agreement.

IN WITNESS WHEREOF Canada has caused its presents to be executed by its Minister of Energy, Mines and Resources, and Alberta has caused its presents to be executed by its Minister in charge of Water Resources, and Saskatchewan has caused its presents to be executed by its Minister in charge of The Water Resources Commission Act, and Manitoba has caused its presents to be executed by its Minister in charge of The Water Control and Conservation Branch Act on the day and year first mentioned above.

"A. Davidson"

Witness to the signature of the Minister
(Energy, Mines and Resources) for Canada

"J. J. Greene"

Minister (Energy, Mines and Resources) for
Canada

October 30, 1969

Date

"R. E. Bailey"

Witness to the signature of the Minister in
charge of Water Resources for Alberta

"Henry A. Ruste"

Minister in charge of Water Resources for
Alberta

October 30, 1969

Date

"Harold W. Pope"

Witness to the signature of the Minister in
charge of The Water Resources Commission
Act for Saskatchewan

"Allan R. Guy"

Minister in charge of The Water Resources
Commission Act for Saskatchewan

October 30, 1969

Date

"Thomas E. Weber"

Witness to the signature of the Minister in
charge of The Water Control and Conserva-
tion Branch Act for Manitoba

"Lenard S. Evans"

Minister in charge of The Water Control
and Conservation Branch Act for Manitoba

October 30, 1969

Date

SCHEDULE A

THIS AGREEMENT is made in quadruplicate this THIRTIETH day of OCTOBER, 1969, A.D.

BETWEEN:

HER Majesty, the Queen, in right of Alberta, represented herein by the Minister in charge of Water Resources for Alberta

(Hereinafter called "Alberta")

- and -

HER Majesty, the Queen, in right of Saskatchewan, represented herein by the Minister in charge of The Water Resources Commission Act of the said Province

(Hereinafter called "Saskatchewan")

WHEREAS under natural conditions the waters of the watercourses hereinafter referred to arising in or flowing through the Province of Alberta would flow into the Province of Saskatchewan and under the said conditions the waters of some of the said watercourses arising in or flowing through the Province of Saskatchewan would flow into the Province of Manitoba;

AND WHEREAS the parties hereto deem it to be in their mutual interest and in the interest of Manitoba that an agreement in principle be reached among the said three Provinces as to the apportionment of such interprovincial waters among them;

AND WHEREAS the parties hereto are of the opinion that an equitable apportionment of such waters as between the adjoining Provinces of Alberta and Saskatchewan would be to permit the Province of Alberta to make a net depletion of one-half the natural flow of water arising in or flowing through the Province of Alberta and to permit the remaining one-half of the natural flow of water of each such watercourse to flow into the Province of Saskatchewan, subject to certain

prior rights as are hereinafter set forth or may hereafter be mutually agreed upon in writing;

AND WHEREAS on the basis of the foregoing apportionment as between the Provinces of Alberta and Saskatchewan the parties hereto are of the opinion that in a similar manner, an equitable apportionment of the remainder of the natural flow of the said watercourses that flow into the Province of Manitoba after permitting the Province of Alberta to make its depletion of one-half thereof would be to permit the Province of Saskatchewan to make a net depletion of one-half of the said remainder and to permit the other one-half thereof to flow into the Province of Manitoba; and that the natural flow of any tributaries to the said watercourses which tributaries join the said watercourses in the Province of Saskatchewan without arising in or first flowing through the Province of Alberta could be apportioned one-half to the Province of Saskatchewan and one-half to the Province of Manitoba in a manner similar to the apportionment of waters as between the Provinces of Alberta and Saskatchewan, in all cases subject to such prior rights as may be mutually acknowledged by the said Provinces of Manitoba and Saskatchewan;

AND WHEREAS the parties hereto recognize the continuing need for consultation and cooperation as between themselves and with Manitoba with respect to the matters herein referred to so that the best and most beneficial use of the said waters may be made and the interests of all said provinces best served:

NOW THIS AGREEMENT witnesseth as follows:

1. IN THIS AGREEMENT:

- (a) "Natural flow" means the quantity of water which would naturally flow in any watercourse had the flow not been affected by human interference or human intervention, excluding any water which is part of the natural flow in Alberta but is not available for the use of Alberta because of the provisions of any international treaty which is binding on Alberta.

- (b) "Watercourse" means any river, stream, creek, or other natural channel which from time to time carries a flowing body of water from the Province of Alberta to the Province of Saskatchewan and includes all tributaries of each such river, stream, creek or natural channel which do not themselves cross the common boundary between the Provinces of Alberta and Saskatchewan. Such tributaries as do themselves cross the said common boundary between the Provinces of Alberta and Saskatchewan shall be deemed to be "watercourses" for the purpose of this agreement.
2. (a) The parties hereto shall mutually establish a method by which to determine the natural flow of each watercourse flowing across their said common boundary.
- (b) For the purpose of this agreement, the said natural flow shall be determined at a point as near as reasonably may be to their said common boundary.
- (c) Notwithstanding sub-paragraph (b) the point at which the natural flow of the watercourses known as the South Saskatchewan and Red Deer Rivers is to be determined may be, at the option of Alberta, a point at or as near as reasonably may be below the confluence of the said two rivers.
3. Alberta shall permit a quantity of water equal to one-half the natural flow of each watercourse to flow into the Province of Saskatchewan, and the actual flow shall be adjusted from time to time on an equitable basis during each calendar year, but this shall not restrict or prohibit Alberta from diverting or consuming any quantity of water from any watercourse provided that Alberta diverts water to which it is entitled of comparable quality from other streams or rivers into such watercourse to meet its commitments to Saskatchewan with respect to each watercourse.
4. Notwithstanding paragraph 3 hereof, the following special provisions shall apply as between the parties hereto with respect to the watercourse known as the South Saskatchewan River.
- (a) Alberta shall be entitled in each year to consume, or to divert or store for its consumptive use a minimum of 2,100,000 acre-feet net depletion out of the flow of the watercourse known as the South Saskatchewan River even though its share for the said year, as calculated under paragraph 3 hereof, would be less than 2,100,000 acre-feet net depletion, provided however Alberta shall not be entitled to so consume or divert, or store for its consumptive use, more than one-half the natural flow of the said South Saskatchewan watercourse if the effect thereof at any time would be to reduce the actual flow of the said watercourse at the common boundary of the said Provinces of Saskatchewan and Alberta to less than 1,500 cubic feet per second.
- (b) The consumption or diversion by Alberta provided for under the preceding subparagraph shall be made equitably during each year, depending on the actual flow of water in the said watercourse and the requirements of each Province, from time to time.
5. The parties hereto shall work together and co-operate to the fullest extent, each with the other, for the most effective, economical and beneficial use of waters flowing from the Province of Alberta into the Province of Saskatchewan, including the construction and operation of approved projects of mutual advantage to our Provinces on a cost-share basis proportionate to the benefits derived therefrom by each Province, (the approval of which projects shall not be unreasonably withheld by either of the parties hereto) and shall enter into such other arrangements, agreements or accords with each other, and with the Governments of Canada and other Provinces to best achieve the principles herein agreed upon.

6. *Notwithstanding paragraph 3 hereof, with respect to each of the three watercourses known as Battle Creek, Lodge Creek, and Middle Creek, the annual flow shall be apportioned such that, in each of the said watercourses, Alberta permits a quantity of water equal to 75 percent of the natural flow to pass the interprovincial boundary from Alberta to Saskatchewan.*
7. If at any time any dispute, difference or question shall arise between the parties or their representatives touching this agreement or the construction, meaning and effect thereof, or anything therein, or the rights or liabilities, of the parties or their representatives thereunder or otherwise in respect thereto then every such dispute, difference or question shall be referred for determination to the Exchequer Court under the provisions of The Exchequer Court Act of Canada, and each of the parties hereto agrees to enact the necessary legislation to provide the Exchequer Court with jurisdiction to determine any such dispute, difference or question in the manner provided under Section 30 of The Exchequer Court Act.
8. This agreement shall become effective upon the execution of an agreement by Canada, Alberta, Manitoba and Saskatchewan relative to the apportionment of waters referred to in this agreement.

IN WITNESS WHEREOF Alberta has caused these presents to be executed on its behalf by its Minister in charge of Water Resources, and Saskatchewan has caused these presents to be executed by its Minister in charge of The Water Resources Commission Act, both on the day and year first above mentioned.

"R. E. Bailey"

Witness to the signature of the Minister
in charge of Water Resources for Alberta

"Henry A. Ruste"

Minister in charge of Water Resources
for Alberta

"Harold W. Pope"

Witness to the signature of the Minister
in charge of The Water Resources Commission Act

"Allan R. Guy"

Minister in charge of The Water Resources Commission Act

Section 6 amended on July 5, 1984.

SCHEDULE B

THIS AGREEMENT is made in quadruplicate this THIRTIETH day of OCTOBER, 1969, A.D.

BETWEEN:

HER Majesty, the Queen, in right of Saskatchewan, represented herein by the Minister in charge of The Water Resources Commission Act of the said Province

(Hereinafter called "Saskatchewan")

- and -

HER Majesty, the Queen, in right of Manitoba, represented herein by the Minister in charge of The Water Control and Conservation Branch Act of the said Province

(Hereinafter called "Manitoba")

WHEREAS under natural conditions the waters of the watercourses hereinafter referred to arising in or flowing through the Province of Saskatchewan would flow into the Province of Manitoba;

AND WHEREAS the parties hereto deem it to be in their mutual interest and in the interest of Alberta that an agreement in principle be reached among the said three Provinces as to the apportionment of interprovincial waters among them;

AND WHEREAS the parties hereto are of the opinion that an equitable apportionment of such waters as between the adjoining Provinces of Saskatchewan and Manitoba would be to permit the Province of Saskatchewan to make a net depletion of one-half the natural flow of water arising in, and one-half the flow of water flowing into, the Province of Saskatchewan, and to permit the remaining one-half of the flow of water of each such watercourse to flow into the Province of Manitoba, subject to certain rights as may hereafter be mutually agreed upon in writing;

AND WHEREAS on the basis of the foregoing apportionment as between the Provinces of Saskatchewan and Manitoba, the parties hereto are of the opinion that in a similar manner, an equitable apportionment of the natural flow of the said watercourses arising in or flowing through the Province of Alberta would be to permit the Province of Alberta to make a net depletion of one-half thereof, subject to such prior rights as may be mutually acknowledged by the said Provinces of Alberta, Saskatchewan and Manitoba;

AND WHEREAS the parties hereto recognize the continuing need for consultation and co-operation as between themselves and with Alberta with respect to the matters herein referred to so that the interests of all said Provinces are best served;

NOW THIS AGREEMENT witnesseth as follows:

1. IN THIS AGREEMENT:

- (a) "Natural flow" means the quantity of water which would naturally flow in any watercourse had the flow not been affected by human interference or human intervention.
- (b) "Watercourse" means any river, stream, creek, or other natural channel which from time to time carries a flowing body of water from the Province of Saskatchewan to the Province of Manitoba and includes all tributaries of each such river, stream, creek or natural channel which do not themselves cross the common boundary between the Provinces of Saskatchewan and Manitoba. Such tributaries as do themselves cross the said common boundary between the Provinces of Saskatchewan and Manitoba shall be deemed to be "watercourses" for the purpose of this agreement.

2. (a) The parties hereto shall mutually establish a method by which to determine the natural flow of each watercourse flowing across their said common boundary.
- (b) For the purpose of this agreement, the said natural flow shall be determined at a point as near as reasonably may be to their said common boundary.
3. Saskatchewan shall permit in each watercourse the following quantity of water to flow into Manitoba during the period from April 1 of each year to March 31 of the year following: A quantity of water equal to the natural flow for that period determined at the point referred to in paragraph 2(b) hereof, less
 - (a) one-half the water flowing into Saskatchewan in that watercourse from Alberta, and
 - (b) any water which would form part of the natural flow in that watercourse but does not flow into Saskatchewan because of the implementation of any provision of any subsisting water apportionment agreement made between Alberta and Saskatchewan and approved by Manitoba, and
 - (c) one-half the natural flow arising in Saskatchewan.
4. Saskatchewan shall be entitled during such period to consume or to divert or store for its consumptive use the water it is not required to permit to flow into Manitoba in each watercourse under paragraph 3 hereof, but such consumption or diversion shall be made equitably depending on the actual flow of water in each watercourse and the requirements of each Province from time to time, but Saskatchewan shall permit sufficient water to flow into Manitoba to meet its commitments during such period under paragraph 3 hereof.
5. The parties hereto shall work together and co-operate to the fullest extent, each with the other, for the use of waters flowing from the Province of Saskatchewan into the Province of Manitoba, including the construction and operation of approved projects of mutual advantage to the said Provinces on a cost-share basis proportionate to the benefits derived therefrom by each Province (the approval of which projects shall not be unreasonably withheld by either of the parties hereto) and shall enter into such other arrangements, agreements or accords with each other, and with the Governments of Canada and other Provinces to best achieve the principles herein agreed upon.
6. If at any time any dispute, difference or question shall arise between the parties or their representatives touching this agreement or the construction, meaning and effect thereof, or anything therein, or the rights or liabilities of the parties or their representatives thereunder or otherwise in respect thereto then every such dispute, difference or question shall be referred for determination to the Exchequer Court under the provisions of The Exchequer Court Act of Canada, and each of the parties hereto agrees to maintain or enact the necessary legislation to provide the Exchequer Court with jurisdiction to determine any such dispute, difference or question in the manner provided under The Exchequer Court Act.

The actual flow shall be adjusted from time to time by mutual agreement on an equitable basis during such period but this shall not restrict or prohibit Saskatchewan from diverting, storing or consuming any quantity of water from any watercourse provided that Saskatchewan diverts water to which it is entitled of comparable quality from other streams or rivers into such watercourse to meet its commitments to Manitoba with respect to each watercourse.

- 7.- This agreement shall become effective upon the execution of an agreement by Canada, Alberta, Manitoba and Saskatchewan relative to the apportionment of waters referred to in this agreement.

IN WITNESS WHEREOF Saskatchewan has caused these presents to be executed by its Minister in charge of The Water Resources Commission Act, and Manitoba has caused these presents to be executed by its Minister in charge of The Water Control and Conservation Branch Act on the day and year first above mentioned.

"Harold W. Pope"

Witness to the signature of the Minister in charge of The Water Resources Commission Act

"Allan R. Guy"

Minister in charge of The Water Resources Commission Act

"Thomas E. Weber"

Witness to the signature of the Minister in charge of The Water Control and Conservation Branch Act

"Leonard S. Evans"

Minister in charge of The Water Control and Conservation Branch Act.

SCHEDULE C

PRAIRIE PROVINCES WATER BOARD AGREEMENT

THIS AGREEMENT made this THIRTIETH day of OCTOBER, 1969, A.D.

BETWEEN:

THE GOVERNMENT OF CANADA,
hereinafter called "Canada"

- and -

THE GOVERNMENT OF MANITOBA,
hereinafter called "Manitoba"

- and -

THE GOVERNMENT OF SASKATCHEWAN,
hereinafter called "Saskatchewan"

- and -

THE GOVERNMENT OF ALBERTA,
hereinafter called "Alberta"

1. Manitoba, Saskatchewan, Alberta and Canada agree to establish and there is hereby established a Board to be known as the Prairie Provinces Water Board to consist of five members to be appointed as follows:

- (a) two members to be appointed by the Governor General in Council, one of whom shall be Chairman of the Board, on the recommendation of the Minister of Energy, Mines and Resources,
- (b) one member to be appointed by the Lieutenant Governor in Council of each of the Provinces of Manitoba, Saskatchewan and Alberta.

2. Functions

The Board shall oversee and report on the Master Agreement (including the First and

Second Agreements thereunder) executed by Canada, Alberta, Manitoba and Saskatchewan for the apportionment of waters flowing from one Province into another Province; shall take under consideration, comprehensive planning, water quality management and other questions pertaining to water resource management referred to it by the parties hereto; shall recommend appropriate action to investigate such matters and shall submit recommendations for their resolution to the parties hereto.

3. Composition of Board

The members of the Board shall be chosen from those engaged in the administration of water resources or related duties for Manitoba, Saskatchewan, Alberta or Canada, as the case may be, and shall serve as members of the Board in addition to their other duties.

4. Duties of the Board

In accordance with its functions, the duties of the Board shall be as follows:

- (a) to review, collate, and analyze stream-flow data and prepare reports and recommendations on the apportionment of water,
- (b) to review water quality problems, particularly such problems located at the interprovincial boundaries, and to recommend to the parties hereto, appropriate management approaches for their resolution including the establishment of new institutional arrangements,
- (c) to develop recommendations on other water matters, in addition to problems on water quality, referred to the Board by any party hereto including the review and analysis of existing information and the requesting of additional studies and assistance by appropriate governmental agencies to provide information for formulating its recommendations,

- (d) to promote through consultation and the exchange of information the integrated development of water resources of inter-provincial streams,
- (e) to cause to be prepared with the consent of the parties involved factual reports on disputes arising out of the water apportionment for consideration by the parties hereto,
- (f) to ensure the co-ordination of such technical programs as water quantity and quality monitoring and streamflow forecasting required for the effective apportionment of water.

5. Confirmation of the Board's Recommendations

A recommendation of the Board with respect to any matters referred to it under Section 2 shall, subject to the Master Agreement for the apportionment of water, become effective when adopted by Orders-in-Council passed by Canada and each of the Provinces.

6. Authority of Board

The Board shall have authority to correspond with all Governmental organizations and other sources of information in Canada or abroad concerned with the administration of water resources, and such other authority as may be conferred on the Board from time to time by agreement between the parties hereto; all agencies of the four governments having to do with the water and associated resources in the area covered by the Agreement shall be required to supply the Board with all data in their possession requested by the Board.

7. Records

The records relating to the water resources of the three provinces collected and compiled by the P.F.R.A. organization at Regina shall be made available to the Board.

8. Meetings of the Board

The Board shall meet at the call of the Chairman and meetings shall be called at least twice annually; the expenses of the members shall be borne by their respective governments.

9. Reports

The Board shall submit an annual progress report outlining work done and work contemplated in the agreed program to each of the responsible Ministers of the parties hereto and such other reports as may be requested by any one of such Ministers.

10. Operation of the Board

The Secretary for the Board and such other technical and clerical staff as may be required, with a headquarters at Regina, shall be Federal or Provincial public servants. The cost of administration, excluding the cost of monitoring as described in Section 7 of the Master Agreement, but including staff, accommodation, supplies and incidental expenses of the Board, shall be borne by the parties hereto on the basis of one-half by Canada and one-sixth by each of the Provinces. The Board shall prepare for approval of the parties hereto, work program, staff requirements, annual budgets and five-year forecasts and such other reports as may be required in the operation of the Board.

11. Any water development project already constructed or to be constructed by any one of the parties shall be so operated as to maintain the apportionment of water as set out in the Master Agreement (and the First and Second Agreements thereunder) for the apportionment of waters of interprovincial streams.

SCHEDULE D

PREVIOUS ALLOCATIONS OF INTERPROVINCIAL WATERS
 APPROVED BY ORDERS-IN-COUNCIL BY THE GOVERNMENTS OF
 CANADA, ALBERTA, MANITOBA, AND SASKATCHEWAN

<u>Item</u>	<u>Order-in-Council</u>			
	<u>Canada</u>	<u>Alberta</u>	<u>Saskatchewan</u>	<u>Manitoba</u>
Allocation of water for specific projects in Alberta	4030/49	857/49	1307/51	1121/49
Allocation of water for specific projects in Saskatchewan	1874/51	1091/51	1310/51	1264/51
Allocation of water for South Saskatchewan River Project in Sask- atchewan	973/53	991/53	1271/53	924/53

BY-LAWS

PART I

1. In these By-Laws:

- (a) "Agreement" means the Prairie Provinces Water Board Master Agreement (including the First and Second Agreements thereunder) executed the Thirtieth day of October, 1969, A. D. by Canada, Alberta, Saskatchewan and Manitoba.
- (b) "Alternate" means Alternate Member of the Prairie Provinces Water Board.
- (c) "Board" means the Prairie Provinces Water Board.
- (d) "By-Laws" means the ordinances adopted by the Board for the regulation of the Board's internal affairs.
- (e) "Chairman" means Chairman of the Prairie Provinces Water Board.
- (f) "Executive Director" means the senior officer of the Secretariat.
- (g) "Member" means Member of the Prairie Provinces Water Board.
- (h) "Ministers" means the responsible ministers of the governments which are party to the Agreement.
- (i) "Secretariat" means the operational unit established by the Board to carry out the day-to-day affairs of the Board.
- (j) "Schedule C" means the Prairie Provinces Water Board Agreement under the Master Agreement (1969) executed by Canada, Alberta, Saskatchewan and Manitoba establishing the Prairie Provinces Water Board.

PART II

The following shall be the By-Laws of the Prairie Provinces Water Board.

1. Objectives

The objectives of the Board shall be to promote the integrated development and use of water and related resources to support economic growth according to selected social goals and priorities, and to participate in the formulation and implementation of comprehensive planning and development programs according to their national, regional and provincial interest and importance.

In general, the Board will provide coordination and liaison between water resource agencies and will advise governments on the planning, development and management of interprovincial waters.

In particular, the Board will ensure the equitable apportionment of water flowing from one province into another province in accordance with the Agreement and will promote effective water quality management of interprovincial streams relative to standards and procedures adopted by the Board from time to time.

2. Membership

In accordance with Section 1 of Schedule "C", the Prairie Provinces Water Board shall consist of five Members to be appointed as follows:

- (a) two Members to be appointed by the Governor General in Council, one of whom shall be Chairman of the Board;
- (b) one Member to be appointed by the Lieutenant Governor in Council of each of the Provinces of Manitoba, Saskatchewan and Alberta.

3. Alternate Members

Each Member, including the Chairman, shall arrange for the appointment of an Alternate Member to act on his behalf during his absence, in which case the Alternate shall enjoy all the rights and privileges conferred on the Member.

4. Meetings and Notice

The Board shall meet at least twice a year by the call of the Chairman. Any Member may request a meeting of the Board at any time, in which case the Chairman must call the meeting within one month (30 days).

Meetings of the Board shall be called with at least 14 days notice unless every Member agrees otherwise.

5. Quorum

Meetings of the Board shall be official when all Members or their appointed Alternates are present.

6. Voting

All recommendations to government, all By-Laws and budgets-in-total shall require unanimous approval. The majority of votes determines a question on any other matter. In the event of a tie, the Chairman shall cast the deciding vote.

7. Powers

In accordance with the duties, functions and operations of the Board, as contained in Schedule "C", the Board shall have the power to authorize expenditures within the limits of approved budgets for the operations of the Secretariat, for the employment of staff, or for any other purposes necessary for administering the Agreement and furthering the objectives of the Board.

8. Authority

Within the general responsibilities given to it, the Board shall determine its technical and administrative functions from time to time and

shall decide all matters regarding the authority of the Board and the delegation thereof.

9. Financial Year

The financial year shall end on the 31st day of March in each year.

10. Budgets

The Chairman shall submit fiscal year program and budget estimates to the Board and to the parties to the Agreement for their approval. Such estimates shall be submitted not later than the first day of August preceding the financial year to which they pertain.

11. Secretariat

- (a) There shall be a permanent Secretariat with offices at Regina, Saskatchewan.
- (b) The Secretariat shall be the "operational arm" of the Board, charged with the responsibility of conducting programs approved by the Board for collating and analyzing data and reporting the apportionment and water quality of interprovincial streams; for conducting approved studies, and for furthering the policies and objectives of the Board.
- (c) Except as otherwise provided for under subsection (f) herein, employees of the Secretariat shall be federal civil servants, subject to federal public service regulations and classification and collective agreements.
- (d) The chief officer of the Secretariat shall be the Executive Director whose actions shall at all times be subject to the approval of the Board.
- (e) The Board shall approve the establishment of salaried positions within the Secretariat and shall approve job descriptions prior to submission to the appropriate federal authority. The Board shall be consulted on the appointment of employees to the Secretariat which role may be delegated to the Executive Director.

- (f) The Board may arrange by agreement for secondment to the Secretariat, the employees of the agencies of those party to the Agreement, at cost, whenever in the opinion of the party concerned the services of such employees are available. Such employees shall remain under the administrative control and public service regulations of the appropriate party.

12. Assignments to Associated Agencies and Consultants

- (a) The Board shall have the authority to engage agencies of those party to the Agreement, at cost, to undertake assignments from the Board, whenever in the opinion of the party concerned, the services of such agencies are available.
- (b) Agencies may enter into sub-contracts with consultants for purposes of professional interpretation subject to the approval of the Executive Director. Sub-contracts for the collection of basic data shall not require the approval of the Executive Director.
- (c) The Board may engage consultants to undertake assignments from the Board where such services are deemed necessary.
- (d) The services of consultants and of agencies of those party to the Agreement shall be engaged under a contractual arrangement. Contracts shall be entered into by the Chairman and/or the Executive Director subject to delegated authorities under the federal government contract regulations. Contracts for services shall also be subject to budgetary appropriations and any other controls imposed by the Board for the conduct of the work.

13. Terms of Payment for Services Provided by Associated Agencies

- (a) Canada, through the Board, shall reimburse the Provinces of Alberta, Saskatchewan and Manitoba on a monthly basis, for expenditures made pursuant to the Agreement and approved by the Board. Payment for such expenditures will be made by Canada upon the submission of a claim in a mutually agreed manner and form.

- (b) Canada, and the Provinces of Alberta, Saskatchewan and Manitoba shall keep complete records of all expenditures made severally pursuant to the Agreement and shall support such expenditures with proper documentation. Canada and the Provinces of Alberta, Saskatchewan and Manitoba shall make these records and documents available to auditors appointed by the other.

14. Cost of Administration of the Board

- (a) In accordance with Section 10 of Schedule "C", all budgeted expenditures, which shall not include the cost of monitoring, as described in Section 7 of the Master Agreement, but including staff, accommodation, supplies and incidental expenses of the Board, shall be borne by the parties to the Agreement on the basis of one-half by Canada and one-sixth by each of the Provinces.

15. Financing the Operations of the Board

- (a) Canada shall assume responsibility for financing the operations of the Board.
- (b) Subject to the cost sharing provisions of the Agreement, the Provinces of Alberta, Saskatchewan and Manitoba shall pay to Canada their shares of approved expenditures made by Canada for the operations of the Board.
- (c) *On or before July 1st of each year, Canada shall prepare and submit to each of the provinces party to the Agreement, statements of claim respecting provincial shares of monies due Canada for financing the operations of the Board during the previous financial year. Statements of claim shall be certified by a senior official of Canada. Once every three years, commencing with fiscal 1981-82, these claims shall be audited and shall bear a Canada audit certificate. (Amended 1980)*

- (d) Within sixty (60) days after receipt of a claim by Canada, submitted as prescribed in Article 15(c), the Provinces of Alberta, Saskatchewan and Manitoba shall reimburse Canada for their shares of expenditures incurred during the previous financial year for the operations of the Board.

16. Annual Report

Within six (6) months after the end of the financial year, the Chairman shall submit to the Ministers the Annual Report of the Board. (Amended 1980)

17. Amendment of By-Laws

By-Laws may be enacted, amended or repealed by unanimous approval of the Board. "Notice of Motion" to enact, amend or repeal By-Laws must be served on Members at least sixty (60) days prior to a vote on such issue.

18. Rules and Procedures

The Board shall formulate and adopt "Rules and Procedures" governing the day-to-day affairs of the Board and the operations of the Secretariat. These "Rules and Procedures" may be amended, adopted or repealed in accordance with Article 6 of these By-Laws.

PART III

EXECUTIVE DIRECTOR

1. Functions

- (a) The Executive Director shall be the senior employee of the Secretariat; subject to the Board's direction, he shall be responsible for the technical and administrative activities of the Secretariat and the day-to-day management of the Board.
- (b) He shall record or cause to be recorded all votes and minutes of all proceedings in books to be kept for that purpose.
- (c) He shall give or cause to be given notice of all meetings of the Board.
- (d) He shall keep the Board informed at all times of matters pertinent or relevant to the programs and operations of the Board.
- (e) He shall have charge of all records of the Board, together with copies of all reports made by the Board and such other books or papers as the Board may direct.
- (f) He shall implement all orders and resolutions of the Board and perform any other duties that the Board may prescribe.

Approved at PPWB Meeting No. 5
- November 2nd, 1971

*Section 15(c) amended at
PPWB Meeting No. 23 - May 5, 1980.*

*Section 16 amended at
PPWB Meeting No. 24 - Nov. 3, 1980.*

RULES AND PROCEDURES

SECRETARIAT

The Prairie Provinces Water Board hereby adopts the following Rules and Procedures governing the operations of the Prairie Provinces Water Board Secretariat.

Financial Administration

1. The Executive Director is authorized to make disbursements of funds in conformity with the main items of expenditure allotted in the budget estimates approved by the Board, subject to those restrictions specified elsewhere in these Rules and Procedures.
2. The Executive Director shall prepare the annual program and budget estimates for the operations of the Prairie Provinces Water Board. Such estimates shall be submitted to the Chairman not later than the first day of July preceding the financial year to which they pertain.
3. Contracts with private consultant firms and individuals shall conform to accepted practices and procedures of the Federal Treasury Board.
4. A contract for services with a person or persons may be undertaken by the Executive Director providing that no such contract is made with a single person, a single firm of persons, or government agency exceeding \$5,000 without the approval of the Board.
5. Contracts not exceeding \$5,000 shall be executed on behalf of the Board under the signature of the Executive Director. Contracts exceeding \$5,000 shall be executed under the signature of the Chairman of the Board.
6. Payment of accounts will be made only after they have been approved by the Executive Director.

Establishment of Salaried Positions, Appointments and Administration of Salaries

7. The establishment of salaried positions in the Secretariat shall be approved by the Board.
8. The Board shall approve the duties of all positions in the Secretariat including those of Executor Director.
9. The classification and remuneration of salaried positions within the Secretariat shall be governed by the appropriate federal authority.
10. The financial and personnel administration of the Secretariat shall be carried out in accordance with federal government practices.
11. To facilitate the operations of the Secretariat, personnel and financial administrative support services shall be provided, at cost, by the Federal Department of the Environment.

Board Offices

12. The Executive Director is authorized to lease and maintain property within which to conduct Board affairs providing that terms of such leasing shall be sanctioned by the Board.
13. Costs for the operation of the Board offices shall include, but shall not necessarily be limited to, expenditures for the following items:
 - (a) Salaries and wages and related benefits of Board employees or personnel seconded to the Board offices, including removal expenses, both at the commencement and termination of the appointment, where applicable, and living expenses for seconded personnel where approved by the Board.

- (b) Field surveys and investigations including travel and living expenses when applicable, by personnel engaged in conducting studies or field investigations.
 - (c) Rentals for office space and equipment and charges for utilities and related services for the operation of Board offices.
 - (d) Purchases of furniture, and equipment not available on a rental basis.
 - (e) Operating, maintenance and transportation expenses for equipment.
 - (f) Contracts awarded by the Board including, where applicable, arbitration, settlements, legal fees and other matters, made in accordance with the provisions of the contract.
 - (g) Settlement and legal fees arising out of property damaged or public liability made or incurred by an employee of the Secretariat or a party to the Agreement working for the Secretariat and engaged in the activities of the Board offices.
 - (h) Other items required for conducting the work and for operations of the Board offices which have been approved by the Board.
- (c) Normal operating maintenance and transportation expenses for equipment where such expenses are not included in the rental rate.
 - (d) All contracts as provided under the provisions of Article 12(b) of the By-Laws.
 - (e) Other items required for conducting the work of the Board and approved by the Executive Director.

Board Members, Alternates and Advisory Committees

15. The costs incurred by Board Members and their Alternates in representing their respective governments at Board functions shall be paid for by the appropriate government. The salaries and travelling expenses of government officials appointed to represent those party to the Agreement on Committees established to advise the Board and/or the Executive Director shall be paid by the appropriate party.

Approved at PPWB Meeting No. 5
- November 2nd, 1971

Payment for Services Provided by Participating Government Agencies

14. Costs of participating government agencies for services, field investigations, planning studies, etc., specifically requested by the Board shall include the following items:
- (a) Salaries, wages, travel and living expenses for employees engaged in providing the service.
 - (b) Rental charges for equipment and operators.

MAP



