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CANADA-SASKATCHEWAN MEMORANDUM OF AGREEMENT F  
OR WATER QUANTITY SURVEYS. ANNUAL REPORT

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**CANADA - SASKATCHEWAN  
MEMORANDUM OF AGREEMENT  
FOR  
WATER QUANTITY SURVEYS  
ANNUAL REPORT 1979 - 80**

**OCTOBER, 1980**

CANADA - SASKATCHEWAN  
MEMORANDUM OF AGREEMENT  
FOR  
WATER QUANTITY SURVEYS  
ANNUAL REPORT 1979-80

TO: Mr. S.R. Blackwell  
Administrator for Saskatchewan

Mr. D.A. Davis  
Administrator for Canada

This is the fifth annual report covering activities under the Memorandum of Agreement for Water Quantity Surveys in the Province of Saskatchewan. The report covers operational activities, hydrometric network changes and resource expenditures for fiscal year 1979-80.

Saskatchewan

Canada

  
\_\_\_\_\_  
R.S. Pentland  
Saskatchewan Environment

  
\_\_\_\_\_  
R.A. Halliday  
Environment Canada

Members  
Coordinating Committee

October, 1980

Regina, Saskatchewan

## TABLE OF CONTENTS

	<u>PAGE</u>
INTRODUCTION .....	1
SUMMARY OF ACTIVITIES .....	2
COSTING PROCEDURES .....	12

## FIGURES

1. Historical Development of Hydrometric Stations in Sask. ....	7
2. Histogram of Gauging Station Maturity in Saskatchewan .....	8

## TABLES

1. Station Classification - Type - Units Summary 1979-80 .....	15
2. Salary Cost 1979-80 .....	16
3. Operations Cost Summary 1979-80 .....	17
4. Detailed Cost Activity Summaries .....	18
5. Vehicle Operating Costs .....	25
6. Capital Depreciation Costs .....	26
7. Vehicle Depreciation Data .....	27
8. Cost Summary 1979-80 .....	28
9. Shared Cost Summary 1979-80 .....	29
10. Gauging Station Data 1979-80 .....	30
11. Comparative Gauging Station Data 1975-79 .....	30
12. Detailed Gauging Station Data 1979-80 .....	30
13. Total and Shared Program Costs 1979-80 .....	31
14. Schedule "D" and Actual Costs 1979-80 .....	31

## APPENDICES

I MEMORANDUM OF AGREEMENT .....	32
II MEMORANDUM OF AGREEMENT - SCHEDULE A .....	39
III MEMORANDUM OF AGREEMENT - SCHEDULE B .....	61
IV MEMORANDUM OF AGREEMENT - SCHEDULE C .....	63
V MEMORANDUM OF AGREEMENT - SCHEDULE D .....	64
VI GUIDELINES FOR DESIGNATING FEDERAL AND PROVINCIAL RESPONSIBILITY FOR WATER QUANTITY SURVEY STATIONS	65

## INTRODUCTION

Canada and Saskatchewan have cooperated in the collection of surface water quantity data since 1975 under terms set out in a Memorandum of Agreement. This, the fifth annual report, summarizes operational activities, network changes, program funding and cost sharing for the fiscal year ending March 31, 1980.

## SUMMARY OF ACTIVITIES

### Coordinating Committee

The coordinating committee met once during the report year on February 19, 1980. In attendance were the member for Canada, R.A. Halliday, Regional Chief, Water Survey of Canada (WSC) and the member for Saskatchewan, R.S. Pentland, Head, Investigations Division, Water Management Service, Saskatchewan Department of the Environment (SDOE). Minutes were recorded by B.N. Johnson, WSC.

It was noted that staff vacancies in WSC through much of the year had an impact on areas such as construction where emphasis was shifted to non-labor intensive capital projects such as the provision of electrical service to 16 gauging stations (26 stations at year end).

While Saskatchewan had no specific proposals for new gauging stations in 1980-81, Mr. Pentland stated that uranium development and agricultural drainage were important current issues and there could be requests related to these areas at a later time.

Decisions taken with respect to the 1980-81 hydrometric network were as follows:

- a) Five federal stations in the Bad Lake research basin will be discontinued; the four remaining stations will be reclassified from federal to federal/provincial. The stations to be discontinued are:
  - 05HF010 White Reservoir near Fiske
  - 05HF011 White Tributary near Fiske
  - 05HF020 White Reservoir Outflow
  - 05HF018 Smith Tributary near Fiske
  - 05HF019 Arnold Tributary near Fiske
- b) 05FE001 Battle River near Unwin (F2)  
Because of operational problems this station was re-located upstream to the Alberta-Saskatchewan boundary. A short term station will be operated on Blackfoot Creek, the only significant tributary between the two sites.

- c) 05HF003 Lake Diefenbaker at Gardiner Dam (F2)  
The station will be relocated to a more accessible location near the east side pump station and a prototype Bristol data collection platform installed for evaluation purposes.
- d) 05HC004 Lake Diefenbaker at Saskatchewan Landing (P)  
The record is used by SDOE along with 05HF003 Lake Diefenbaker at Gardiner Dam to estimate reservoir levels during periods of seiche or wind action. Since this is of concern near FSL during the open water season, the period of operation will be reduced from 12 months to 8 months.
- e) 05JL001 Qu'Appelle River at Outlet Katepwa Lake (F2)  
With the completion of the new gated control structure, the station will have to be moved from the weir at the lake outlet to a site on the improved channel below the Highway 56 crossing. The station will be operated along with a water quality sampler maintained by Water Quality Branch staff.
- f) 05HB002 Coulee near Fox Valley (F/P)  
WSC questioned the continuance of this station because of the apparent extremely low basin yield but it will be continued as an indication of regional hydrology.
- g) 05LA001 Barrier River Overflow (P)  
05LB009 Greenwater Creek near Chelan (P)  
These two stations will be discontinued as they were intended as short term stations to study specific problems.
- h) 05JF010 Wascana Lake above Broad Street Weir (F/P)  
This station will be discontinued as the entire lake is now held at the same level and the record is duplicated by station 05JF002 Wascana Lake below Broad Street Weir.
- i) 05GB001 Kiyiu Lake near Netherhill (P)  
This station will be discontinued as the lake has been dry for the past several years and no useful record has been produced.
- j) 06AD008 Morin Creek near Meadow Lake (P)  
The station will be upgraded from manual to continuous recording.
- k) 05HC003 Snipe Lake North Inflow (P)  
The major renovations required at this station will be carried out as SDOE requested continued operation as a regional indicator station.

Other items discussed by the Coordinating Committee included:

- a) Wascana Marina Support Structure.  
The proposal to develop an operational public information and display hydrometric station is going ahead. The Wascana Centre Authority has granted space for the project which may be completed late in 1980.

b) Sediment Range Surveys.

It may not be possible for SDOE to support Lake Diefenbaker and South Saskatchewan River sediment range surveys in 1980 as an allocation of summer students is not anticipated.

c) Network Evaluation and Planning.

A sediment network planning study which WSC hopes to complete in 1980-81 will be supported by SDOE in the area of contacts with provincial agencies. SDOE will provide comments on a hydrometric network planning study outline presented by WSC.

d) SDOE indicated a continued need for snow survey data collected by WSC and requested that the surveys continue.

### Surface Water Conditions

Spring runoff in the south half of the province was one to two weeks later than normal which may account in part for the substantial volumes and high peak flows recorded in many prairie basins. The largest flows tended to be in streams located in the southeast and east central areas. Historic maximum flows were recorded at Souris River gauging stations from Weyburn to Oxbow and in the upper Long Creek basin. The recorded flow for the Souris River near Sherwood was 360% of the historic mean; the recorded flow at Long Creek at Western Crossing of International Boundary was 290% of the long term mean.

Rainstorms in May produced substantial flows in the Red Deer River, its tributaries and adjacent basins. Historic maximum instantaneous flows were recorded on the Fir River and Loiselle Creek in the Hudson Bay area.

In contrast with conditions over much of the province, runoff values in the west central region, particularly in the Rosetown/Kindersley area tended to be in the normal to below normal range.

### Network Construction and Development

Apart from the obligation to respond to federal, provincial and other mandatory requirements for network development, the Saskatchewan hydrometric

Figure 1 depicts the historical development of hydrometric stations in Saskatchewan. The accelerated growth of the sixties is related to the need for apportionment of the water supplies of the Souris Basin, water development activities resulting from the construction of Gardiner Dam and to some

One project recommended by the Co-ordinating Committee was the rebuilding of the metering cableway at station 07LE002 Fond du Lac River at Outlet of Black Lake. This job was not done because the construction unit simply ran out of time. The job will be rescheduled for 1980-81.

Total Projects	76
New Stations	5
Upgrading	10
Controls	14
Cableways	1
Commercial Power	26
Maintenance	<u>20</u>

The program emphasizes activities such as the construction of artificial controls, instrumentation, commercial power and standard design, all of which relate to the program goals. In addition, the annual construction plan is of a size and variety to enable one to respond to vagaries of weather, reallocation of funds, changing priorities and the availability of trained or semi-skilled staff. The 1979-80 plan was developed not with the intent of completing it but rather to meet the above criteria. In fact, 76 of 130 listed projects were completed as shown below.

construction program has been planned to achieve two related goals: a) stations capable of producing continuous quality data and b) bearing in mind the finite resources available to both WSC and SDOE, do these things in the most efficient manner possible in terms of both immediate capital costs and longer term operational costs.

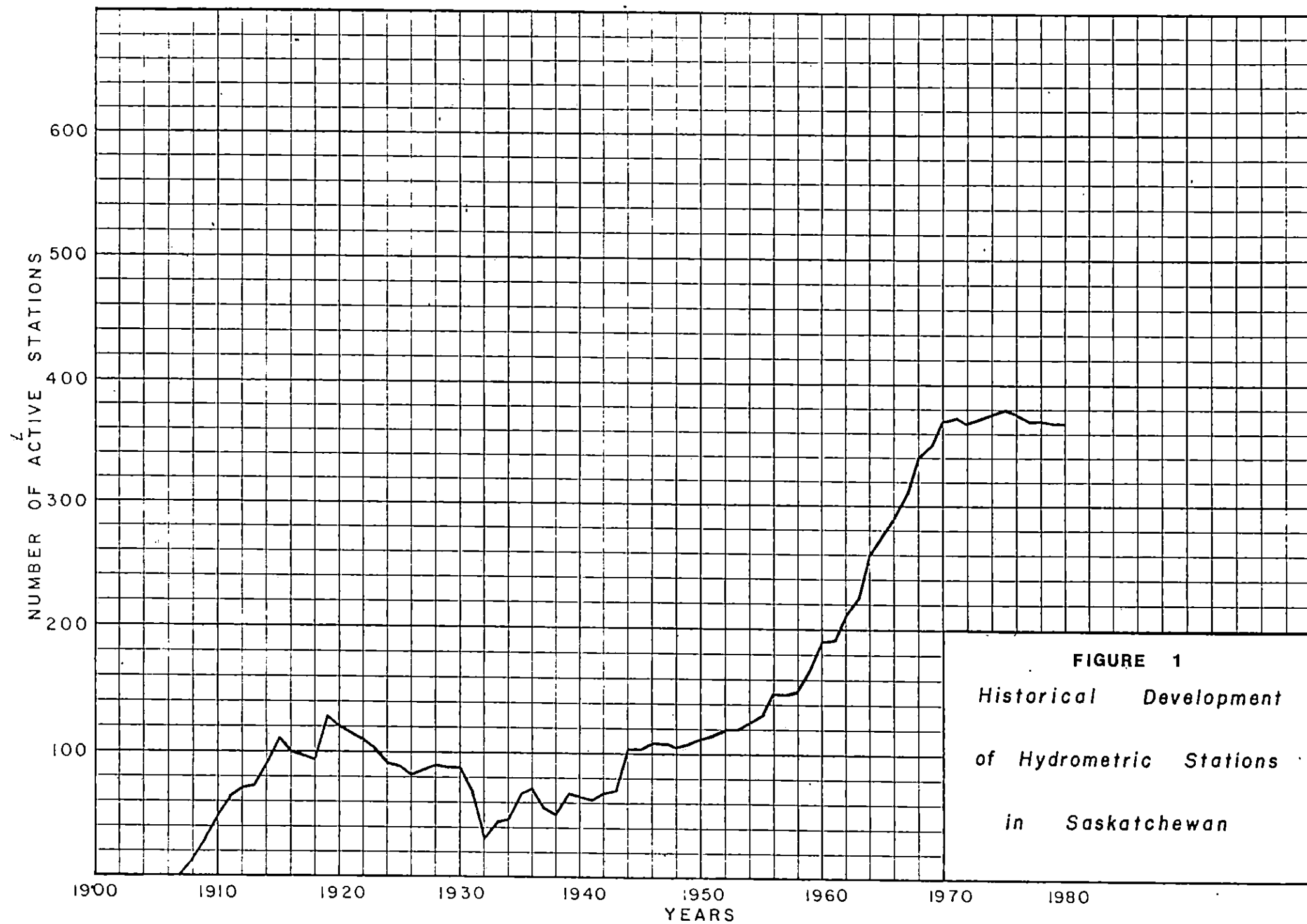
extent, stations operated in support of IHD programs. While the seventies saw a considerable increase in the number of hydrometric stations in the north, this was to some extent offset by the discontinuance of stations in the south. Figure 2 depicts the lack of maturity of the Saskatchewan network. From this it can be noted that about 25 per cent of the network has 10 years or less of record and that the modal value for years of data for the entire network is only 15 years.

### Operations

Outside of a substantial spring runoff, surface water conditions were generally normal and operations routine. Several vacant positions were carried for much of the year (since filled) which resulted in additional pressure on staff to carry out field schedules, meet apportionment and publication deadlines and provide clients with current data.

There were 135 recording stations serviced by commercial power at year end. While the capital cost is high (and rising), the payout in terms of increased record recovery, better record quality and reduced operating costs is substantial. The benefits are particularly apparent in the spring where, with power, one person can start up a seasonal station in a matter of minutes whereas without power, one or two persons can spend a day or longer removing accumulated ice from a stilling well and steaming valves and intakes.

Fifteen photo-voltaic panels were deployed during the year at stations requiring a small DC power source. While some small problems were experienced with diodes which control the voltage and direction of current (without a blocking diode, batteries will discharge at night) the exercise has been a success and will be continued until it is completed at about 50 stations at an estimated total cost of \$13 000.



**FIGURE 1**  
*Historical Development  
of Hydrometric Stations  
in Saskatchewan*

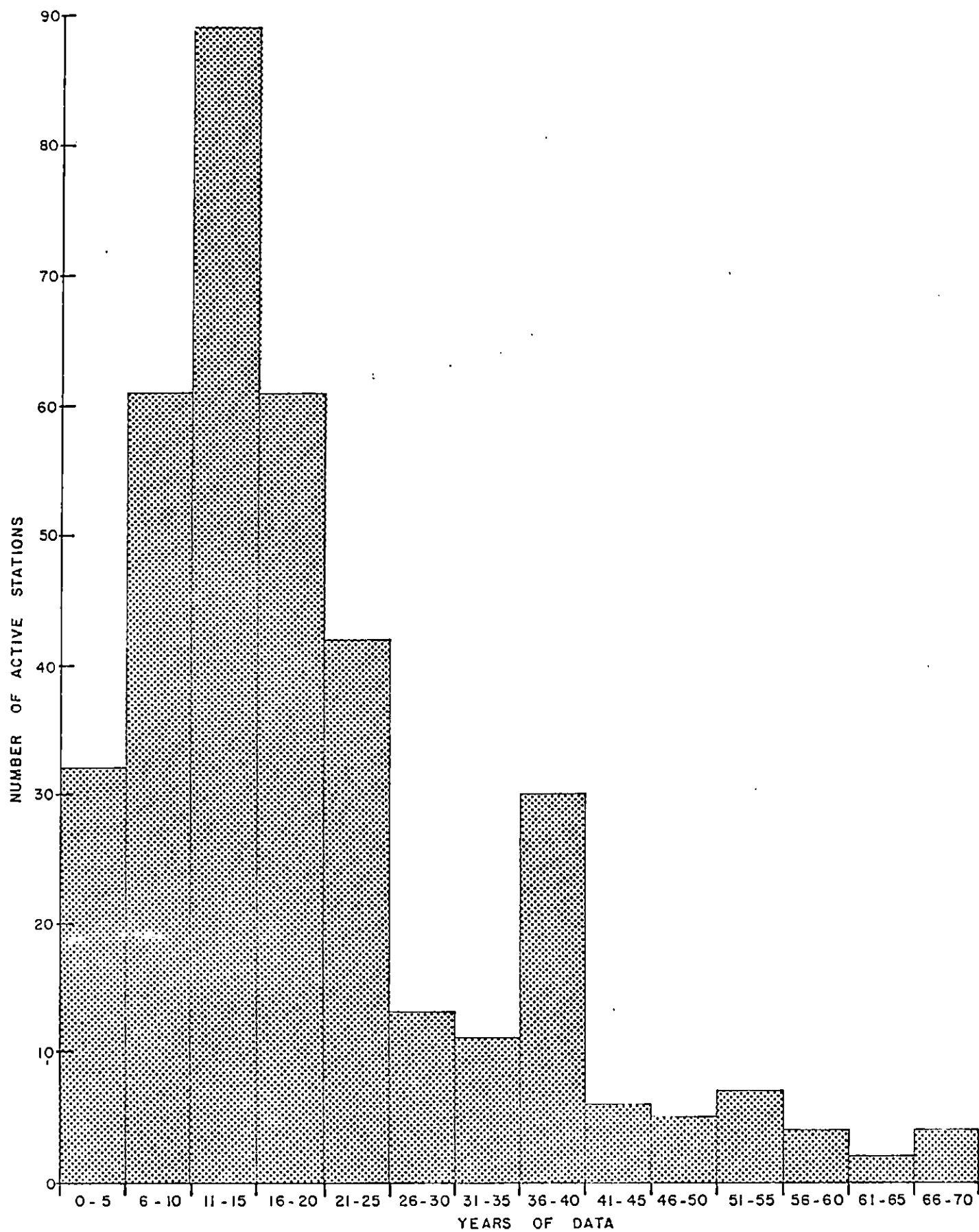


Figure 2  
Histogram of gauging station maturity — Saskatchewan

About one half of the hydrometric stations in the northern half of the province are located in areas with no exposed bedrock in which to establish stable bench marks. In non-bedrock areas, soil conditions - poor drainage, frost heave, permafrost - are such that bench marks tend to move seasonably and the result is measurement scatter at stations that obviously have stable controls. In an attempt to solve the problem, deep iron rod pins were installed at 13 stations. The rods have threaded ends with couplers and were driven, in 1.5-metre sections, to the point of refusal using an electric impact hammer. The ultimate depth of the rods varied from 3 to 13 metres. The results of this effort are not yet in but it is expected the problem has been alleviated, if not solved.

A record loss study was carried out covering the calendar year 1979. The study documents the station, duration and reason for loss of stage record at all recorder equipped hydrometric stations. The data were archived on magnetic tape and can be retrieved and displayed in various formats. When the study is completed nationally by the end of 1980 it is expected to pinpoint several major reasons for record loss. Presumably some coordinated corrective action can then be taken to reduce this loss. The study indicates that record loss in Saskatchewan for 1979 was of the order of seven percent. While the figure is large and should be reduced, it is perhaps not alarming considering the areal extent of the network and the severe climatic conditions. Much of the loss occurred in the winter when flows were in recession, thus daily discharges could be estimated despite the loss of stage record. One significant source of record loss, dead dry cell batteries, has already been tackled with the introduction of photo-voltaic cells.

A study of channel degradation in the South Saskatchewan River below Gardiner Dam was jointly funded by Environment Canada and Saskatchewan Environment. The work was performed by Northwest Hydraulic Consultants Limited at a cost of \$30 000. Data collected by Water Survey of Canada and Hydrology Branch, Saskatchewan Environment since 1964 were used in the study. Although this study was funded separately from the Water Quantity Agreement, it does serve as a further example of government agency cooperation in the area of surface water programs within the province.

#### Network Changes for 1979-80

Schedule A of the Memorandum of Agreement identifies water quantity stations which are to be operated in a given year under the terms of the Agreement. Additions, deletions or changes in station designation are or can be made annually based on decisions taken by the Co-ordinating Committee. Prior to the 1979-80 report year, Schedule A for Saskatchewan listed those stations that would be included in the network by year end, i.e. March 31, thus accounting for planned network changes due to construction or for other reasons. Nationally, the practice is to indicate on Schedule A those stations that are active and operating on April 1st of a given year. To conform with the national practice, this and subsequent reports will use the same procedure.

Network changes from the preceeding year as the result of reclassification, addition or discontinuance of gauging stations were minimal and as follows:

Stations Reclassified                      - Nil

Stations Added                                - Nil

Stations Discontinued                      - 1

05JM018 Esterhazy Index Reservoir (F2)

#### Other

11AE008 Middle Fork Poplar River at International Boundary (F3) - the period of operation was extended from eight to twelve months.

A summary of 1979-80 station changes, categories and a comparison with 1975-76 station data is presented in Tables 10, 11 and 12.

## COSTING PROCEDURES

### Station Units

The calculation of station units (Table 1) is derived from Schedule A of the Memorandum of Agreement which lists the hydrometric network stations existing and operating as of April 1, 1979.

Total operational costs of hydrometric stations vary significantly with the period of operation, i.e. seasonal or continuous, and with the type of data produced, i.e. stage only or stage and discharge. Weighting factors to account for these variations have therefore been assigned as follows:

- 1.00 - 12 month flow station
- 0.75 - 8 month flow station
- 0.40 - 12 month water level station
- 0.25 - 8 month water level station.

These factors are used by the three regional WSC offices within the Western & Northern Region and apply to normal and remote access stations.

### Salary Costs

Salaries of staff with direct full-time hydrometric duties are charged to the program. In addition, salaries of staff with partial hydrometric duties or those seconded to the program for brief periods are also charged proportionately.

An analysis of 1978-79 salary data indicates there has been some "drift" in salary costs incurred by the three station categories making up the total network. Prior to 1979-80, the unit salary costs for international and remote access stations were, respectively, set at 1.25 and 1.15 times the salary costs for normal access stations. For this and subsequent reports, these values will be changed to 1.40 for international stations and 1.10 for remote access stations. With changing circumstances - programs, priorities, techno-

logy - these values may require additional adjustments in the future. Salary costs are detailed in Table 2.

#### Operational Costs

Beginning with fiscal year 1979-80, and to conform with financial practices now common to other hydrometric agreements, staffing, training and removal costs are no longer considered shareable and have been included with administrative overhead. These costs vary considerably from year to year. The new procedure will tend to reduce the provincial share of program costs.

For this report, the distribution of operating costs among the three networks - normal, international, remote - were determined using 1979-80 data. The calculations indicated the relative costs for international and normal stations were approximately the same whereas the remote/normal cost ratio was 4.95, somewhat higher than the figure of 4.50 used for previous years. The higher operating costs of remote stations can be mainly attributed to the ever increasing charter costs of light aircraft. Operating costs are shown in Table 3 and detailed in Tables 4 and 5.

#### Capital Depreciation Costs

Capital depreciation costs apply to hydrometric survey vehicles and the equipment used in carrying out surveys as listed in Tables 6 and 7. Consumables such as small tools and clothing are charged to the program at time of purchase as are certain other items such as boats that make up an integral part of a specific hydrometric station. All stage recording instruments are excluded.

The rate of depreciation for survey equipment has now been fixed nationally at 10%. It implies a 10-year equipment lifetime which is realistic for this type of equipment. The actual calculation of inventory value is based on the

mean of the value at the beginning and end of the year so as to reflect purchasing activity throughout the year.

The depreciation data for vehicles are provided by the departmental Fleet Management Information System which assumes a 60 month service period for each vehicle which reflects Saskatchewan conditions.

#### Calculation of Costs

Program costs were extracted from the departmental cost accounting systems and the Department of Supply and Services detailed transaction listings. All costs attributable to the hydrometric program have unique codes and a clear audit trail exists for each expenditure. The unit and total cost summary is shown on Table 8 and the shared cost summary on Table 9. Tables 10 to 14 give additional station designation and resource utilization data required as input to the national annual report.

TABLE 1

SASKATCHEWAN WATER QUANTITY PROGRAM  
STATION CLASSIFICATION - TYPE - UNITS SUMMARY  
1979-1980

CLASSIFICATION	TYPE*	NO. OF STATIONS	CONVERSION	UNITS
<u>Federal</u>				
Remote Access	8L	0	0.25	0.00
	12L	3	0.40	1.20
	8Q	0	0.75	0.00
	12Q	13	1.00	13.00
		<u>16</u>		<u>14.20</u>
Normal Access	8L	11	0.25	2.75
	12L	9	0.40	3.60
	8Q	24	0.75	18.00
	12Q	24	1.00	24.00
		<u>68</u>		<u>48.35</u>
International	8L	15	0.25	3.75
	12L	4	0.40	1.60
	8Q	39	0.75	29.25
	12Q	9	1.00	9.00
		<u>67</u>		<u>43.60</u>
Total		151		106.15
<u>Federal-Provincial</u>				
Remote Access	8L	0	0.25	0.00
	12L	3	0.40	1.20
	8Q	0	0.75	0.00
	12Q	15	1.00	15.00
		<u>18</u>		<u>16.20</u>
Normal Access	8L	2	0.25	0.50
	12L	5	0.40	2.00
	8Q	84	0.75	63.00
	12Q	15	1.00	15.00
		<u>106</u>		<u>80.50</u>
Total		124		96.70
<u>Provincial</u>				
Normal Access	8L	6	0.25	1.50
	12L	2	0.40	0.80
	8Q	54	0.75	40.50
	12Q	1	1.00	1.00
		<u>1</u>		<u>1.00</u>
Total		63		43.80
Grand Total		338		246.65

\* 8L - 8 month water level station      8Q - 8 month flow station  
 12L - 12 month water level station      12Q - 12 month flow station

TABLE 2

SASKATCHEWAN WATER QUANTITY PROGRAM  
SALARY COST 1979-1980

<u>Position No.</u>	<u>Position Title</u>	<u>Salary</u>
1. 840-1279	Hydrometric Supervisor	\$18 780
2. 840-1370	Hydrometric Supervisor	22 339
3. 840-1460	Hydrometric Supervisor	12 374
4. 840-1285	Hydrometric Supervisor	22 383
5. 840-8951	Hydrometric Supervisor	22 339
6. 840-8073	Hydrometric Technician	12 071
7. 840-8914	Hydrometric Technician	18 109
8. 840-8915	Hydrometric Technician	20 672
9. 840-1409 (x0.50)	Hydrometric Technician	10 337
10. 840-8907	Hydrometric Technician	21 209
11. 840-8913	Hydrometric Technician	16 508
12. 840-1413	Hydrometric Technician	10 030
13. 840-1506	Hydrometric Technician	20 672
14. 840-8119 (x0.50)	Hydrometric Technician	10 336
15. 840-8004	Hydrometric Technician	20 672
16. 840-1401	Hydrometric Technician	20 672
17. 840-8916	Hydrometric Technician	18 787
18. 840-1265 (x0.85)	Hydrometric Technician	17 571
19. 840-1505	Hydrometric Technician	20 672
20. 840-8012	Hydrometric Technician	20 672
21. 840-8189 (x0.15)	International Area Engineer	3 182
22. 840-1431 (x0.25)	Sediment Lab Technician	5 168
23. 840-8937 (x0.25)	Sediment Lab Technician	3 400
24. 840-8952 (x0.15)	Computations Technician	2 631
25. 840-5619 (x0.30)	Data Control Supervisor	7 040
26. Overtime	All positions	<u>16 301</u>
TOTAL	19.95 P-Ys	394 927

CALCULATION OF STATION UNIT SALARY COST

Station Units

Remote	30.40
Normal	
- Non-International	172.65
- International	<u>43.60</u>
TOTAL	246.65

Units

- Remote x1.10	33.44
- Normal, Non-International	172.65
- International x1.40	<u>61.04</u>
TOTAL	267.13

$$\text{Unit Salary Cost} = \frac{\text{Total Salary Cost}}{\text{Total Station Units}} = \$1478$$

Unit Salary Cost Normal	\$1478
Unit Salary Cost Remote = \$1478 x 1.10 =	\$1626
Unit Salary Cost International = \$1478 x 1.40 =	\$2069

TABLE 3

SASKATCHEWAN WATER QUANTITY NETWORK  
OPERATIONS COST SUMMARY 1979-1980  
(Cost Codes 005-006-007)

Program Travel	\$ 43 122
Transportation of Material	\$ 2 674
Communications	\$ 4 907
Professional Services	\$ 6 995
Purchased Services	\$ 27 762
Purchased Goods (other than capital acquisition)	\$ 15 559
Equipment Parts & Tools	\$ 9 847
Repairs (other than vehicles)	\$ 1 895
Rentals	\$ 72 825
Licenses & Permits	\$ <u>40</u>
	\$185 491

Vehicle Operating Costs (Fleet Management System)	\$ 26 511
Total Operating Costs	\$212 002

Station Units - Normal	216.25
- Remote = 30.40 x 4.95	<u>150.48</u>
	366.73
Unit Cost - Normal = $\frac{\$212\ 002}{366.73}$ =	\$ 578
- Remote = \$578 x 4.95 =	\$ 2 861

TABLE 4  
SASKATCHEWAN WATER QUANTITY PROGRAM  
COST ACTIVITY SUMMARY  
1979 - 1980

Line Object Name	Total	Line Object	General 001	Sediment Lab 003	Sediment Field 004	Hydro. Normal 005	Hydro. Remote 006	Hydro. Int'l 007	Int'l Boards 008	Constr. 010	Snow Surveys 012	Res. Surveys 015	Network Planning 016	Data Control 017	Consul- tants 025	Water Quality 050	Capital Equip. Acq. 051	Capital Constr. Maint. 052
Travel - Program																		
- Meals and Accommodation	53521	0501	4146	166	214	25586	3903	6249	215	11842	36	13		792		359		
- Transportation	6384	0502	4825	378		507	448	135	7	40				24		20		
- Other	8537	0503	505	36	20	4119	792	968	52	1884				104		57		
Travel - Conference																		
- Meals and Accommodation	572	0511	331						164				77					
- Transportation	453	0512	228										225					
- Other	32	0513	19										13					
Travel - Non Program																		
- Meals and Accommodation	1562	0521	1562															
- Transportation	571	0522	571															
- Other	121	0523	121															
Travel - Removal																		
- Meals and Accommodation	2334	0531	2080											254				
- Removal Transportation	183	0532	172											11				
- Other	4614	0533	4600											14				
- Non Accountable Advance	337	0590	337															
- Real Estate Fees	219	0591	219															
- Moving Fees																		
Travel - U.S.A.																		
- Meals and Accommodation	356	0541				102		52	202									
- Other	59	0543				17		9	33									
Travel - Foreign																		
- Meals and Accommodation	279	0551	279															
- Transportation	8	0552	8															
- Other	105	0553	105															

15

[illegible]

TABLE 4  
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1979 - 1980

Line Object Name	Line Total Object	General 001	Sediment Lab 003	Sediment Field 004	Hydro. Normal 005	Hydro. Remote 006	Hydro. Int'l 007	Int'l Boards 008	Constr. 010	Snow Surveys 012	Res. Surveys 015	Network Planning 016	Data Control 017	Consul- tants 025	Water Quality 050	Capital Equip. Acq. 051	Capital Constr. Maint. 052
<b>Purchased Services</b>																	
- Brokerage Fees	1824 1104	993			641	76	114										
- Electricity	13636 1105				11822	431	1383										
- Laundry	25 1108				25												
- Data Processing	27648 1111	91	336	2089	9078	1685	2205					4215	7949				
- Photo Services	97 1115				20				77								
- Building Cleaning	1310 1117	1310															
- Refuse Collection	216 1121	216															
- Snow Removal	158 1122								158								
- Typing Services	1954 1123	204	877				282							591			
- Construction Laborers	7589 1124	996							6593								
- Dept Supply & Serv Charges	6600 1132	6600															
- Conferences & Seminars	235 1135	185										50					
- Miscellaneous	2590 1140	21				60			45				2464				
<b>Purchased Goods</b>																	
- Food Materials	639 2013				42	569									28		
- Crude Lumber																	
- Scrap Metal	378 2024	45			138	18	3		168						6		
- Non-Metallic Minerals	2920 2026	14			111		32		2763								
- Rubber & Plastic	32 2030		4		20	8											
- Lumber	2491 2031	312				7	41		2131								
- Paper & Paper Board	92 2032		92														
- Gases	926 2035				677	199	50										
- Other																	
- Lubricating Oil	790 2037	749			38		3										
- Heating Supplies	421 2038		60		139	202	20										
- Motor Fuel	25032 2039	24790				228	4		10								
- Aviation & Other Fuels	2027 2040				14	1977			36								

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1979 - 1980

Line	Object Name	Total	Line Object	General 001	Sediment Lab 003	Sediment Field 004	Hydro. Normal 005	Hydro. Remote 006	Hydro. Int'l 007	Int'l Boards 008	Constr. 010	Snow Surveys 012	Res. Surveys 015	Network Planning 016	Data Control 017	Consul- tants 025	Water Quality 050	Capital Equip. Acq. 050	Capital Constr. Maint. 050
-	Basic Metal Products	15166	2041	81	118	76	2280	335	130		141						19		11986
-	Non Metallic Products	60	2042								60								
-	Clothing	1464	2043	818	50		479	77	40										
-	Footwear	942	2044				461	329	132		20								
-	Cleaning Supplies	511	2045	151	208		92	52			8								
-	Clocks & Watches	394	2046				4												390
-	Hand Tools	2555	2047				1406	449	421		279								
-	Kitchen Utensils	7	2048								7								
-	Other Household Supplies	68	2049		22		4	42											
-	Preprinted Forms	58	2051	58															
-	Custom Forms	1455	2052	751	80		29		37	121	83			186	168				
-	Library Stock	462	2053	322			138				2								
-	Subscriptions	262	2054	262															
-	Other Printing	6230	2055	1907	525		330	57	1357	1483	8				563				
-	Computer Supplies	734	2057	38					63					59	574				
-	Office Supplies	9496	2058	7532	33		362	59	36		30			308	1126		10		
-	Artists Materials	53	2059				53												
-	Photographic Supplies	369	2062	32			242	64	8						23				
-	Ammunition	25	2063					25											
-	Containers	1551	2064		1237		314												
-	Finished Products	40	2066								40								
-	Laboratory Glassware	4019	2067		3637	3	271	36	72										
-	Electrical Supplies	1512	2068	98	41		678	72	11		612								
-	Other Fabricated Materials	12	2069					12											
-	Photocopy Supplies	156	2070	156															

TABLE 4  
SASKATCHEWAN WATER QUANTITY PROGRAM  
COST ACTIVITY SUMMARY  
1979 - 1980

Line Object Name	Line Total Object	General 001	Sediment Lab 003	Sediment Field 004	Hydro. Normal 005	Hydro. Remote 006	Hydro- Int'l 007	Int'l Boards 008	Constr. 010	Snow Surveys 012	Res. Surveys 015	Network Planning 016	Data Control 017	Consul- tants 025	Water Quality 050	Capital Equip. Acq. 051	Capital Constr. Maint. 052
<b>Equipment Acquisition</b>																	
- General Industrial Machinery	1057 2102																1057
- Conveying	3217 2103																3217
- Station Wagons	5771 2108																
- Trucks	37600 2109															5771	
- Power Tools	373 2118															37600	
- Heating & Refrigeration	225 2125																373
- Electrical	3880 2127																225
- Measuring	26190 2130	1965															3880
- Boats	1041 2140																26190
- Marine	713 2141																1041
- Office	101 2157																713
- Drilling	175 2160																101
<b>Equipment Parts &amp; Tools</b>																	
- Generators	25 2501				25												
- General Purpose Parts	186 2502	13			148	14	2								9		
- Conveying	1375 2503	276			65	17			1017								
- Special Ind Machine Parts	19 2504					19											
- Motor Vehicle Parts	2092 2507	2034			27		29										
- Miscellaneous Vehicle Parts	1046 2515	435			606										2		
- Vehicle Tires	3077 2516	3077													5		
- Plumbing Supplies	201 2517				82				119								
- Heating & Refrigeration	1121 2525				87				1034								
- Solar Cells Etc.	4094 2527				1119	1354			43								
- Electrical	415 2528								415								1578
- Measuring & Controlling	6276 2530	227	200		4080	758	991										
- Safety Equipment	98 2533				98										20		
- Marine Parts	49 2541				49												

TABLE 4  
SASKATCHEWAN WATER QUANTITY PROGRAM  
COST ACTIVITY SUMMARY  
1979 - 1980

Line Object Name	Total	Line Object	General 001	Sediment Lab 003	Sediment Field 004	Hydro. Normal 005	Hydro. Remote 006	Hydro. Int'l 007	Int'l Boards 008	Constr. 010	Snow Surveys 012	Res. Surveys 015	Network Planning 016	Data Control 017	Consul- tants 025	Water Quality 050	Capital Equip. Acq. 051	Capital Constr. 052	Maint. 053
- Misc. Marine Equipment	10	2546					6	4											
- Office Equipment Parts	335	2556	335																
- Drafting Equipment Parts	267	2560				197	70												
Purchased Repairs																			
- Portable Generators	70	3001				35				35									
- Industrial Machines	597	3002	95			143				359									
- Material Handling Equipment	4224	3003				240				3697									207
- Agricultural Equipment	2	3005				2													
- Tractors	57	3006				57													
- Station Wagon	7174	3008	7011			51		112											
- Truck	4782	3009	4764			15	3												
- Other Vehicle	72	3010				72													
- Miscellaneous Vehicle	372	3015	74							298									
- Heating & Refrigeration	98	3025		98															
- Solar Cell	229	3027				229													
- Measuring Equipment	2897	3030				538	100	131											2128
- Safety Equipment	53	3033				53													
- Marine	36	3045				36													
- Word Processing Equipment	297	3052	297																
- Office Machines	54	3056	45			9													
- Recreational Equipment	69	3061					69												
Rentals																			
- Open Space	137	3503	82			26		22		2				5					
- Commercial Buildings	15	3505				15													
- Aircraft	76458	3511				745	70106	300	1705							3602			
- Vehicles	1350	3513	52			1278				20									
- Other Vehicles	30	3514				30													
- Software	8	3516				8													

24

[illegible]

TABLE 5  
VEHICLE OPERATING COSTS F.M.I.S. DATA 1979-80

FLEET NO	General 001		Sediment Field 004		Hydro. Normal 005		Hydro. Remote 006		Hydro. Int'l 007		Construction 010		Water Quality 050		RATE	TOTAL	
	MILE	COST	MILE	COST	MILE	COST	MILE	COST	MILE	COST	MILE	COST	MILE	COST		MILE	COST
9-021									1380	146.28					.106	1380	146.28
73-295					1087	97.83			3148	283.32					.090	4235	381.15
75-01					4593	509.82			4210	467.31					.111	8803	977.13
75-110					5460	551.46									.101	5460	551.46
75-111					9443	1085.94									.115	9443	1085.94
75-112					1450	178.35			14732	1812.04			1970	242.31	.123	18152	2232.70
75-236					9243	1016.73	130	14.30							.110	9373	1031.03
76-42					5305	450.92									.085	5305	450.92
76-43					5535	398.52									.072	5535	398.52
76-44					16030	1250.34									.070	16030	1250.34
76-45					9738	856.94			3644	320.67					.086	13382	1177.61
76-46					11234	876.25									.078	11234	876.25
76-48					3349	445.42	8	1.06							.133	3357	446.48
76-152					12682	1674.02									.132	12682	1674.02
77-002					18404	1472.32									.080	18404	1472.32
77-003					15648	1377.02	823	72.42							.088	16471	1449.44
77-035	1134	92.99	1100	90.20	16033	1314.71									.082	18267	1497.90
77-036	500	38.50			5543	426.81			4942	380.53					.077	10985	845.84
77-296					4041	327.32					15844	1283.36			.081	19885	1610.68
77-297					10757	882.07									.082	10757	882.07
78-009	651	60.54			3626	337.22					4908	456.44			.093	9185	854.20
78-047											15043	3835.96			.255	15043	3835.96
78-067											10989	2978.02			.271	10989	2978.02
78-339	870	113.97			1003	131.39					18990	2487.69			.131	20863	2733.05
78-340			1896	191.50	11298	1141.10									.101	13194	1332.60
78-341					14443	1270.98									.088	14443	1270.98
79-192					12199	1463.88			1223	146.76					.120	13422	1610.64
79-193					2360	280.84			9981	1187.74					.119	12341	1468.58
79-213					13436	1612.32	14	1.68							.120	13450	1614.00
79-462	7264	515.74			3473	246.58									.071	10737	762.32
TOTAL	10419	821.74	2996	281.70	227413	21677.10	975	89.46	43260	4744.65	65774	11041.47	1970	242.31		352807	38898.43

TABLE 6

SASKATCHEWAN WATER QUANTITY PROGRAM  
CAPITAL DEPRECIATION COSTS

1. VEHICLE DEPRECIATION - FMIS* DATA			\$16 334
2. EQUIPMENT DEPRECIATION**			
- Field Equipment	\$ 57 933		
- Marine Equipment	\$ 17 448		
- Scientific Equipment	\$ 27 459		
- Transportation Equipment	\$ 10 924		
- Shop & Construction Equipment	\$ 38 317		
- Accountable Items	\$ 44 161		
Total Inventory Value March 31, 1980	\$196 242		
Total Inventory Value March 31, 1979	\$188 742		
Average Inventory Value For 1979-80	\$192 492		
Capital Depreciation of Equipment @ 10%	$\frac{\$192\,492}{10}$	=	\$19 249
3. TOTAL CAPITAL DEPRECIATION			\$35 583
4. UNIT CAPITAL DEPRECIATION			
= $\frac{\text{Total Capital Depreciation}}{\text{Total Station Units}}$ =	$\frac{\$ 35\,583}{246.65}$	=	\$ 144

\* Fleet Management Information System

\*\* Departmental Equipment-In-Use Material Management System

TABLE 7  
VEHICLE DEPRECIATION F.M.I.S. DATA 1979-80

FLEET NO	General 001		Sediment Field 004		Hydro. Normal 005		Hydro. Remote 006		Hydro. Int'l 007		Construction 010		Water Quality 050		RATE	TOTAL	
	MILE	COST	MILE	COST	MILE	COST	MILE	COST	MILE	COST	MILE	COST	MILE	COST		MILE	COST
73-295					1087	3.26			3148	9.44					.003	4235	12.70
75-01					4593	192.91			4210	176.82					.042	8803	369.73
75-110					5460	131.04									.024	5460	131.04
75-111					9443	585.47									.062	9443	585.47
75-112					1450	92.80			14732	942.85			1970	126.08	.064	18152	1161.73
75-236					9243	508.37	130	7.15							.055	9373	515.52
76-42					5305	190.98									.036	5305	190.98
76-43					5535	238.01									.043	5535	238.01
76-44					16030	753.41									.047	16030	753.41
76-45					9738	545.33			3644	204.06					.056	13382	749.39
76-46					11234	595.40									.053	11234	595.40
76-48					3349	713.34	8	1.70							.213	3357	715.04
76-152					12682	570.69									.045	12682	570.69
77-002					18404	1067.43									.058	18404	1067.43
77-003					15648	970.17	823	51.03							.062	16471	1021.20
77-035	1134	30.62	1100	29.70	16033	432.89									.027	18267	495.21
77-036	500	39.00			5543	432.35			4942	335.40					.078	10985	856.83
77-296					4041	214.17					15844	839.73			.053	19885	1053.90
77-297					10757	1043.43									.097	10757	1043.43
78-009	651	54.68			3626	304.58					4908	412.28			.084	9185	771.54
78-047											15043	1173.35			.078	15043	1173.35
78-067											10989	1549.45			.141	10989	1549.45
78-339	870	46.98			1003	54.16					18990	1025.46			.054	20863	1126.60
78-340			1896	163.05	11298	971.63									.086	13194	1134.68
78-341					14443	491.06									.034	14443	491.06
79-192					12199	1024.72			1223	102.73					.084	13422	1127.45
79-193					2360	191.16			9981	808.46					.081	12341	999.62
79-213					13436	994.26	14	1.04							.074	13450	995.30
79-462	7264	690.08			3473	329.93									.095	10737	1020.01
TOTAL	10419	861.36	2996	192.75	227413	13642.95	975	60.92	41880	2629.84	65774	5000.27	1970	126.08		351427	22514.17

TABLE 8  
SASKATCHEWAN WATER QUANTITY PROGRAM  
COST SUMMARY 1979-1980

Unit Cost Summary

STATION NAME	UNIT	SALARY \$	OPERATIONS \$	CAPITAL \$	TOTAL \$
1. Normal Access					
- Non-International	1.0	1478	578	144	2200
- International	1.0	2069	578	144	2791
2. Remote Access	1.0	1626	2861	144	4631

Total Cost Summary

STATION CLASSIFICATION	NO. OF STATIONS	UNITS	SALARY \$	OPERATIONS \$	CAPITAL \$	TOTAL \$
<u>Federal</u>						
Remote	16	14.20	23 089	40 626	2 045	65 760
Normal						
- Non-International	68	48.35	71 461	27 946	6 962	106 369
- International	67	43.60	90 208	25 201	6 278	<u>121 687</u>
						293 816
<u>Federal-Provincial</u>						
Remote	18	16.20	26 341	46 348	2 333	75 022
Normal	106	80.50	118 979	46 529	11 592	<u>177 100</u>
						252 122
<u>Provincial</u>						
Normal	<u>63</u>	<u>43.80</u>	<u>64 736</u>	<u>25 316</u>	<u>6 307</u>	<u>96 359</u>
Total	338	246.65	394 814	211 966	35 517	642 297

TABLE 9

SASKATCHEWAN WATER QUANTITY PROGRAM  
 SHARED COST SUMMARY 1979-1980  
 (From Table 8 & Construction Report)

FEDERAL SHARE	=	$\$293\,816 + \frac{\$252\,122}{2}$	=	\$419 877
FEDERAL CONSTRUCTION COST			=	\$126 793
TOTAL FEDERAL SHARE			=	\$546 670
PROVINCIAL SHARE	=	$\frac{\$252\,122}{2} + \$96\,359$	=	\$222 420
PROVINCIAL CONSTRUCTION COST			=	\$ 62 444
PROVINCIAL CREDIT FOR OPERATION OF THREE F/P STATIONS			=	(\$ 1 540)
TOTAL PROVINCIAL SHARE			=	\$283 324
PROVINCIAL PAYMENTS			=	\$294 258
PROVINCIAL CREDIT AGAINST 1980-81 PAYMENTS			=	\$ 10 934

TABLE 10  
SASKATCHEWAN WATER QUANTITY PROGRAM  
GAUGING STATION DATA FOR 1979-80

No. of Stations			No. of Stations Added	No. of Stations Discontinued	Stn. Designation April 1 1979			
April 1/78	April 1/79	Change			Fed.	F/P	Prov.	Contrib
369	368	-1	0	1	151	121 <sup>(1)</sup> 3 <sup>(2)</sup>	63 <sup>(1)</sup> 29 <sup>(2)</sup> 1 <sup>(3)</sup>	10

Operated by: (1) WSC; (2) SDOE; (3) Ducks Unlimited

TABLE 11  
SASKATCHEWAN WATER QUANTITY PROGRAM  
COMPARATIVE GAUGING STATION DATA April 1/75 - April 1/79

Federal Stations			F/P Stations			Provincial Stations			Total Stations		
Apr 1/75	Apr 1/79	Chge	Apr 1/75	Apr 1/79	Chge	Apr 1/75	Apr 1/79	Chge	Apr 1/75	Apr 1/79	Chge
173	151	-22	106	124	18	51	93 <sup>(1)</sup>	42	330	368	38

(1) See notes Table 10.

TABLE 12  
SASKATCHEWAN WATER QUANTITY PROGRAM  
DETAILED GAUGING STATION DATA 1979-80 (April 1/79)

F-1	F-2	F-3	F-4	F-5	F-6	F-7	Total F	F/P	P	Contributed	Total-All
11	44	67	1	9	0	19	151	124	93	10	378

TABLE 13  
SASKATCHEWAN WATER QUANTITY PROGRAM  
TOTAL PROGRAM COSTS & SHARED COSTS FOR 1979-80  
(x \$1000)

Total Program Expenditures					Shared Program Costs						
P/Yrs	Sal.	Oper.	Cap.	Total	P/Yrs	Sal.	Oper*	Const	Total	F Share	P Share
37.50	757.0	357.2	164.4	1278.6	19.95	394.8	247.5	189.2	831.5	548.2	283.3

\* Includes depreciation

TABLE 14  
SASKATCHEWAN WATER QUANTITY PROGRAM  
COMPARISON - SCHEDULE "D" & ACTUAL COSTS FOR 1979-80  
(Dollars)

Salary & Operations		Construction		Total			Annual Payment Received
Sch. "D"	Actual Cost	Sch. "D"	Actual Cost	Sch. "D"	Actual Cost	Difference	
228 100	220 880	71 900	62 444	300 000	283 324*	16 676	294 258*

\* Difference between actual cost and annual payment is  $294\ 258 - 283\ 324 = 10\ 934$   
and will be credited to 1980-81 Saskatchewan payment.

APPENDIX I  
CANADA - SASKATCHEWAN  
MEMORANDUM OF AGREEMENT  
FOR  
WATER QUANTITY SURVEYS

MEMORANDUM OF AGREEMENT made this eighteenth day of February,  
1975,

BETWEEN:

The Government of Canada, hereinafter called "Canada", represented  
by the Minister of the Environment

OF THE FIRST PART

-and-

The Government of the Province of Saskatchewan, hereinafter called  
the "Province", represented by the Minister of Environment

OF THE SECOND PART.

WHEREAS co-operative water quantity surveys have been carried on  
for many years under various informal federal-provincial agreements in the  
Provinces of Canada by the Water Survey of Canada of the Department of the  
Environment, for the purpose of securing co-ordinated and standardized basic  
data to facilitate resource planning and management in general and the design  
and implementation of projects related to navigation, hydro-electric develop-  
ment, irrigation, drainage, flood control, recreation, domestic and industrial  
water supply and other purposes;

AND WHEREAS the Governor-in-Council has by Order-in-Council No. PC  
1975-1/172 dated January 28, 1975, authorized the Minister of Environment to  
execute this agreement on behalf of Canada, subject to funds being voted by the  
Parliament of Canada;

AND WHEREAS the Lieutenant Governor in Council has, by Order-in-  
Council No. O.C. 282/75 dated February 11, 1975, authorized the Minister of  
Environment to execute this agreement on behalf of the Province subject to  
funds being voted by the Legislative Assembly.

NOW THEREFORE this agreement witnesseth that water quantity surveys  
in the Province and the financing thereof shall be continued and maintained  
upon the following basis:-

## INTRODUCTION

### DEFINITIONS

- a) ANNUAL PAYMENT - a sum, agreed to by both parties in advance of the fiscal year, which shall represent the costs of operation and construction of water quantity survey stations.
- b) CONSTRUCTION - includes the construction of new water quantity survey stations and the maintenance, repair and reconstruction of existing water quantity survey stations.
- c) CONSTRUCTION PERSONNEL - includes foremen and labourers on full time duty as well as engineering and technical staff on part time supervisory duty or reconnaissance assignment.
- d) FIELD PERSONNEL - includes hydrometric supervisors and field technicians on full time duty as well as engineering and technical staff on temporary assignment.
- e) NETWORKS - an organized system of gauging stations for collection of water quantity survey data.
- f) OPERATING PARTY - either party to this agreement which operates water quantity survey stations.
- g) PUBLISHED DATA - includes streamflow, water level and sediment data. The data is to be available in publications and computer compatible data files.
- h) SEDIMENT STATIONS - any location where surveys are undertaken to collect data on suspended sediment or bed material or bed load data singly or in combination. Water temperature data is to be collected.
- i) WATER QUANTITY SURVEY STATIONS - any location where surveys are undertaken to collect streamflow or water level or suspended sediment or bed material or bed load data singly or in combination. Water temperature data may be collected.

## ARTICLE I

Each water quantity survey station presently in operation has been identified according to the designation federal, federal-provincial or provincial. The current designation is given in Schedule A, hereto attached. Schedule A may be revised to include a change in the designation of a station, the addition of new stations or the deletion of stations as agreed by the Co-ordinating Committee (Article XII) and approved by the officials named in Article XIII.

## OPERATIONAL CONSIDERATIONS

## ARTICLE II

Canada will construct and operate and pay the cost of construction and the annual cost of operation of water quantity survey stations which have been designated as federal. Where Canada deems it desirable in the interest of efficiency of operation, the Province may be requested to construct and operate some federal water quantity survey stations. If the Province agrees to such agreements, Canada would in such cases reimburse the Province for the cost of construction and annual cost of operation in accordance with Article VI.

## ARTICLE III

Where Canada constructs and operates water quantity survey stations designated as federal-provincial, the Province will reimburse Canada for 50% of the construction costs and 50% of the annual cost of operation. Where the Province constructs and operates these stations, Canada will reimburse the Province for 50% of the construction costs and 50% of the annual cost of operation in accordance with Article VI.

## ARTICLE IV

If requested by the Province, Canada will construct and operate water quantity survey stations designated as provincial provided the Province reimburses Canada for the construction cost and annual cost of operation. If the Province constructs and operates these stations the Province will assume the cost of construction and operation in accordance with Article VI.

## ARTICLE V

- a) The operating party shall provide the staff to meet its responsibilities under this agreement.
- b) Canada will at its own expense publish data from stations that it operates. Canada will on request at its own expense, publish data from stations operated by the Province providing the data meets national standards.

- c) Water quantity surveys under this agreement shall be carried out to national standards in field procedures, equipment and instrumentation, data compilation and will use national guidelines for station designations. Such standards and guidelines shall be developed and maintained by Canada in consultation with all of the Provinces.
- d) Canada and the Province shall work together to take advantage of technological advancements which improve the quality of data and the efficiency of standard procedures and to develop methods and techniques to assist in planning water quantity survey networks.
- e) Canada at its own expense will provide calibration service for water quantity survey velocity instruments for both parties.

#### FINANCIAL CONSIDERATIONS

#### ARTICLE VI

- a) Procedures for computing the annual payment are given in Schedule C.
- b) The annual payment for 1975-76 is set out in Schedule D. The annual payment for subsequent years shall be determined according to the terms of this agreement and the procedures as set out in Schedule C.
- c) Annual operation costs, except for sediment stations, will be computed using average annual water quantity survey station costs and the number of stations to be operated. The average annual water quantity survey station costs shall be recomputed annually according to the items listed in Schedule B.
- d) Annual construction costs, except for sediment stations, will be the cost of constructing new water quantity survey stations plus repairs to and major reconstruction of existing water quantity survey stations.
- e) The annual operation costs for sediment stations will be the summation of the individual station operation costs.
- f) The annual construction costs of sediment stations will be the cost of constructing new sediment stations plus repairs to and major reconstruction of existing stations.

#### ARTICLE VII

- a) The party operating the water quantity survey stations in accordance with Articles II, III and IV, will be responsible for providing and paying the total cost of the water level recording equipment.

- b) All costs associated with the purchase, installation and operation of specialized water quantity survey equipment will be paid for by the party or parties requiring the service.

#### ARTICLE VIII

Canada or the Province, depending on the operating responsibilities, shall submit invoices for one-quarter of the annual payment on July 1st, October 1st, January 1st and March 1st of each fiscal year in accordance with the annual payment set out in Schedule D. Payment is to be made as soon as possible after receipt of each quarterly claim but in no case later than March 31st of each year.

#### ARTICLE IX

Except as agreed by the parties hereto where both parties have an interest, either operational or financial, the annual net change in the total number of water quantity survey stations, including federal, federal-provincial and provincial, as set out in Schedule A, is not to exceed 7% in any year.

#### ARTICLE X

Each party constructing or operating a water quantity survey station or stations shall keep complete records of all shareable expenditures made pursuant to this agreement and shall support such expenditures with proper documentation. Canada and the Province upon request shall make these records and documents available to auditors appointed by each other.

#### CO-OPERATION

#### ARTICLE XI

There shall be a free exchange of water quantity survey data between Canada and the Province. The party operating the water quantity survey station shall retain originals or a microfilm copy of observations, measurements, recorder charts and computations and these are to be available to the other party on request.

#### ARTICLE XII

The officials named in Article XIII shall establish a Co-ordinating Committee representing each of the parties affected by this agreement. The Co-ordinating Committee shall be responsible for:

- a) Planning and the continuing review of water quantity survey networks, including addition and deletion of all stations within Provincial boundaries.
- b) Determining and reviewing the designation of water quantity survey stations using national guidelines which may from time to time be changed, subject to ratification by Canada and all of the Provinces.
- c) Assuring the maintenance of standards in procedures, data compilation and instrumentation.
- d) Reviewing annual operating costs and establishing average annual station costs, as per Article VI, for revision of Schedule D.
- e) Preparation annually of new Schedule A and D which with the approval of the officials named in Article XIII would apply for the second and each subsequent year of the agreement.

The committee shall meet at least once a year and shall report to the officials named in Article XIII.

#### ADMINISTRATIVE ARRANGEMENTS

##### ARTICLE XIII

This agreement is to be administrated for Canada by the Regional Director of the Inland Waters Directorate located at Regina, Saskatchewan, and for the Province by the Chief, Water Management Service, Saskatchewan Department of Environment, located at Regina, Saskatchewan.

#### IMPLEMENTATION

##### ARTICLE XIV

The parties hereto agree that water quantity surveys will be carried out as indicated in Articles I to XIII inclusive and the Schedules attached hereto.

#### PERIOD OF AGREEMENT

##### ARTICLE XV

This agreement shall become effective and binding on the parties upon the first day of April, 1975.

The agreement may be terminated by Canada or the Province on March 31st of any year provided that eighteen (18) months notice in writing is given. The agreement may be revised with the consent of the Governor-in-Council and the Lieutenant Governor-in-Council.



APPENDIX II

MEMORANDUM OF AGREEMENT

SCHEDULE A

SASKATCHEWAN WATER QUANTITY STATIONS 1978-79

## SCHEDULE A

SASKATCHEWAN WATER QUANTITY STATIONS  
1979-80

APR 01 1979

PAGE

## FEDERAL 1. SUPPORT NATIONAL PROGRAMS

ITEM NO.	STATION NUMBER	STATION NAME	OPERATING AGENCY	RECORD OBTAINED HYDROMETRIC SEDIMENT	ACCESS	OPERATIONS CENTER
1.	05GG005	ANGLIN LAKE RESERVOIR	WSC	12L		PRINCE ALBERT
2.	05HA070	DOWNIE LAKE INFLOW CANAL	WSC	8Q		REGINA
3.	05HA064	DOWNIE LAKE RESERVOIR NEAR MAPLE CREEK	WSC	8L		REGINA
4.	05JF008	FAHLMAN CREEK NEAR DAVIN	WSC	8Q		REGINA
5.	05HA069	GAP CREEK BELOW DOWNIE LAKE DIVERSION	WSC	8Q		REGINA
6.	05HA074	HARRIS RESERVOIR NEAR MAPLE CREEK	WSC	8L		REGINA
7.	05HA063	JUNCTION RESERVOIR NEAR MAPLE CREEK	WSC	8L		REGINA
8.	05HA076	MAPLE CREEK BELOW JUNCTION RESERVOIR	WSC	8Q		REGINA
9.	05JC004	RUSHLAKE CREEK ABOVE HIGHFIELD RESERVOIR	WSC	8Q		REGINA
10.	05GG007	SPRUCE RIVER BELOW ANGLIN LAKE RESERVOIR	WSC	12Q		PRINCE ALBERT
11.	05GG006	SPRUCE RIVER DIVERSION TO EMMA LAKE	WSC	8Q		PRINCE ALBERT

SCHEDULE A

SASKATCHEWAN WATER QUANTITY STATIONS

APR 01 1979

1979-80

PAGE

FEDERAL 2. INTERPROVINCIAL RIVERS

ITEM NO.	STATION NUMBER	STATION NAME	OPERATING AGENCY	RECORD OBTAINED HYDROMETRIC SEDIMENT	ACCESS	OPERATIONS CENTER
1.	05H0004	ASSINIBOINE RIVER AT KANSACK	WSC	12Q		REGINA
2.	05JE010	AVONLEA INDEX RESERVOIR	WSC	8L		REGINA
3.	05JE007	AVONLEA RESERVOIR NEAR AVONLEA	WSC	8L		REGINA
4.	11AB117	BATTLE CREEK AT ALBERTA BOUNDARY	WSC	8Q		REGINA
5.	05FE001	BATTLE RIVER NEAR UNWIN	WSC	12Q		REGINA
6.	05JF006	BOGGY CREEK NEAR LUMSDEN	WSC	8Q		REGINA
7.	05AH001	BOXELDER CREEK NEAR WALSH	WSC	8Q		CALGARY
8.	05HF007	BRODERICK IRRIGATION CANAL BELOW PUMPING STATION	WSC	8Q		REGINA
9.	05JG009	BUFFALO POUND LAKE AT PUMPING STATION	WSC	12L		REGINA
10.	05KH007	CARROT RIVER NEAR TURNBERRY	WSC	12Q		WINNIPEG
11.	06EA002	CHURCHILL RIVER AT SANDY BAY	WSC	12Q	REMOTE	PRINCE ALBERT
12.	05JH006	CROOKED LAKE NEAR GRAYSON	WSC	12L		REGINA
13.	05KH011	DRAGLINE CHANNEL NEAR SQUAW RAPIDS	WSC	12Q		PRINCE ALBERT
14.	05JK005	ECHO LAKE AT FISH HATCHERY	WSC	12L		REGINA
15.	05JM010	EKAPO CREEK NEAR MARIEVAL	WSC	8Q		REGINA
16.	05JG006	ELOOM DIVERSION CANAL AT DROP STRUCTURE	WSC	12Q		REGINA
17.	05JL002	INDIANHEAD CREEK NEAR INDIAN HEAD	WSC	8Q		REGINA
18.	05JL004	KATEPWA LAKE AT OUTLET WEIR	WSC	12L		REGINA
19.	05HF003	LAKE DIEFFENBAKER AT GARDINER DAM	WSC	12L		REGINA
20.	05JH004	LAST MOUNTAIN LAKE AT ROWAN'S RAVINE	WSC	12L		REGINA
21.	11AB082	LODGE CREEK AT ALBERTA BOUNDARY.	WSC	8Q		REGINA
22.	05JF013	LUMSDEN INDEX RESERVOIR	WSC	8L		REGINA
23.	05JE006	MOOSE JAW RIVER NEAR BURDICK	WSC	12Q	X	REGINA

## SCHEDULE A

## SASKATCHEWAN WATER QUANTITY STATIONS

APR 01 1979

1979-80

PAGE

## FEDERAL 2. INTERPROVINCIAL RIVERS

ITEM NO.	STATION NUMBER	STATION NAME	OPERATING AGENCY	RECORD OBTAINED HYDROMETRIC	SEDIMENT	ACCESS	OPERATIONS CENTER
24.	05GG001	NORTH SASKATCHEWAN RIVER AT PRINCE ALBERT	WSC	12Q	X		PRINCE ALBERT
25.	05EFC01	NORTH SASKATCHEWAN RIVER NEAR DEER CREEK	WSC	12Q			PRINCE ALBERT
26.	05JG004	QU'APPELLE RIVER ABOVE BUFFALO POUND LAKE	WSC	12Q			REGINA
27.	05JM013	QU'APPELLE RIVER AT HYDE	WSC	8Q			REGINA
28.	05JL001	QU'APPELLE RIVER AT OUTLET OF KATEPWA LAKE	WSC	12Q			REGINA
29.	05JK002	QU'APPELLE RIVER BELOW CRAVEN DAM	WSC	12Q			REGINA
30.	05JK007	QU'APPELLE RIVER BELOW LOCN CREEK	WSC	12Q			REGINA
31.	05JG007	QU'APPELLE RIVER BELOW MOOSE JAW RIVER	WSC	12Q			REGINA
32.	05JF001	QU'APPELLE RIVER NEAR LUMSDEN	WSC	12Q			REGINA
33.	05JM001	QU'APPELLE RIVER NEAR WELBY	WSC	12Q			REGINA
34.	05LC001	RED DEER RIVER NEAR ERWOOD	WSC	12Q			PRINCE ALBERT
35.	05HD033	REID LAKE NEAR DUNCAIRN	WSC	8L			REGINA
36.	05JG013	RIDGE CREEK NEAR BRIDGEFORD	WSC	8Q			REGINA
37.	05JH007	ROUND LAKE NEAR WHITEWOOD	WSC	12L			REGINA
38.	05KH008	SASKATCHEWAN RIVER NEAR MANITOBA BOUNDARY	WSC	12Q		REMOTE	WINNIPEG
39.	05JH007	SILTON INDEX RESERVOIR	WSC	8L			REGINA
40.	05HG001	SOUTH SASKATCHEWAN RIVER AT SASKATOON	WSC	12Q			REGINA
41.	05HH001	SOUTH SASKATCHEWAN RIVER AT ST. LOUIS	WSC	12Q			PRINCE ALBERT
42.	05HD034	SWIFT CURRENT CANAL AT SWIFT CURRENT	WSC	8Q			REGINA
43.	05HB009	THEODORE RESERVOIR NEAR THEODORE	WSC	8L			REGINA
44.	05JF005	WASCANA CRKEK NEAR LUMSDEN	WSC	12Q			REGINA

SCHEDULE A

SASKATCHEWAN WATER QUANTITY STATIONS

1979-80

FEDERAL 3. INTERNATIONAL COMMITMENTS

APR 01 1979

PAGE

ITEM NO.	STATION NUMBER	STATION NAME	OPERATING AGENCY	RECORD OBTAINED HYDROMETRIC SEDIMENT	ACCESS	OPERATIONS CENTER
1.	11AB095	ADAMS LAKE	WSC	8L		REGINA
2.	11AB089	ALTAWAN RESERVOIR NEAR GOVENLOCK	WSC	8L		REGINA
3.	05NCO06	ARCOLA INDEX RESERVOIR	WSC	8L		REGINA
4.	11AB100	BATTLE CREEK ABOVE CYPRESS LAKE WEST OUTFLOW CANAL	WSC	8Q		REGINA
5.	11AB027	BATTLE CREEK AT INTERNATIONAL BOUNDARY	WSC	8Q		REGINA
6.	11AB101	BATTLE CREEK BELOW NASHLYN PROJECT	WSC	8Q		REGINA
7.	11AB096	BATTLE CREEK NEAR CONSUL	WSC	8Q		REGINA
8.	11AF005	BEAVER CREEK NEAR INTERNATIONAL BOUNDARY	WSC	12Q		REGINA
9.	11AC064	BELANGER CREEK DIVERSION TO CYPRESS LAKE	WSC	8Q		REGINA
10.	05NB012	BOUNDARY RESERVOIR NEAR ESTEVAN	WSC	12L		REGINA
11.	11AE013	COOKSON RESERVOIR NEAR CORONACH	WSC	12L		REGINA
12.	11AC037	CYPRESS LAKE	WSC	8L		REGINA
13.	11AC060	CYPRESS LAKE EAST OUTFLOW CANAL	WSC	8Q		REGINA
14.	11AB078	CYPRESS LAKE WEST INFLOW CANAL	WSC	8Q		REGINA
15.	11AB085	CYPRESS LAKE WEST INFLOW CANAL DRAIN	WSC	8Q		REGINA
16.	11AB077	CYPRESS LAKE WEST OUTFLOW CANAL	WSC	8Q		REGINA
17.	05NB029	DEAD LAKE PROJECT - SOURIS RIVER CHANNEL	WSC	8L		REGINA
18.	05NB022	DEAD LAKE RESERVOIR NEAR MIDALE	WSC	8L		REGINA
19.	11AC025	DENNIEL CREEK NEAR VAL MARIE	WSC	8Q		REGINA
20.	11AE003	EAST POPLAR RIVER AT INTERNATIONAL BOUNDARY	WSC	12Q		REGINA
21.	11AC052	EASTEND CANAL	WSC	8Q		REGINA
22.	11AC055	EASTEND RESERVOIR	WSC	8L		REGINA
23.	11AC041	FRENCHMAN RIVER AT INTERNATIONAL BOUNDARY	WSC	8Q		REGINA

SCHEDULE A

SASKATCHEWAN WATER QUANTITY STATIONS  
1979-80  
FEDERAL 3. INTERNATIONAL COMMITMENTS

APR 01 1979

PAGE

ITEM NO.	STATION NUMBER	STATION NAME	OPERATING AGENCY	RECORD OBTAINED HYDROMETRIC SEDIMENT	ACCESS	OPERATIONS CENTER
24.	11AC001	FRENCHMAN RIVER BELOW EASTEND RESERVOIR	WSC	8Q		REGINA
25.	11AC062	FRENCHMAN RIVER BELOW VAL MARIE RESERVOIR	WSC	8Q		REGINA
26.	05ND006	FROBISHER INDEX RESERVOIR	WSC	8L		REGINA
27.	11AB102	GAFF DITCH NEAR MERRYFLAT	WSC	8Q		REGINA
28.	05NA036	LARSEN RESERVOIR NEAR RADVILLE	WSC	8L		REGINA
29.	11AB003	LODGE CREEK BELOW MCRAE CREEK AT INTERNATIONAL BOUNDARY	WSC	8Q		REGINA
30.	05NA003	LONG CREEK AT WESTERN CROSSING OF INTERNATIONAL BOUNDARY	WSC	12Q		REGINA
31.	05NB001	LONG CREEK NEAR ESTEVAN	WSC	12Q		REGINA
32.	05NB027	LONG CREEK NEAR NOONAN	WSC	12Q		REGINA
33.	11AB075	LYONS CREEK AT INTERNATIONAL BOUNDARY	WSC	8Q		REGINA
34.	11AB044	MCKINNON DITCH NEAR CONSUL	WSC	8Q		REGINA
35.	11AB008	MIDDLE CREEK ABOVE LODGE CREEK	WSC	8Q		REGINA
36.	11AB001	MIDDLE CREEK BELOW MIDDLE CREEK RESERVOIR	WSC	8Q		REGINA
37.	11AB108	MIDDLE CREEK NEAR GOVENLOCK	WSC	8Q		REGINA
38.	11AB080	MIDDLE CREEK RESERVOIR	WSC	8L		REGINA
39.	11AB114	MIDDLE CREEK RESERVOIR BEDFORD OUTLET	WSC	8Q		REGINA
40.	11AB115	MIDDLE CREEK RESERVOIR FLOOD SPILLWAY	WSC	8Q		REGINA
41.	11AB113	MIDDLE CREEK RESERVOIR MAIN OUTLET	WSC	8Q		REGINA
42.	11AE008	MIDDLE FORK POPLAR RIVER AT INTERNATIONAL BOUNDARY	WSC	12Q		REGINA
43.	05NC002	MOOSE MOUNTAIN LAKE (RESERVOIR) NEAR CORNING	WSC	12L		REGINA
44.	11AB018	NASHLYN CANAL NEAR CONSUL	WSC	8Q		REGINA
45.	05NA009	RADVILLE INDEX RESERVOIR	WSC	8L		REGINA
46.	11AB058	RICHARDSON DITCH NEAR CONSUL	WSC	8Q		REGINA

## SCHEDULE A

SASKATCHEWAN WATER QUANTITY STATIONS  
1979-80  
FEDERAL 3. INTERNATIONAL COMMITMENTS

APR 01 1979

PAGE

ITEM NO.	STATION NUMBER	STATION NAME	OPERATING AGENCY	RECORD OBTAINED HYDROMETRIC SEDIMENT	ACCESS	OPERATIONS CENTER
47.	11AE009	ROCK CREEK BELOW HORSE CREEK NEAR INTERNATIONAL BOUNDARY	WSC	8Q		REGINA
48.	05NB016	ROUGHBAK RESERVOIR NEAR WEYBURN	WSC	8L		REGINA
49.	11AB020	SHEPHERD DITCH NEAR CONSUL	WSC	8Q		REGINA
50.	05NB021	SHORT CREEK NEAR ROCHE PERCEE	WSC	12Q		REGINA
51.	05ND001	SOURIS RIVER NEAR GLEN EHEN	WSC	12Q		REGINA
52.	05ND007	SOURIS RIVER NEAR SHERWOOD	WSC	12Q		REGINA
53.	11AB060	SPANGLER DITCH NEAR GOVENLOCK	WSC	8Q		REGINA
54.	11AB103	SQUAW COULEE NEAR WILLOW CREEK	WSC	8Q		REGINA
55.	05NB018	TATAGWA LAKE DRAIN NEAR WEYBURN	WSC	8Q		REGINA
56.	11AC054	VAL MARIE MAIN CANAL	WSC	8Q		REGINA
57.	11AC068	VAL MARIE PUMP NO. 1	WSC	8Q		REGINA
58.	11AC069	VAL MARIE PUMP NO. 2	WSC	8Q		REGINA
59.	11AC056	VAL MARIE RESERVOIR	WSC	8L		REGINA
60.	11AC065	VAL MARIE WEST GRAVITY CANAL	WSC	8Q		REGINA
61.	11AC066	VAL MARIE WEST PUMPING CANAL	WSC	8Q		REGINA
62.	11AC063	VAL MARIE WEST RESERVOIR	WSC	8L		REGINA
63.	11AB084	VIDORA DITCH NEAR CONSUL	WSC	8Q		REGINA
64.	05NB024	WEYBURN INDEX RESERVOIR	WSC	8L		REGINA
65.	05ND020	WEYBURN RESERVOIR NEAR WEYBURN	WSC	12L		REGINA
66.	11ADC01	WHITewater CREEK NEAR INTERNATIONAL BOUNDARY	WSC	8Q		REGINA
67.	05NB011	YELLOW GRASS DITCH NEAR YELLOW GRASS	WSC	8Q		REGINA

SCHEDULE A		
SASKATCHEWAN WATER QUANTITY STATIONS		
APR 01 1979	1979-80	PAGE

**FEDERAL 4. MAJOR NAVIGATIONAL IMPORTANCE**

ITEM NO.	STATION NUMBER	STATION NAME	OPERATING AGENCY	RECORD OBTAINED	OPERATIONS CENTER
				HYDROMETRIC SEGMENT ACCESS	

NO.	NUMBER	STATION NAME	AGENCY	HYDROMETRIC	SEDIMENT	ACCESS	STATUS

1. 07HC003 LAKE ATHABASCA NEAR CRACKINGSTONE POINT	WSC	12L	REMOTE	PRINCE ALBERT
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*Journal of Management Education* 36(8) 907-924

## SASKATCHEWAN WATER QUANTITY STATIONS

1979-80

PAGE

## FEDERAL 5. NATIONALLY FUNDED RESEARCH PROJECTS

[illegible]

## SCHEDULE A

## SASKATCHEWAN WATER QUANTITY STATIONS

1979-80

APR 01 1979

## FEDERAL 7. NATIONAL STREAM INVENTORY

PAGE

ITEM NO.	STATION NUMBER	STATION NAME	OPERATING AGENCY	RECORD OBTAINED HYDROMETRIC SEDIMENT	ACCESS	OPERATIONS CENTER
1.	06CA004	BIGSTONE LAKE NEAR LA RONGE	WSC	12L		PRINCE ALBERT
2.	05KC001	CARROT RIVER NEAR SMOKY BURN	WSC	12Q		PRINCE ALBERT
3.	07LC002	CHIPMAN RIVER ABOVE BLACK LAKE	WSC	12Q	REMOTE	PRINCE ALBERT
4.	06C0022	CHURCHILL RIVER ABOVE OTTER RAPIDS	WSC	12Q		PRINCE ALBERT
5.	06B8003	CHURCHILL RIVER NEAR PATUANAK	WSC	12Q	REMOTE	PRINCE ALBERT
6.	07C0006	CLEARWATER RIVER AT OUTLET OF LLOYD LAKE	WSC	12Q	REMOTE	PRINCE ALBERT
7.	07LD001	CREE LAKE AT CABLE BAY	WSC	12L	REMOTE	PRINCE ALBERT
8.	07LD002	CREE RIVER AT OUTLET OF WAPATA LAKE	WSC	12Q	REMOTE	PRINCE ALBERT
9.	06BA002	DILLON RIVER AT OUTLET OF DILLON LAKE	WSC	12Q	REMOTE	PRINCE ALBERT
10.	07LE002	FCND DU LAC RIVER AT OUTLET OF BLACK LAKE	WSC	12Q	REMOTE	PRINCE ALBERT
11.	07LA002	GEIKIE RIVER BELOW WHEELER RIVER	WSC	12Q	REMOTE	PRINCE ALBERT
12.	07LE003	GREASE RIVER BELOW FONTAINE LAKE	WSC	12Q	REMOTE	PRINCE ALBERT
13.	06BD001	HAULTAIN RIVER ABOVE NORBERT RIVER	WSC	12Q	REMOTE	PRINCE ALBERT
14.	07MB001	MACFARLANE RIVER AT OUTLET OF DAVY LAKE	WSC	12Q	REMOTE	PRINCE ALBERT
15.	06CA001	MONTREAL RIVER AT OUTLET OF BIGSTONE LAKE	WSC	12Q		PRINCE ALBERT
16.	05KJ014	PASQUIA RIVER AT HIGHWAY NO. 169	WSC	8Q		PRINCE ALBERT
17.	07LC003	POPCUPINE RIVER AT OUTLET OF GROVE LAKE	WSC	12Q	REMOTE	PRINCE ALBERT
18.	05HD036	SHIFT CURRENT CREEK BELOW ROCK CREEK	WSC	12Q		REGINA
19.	06DA001	WOLLASTON LAKE AT ROSS CHANNEL	WSC	12L	REMOTE	PRINCE ALBERT

## SCHEDULE A

## SASKATCHEWAN WATER QUANTITY STATIONS

APR 01 1979

1979-80  
FEDERAL-PROVINCIAL

PAGE

ITEM NO.	STATION NUMBER	STATION NAME	OPERATING AGENCY	RECORD OBTAINED HYDROMETRIC SEDIMENT	ACCESS	OPERATIONS CENTER
1.	06AD011	ALCOTT CREEK ABOVE MEADOW LAKE	WSC	8Q		PRINCE ALBERT
2.	05KG003	AMISK LAKE NEAR FLIN FLON	WSC	12L		WINNIPEG
3.	05HC005	ANTELOPE CREEK NEAR CABRI	WSC	8Q		REGINA
4.	05NF010	ANTLER RIVER NEAR WAUCHOPE	WSC	8Q		REGINA
5.	05JH001	ARM RIVER NEAR BETHUNE	WSC	8Q		REGINA
6.	05MC001	ASSINIBOINE RIVER AT STURGIS	WSC	8Q		REGINA
7.	05JE005	AVONLEA CREEK NEAR ROULEAU	WSC	8Q		REGINA
8.	05KF001	BALLANTYNE RIVER ABOVE BALLANTYNE BAY	WSC	12Q		PRINCE ALBERT
9.	05FF001	BATTLE RIVER AT BATTLEFORD	WSC	8Q		PRINCE ALBERT
10.	05HA003	BEAR CREEK NEAR PIAPOT	WSC	8Q		REGINA
11.	06AG001	BEAVER RIVER BELOW WATERHEN RIVER	WSC	12Q		PRINCE ALBERT
12.	06AD001	BEAVER RIVER NEAR DORINTOSH	WSC	12Q		PRINCE ALBERT
13.	05EF005	BIG GULLY CREEK NEAR MAIDSTONE	WSC	8Q		PRINCE ALBERT
14.	05MA011	BIRCH CREEK NEAR ELFROS	WSC	8Q		REGINA
15.	05FG006	BIRLING CREEK NEAR PAYNTON	WSC	8Q		PRINCE ALBERT
16.	05HA015	BRIDGE CREEK AT GULL LAKE	WSC	8Q		REGINA
17.	05HG002	BRIGHTWATER CREEK NEAR KENASTON	WSC	8Q		REGINA
18.	05KB005	BURNTOUT BROOK NEAR ARBORFIELD	WSC	8Q		PRINCE ALBERT
19.	06BB005	CANOE RIVER NEAR BEAUVAIL	WSC	12Q	REMOTE	PRINCE ALBERT
20.	05KB003	CAPROT RIVER NEAR ARMLEY	WSC	8Q		PRINCE ALBERT
21.	05JF011	COTTENWOOD CREEK NEAR LUMSDEN	WSC	8Q		REGINA
22.	05HB002	COULEE NEAR FOX VALLEY	WSC	8Q		REGINA
23.	05JG015	COULEE NEAR LUXFORD	WSC	8Q		REGINA

## SCHEDULE A

## SASKATCHEWAN WATER QUANTITY STATIONS

1979-80

FEDERAL-PROVINCIAL

APR 01 1979

PAGE

ITEM NO.	STATION NUMBER	STATION NAME	OPERATING AGENCY	RECORD OBTAINED HYDROMETRIC SEDIMENT	ACCESS	OPERATIONS CENTER
24.	05HH002	CROMARTY CREEK NEAR BIRCH HILLS	WSC	8Q		PRINCE ALBERT
25.	05MB006	CROOKED HILL CREEK NEAR CANORA	WSC	8Q		REGINA
26.	05EG004	CRYSTAL CREEK NEAR IFFLEY	WSC	8Q		PRINCE ALBERT
27.	05KH002	CUMBERLAND LAKE NEAR CUMBERLAND HOUSE	WSC	12L		PRINCE ALBERT
28.	05JM015	CUTARM CREEK NEAR SPY HILL	WSC	8Q		REGINA
29.	07CD007	DESCHARME RIVER BELOW DUPRE LAKE	WSC	12Q	REMOTE	PRINCE ALBERT
30.	06AG002	DORE RIVER NEAR THE MOUTH	WSC	12Q	REMOTE	PRINCE ALBERT
31.	07MA003	DOUGLAS RIVER NEAR CLUFF LAKE	WSC	12Q	REMOTE	PRINCE ALBERT
32.	05HH003	DUCK LAKE CREEK NEAR ROSTHERN	WSC	8Q		PRINCE ALBERT
33.	05GC006	EAGLE CREEK NEAR ENVIRON	WSC	8Q		REGINA
34.	05LB002	ETOMAMI RIVER NEAR BERTHELL	WSC	8Q		PRINCE ALBERT
35.	05GA007	EYEHILL CREEK NEAR MACKLIN	WSC	8Q		PRINCE ALBERT
36.	05LB007	FIR RIVER NEAR HUDSON BAY	WSC	12Q		PRINCE ALBERT
37.	06CE001	FOSTER RIVER ABOVE CHURCHILL RIVER	WSC	12Q	REMOTE	PRINCE ALBERT
38.	05NF013	GAINSBOROUGH CREEK NEAR STORTHOAKS	WSC	8Q		REGINA
39.	05GG010	GARDEN RIVER NEAR HENRIBURG	WSC	8Q		PRINCE ALBERT
40.	05NA005	GIBSON CREEK NEAR RADVILLE	WSC	8Q		REGINA
41.	05KA009	GOOSEHUNTING CREEK NEAR BEATTY	WSC	8Q		PRINCE ALBERT
42.	11AE010	HAY MEADOW CREEK NEAR LISTEUX	WSC	8Q		REGINA
43.	05MA012	IRONSPRING CREEK NEAR WATSON	WSC	8Q		REGINA
44.	05JG014	ISKWAD CREEK NEAR CRAIK	WSC	8Q		REGINA
45.	05NB014	JEWEL CREEK NEAR GOODWATER	WSC	8Q		REGINA
46.	05JK004	JUMPING DEER CREEK NEAR LIPTON	WSC	8Q		REGINA

## SCHEDULE A

APR 01 1979

SASKATCHEWAN WATER QUANTITY STATIONS  
1979-80  
FEDERAL-PROVINCIAL

PAGE

ITEM NO.	STATION NUMBER	STATION NAME	OPERATING AGENCY	RECORD OBTAINED HYDROMETRIC SEDIMENT	ACCESS	OPERATIONS CENTER
47.	06BR004	KEELEY RIVER AT OUTLET OF KEELEY LAKE	WSC	12Q	REMOTE	PRINCE ALBERT
48.	06CB001	LAC LA RONGE AT LA RONGE	WSC	12L		PRINCE ALBERT
49.	05JD004	LAKE OF THE RIVERS WEST INFLOW	WSC	8Q		REGINA
50.	05JJ003	LANIGAN CREEK BELOW DIVERSION	WSC	8Q		REGINA
51.	05KB006	LEATHER RIVER NEAR STAR CITY	WSC	8Q		PRINCE ALBERT
52.	05JH005	LEWIS CREEK NEAR IMPERIAL	WSC	8Q		REGINA
53.	05NF006	LIGHTNING CREEK NEAR CARNDUFF	WSC	8Q		REGINA
54.	05HC003	LILIAN RIVER NEAR LADY LAKE	WSC	8Q		REGINA
55.	05LB004	LOISELLE CREEK NEAR HUDSON BAY	WSC	8Q		PRINCE ALBERT
56.	05NA004	LONG CREEK NEAR MAXIM	WSC	8Q		REGINA
57.	05HF005	MACDONALD CREEK NEAR BOUNTY	WSC	8Q		REGINA
58.	05MA021	MAGNUSSON CREEK NEAR WYNYARD	WSC	8Q		REGINA
59.	06AD007	MAKWA RIVER AT RAPID VIEW	WSC	8Q		PRINCE ALBERT
60.	05LE011	MALONECK CREEK NEAR PELLY	WSC	8Q		REGINA
61.	05JA003	MCDONALD CREEK NEAR MCCORD	WSC	8Q		REGINA
62.	05EF004	MENNERY RIVER NEAR PARADISE HILL	WSC	8Q		PRINCE ALBERT
63.	06CA005	MONTREAL LAKE NEAR MOLANOSA	WSC	12L		PRINCE ALBERT
64.	06CA003	MONTREAL RIVER AT HIGHWAY NO. 2	WSC	12Q		PRINCE ALBERT
65.	05JE001	MOOSE JAW RIVER ABOVE THUNDER CREEK	WSC	8Q		REGINA
66.	05JE004	MOOSE JAW RIVER NEAR ROULFAU	WSC	8Q		REGINA
67.	05NC001	MOOSE MOUNTAIN CREEK BELOW MOOSE MOUNTAIN LAKE	WSC	8Q		REGINA
68.	05ND004	MOOSE MOUNTAIN CREEK NEAR OXBOW	WSC	8Q		REGINA
69.	05NE002	MOOSOMIN RESERVOIR NEAR MOOSOMIN	WSC	8L		REGINA

## SCHEDULE A

SASKATCHEWAN WATER QUANTITY STATIONS  
1979-80

APR 01 1979

FEDERAL-PROVINCIAL

PAGE

ITEM NO.	STATION NUMBER	STATION NAME	OPERATING AGENCY	RECORD OBTAINED HYDROMETRIC SEDIMENT	ACCESS	OPERATIONS CENTER
70.	05JB005	MOSQUITO CREEK NEAR VANGUARD	WSC	8Q		REGINA
71.	06BC001	MUDJATIK RIVER NEAR FORCIER LAKE	WSC	12Q	REMOTE	PRINCE ALBERT
72.	05JB004	NCTUKEU CREEK ABOVE ADMIRAL RESERVOIR	WSC	8Q		REGINA
73.	05JB001	NCTUKEU CREEK NEAR VANGUARD	WSC	8Q		REGINA
74.	05GD002	OSCAR CREEK NEAR KRYDOOR	WSC	8Q		PRINCE ALBERT
75.	07LE004	OTHERSIDE RIVER AT OUTLET OF MERCREDI LAKE	WSC	12Q	REMOTE	PRINCE ALBERT
76.	06EAG07	PAGATO RIVER AT OUTLET OF PAGATO LAKE	WSC	12Q	REMOTE	PRINCE ALBERT
77.	05JL005	PHEASANT CREEK NEAR ABERNETHY	WSC	8Q		REGINA
78.	05JA004	PINTO CREEK NEAR WOODROW	WSC	8Q		REGINA
79.	05NE001	PIPESTONE CREEK NEAR MOOSOMIN	WSC	8Q		REGINA
80.	07LD003	PIPESTONE RIVER BELOW ROTARIU LAKE	WSC	12Q	REMOTE	PRINCE ALBERT
81.	06BC002	PORTER LAKE AT CREW CABIN	WSC	12L	REMOTE	PRINCE ALBERT
82.	05MA020	QUILL CREEK NEAR QUILL LAKE	WSC	8Q		REGINA
83.	05MA014	RANCH CREEK NEAR ANNAHEIM	WSC	8Q		REGINA
84.	05LB005	RED DEER RIVER NEAR STEEN	WSC	8Q		PRINCE ALBERT
85.	05JJ009	SALINE CREEK NEAR NOKOMIS	WSC	8Q		REGINA
86.	05KD003	SASKATCHEWAN RIVER BELOW TOBIN LAKE	WSC	12Q		PRINCE ALBERT
87.	05KH009	SASKATCHEWAN RIVER OLD CHANNEL	WSC	12Q		PRINCE ALBERT
88.	05LB006	SHAND CREEK NEAR DILLABOUGH	WSC	8Q		PRINCE ALBERT
89.	05GF001	SHELL BROOK NEAR SHELLBROOK	WSC	8Q		PRINCE ALBERT
90.	05ME007	SMITH CREEK NEAR MARCHWELL	WSC	8Q		REGINA
91.	06CC001	SMOOTHSTONE RIVER BELOW EMMELINE LAKE	WSC	12Q		PRINCE ALBERT
92.	05HE001	SNAKEBITE CREEK NEAR BEECHY	WSC	8Q		REGINA

## SCHEDULE A

## SASKATCHEWAN WATER QUANTITY STATIONS

APR 01 1979

1979-80  
FEDERAL-PROVINCIAL

PAGE

ITEM NO.	STATION NUMBER	STATION NAME	OPERATING AGENCY	RECORD OBTAINED HYDROMETRIC SEDIMENT	ACCESS	OPERATIONS CENTER
93.	05NB017	SOURIS RIVER NEAR HALBRITE	WSC	8Q		REGINA
94.	05NB009	SOURIS RIVER NEAR ROCHE PERCEE	WSC	8Q		REGINA
95.	05NB007	SPIRIT CREEK NEAR BUCHANAN	WSC	8Q		REGINA
96.	05MD010	STONY CREEK NEAR KAMSACK	WSC	8Q		REGINA
97.	05MCC02	STONY CREEK NEAR STENEN	WSC	8Q		REGINA
98.	05GF002	STURGEON RIVER NEAR PRINCE ALBERT	WSC	8Q		PRINCE ALBERT
99.	05KG007	STURGEON-WEIR RIVER AT LEAF RAPIDS	WSC	12Q		PRINCE ALBERT
100.	05KB002	STURGEON-WEIR RIVER AT OUTLET OF AMISK LAKE	WSC	12Q		WINNIPEG
101.	05LF008	SWAN RIVER NEAR NORQUAY	WSC	12Q		REGINA
102.	05HD041	SWIFT CURRENT CREEK BELOW REID LAKE	WSC	12Q		REGINA
103.	05HD039	SWIFT CURRENT CREEK NEAR LEINAN	WSC	12Q	X	REGINA
104.	07QC002	TAZIN LAKE NEAR OUTLET	WSC	12L	REMOTE	PRINCE ALBERT
105.	05JG012	THUNDER CREEK NEAR DARMODY	WSC	8Q		REGINA
106.	06DB003	THYMEHILL RIVER BELOW HACKENZIE LAKE	WSC	12Q	REMOTE	PRINCE ALBERT
107.	05KE002	TORCH RIVER NEAR LOVE	WSC	12Q		PRINCE ALBERT
108.	05EG005	TURTLELAKE RIVER NEAR TURTLEFORD	WSC	8Q		PRINCE ALBERT
109.	05JF012	WASCANA CREEK BELCH KRONAU MARSH	SDOE	8Q		REGINA
110.	05JF004	WASCANA CREEK NEAR SEDLEY	WSC	8Q		REGINA
111.	05JF010	WASCANA LAKE ABOVE BROAD STREET WEIR	SDOE	8L		REGINA
112.	05JF002	WASCANA LAKE BELOW BROAD STREET WEIR	SDOE	12L		REGINA
113.	07LB001	WATERBURY LAKE AT CREW CABIN	WSC	12L	REMOTE	PRINCE ALBERT
114.	07LB002	WATERFOUND RIVER BELOW UNKNOWN LAKE	WSC	12Q	REMOTE	PRINCE ALBERT
115.	06AF005	WATERHEN RIVER NEAR GODSOIL	WSC	12Q		PRINCE ALBERT

### SASKATCHEWAN WATER QUANTITY STATIONS

1979-80

FEDERAL-PROVINCIAL

PAGE

ITEM NO.	STATION NUMBER	STATION NAME	OPERATING AGENCY	RECORD OBTAINED	HYDROMETRIC	SEDIMENT	ACCESS	OPERATIONS CENTER
116.	06DC001	WATHAMAN RIVER BELOW WATHAMAN LAKE	WSC	12Q			REMOTE	PRINCE ALBERT
117.	07LA003	WHEELER RIVER BELOW RUSSELL LAKE	WSC	12Q			REMOTE	PRINCE ALBERT
118.	05KE005	WHITE FOX RIVER NEAR GARRICK	WSC	8Q				PRINCE ALBERT
119.	05MB003	WHITESAND RIVER NEAR CANDRA	WSC	8Q				REGINA
120.	05MB008	WHITESAND RIVER NEAR SPRINGSIDE	WSC	8Q				REGINA
121.	07MA004	WILLIAM RIVER ABOVE CARSWELL RIVER	WSC	12Q			REMOTE	PRINCE ALBERT
122.	05MD005	WILLOW BROOK AT WILLOWBROOK	WSC	8Q				REGINA
123.	05JA002	WOOD RIVER NEAR LAFLECHE	WSC	8Q				REGINA
124.	05MB001	YORKTON CREEK NEAR EBENEZER	WSC	8Q				REGINA

## SCHEDULE A

SASKATCHEWAN WATER QUANTITY STATIONS  
1979-80  
PROVINCIAL

APR 01 1979

PAGE

ITEM NO.	STATION NUMBER	STATION NAME	OPERATING AGENCY	RECORD OBTAINED HYDROMETRIC SEDIMENT	ACCESS	OPERATIONS CENTER
1.	05LA006	BARRIER RIVER BELOW BARRIER LAKE	WSC	8Q		PRINCE ALBERT
2.	05LA001	BARRIER RIVER OVERFLOW	WSC	8Q		REGINA
3.	05HA022	BECKETT BROOK NEAR FOAM LAKE	WSC	8Q		REGINA
4.	05HA010	BIG QUILL LAKE NEAR KANDAHAR	SDOE	8L		REGINA
5.	05KH014	BIRCH RIVER MARSH NEAR CUMBERLAND HOUSE	OU	12L	REMOTE	PRINCE ALBERT
6.	05KH013	BIRCH RIVER NEAR MANITOBA BOUNDARY	SDOE	12Q	REMOTE	REGINA
7.	05KE006	BISSETT CREEK NEAR CHOICELAND	WSC	8Q		PRINCE ALBERT
8.	05HG014	BLACKSTRAP RESERVOIR AT SOUTH SIDE OF CAUSEWAY	SDOE	8L		REGINA
9.	05HG013	BRADEWELL RESERVOIR AT PUMP STATION	SDOE	8L		REGINA
10.	05HG020	BRIGHTWATER CREEK NEAR PROCTOR LAKE	WSC	8Q		REGINA
11.	05HG006	BRIGHTWATER RESERVOIR AT RIPARIAN OUTLET	SDOE	8L		REGINA
12.	05HF017	BRODERICK RESERVOIR AT WEST EMBANKMENT	WSC	8L		REGINA
13.	05JE009	BROKENSHILL CREEK NEAR TROSSACHS	WSC	8Q		REGINA
14.	05KE008	CANDLE LAKE AT CANDLE LAKE	WSC	8L		PRINCE ALBERT
15.	05KA001	CARROT RIVER NEAR KINISTINO	WSC	8Q		PRINCE ALBERT
16.	06ADC12	CHITEK LAKE AT CHITEK VILLAGE	SDOE	8L		REGINA
17.	05GG009	CHRISTOPHER LAKE NEAR CHRISTOPHER LAKE	SDOE	8L		REGINA
18.	05MC004	CONJURING CREEK NEAR PREECEVILLE	WSC	8Q		REGINA
19.	05KC002	CONNELL CREEK NEAR CONNELL CREEK	WSC	8Q		PRINCE ALBERT
20.	06AE002	COWAN LAKE AT BIG RIVER	SDOE	8L		REGINA
21.	05FF003	CUTKNIFE CREEK NEAR CUTKNIFE	WSC	8Q		PRINCE ALBERT
22.	05JJ008	DELLWOOD RESERVOIR AT PUMP STATION	SDOE	8L		REGINA
23.	05KB011	DOGHEAD RIVER NEAR RUNCIMAN	WSC	8Q		PRINCE ALBERT

## SCHEDULE A

SASKATCHEWAN WATER QUANTITY STATIONS  
1979-80  
PROVINCIAL

APR. 01 1979

PAGE

ITEM NO.	STATION NUMBER	STATION NAME	OPERATING AGENCY	RECORD OBTAINED HYDROMETRIC SEDIMENT	ACCESS	OPERATIONS CENTER
24.	05LAC03	DUCK CREEK NEAR KELVINGTON	WSC	8Q		PRINCE ALBERT
25.	05GC002	EAGLE CREEK NEAR ANGLIA	WSC	8Q		REGINA
26.	11AEP14	EAST POPLAR RIVER ABOVE COOKSON RESERVOIR	WSC	8Q		REGINA
27.	05GG008	EMMA LAKE NEAR TWEEDSHUIR	SDOE	8L		REGINA
28.	05EF006	ENGLISHMAN RIVER NEAR SPRUCE LAKE	WSC	8Q		PRINCE ALBERT
29.	05MB013	FISHING LAKE NEAR WADENA	SDOE	8L		REGINA
30.	05JC007	FLOWING WELL WEST INFLOW NEAR FLOWING WELL	WSC	8Q		REGINA
31.	05MB010	GOOD SPIRIT LAKE NEAR CANORA	SDOE	8L		REGINA
32.	05LB009	GREENWATER CREEK NEAR CHELAN	WSC	8Q		REGINA
33.	05LB011	GREENWATER LAKE NEAR CHELAN	SDOE	8L		REGINA
34.	05JF014	HUNTER CREEK NEAR RICHARDSON	WSC	8Q		REGINA
35.	05EG003	JACKFISH LAKE NEAR COCHIN	WSC	8L		PRINCE ALBERT
36.	05EG007	JACKFISH RIVER NEAR PRINCE	WSC	8Q		PRINCE ALBERT
37.	05KE007	KELSEY CREEK NEAR GARRICK	WSC	8Q		PRINCE ALBERT
38.	05ND009	KENOSSEE LAKE NEAR CARLYLE	WSC	8L		REGINA
39.	05LA007	KIPARISKAU LAKE NEAR MCKAGUE	SDOE	8L		REGINA
40.	05GB001	KIYIU LAKE NEAR NETHERHILL	SDOE	8L		REGINA
41.	05HD028	LAC PELLETIER NEAR VESPER	SDOE	8L		REGINA
42.	05HC004	LAKE DIEFENBAKER AT SASKATCHEWAN LANDING	WSC	12L		REGINA
43.	05JJ010	LANIGAN CREEK NEAR LANIGAN	WSC	8Q		REGINA
44.	05MB012	LAWRIE CREEK NEAR INSINGER	WSC	8Q		REGINA
45.	05KB008	LITTLE BRIDGE CREEK NEAR ARMLEY	WSC	8Q		PRINCE ALBERT
46.	05JJ001	LITTLE MANITOU LAKE AT MANITOU BEACH	SDOE	8L		REGINA

## SCHEDULE A

## SASKATCHEWAN WATER QUANTITY STATIONS

APR 01 1979

1979-80  
PROVINCIAL

PAGE

ITEM NO.	STATION NUMBER	STATION NAME	OPERATING AGENCY	RECORD OBTAINED HYDROMETRIC SEDIMENT	ACCESS	OPERATIONS CENTER
47.	05MA002	LITTLE QUILL LAKE NEAR CLAIR	SDOE	8L		REGINA
48.	05LB008	MACNAB CREEK NEAR SOMHE	WSC	8Q		PRINCE ALBERT
49.	05LE012	MADGE LAKE NEAR KANSACK	SDOE	8L		REGINA
50.	06AD009	NAKWA RIVER AT OUTLET OF NAKWA LAKE	WSC	8Q		PRINCE ALBERT
51.	05GA006	MANITO LAKE NEAR MARSDEN	SDOE	8L		REGINA
52.	06AD010	MEADOW RIVER BELOW MEADOW LAKE	WSC	12Q		PRINCE ALBERT
53.	05HA023	MILLIGAN CREEK NEAR WADENA	WSC	8Q		REGINA
54.	05JE002	MOOSE JAW RIVER NEAR LANG	WSC	8Q		REGINA
55.	06AD008	MORIN CREEK NEAR MEADOW LAKE	WSC	8Q		PRINCE ALBERT
56.	05GB004	MUDDY LAKE INFLOW NEAR REVENUE	WSC	8Q		PRINCE ALBERT
57.	06CB003	NEMEBEN LAKE NEAR LA RONGE	SDOE	8L		REGINA
58.	05GC007	OPUNTIA LAKE WEST INFLOW	WSC	8Q		REGINA
59.	05LD003	OVERFLOWING RIVER NEAR HUDSON BAY	WSC	8Q		PRINCE ALBERT
60.	05EG008	PAGE CREEK NEAR IFFLEY	WSC	8Q		PRINCE ALBERT
61.	05MB011	PATTEN CREEK NEAR KUROKI	WSC	8Q		REGINA
62.	05HG003	PIKE LAKE NEAR SASKATOON	SDOE	8L		REGINA
63.	05LA004	PIPESTONE CREEK NEAR ROSE VALLEY	WSC	8Q		PRINCE ALBERT
64.	05LB010	PRAIRIE RIVER NEAR PRAIRIE RIVER	WSC	8Q		PRINCE ALBERT
65.	05GE001	RADOUGA CREEK NEAR BLAINE LAKE	WSC	8Q		PRINCE ALBERT
66.	05LA005	RED DEER RIVER NEAR ARCHERWILL	WSC	8Q		PRINCE ALBERT
67.	05MA016	ROMANCE CREEK NEAR WATSON	WSC	8Q		REGINA
68.	05JB002	RUSSELL CREEK NEAR VANGUARD	WSC	8Q		REGINA
69.	05JB006	RUSSELL CREEK RESERVOIR	WSC	8L		REGINA

## SCHEDULE A

## SASKATCHEWAN WATER QUANTITY STATIONS

APR 01 1979

1979-80  
PROVINCIAL

PAGE

ITEM NO.	STATION NUMBER	STATION NAME	OPERATING AGENCY	RECORD OBTAINED HYDROMETRIC SEDIMENT	ACCESS	OPERATIONS CENTER
70.	05HG008	S.S.E.P. EAST MAIN CANAL BELOW BLACKSTRAP RESERVOIR	WSC	8Q		REGINA
71.	05HG004	S.S.E.P. EAST MAIN CANAL BELOW BRIGHTWATER RESERVOIR	WSC	8Q		REGINA
72.	05HG019	S.S.E.P. EAST MAIN CANAL BELOW BRODERICK RESERVOIR	WSC	8Q		REGINA
73.	05HG009	S.S.E.P. EAST MAIN CANAL BELOW ZELMA RESERVOIR	WSC	8Q		REGINA
74.	05JG001	SANDY CREEK NEAR CARON	WSC	8Q		REGINA
75.	05HC002	SNIPE LAKE NEAR SNIPE LAKE	SDOE	8L		REGINA
76.	05HC003	SNIPE LAKE NORTH INFLOW	WSC	8Q		REGINA
77.	05NB031	SOURIS RIVER BELOW LEHMAN	WSC	8Q		REGINA
78.	05NB025	SOURIS RIVER NEAR LEHMAN	WSC	8Q		REGINA
79.	05NB030	SOURIS RIVER NEAR MCTAGGART	WSC	8Q		REGINA
80.	05HF004	SOUTH SASKATCHEWAN RIVER BELOW GARDINER DAM	WSC	12L		REGINA
81.	05KD004	TGBIN LAKE AT SQUAM RAPIDS SPILLWAY	SDOE	12L		REGINA
82.	05EG009	TURTLE LAKE NEAR GLASLYN	SDOE	8L		REGINA
83.	05HF022	UNNAMED CREEK NEAR CUTBANK	WSC	8Q		REGINA
84.	05HG018	UNNAMED CREEK NEAR GLENSIDE	WSC	8Q		REGINA
85.	06AE001	UNNAMED CREEK NEAR SPIRITWOOD	WSC	8Q		PRINCE ALBERT
86.	05KA010	WALDSEA LAKE NEAR HUMBOLDT	SDOE	8L		REGINA
87.	06AF007	WATERHEN LAKE NEAR DORINTOSH	SDOE	8L		REGINA
88.	05ND008	WHITE BEAR (CARLYLE) LAKE NEAR CARLYLE	SDOE	8L		REGINA
89.	05JE008	WILCOX MAIN DITCH NEAR WILCOX	WSC	8Q		REGINA
90.	05JD005	WILLOWS COULEE RESERVOIR NEAR ASSINIBOIA	WSC	8L		REGINA
91.	05JC006	WIMA CREEK NEAR ST. BOSWELLS	WSC	8Q		REGINA
92.	05JC005	WOOD RIVER DIVERSION TO CHAPLIN LAKE	WSC	8Q		REGINA

**SASKATCHEWAN WATER QUANTITY STATIONS**  
**1979-80**  
**PROVINCIAL**

**PAGE**

60

SCHEDULE A

SASKATCHEWAN WATER QUANTITY STATIONS

APR 01 1979

1979-80

PAGE

DATA CONTRIBUTED BY SASKATCHEWAN

ITEM NO.	STATION NUMBER	STATION NAME	OPERATING AGENCY	RECCPD OBTAINED HYDROMETRIC	SEDIMENT	ACCESS	OPERATIONS CENTER
1.	05HG016	BRIGHTWATER CREEK BELOW BRIGHTWATER RESERVOIR	SDOE	8Q			REGINA
2.	05JJ006	S.S.E.P. DIVERSION TO LITTLE MANITOU LAKE	SDOE	8Q			REGINA
3.	05HG005	S.S.E.P. MAIN CANAL ABOVE BLACKSTRAP RESERVOIR	SDOE	8Q			REGINA
4.	05HG010	S.S.E.P. MAIN CANAL ABOVE BRADWELL RESERVOIR	SDOE	8Q			REGINA
5.	05HG007	S.S.E.P. MAIN CANAL ABOVE BRIGHTWATER RESERVOIR	SDOE	8Q			REGINA
6.	05HG011	S.S.E.P. MAIN CANAL ABOVE ZELMA RESERVOIR	SDOE	8Q			REGINA
7.	05JJ007	S.S.E.P. MAIN CANAL AT INLET TO DELLWOOD RESERVOIR	SDOE	8Q			REGINA
8.	05JJ005	S.S.E.P. MAIN CANAL AT INLET OF MANITOU PUMPING STATION	SDOE	8Q			REGINA

SCHEDULE A -		
SASKATCHEWAN WATER QUANTITY STATIONS		
APR 01 1979	1979-80	PAGE

DATA CONTRIBUTED BY PRIVATE AGENCY

ITEM NO.	STATION NUMBER	STATION NAME	OPERATING AGENCY	RECORD HYDROMETRIC	OBTAINED SEDIMENT	ACCESS	OPERATIONS CENTER
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1. 06BA001 CHURCHILL LAKE AT BUFFALO NARROWS	CRPC	12L	WINNIPEG
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2. 06DB002 REINDEER RIVER AT OUTLET OF REINDEER LAKE CRPG 12Q REMOTE WINNIPEG

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APPENDIX III

MEMORANDUM OF AGREEMENT

SCHEDULE B

ANNUAL PAYMENTS - ITEMS INCLUDED

## SCHEDULE B

### ANNUAL PAYMENTS - ITEMS TO BE INCLUDED

The items to be included in computing the annual payments of water quantity survey stations are:

#### I OPERATIONAL COST WATER QUANTITY SURVEY STATIONS EXCLUDING SEDIMENT

- a) Salaries and overtime of field personnel and casual labour;
- b) Field travel expenses, board and lodging costs for field personnel;
- c) The computer costs associated with computing daily mean hydrometric data;
- d) Observer pay;
- e) Depreciation, operation and maintenance of vehicles and boats
- f) Maintenance of gauging station structures including material and labour for minor repairs;
- g) Maintenance and depreciation of all field equipment and instruments (except as noted in Article VII of this agreement);
- h) Fuels such as propane for heating recorder installations and gas such as nitrogen for operating pressure sensing equipment, electricity charges;
- i) Rental of aircraft, vehicles, boats, etc. supplied by either party or chartered;
- j) The annual cost of land leases;
- k) Services, e.g. cost of establishing gas caches, operation of line cabins, etc.

#### II OPERATIONAL COST SEDIMENT STATIONS

All items in I OPERATIONAL COST plus:

- l) The computer costs associated with computing daily mean sediment data;
- m) Cost of analysis of sediment samples.

III NEW CONSTRUCTION REPAIR AND MAJOR RECONSTRUCTION COSTS FOR WATER QUANTITY  
SURVEY STATIONS:

- a) Salaries and overtime of construction personnel;
- b) Field travel expenses, board and lodging costs of construction personnel;
- c) Depreciation, operation and maintenance of vehicles;
- d) Construction materials;
- e) Maintenance, depreciation and operation of construction equipment;
- f) Rental of aircraft, vehicles, boats, construction equipment, etc. supplied by either party or chartered;
- g) Land acquisition costs including legal survey costs;
- h) Construction contract payments.

APPENDIX IV

MEMORANDUM OF AGREEMENT

SCHEDULE C

PROCEDURES FOR PREPARATION OF ANNUAL PAYMENTS

## SCHEDULE C

### PROCEDURES FOR PREPARATION OF ANNUAL PAYMENTS

- a) The annual payment is composed of two parts; the annual operating costs and the costs of construction for streamflow and water level installations and sediment installations.
- b) The annual payment shall be computed for each year the agreement is in effect.
- c) Cost data to be used as a basis for computing each annual payment will be the cost data from the latest available full fiscal year.
- d) A cost index factor is to be used in computing the annual payment for the year in question commensurate with sound engineering practice.
- e) The average annual unit costs for operating water quantity survey stations listed in Schedule A but not including sediment stations will be determined from the cost data of c) above and where necessary, because of significant differences in transportation costs, these average annual unit costs will be computed for more than one area or condition of operation.
- f) The total annual operation cost of the water quantity survey station listed in Schedule A but not including sediment stations will be the summation of the appropriate average annual unit cost for each station multiplied by the cost index factor as determined in item d) above.
- g) The total annual operation cost of the sediment stations listed in Schedule A will be the summation of the annual operating cost for each station multiplied by the cost index factor as determined in item d) above.
- h) The construction cost to be apportioned in accordance with Articles II, III and IV will be the summation of the construction cost for each new, or reconstructed water quantity survey station. The entire cost of construction is to be included in the annual payment. Construction costs are to be determined using data from reconnaissance surveys, standard plans, etc. and incorporating and cost index factor from item d) above.
- i) In cases where there is a significant deviation between the cost determined in f), g) and h) and actual costs because of the cost index factor used, or changes in the construction program due to unforeseen circumstances such as flooding, an adjustment may be made in the final quarterly payment (March 1st) or the next fiscal year to more accurately reflect the cost shares of the parties to this agreement.

APPENDIX V  
MEMORANDUM OF AGREEMENT  
SCHEDULE D  
ANNUAL PAYMENT 1978-79

SCHEDULE D

SASKATCHEWAN HYDROMETRIC SURVEYS 1978-79

This schedule is a summary of the annual payment. The details of the calculations for operation and construction costs are available and have been jointly reviewed by officers of each party.

ANNUAL PAYMENT FOR 1978-79 TO BE PAID TO CANADA BY SASKATCHEWAN

	<u>Operation</u>	<u>Construction*</u>	<u>Total</u>
a) Streamflow and water level installations	206 202	63 865	270 067
b) Sediment installations	-	-	-
			<hr/>
TOTAL			\$270 067

\* Province of Saskatchewan share of maintenance, upgrading and construction of hydrometric gauging stations.

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S.R. Blackwell  
Chief, Water Management Service  
Administrator for Saskatchewan

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D.A. Davis  
Regional Director  
Inland Waters Directorate  
Administrator for Canada

APPENDIX VI

GUIDELINES FOR DESIGNATING FEDERAL AND PROVINCIAL  
RESPONSIBILITY FOR WATER QUANTITY STATIONS

GUIDELINES FOR DESIGNATING FEDERAL AND PROVINCIAL  
RESPONSIBILITY FOR WATER QUANTITY SURVEY STATIONS

The guidelines have been prepared in compliance with the Memoranda of Agreement between Canada and the Provinces in order to determine and review the designation of water quantity survey stations. The assignment of station designations is the responsibility of each Co-ordinating Committee established under the Memoranda of Agreement.

The intent of these guidelines is to provide a means by which responsibility for water quantity survey stations will be designated throughout Canada in a uniform and consistent manner. Water quantity survey stations as used in these guidelines has the same definition as in the Memorandum of Agreement and includes streamflow, water level and sediment survey stations. The word "stations" used in these guidelines means "water quantity survey stations".

FEDERAL STATIONS

The stations under these guidelines support programs of primary interest to the Government of Canada.

1. Federal Departmental Programs

Stations which are required for programs of various federal government departments where water quantity information on inland waters is required in support of specific projects or management responsibilities. Normally stations in this category would be the result of a specific request from another federal government department (e.g. MOT, DPW) or from statutory programs within Fisheries and Environment Canada (e.g. Canada Water Act, Fisheries Act, Migratory Birds Convention Act, etc.). Costs will normally be borne by the requesting agency. A station may also be designated under this guideline, where by formal agreement the federal government has accepted the responsibility for the continued operation of the station under an implementation agreement.

2. Interprovincial Rivers

Stations which are required for monitoring of streams flowing across or forming provincial or provincial-territorial boundaries where federal responsibility has been established by an agreement or where both the federal government and provincial governments recognize that there is or could be a trans-boundary management or jurisdictional problem.

### 3. International Commitments

Stations which are associated with federal responsibilities arising from international agreements, treaties, orders or studies.

- a) Where the International Joint Commission (IJC) issues orders governing the control of waters crossing or forming part of international boundaries and stipulates the installation and monitoring of water quantity survey stations.
- b) Stations which are not specifically stipulated under IJC orders but are required to support orders of the IJC.
- c) International treaties and agreements which involve the use of waters crossing or forming part of an international boundary and specifically stipulate the reaches of streams required to be monitored or stipulate that special arrangements be made to meet water quantity survey needs.
- d) Studies arising from federal responsibilities under the Boundary Waters Treaty which require the establishment of water quantity stations. These studies may be unilateral or bilateral and undertaken in anticipation of the need for formal studies.
- e) Transboundary streams which require monitoring for management purposes.

### 4. Water Bodies of Navigational Importance

Stations which are operated for federal government departments and are normally covered by internal cost sharing arrangements in carrying out responsibilities relating to maintenance of navigational channels, construction of training works, prediction and controlling of water levels in navigable streams or lakes. A water quantity survey station located on a stream classified navigable under the Navigable Waters Protection Act is not automatically included in this guideline.

### 5. Nationally Funded Hydrologic Research Programs

Stations which support international and nationally funded hydrologic research programs.

### 6. Basin Studies

This guideline normally covers stations only for an interim period. Stations are included for the period of a study where federal responsibility has been established under the terms and conditions of a study agreement between the federal and provincial governments. Where the responsibility for monitoring was federal during the study and where it is known that the implementation stage will proceed under a federal-provincial agreement the guideline may be used as a holding category between completion of a study and implementation of study recommendations.

## 7. National River Inventory

The number of stations that can be operated to provide information for a national inventory will be limited to those required to assess major water quantity trends in the country and significant discharge to the ocean. Many stations under other federal guidelines perform a dual function and also form part of the national inventory.

This guideline includes stations within each province and territory that will provide an assessment of the total water resources available and a representative sampling on a national basis of the hydrologic regimes in Canada giving consideration to geographic and climatic variability, basin size, streamflow regime, relationship to major groundwater resources and length of record.

### FEDERAL-PROVINCIAL STATIONS

The stations under these guidelines support programs which are of interest to the governments of both Canada and the Provinces.

#### 1. Federal-Provincial Agreements

Stations are included where joint federal and provincial responsibility is established under the terms and conditions of an agreement between federal and provincial governments. Following the completion of federal-provincial water resources study and implementation agreements a station will also be designated under this guideline, where responsibility for the continued operation of the station would be in the joint interest of both Canada and the Province.

#### 2. River Basin Development

Stations are included where both the federal and provincial governments have stated an interest in the need for information to develop a river basin.

### PROVINCIAL STATIONS

Stations which are required for provincial programs where water quantity information on inland waters is required in support of specific projects or management activity. Normally, such station designations would be the result of a specific request from the provincial government.