Technical Report to the PPWB
Committee on Hydrology

NATURAL FLOW

BATTLE RIVER

AT ALBERTA-SASKATCHEWAN BOUNDARY

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SYNOPSIS

The average annual natural flow of the Battle River at the Alberta-Saskatchewan boundary is 228,000 acre-feet. Average annual water use in the Alberta portion of the basin now amounts to 13,900 acre-feet, 6.1% of the average annual natural flow.

The present level of consumptive use (1979 level) in the Alberta portion of the Battle River basin would not have exceeded Alberta's 50% share in any of the 68 years (1912-79) analyzed. On the average, 101,000 acre-feet of Alberta's share of the Battle River flow would have been passed annually to Saskatchewan. The minimum surplus passed during any one year would have been 3,900 acre-feet in 1941.

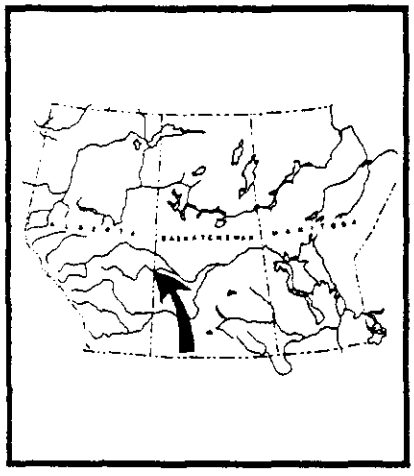
Hydrometric records for Battle River near Ponoka, Pipestone Creek near Wetaskiwin, Coal Lake reservoir, Alberta Power reservoir and Battle River near Unwin will serve as an adequate hydrometric data base in the computation of natural flows for apportionment purposes.

The hydrometric stations for Coal Lake reservoir and for Pipestone Creek near Wetaskiwin should be operated on a continuous basis if consumptive uses are to be calculated on a continuing basis.

TABLE OF CONTENTS

CONTENTS

LIST OF TABLES



LIST OF FIGURES

INTRODUCTION

Following the completion of the Prairie Provinces Water Board's Study on Determination of Natural Flow of the North Saskatchewan, South Saskatchewan, Saskatchewan, Churchill and Qu'Appelle River Basins in 1977, the Board agreed to have other interprovincial basins studied to determine if apportionment of natural flow might be required at this time. Eighteen interprovincial basins were identified and priorities assigned to the basins. The Board agreed that the eighteen basins would be studied in order of priority as funds and time became available. The Battle River natural flow study is one of this series of natural flow studies being conducted for the Prairie Provinces Water Board.

This report on the natural flow of the Battle River at the Alberta-Saskatchewan boundary describes the basin geography (chapter 2), the analytical approach of the study (chapter 3), water use within the basin (chapter 4), and the

derivation of historical natural flows (chapter 5). In chapter 6 the present (1979) level of use is analysed in conjunction with natural flows to indicate the potential for apportionment deficits.

BASIN GEOGRAPHY

The Battle River basin is situated in east-central Alberta and west-central Saskatchewan (Figure 1). Originating at Battle Lake and Pigeon Lake in central Alberta and flowing in an easterly direction, the river drains an area of 9,600 square miles and travels a channel distance of about 500 miles before crossing into Saskatchewan. In Saskatchewan, the Battle River continues its easterly route and drains an additional 1,980 square miles as it travels the remaining 150 miles to its confluence with the North Saskatchewan River.

The headwaters of the Battle River basin are situated within the eastern limits of the Western Alberta Plains, approximately 100 miles from the mountains to the west.

From its origin at Battle Lake, the river flows in a south-east direction meandering for a distance of 62 miles within a low well-defined valley. At Ponoka the river flows east for 30 miles and into a low, flat area near Samson

Lake. Passing through Samson Lake the river continues north for approximately 40 miles in a valley which gradually grows deeper as it approaches its confluence with Pipestone Creek.

Downstream of Pipestone Creek the river occupies a much larger, more rugged valley which was carved out by the outflow from glacial Lake Edmonton during the last glaciation some 10,000 years ago.

From its oversized valley the main Battle River flows in a generally easterly direction through the Eastern Alberta Plains and into Saskatchewan. In its downstream reaches it flows through an area characterized by gently undulating terrain with surficial deposits of till and moraine formations.

Water supply within the Battle River is partially controlled by three reservoirs located within the basin (Figure 1). Of the three reservoirs, only Coal Lake has been operated for low flow augmentation (August to November 1977) and has been fitted with a riparian outlet for such purposes. Driedmeat Lake, although originally intended to contain a riparian outlet, now depends upon manipulation of a 2-meter wide fish ladder to provide downstream flow. The Alberta Power Reservoir is used to provide cooling water for a thermal electric generating station and passes water out of the reservoir by means of a syphon fitted with various size orifice plates. All three structures have substantial spillways for the passage of larger floods.

STUDY APPROACH

The primary objective of the study is to analyze the natural monthly flow values for a historical time period (1912 to 1979) and based on the present (1979) level of water use, determine the potential for apportionment deficits now and in the foreseeable future at the Alberta-Saskatchewan boundary. The analysis may be considered as consisting of the following three components:

i) Determining the present level of water use for the Battle River upstream of the Alberta-Saskatchewan boundary.

ii) Determining the natural monthly flows, for the 1912 to 1979 period, for the Battle River at the Alberta-Saskatchewan boundary.

iii) Subtracting item i from ii to determine if an apportionment deficit would have occurred in the past based on the present level of water use.

Since monthly flow records are not available at the Alberta-Saskatchewan boundary, records from the hydrometric stations - Battle River near Ponoka (05FA001), Battle River near Unwin (05FE001) and Battle River at Battleford (05FF001)

were used in the development of streamflow estimates for the Battle River at the interprovincial boundary. Also, since the monthly flow records at these sites reflect human activity in the basin and are incomplete, the natural flows at these sites as well as for Pipestone Creek near Wetaskiwin had to be reconstructed before they could be utilized in the development of natural flows at the boundary and in the apportionment analysis. The natural flows at these sites were computed using the project depletion method (see chapter 5) which required the creation of the following files at each of the previously identified gauging locations.

i) A-File - consisting of the recorded monthly flows at each of the sites.

ii) J-File - consisting of an array of adjustment items which must be added to or subtracted from the recorded flows in order to remove the effects of human activity (historical water use) in the basin.

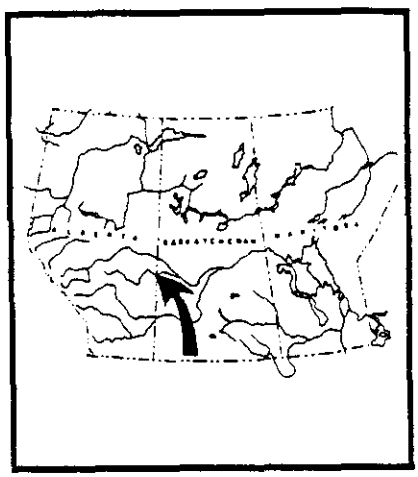
iii) B-File - consisting of the natural flows at the gauging sites. Naturalization was achieved by applying the J-Files to the pertaining A-Files.

iv) C-File - consisting of the B-Files extended to the full 1912 to 1979 period, using simple or multiple regression on natural flow records (B-files) from other stations.

Having computed the natural flows for the 1912 to 1979 period at the above noted gauging sites, interpolation

procedures were utilized to estimate natural flows at the Alberta-Saskatchewan boundary.

The need for apportionment was analyzed by applying the estimated effects of the projects now in operation within the Alberta portion of the Battle River basin to the estimates of natural flows at the interprovincial boundary.



BASIN WATER USE

Historical basin water use (J-File) is defined as the monthly flow adjustments which must be added to the recorded flows at a gauging station in order to reconstruct the natural monthly flows at that site.

The Battle River has, and continues to supply, a diversity of water users who withdraw, discharge and consume water from various points within its basin. In order to create a table of historical basin water uses it was, therefore, necessary to identify the following items:

i) Which projects constitute a water use?
ii) What is the quantity of water being used by each project?
iii) What was the period of operation for each project?
iv) What is the time distribution of water diversions?
v) How are time of travel adjustments to be taken into account?

4.1 Identification of Water Using Projects

As stated previously the Battle River supplies a diversity of water users. Many of the users, however,

withdraw water from or discharge water to areas which, during a year of average flow, do not contribute to the flow in the Battle River. In this regard, a basin water use has been defined as consisting solely of licenced and/or authorized projects which are located within the effective drainage area of the basin, and which consume or modify the flow which would have been experienced in the Battle River at the interprovincial boundary. While it is realized that drainage projects, land use changes, unlicenced withdrawals and withdrawals from non-effective drainage areas may have some modifying effects on flows in the Battle River, it was assumed that these effects will be negligible and therefore were not included in the analysis.

Based on the above definition, basin water uses for the Alberta portion of the Battle River were identified from Alberta Environment's computer files of water rights projects and are presented in Appendix A, Table A-1. A chronological listing of water uses for the Saskatchewan portion of the Battle River was obtained from Water Rights Branch of Saskatchewan Environment and is presented in Table A-2.

4.2 Identification of Quantity and Time of Diversions

The annual quantity and the monthly distributions of the water used within the Alberta portion of the Battle River basin were computed by the Hydrology Branch and the Planning Services Branch of Alberta Environment using the following procedure.

Licencing files provided by the Water Rights Branch of Alberta Environment were reviewed to determine which licences were located within the effective drainage area of the Battle River basin. Water licences within the effective drainage area were then categorized according to their specified purposes into one of the following groups:

a) Stockwatering
b) Agricultural: Irrigation
c) Agricultural: Ducks Unlimited Projects
d) Fish Ponds
e) Urban Water Supply
f) Injection
g) Wildfowl Propogation
h) Community Water Supply
i) Cooling: APL Reservoir
j) Washing Operations
k) Flow Control: Coal Lake
l) Miscellaneous
m) Flood Control

Since there is a lack of information on project operation and on the variability in the monthly and annual consumption of individual licenced uses, and since the licenced amount does not necessarily represent the actual amount that it consumed each year, the following assumptions were made in order to assess the quantity and time of diversion for each of the above groups.

a) Stockwatering

Consumptive use was assumed to be 100% of the allocated amount. This amount was assumed to be diverted and effectively lost from the system during the month of April.

b) Agricultural: Irrigation

Irrigation areas were assumed to have an annual crop water requirement of two acre-feet/acre of irrigation (24 inches). The monthly crop requirements were assumed to be as follows:

May	2.64 inches	11%
June	6.24 inches	26%
July	7.68 inches	32%
Aug.	5.04 inches	21%
Sept.	2.40 inches	10%

Diversion and consumptive use for irrigation was then assumed to occur during months for which the crop requirements exceeded the monthly precipitation. The quantity diverted was assumed equal to the irrigated area multiplied by the difference between the monthly crop requirements and monthly precipitation. Monthly precipitation for areas upstream of Forestburg was assumed equal to monthly precipitation for Wetaskiwin (Table B-2) while monthly precipitation for Stettler (Table B-3) was assumed representative of areas downstream of Forestburg.

c) Agricultural: Ducks Unlimited Projects

Licenced uses within this category consisted of 17 Ducks Unlimited backflood irrigation projects most of which are located in the Ribstone Creek basin. While details as to the operation of individual projects are not available, their general opera-

tion consists of storing water during the spring runoff period (March, April) and releasing all storage in June. The number of structures operated during any one year is not constant but rather, is directly related to the spring runoff during that year.

Based on information received from Ducks Unlimited it was assumed that 50% of the total Water Rights Allocation for this category was withdrawn in March, 50% was withdrawn in April, and 100% was returned in June.

The above assumption does not consider evaporative and infiltration losses. These losses, however, are estimated at 530 ac.ft. (3.8% of total consumption in the Battle River Basin) during years when all reservoirs are being operated and substantially less during years of average or below average spring runoff.

d) Fish Ponds

Based on information in Water Rights files and on information provided by Fish and Wildlife, it was assumed that the allocated amount was diverted and held as dead storage in the first year of operation. In subsequent years, only annual evaporation losses (assumed at 12 inches) were replenished.

e) Urban Water Supply

Monthly consumptive uses for this category were determined on the basis of water use returns submitted annually by the municipalities to Water Rights Branch as well as on Municipal Water Use Questionnaires carried out by Planning Division of Alberta Environment in 1976 and updated in 1979.

f) Injection

Consumptive uses in this category were computed on the basis of monthly water use returns submitted by the licencee to the Engergy Resources Conservation Board and filed in the Oil and Gas Water Use Drainage Area Codes (OGWU DAC). Since the OGWA DAC extend only as far back as 1973, consumptive uses of individual licences for years prior to 1973 were assumed equal to the average consumption of the known years (1973 to 1980).

g) Wildfowl Propogation

Consumptive uses for this category were assumed equal to 100% of the allocated amount. This amount was assumed to be diverted and effectively lost from the system during the spring runoff period - April.

h) Community Water Supply

This category refers to water diverted to service the Canadian Forces Base at Camp Wainwright. Based on information provided by the Base

(Sgt. Holesworth) it was determined that diversion had been occurring since 1955. From 1955 to 1975 water was diverted from the Battle River to Betty Lake, effluent was released to Bushyhead Lake which had no outlet. The amount diverted during the time period was, therefore, totally consumed. In 1975 an outlet system was constructed from Bushyhead Lake to the Battle River. Consumptive uses for 1975 to 1979 were assumed equal to the amount diverted less releases from Bushyhead Lake. Diversions from the Battle River and releases from Bushyhead Lake were provided by the Base (Sgt. Holesworth).

i) Cooling: Alberta Power Reservoir

Consumptive uses from the Alberta Power Reservoir were assumed equal to the change in storage of the reservoir plus the net natural and induced evaporation from the pond. Reservoir elevations used to compute the change in storage were provided by Alberta Power Limited. Monthly precipitation and Morton estimates of evaporation used to compute the net natural evaporation are presented in Appendix B Tables B-1 to B-3. Monthly values of induced evaporation were provided by Alberta Power Limited for the 1972 to 1979 period. On the basis of the 1972 to 1979 data a relation was established for annual induced evaporation as a

function of annual energy production. The computed annual induced evaporation for years prior to 1972 was then assumed to be distributed on a monthly basis in the same fashion as the average for the 1972 to 1979 period.

j) Washing Operations

Based on information in the Water Rights files, the consumptive use for this category was estimated to be approximately 30% of the allocated amount. The 30% consumptive use was assumed equally distributed over the May to October period unless, the files listed a different period of operation.

k) Flow Control: Coal Lake Reservoir

Consumptive uses for Coal Lake Reservoir were assumed equal to the recorded flows for Pipestone Creek near Wetaskiwin (05FA012) adjusted by the ratio of effective drainage area of Pipestone Creek at its confluence with Coal Lake and at the gauging site minus releases from Coal Lake.

l) Miscellaneous

This category refers to a licence (#12128) issued for the purpose of leaching underground caverns. Consumptive use for this category was assumed at 100% of allocated amount since it is essentially an injection type of operation.

m) Flood Control

Consumptive uses for this category were assumed as negligible since losses are essentially the same as for normal river flow.

Consumptive uses for the Saskatchewan portion of the Battle River basin were supplied by Water Rights Branch of Saskatchewan Environment and are listed in Appendix A Table A-2. The time distribution of all water uses in Saskatchewan was assumed to be; 50% in April, 35% in May, 10% in June, and 5% between July and October.

4.3 Period of Operation

Based on discussions with Planning Services Branch of Alberta Environment, the period of operation for projects in all categories was assumed to commence on the year of interim licencing. The period of operation from all categories was assumed to end on the date of cancellation. The period of operation for the individual projects within the Alberta portion of the Battle River are provided in Table A-1.

4.4 Time of Travel Adjustments

Due to the relative lack of hydrometric data for the Battle River and its tributaries, travel times could only be computed for specific points along the main stem of the Battle River. The Battle River was therefore assumed to consist of five nodes. All water uses between any two nodes

were assumed to take place at the downstream node. The five nodes and the travel times between these nodes are as follows:

Node Number	Location	Travel Time (days)
1	Battle River near Ponoka	6
2	Battle River near Gwynne	6
3	Battle River near Forestburg	7
4	Battle River near Unwin	4
5	Battle River at Battleford	

The above times are assumed constant for all levels of flow.

Based on items 4.1 to 4.4, historical water uses (J-File) for the Battle River near Forestburg, Unwin and Battleford were computed using the following equation:

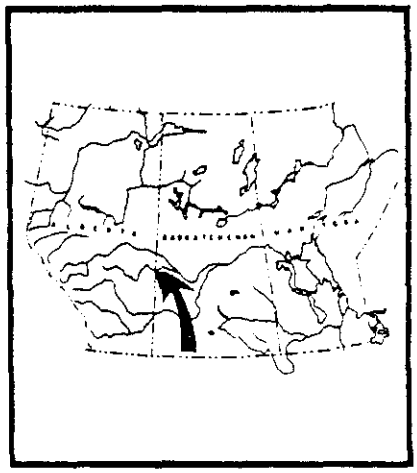
$$J(i,t) = Q(i,t) + qQ(i-1,t-1) + (1-q)Q(i-1,t) + q_1Q(i-2,t-1) + (1-q_1)Q(i-2,t) + \ldots$$

Where $J(i,t)$ = The adjustment which must be added to the recorded flow at node 'i' for month 't' to reconstruct the natural flow at node 'i'.

$Q(i,t)$ = The adjustment due to water uses between nodes 'i' and'i-1' for time 't'.

q = A travel time adjustment as a fraction of a month. Travel time from the upstream node to node 'i' divided by the number of days in month 't'.

The resulting listing of adjustment items (J-Files) for the Battle River near Ponoka, Forestburg, Unwin, and Battleford are presented in Appendix D, Tables D-1 to D-4 respectively and are designated by a "J" preceeding the station number.



NATURAL FLOW CALCULATIONS

5.1 Introduction

Natural flow is that quantity of water which would have been recorded under natural conditions, that is, prior to the effects of human interference. The project depletion method was used in this study to derive an estimate of natural flows.

In the process monthly natural flow arrays covering the extended 1912 to 1979 period were developed for the hydrometric gauging stations Battle River near Ponoka (05FA001) and Battle River near Unwin (05FE001).

5.2 Data Available

Hydrometric records were available for the gauging stations Battle River near Ponoka (05FA001) for the period 1913 to 1932 and 1966 to 1979, Battle River near Forestburg (05FC001) for the period 1966 to 1979, Battle River near Unwin (05FC001) for the period 1944 to 1979 and Battle River at Battleford (05FF001) for the period 1912 to 1932, 1935,

1936, and 1967 to 1979. The arrays of monthly recorded flows (A-Files) for these sites are presented in Appendix C, Tables C-1 to C-4.

5.3 Natural Flows

Historic uses (J-Files generated in section 4.0) in the Battle River basin upstream of each of the gauging stations were added to the respective recorded monthly flows (A-Files) to create an array of monthly natural flows (B-Files) for each of the four sites. The resulting arrays of monthly natural flows are presented in Appendix E, Tables E-1 to E-4.

5.4 Regression Techniques

Monthly natural flows for periods of missing records for the Battle River near Ponoka and for the Battle River near Unwin were to be estimated by regression analysis using natural flow arrays from gauging stations within the Battle River Basin. However, no combination of stations in the Battle River basin could be found which covered the entire study period. In this regard, it was necessary to introduce the following stations, which are outside the Battle River basin, into the analysis:

i) Sturgeon River near Fort Saskatchewan (05EA001)
ii) Red Deer River at Red Deer (05CC002)
iii) North Saskatchewan River at Edmonton (05DF001)
iv) North Saskatchewan River at Prince Albert (05GG001)
v) Blindman River near Blackfalds (05CC001)

The North Saskatchewan River has been regulated since October 1961. Removal of the effect of regulation for the North Saskatchewan River at Edmonton and Prince Albert was carried out by adding the change in storage for the Bighorn and Brazeau Reservoirs (Appendix D, Tables D-5 and D-6) directly to the recorded flows at Edmonton; the changes in storage were lagged by a factor of 0.23 to account for travel times prior to being added to the recorded flows at Prince Albert. Natural flow arrays (B-Files) for the North Saskatchewan River as well as for other stations used in the analysis are presented in Appendix E.

Licenced uses within the Blindman River basin are negligible. Recorded flows for the Blindman River near Blackfalds (05CC001) were, therefore, assumed to be equal to the natural flows and are presented in Appendix E, Table E-9.

B-Files for the Battle River near Ponoka and near Unwin were then correlated to the B-Files of all combinations of the other stations using a stepwise logarithmic linear regression. Missing hydrometric records were then estimated by assigning priorities to the resulting regression equations. The highest priority was given to the regression equation which gave the best estimate based on the adjusted (to account for the degrees of freedom) standard error of estimate and the adjusted coefficient of correlation. The regression equation which gave the best estimate of monthly streamflow, based on these two parameters, was assigned

priority No. 1 and was used to estimate as many missing values as possible. The regression equation assigned priority No. 2 was then used to estimate values which had not been filled in by the first priority and so on. The regression results are presented in Appendix F in a supplementary table opposite the corresponding natural flow arrays for the 1912 to 1979 period.

5.5 Natural Flows at Project Sites

Natural flows for the Battle River at the Alberta-Saskatchewan boundary were based entirely on natural flow data derived for the Battle River at Unwin. The transfer of the natural flow array from Unwin to the interprovincial boundary was carried out by multiplying the monthly natural flows at Unwin by the ratio of the effective drainage area at the interprovincial boundary to the effective drainage area at Unwin. Similarly, the natural flows for the Coal Lake local area were estimated by multiplying the natural flows for the Battle River at Ponoka (C05FA001) by the ratio of the respective effective drainage areas. Natural flows for Pipestone Creek were computed by multiplying the extended flows for the Battle River near Ponoka (C05FA001) by .5964, the ratio of the recorded flows at the two sites. The natural flows at these latter sites were used in the apportionment section of the study. The results are presented in Appendix G, Tables G-1 to G-3.

PRESENT USE (1979) FLOW CALCULATIONS

This section describes the effect of the present level of water use on the historical natural flows. This was done by assuming that the present uses have existed since 1912 and by super-imposing those uses on the calculated natural flows for the period 1912 to 1979.

6.1 Calculation of Uses

Monthly arrays of uses were created for the following: 1) for all minor users upstream of the interprovincial border assuming the user demand to be constant and at its present (1979) level, 2) for evaporation from Coal Lake Reservoir assuming the lake had a constant surface area of 2,740 acres (surface area at FSL) and 3) for evaporation from the Alberta Power Reservoir assuming a constant surface area of 700 acres (average surface area).

An array of monthly demands from minor users at their present level of consumption (as described in Section 4.0) is presented in Appendix H Table H-3.

Coal Lake initially had a contributing drainage area of approximately 67.3 square miles and an average surface area of approximately 2,200 acres. In August of 1973 a dam was constructed to create the Coal Lake Reservoir. The construction of the dam increased the surface area of the lake to a full supply level (FSL) surface area of approximately 2,740 acres. Since the median annual runoff from this region is significantly lower than the mean annual runoff, the runoff from the initial drainage area of Coal Lake cannot, during most years, offset the evaporation from the initial lake surface area. Consequently, during most years the inflow from Pipestone Creek has to offset evaporation losses from an area much larger than that of the incremental lake surface area created by the dam. In addition spills from the reservoir do not take place unless the reservoir is above FSL. In view of the above, it has been assumed that evaporation losses and licenced consumptive uses from Coal Lake are replenished first by the runoff from the Coal Lake local drainage area and then by the inflow from Pipestone Creek. Any remaining deficits are carried over and added on to the next month's deficit or until such time as the reservoir reaches FSL. In addition, since Coal Lake and its contributary drainage area have historically been considered as not contributing to the flow in the Battle River, evaporation losses and licenced consumptive uses replenished by the runoff from the local

drainage area for Coal Lake were not considered as historical uses. Deficits which were replenished by the inflow from Pipestone Creek were treated as historical uses since runoff from this area would have contributed to the flows in the Battle River. An array of the monthly evaporation and consumptive uses from Coal Lake if it had been at its present level of development for the entire study period is presented in Appendix H, Table H-1. An array of evaporation and consumptive uses which were made up by flow from Pipestone Creek and which are considered basin consumptive uses is presented in Table H-4.

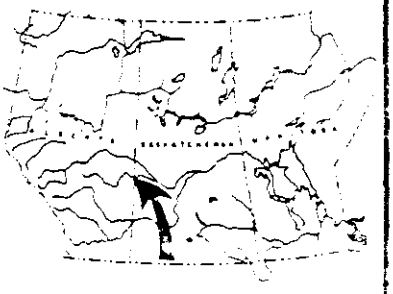
Induced evaporation from the Alberta Power Reservoir was considered equal to the average for the 1977 to 1979 period and is included within the array of minor uses. Natural evaporation was assumed to be equal to the evaporation for Lacombe (Table B-1) less the precipitation for Stettler (Table B-3) assuming a constant lake surface area of 700 acres. An array of the water uses due to natural evaporation which would have been experienced if the reservoir had been in operation for the entire study period is presented in Appendix H, Table H-2.

The total present (1979) level of water use which would have been experienced at the Alberta-Saskatchewan boundary is presented in Appendix H, Table H-5.

6.2 Comparison to Apportionment Principle

An analysis was made to determine if Alberta would have exceeded its 50% share of the natural flow of the Battle River at the interprovincial boundary, under the 1969 Master Agreement on Apportionment, in the period 1912 to 1979 if the present level of use had been in effect.

An array of one-half the natural flow at the interprovincial boundary plus the array of the total water uses at the present level of consumption (Table H-5) were then subtracted from the array of natural flows for the Battle River at the Alberta-Saskatchewan boundary (Table G-1). The results are presented in Appendix I, Table I-1. It should be emphasized that for periods when the consumptive use exceeded the natural flow, the deficit was assumed to be one-half of the natural flow. Within Table I-1, negative values indicate periods when water use in Alberta would have exceeded Alberta's 50% share of the natural flow at the interprovincial boundary. Positive values indicate periods when Saskatchewan would have received more than its 50% share under the apportionment agreement.



CONCLUSIONS

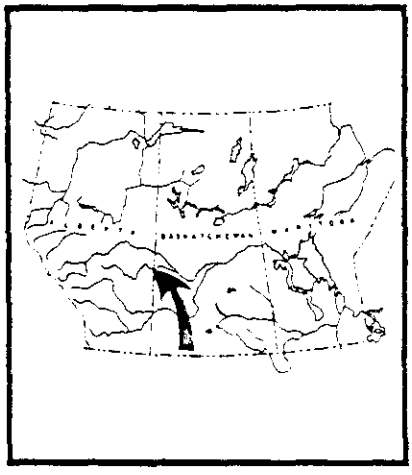
The 13,900 acre-feet of water presently (1979) used in the Battle River basin to the Alberta-Saskatchewan boundary in an average year represents 6.1% of the average annual natural flow of the Battle River at the Alberta-Saskatchewan boundary. At the present level of use there would not have been any years, of the 68 years studied, in which less than 50% of natural flow would have been passed to Saskatchewan. It is of interest to note that the average annual quantity delivered to Saskatchewan in excess of 50% of natural flow during that sixty-eight year period was 101,000 acre-feet. The minimum surplus passed during any one year would have been 3,900 acre-feet in 1941.

Monthly records for Battle River near Unwin have provided an adequate representation of flow at the Alberta-Saskatchewan boundary for historic purposes. This station was relocated in 1980 (Battle River near the Alberta-Saskatchewan Boundary - 05FE004). The new location of this

station will provide a technically more accurate point flow estimate for apportionment purposes but will not change or modify the results of this natural flow study.

If consumptive uses for the Alberta portion of the Battle River are required to be calculated on a continuing basis, five existing hydrometric stations should be operated continuously. They are:

1. Battle River near the Alberta-Saskatchewan Boundary 05FE004
2. Battle River near Ponoka 05FA001
3. Pipestone Creek near Wetaskiwin 05FA012
4. Coal Lake Reservoir near Wetaskiwin 05FA016
5. Alberta Power Reservoir (Recorder operated by Alberta Power).



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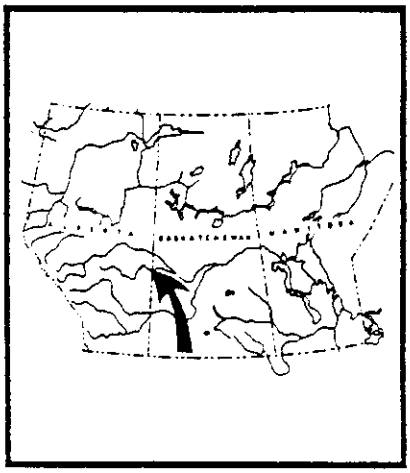

APPENDIX A

BATTLE RIVER BASIN WATER USES FOR ALBERTA - SASKATCHEWAN

TABLE A-1

BATTLE RIVER BASIN - ALBERTA WATER USES

FILE #	LEGAL LOCATION	PROJECT STATUS	DATE AUTHORIZED	PURPOSE	IRRIGATED AREA (ACRES)	LICENSED ALLOCATION (AC-FT)	ESTIMATED USE (AC-FT)	ACTUAL USE (AC-FT)
UPSTREAM OF PONOKA								
18201	NE35-43-27-4	AUTH	1978	AGR.	3.5	120	7	
10773	NW11-45-28-4	AUTH	1962	F. P.		75	23	
31217	NW35-42-26-4	-	-	WASH.		-		
17533	SE34-42-26-4	AUTH	1976	"		100	30	
15588	NE26-41-26-4	-	-	WF. PR.		45	45	
10738	NE23-41-27-4	LIC	1962	STOCK.		2	2	
11194	NW24-43-28-4	LIC	1963	"		2	2	
11323	SW03-43-28-4	LIC	1963	"		2	2	
11472	SW16-40-26-4	LIC	1963	"		4	4	
11680	NE34-44-01-5	LIC	1964	"		2	2	
11719	NW04-45-01-5	LIC	1964	"		1	1	
11781	SW25-43-28-4	LIC	1965	"		3	3	
11985	NW12-44-01-5	LIC	1965	"		2	2	
10710	SW21-40-27-4	LIC	1966	"		8	8	
12011	SE02-44-01-5	LIC	1966	"		8	8	
12251	NE04-45-01-5	LIC	1967	"		2	2	
12416	SE35-40-27-4	LIC	1968	"		3	3	
12309	SE22-45-28-4	LIC	1968	"		4	4	
12398	NW31-44-01-5	LIC	1968	"		3	3	
12415	SE34-40-27-4	LIC	1968	"		2	2	
12577	SE36-44-01-5	LIC	1969	"		2	2	
13191	SW26-45-02-5	AUTH	1970	"		2	2	
12078	NE15-40-27-4	LIC	1970	F. C.		600	NIL	
13192	NE27-45-02-5	LIC	1971	STOCK.		17	17	
15154	SE20-44-01-5	AUTH	1973	"		5	5	

AGR. - Agricultural
COOL. - Cooling APL
D. U. - Ducks unlimited
F. C. - Flow control
F. P. - Fish ponds
INJ. - Injection
MISC. - Miscellaneous
MUN. - Municipal
PROC. - Processing APL
REC. - Recreation
STOCK. - Stockwatering
WASH. - Washing
WF. PR. - Wildfowl propagation

TABLE A-1 CONTINUED

BATTLE RIVER BASIN - ALBERTA WATER USES

FILE #	LEGAL LOCATION	PROJECT STATUS	DATE AUTHORIZED	PURPOSE	IRRIGATED AREA (ACRES)	LICENSED ALLOCATION (AC-FT)	ESTIMATED USE (AC-FT)	ACTUAL USE (AC-FT)
15514	SE30-44-27-4	LIC	1973	STOCK.		3	3	
15632	NW34-43-26-4	LIC	1973	"		2	2	
16714	NW22-43-28-4	AUTH	1974	"		4	4	
16701	SW16-44-01-5	LIC	1974	"		2	2	
16700	NE01-44-01-5	LIC	1974	"		2	2	
15609	NE34-44-28-4	LIC	1976	"		3	3	
12534	SE30-43-27-4	LIC	1976	"		2	2	
18163	NW28-45-01-5	LIC	1977	"		2	2	
18260	SW11-46-02-5	LIC	1977	"		2	2	
18385	NW36-44-01-5	LIC	1978	"		2	2	
18624	SE11-45-28-4	LIC	1978	"		4	4	
18623	SW08-43-26-4	LIC	1978	"		2	2	
13116	NW07-42-27-4	LIC	1978	"		2	2	
19623	NW17-44-01-5	LIC	1980	"		2	2	
19614	SW04-45-01-5	AUTH	1980	"		1	1	

TABLE A-1 CONTINUED

BATTLE RIVER BASIN - ALBERTA WATER USES

FILE #	LEGAL LOCATION	PROJECT STATUS	DATE AUTHORIZED	PURPOSE	IRRIGATED AREA (ACRES)	LICENSED ALLOCATION (AC-FT)	ESTIMATED USE (AC-FT)	ACTUAL USE (AC-FT)
BETWEEN GWYNNE AND PONOKA								
12966	NE31-45-22-4	LIC	1970	AGR.	54.5	23		
12966	NE31-45-22-4	LIC	1971	"	54.5	46		
17369	SE08-47-26-4	LIC	1976	"	64.8	54		
9999	SW12-44-26-4	LIC	1959	F. P.		40	13	
19883	NW21-43-23-4	AUTH	1980	WF. PR.		NIL	NIL	
3670	NE28-46-26-4	LIC	1937	STOCK.	61.6	1	1	
8504	NE31-45-23-4	LIC	1959	"		10	10	
12278	NW14-47-26-4	LIC	1970	"		5	5	
14914	NW12-43-24-4	AUTH	1973	"		3	3	
15620	SW34-46-23-4	AUTH	1973	"		2	2	
COAL LAKE								
17577	NE02-47-23-4	LIC	1976	AGR.	290.0	290		
10670	SW07-47-23-4	LIC	1970	MUN.		500		269
PIPESTONE CREEK								
14364	NW21-47-24-4	LIC	1972	AGR.	3.5	6		
14949	NE26-46-23-4	LIC	1978	F. C.		510		

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MISC. - Miscellaneous
MUN. - Municipal
PRDC. - Processing APL
REC. - Recreation
STOCK. - Stockwatering
WASH. - Washing
WF. PR. - Wildfowl propagation

TABLE A-1 CONTINUED

BATTLE RIVER BASIN - ALBERTA WATER USES

FILE #	LEGAL LOCATION	PROJECT STATUS	DATE AUTHORIZED	PURPOSE	IRRIGATED AREA (ACRES)	LICENSED ALLOCATION (AC-FT)	ESTIMATED USE (AC-FT)	ACTUAL USE (AC-FT)
BETWEEN FORESTBURG AND GWYNNE								
12194	SW15-45-19-4	LIC	1967	AGR.	65.4	40		64
12015	SE05-46-20-4	LIC	1965	INJ.		500		291
1989	SW24-45-20-4	LIC	1969	MUN.		1000		
1989	SW24-45-20-4	LIC	1978	"		700		
17356	SW34-45-20-4	LIC	1975	WASH.		40	12	
17532	SW34-45-20-4	AUTH	1976	"		70	21	
17356	SW33-45-20-4	AUTH	1976	"		70	21	
17653	SW26-45-20-4	AUTH	1979	"		133	40	
1989	NW34-46-20-4	LIC	1929	WF. PR.		150	150	
14261	NE02-44-18-4	AUTH	1961	"		100	100	
14276	SW28-45-19-4	AUTH	1970	"		50	50	
14278	NE24-46-19-4	AUTH	1970	"		6	6	
11624	SE18-44-18-4	LIC	1964	STOCK.		5	5	
11768	NE15-43-17-4	LIC	1964	"		2	2	
12002	NE25-42-18-4	AUTH	1965	"		1	1	
12383	SW07-42-17-4	LIC	1968	"		12	12	
7925	SE20-46-20-4	LIC	1974	"		3	3	

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WASH. - Washing
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TABLE A-1 CONTINUED

BATTLE RIVER BASIN - ALBERTA WATER USES

FILE #	LEGAL LOCATION	PROJECT STATUS	DATE AUTHORIZED	PURPOSE	IRRIGATED AREA (ACRES)	LICENSED ALLOCATION (AC-FT)	ESTIMATED USE (AC-FT)	ACTUAL USE (AC-FT)
BETWEEN ALTA-SASK BORDER AND FORESTBURG								
11228	SW14-47-04-4	AUTH	1933	STOCK.		4	4	
3187	SW05-39-14-4	LIC	1937	"		30	30	
3575	NE33-37-12-4	AUTH	1937	"		4	4	
3405	SW30-36-10-4	AUTH	1937	"		6	6	
2623	NW12-44-13-4	LIC	1937	"		20	20	
4201	SW26-39-13-4	LIC	1938	"		10	10	
3776	SW28-40-14-4	LIC	1938	"		4	4	
3777	SE32-40-14-4	LIC	1938	"		8	8	
4116	SW20-37-12-4	LIC	1938	"		6	6	
3287	SE09-37-10-4	LIC	1938	"		10	10	
3843	SW36-36-09-4	AUTH	1938	"		8	8	
3850	NW20-37-09-4	LIC	1938	"		1	1	
3963	SW01-37-09-4	LIC	1938	"		1	1	
5051	NE33-39-18-4	LIC	1939	"		2	2	
5032	NW08-42-12-4	LIC	1939	"		4	4	
4538	SW02-38-13-4	AUTH	1939	"		2	2	
4637	NW14-38-14-4	LIC	1939	"		2	2	
4691	SW22-38-14-4	AUTH	1939	"		1	1	
4804	SW36-39-14-4	AUTH	1939	"		5	5	
4855	NE23-39-13-4	AUTH	1939	"		3	3	
5303	NW10-40-15-4	LIC	1939	"		5	5	
4634	SE08-39-14-4	AUTH	1939	"		3	3	
4694	SE06-39-14-4	AUTH	1939	"		5	5	
4279	SW21-39-13-4	LIC	1939	"		5	5	
4398	NW28-39-13-4	LIC	1939	"		3	3	

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PROC. - Processing APL
REC. - Recreation
STOCK. - Stockwatering
WASH. - Washing
WF. PR. - Wildfowl propagation

NOTE: Irrigated areas followed by an "A" are an average of all the data available

TABLE A-1 CONTINUED

BATTLE RIVER BASIN - ALBERTA WATER USES

FILE #	LEGAL LOCATION	PROJECT STATUS	DATE AUTHORIZED	PURPOSE	IRRIGATED AREA (ACRES)	LICENSED ALLOCATION (AC-FT)	ESTIMATED USE (AC-FT)	ACTUAL USE (AC-FT)
4416	SE31-39-13-4	LIC	1939	STOCK.		5	5	
5560	SW31-44-01-4	AUTH	1939	"		1	1	
4567	NE18-38-10-4	AUTH	1939	"		10	10	
5063	SW13-38-09-4	LIC	1939	"		10	10	
5231	NW06-41-05-4	AUTH	1940	"		10	10	
5031	SE07-42-12-4	AUTH	1940	"		2	2	
4709	NW35-37-14-4	AUTH	1940	"		3	3	
5275	NE04-38-14-4	AUTH	1940	"		2	2	
5474	SW04-42-09-4	AUTH	1940	"		2	2	
3417	NE17-39-14-4	AUTH	1940	"		4	4	
4717	NW13-38-14-4	LIC	1940	"		2	2	
5649	SW16-37-13-4	LIC	1940	"		8	8	
5548	NE30-40-13-4	AUTH	1940	"		3	3	
5603	SE16-46-02-4	AUTH	1940	"		10	10	
5642	SW22-46-02-4	AUTH	1940	"		3	3	
5491	NW15-36-11-4	LIC	1940	"		8	8	
5274	NW36-39-14-4	LIC	1941	"		7	7	
5924	NW35-37-13-4	AUTH	1941	"		4	4	
5597	SW30-45-01-4	AUTH	1941	"		4	4	
5856	SE17-46-02-4	AUTH	1941	"		3	3	
6382	SW29-39-13-4	AUTH	1942	"		2	2	
5865	SE07-39-13-4	AUTH	1942	"		10	10	
6317	NE13-39-14-4	LIC	1942	"		2	2	
5779	NE05-40-15-4	LIC	1942	"		11	11	
5584	SE03-47-02-4	LIC	1942	"		2	2	

TABLE A-1 CONTINUED

BATTLE RIVER BASIN - ALBERTA WATER USES

FILE #	LEGAL LOCATION	PROJECT STATUS	DATE AUTHORIZED	PURPOSE	IRRIGATED AREA (ACRES)	LICENSED ALLOCATION (AC-FT)	ESTIMATED USE (AC-FT)	ACTUAL USE (AC-FT)
6626	SE25-45-14-4	AUTH	1943	STOCK.		3	3	
6425	NW12-39-14-4	LIC	1943	"		2	2	
6529	SE16-38-12-4	AUTH	1943	"		2	2	
6302	NE21-36-13-4	LIC	1943	"		10	10	
6552	SW03-50-05-4	AUTH	1943	"		4	4	
7061	NW11-38-14-4	LIC	1944	"		2	2	
6696	SE16-39-15-4	LIC	1944	"		5	5	
7052	SE34-37-14-4	AUTH	1944	"		2	2	
7026	SE08-46-14-4	LIC	1945	"		2	2	
7058	NW28-37-13-4	LIC	1945	"		3	3	
7063	NW10-38-13-4	LIC	1945	"		1	1	
6259	NW22-37-13-4	LIC	1945	"		3	3	
4826	NE24-37-13-4	LIC	1945	"		5	5	
6883	NW25-38-16-4	LIC	1945	"		6	6	
7123	SW27-36-13-4	LIC	1945	"		10	10	
7056	NE31-38-14-4	LIC	1945	"		3	3	
7438	NW36-38-07-4	AUTH	1945	"		3	3	
5643	NE20-47-01-4	AUTH	1946	"		4	4	
7579	NW29-38-15-4	LIC	1946	"		5	5	
7579	NW32-38-15-4	LIC	1946	"		10	10	
7588	SW05-37-13-4	AUTH	1946	"		4	4	
7072	SE24-38-14-4	LIC	1946	"		3	3	
7694	NE28-39-14-4	LIC	1946	"		1	1	
7700	NW09-38-13-4	LIC	1946	"		12	12	
7714	SE32-37-12-4	LIC	1946	"		6	6	

TABLE A-1 CONTINUED

BATTLE RIVER BASIN - ALBERTA WATER USES

FILE #	LEGAL LOCATION	PROJECT STATUS	DATE AUTHORIZED	PURPOSE	IRRIGATED AREA (ACRES)	LICENSED ALLOCATION (AC-FT)	ESTIMATED USE (AC-FT)	ACTUAL USE (AC-FT)
7678	SE03-39-15-4	LIC	1946	STOCK.		4	4	
7150	NE17-38-13-4	LIC	1946	"		3	3	
6578	SE26-37-13-4	LIC	1946	"		5	5	
7264	NE32-37-13-4	LIC	1947	"		5	5	
7817	NE17-37-12-4	LIC	1947	"		1	1	
7924	NW28-37-12-4	LIC	1947	"		2	2	
7931	SW21-37-12-4	LIC	1947	"		2	2	
7921	SW33-46-02-4	AUTH	1947	"		50	50	
7808	NW18-46-02-4	AUTH	1947	"		15	15	
7923	NW24-43-02-4	LIC	1947	"		2	2	
8042	SE35-36-10-4	LIC	1947	"		9	9	
8043	NE06-37-09-4	LIC	1947	"		9	9	
7416	NE31-38-11-4	LIC	1948	"		4	4	
7980	SE16-40-13-4	LIC	1948	"		5	5	
7960	SW14-39-16-4	LIC	1948	"		10	10	
7906	SE24-41-04-4	LIC	1948	"		2	2	
7890	NE17-37-10-4	LIC	1948	"		3	3	
5329	SW19-36-08-4	LIC	1948	"		10	10	
8057	SE21-36-10-4	LIC	1948	"		5	5	
8059	SE26-36-11-4	LIC	1948	"		3	3	
8348	SW02-40-14-4	LIC	1949	"		5	5	
7855	SW15-38-13-4	LIC	1949	"		5	5	
8099	NW06-38-12-4	LIC	1949	"		7	7	
8281	NE35-39-11-4	AUTH	1950	"		20	20	
8454	NW33-39-15-4	LIC	1950	"		2	2	

TABLE A-1 CONTINUED

BATTLE RIVER BASIN - ALBERTA WATER USES

FILE #	LEGAL LOCATION	PROJECT STATUS	DATE AUTHORIZED	PURPOSE	IRRIGATED AREA (ACRES)	LICENSED ALLOCATION (AC-FT)	ESTIMATED USE (AC-FT)	ACTUAL USE (AC-FT)
8656	SE10-38-13-4	AUTH	1950	STOCK.		1	1	
8604	NE07-39-14-4	AUTH	1950	"		3	3	
8755	SE33-39-13-4	AUTH	1950	"		10	10	
7813	NE19-40-03-4	AUTH	1950	"		4	4	
8612	NW11-48-05-4	AUTH	1950	"		10	10	
8614	SW19-48-04-4	AUTH	1950	"		34	34	
8064	SE34-37-13-4	LIC	1950	"		1	1	
8289	SE09-37-13-4	AUTH	1950	"		3	3	
8308	NE14-37-12-4	LIC	1951	"		12	12	
8611	NW02-48-05-4	LIC	1951	"		2	2	
8613	SE05-48-05-4	AUTH	1951	"		5	5	
8031	SW16-39-15-4	LIC	1951	"		5	5	
9005	NW02-45-08-4	LIC	1952	MUN.		4069	319	
14020	SE25-47-15-4	AUTH	1953	STOCK.		58	58	
9199	SE09-38-13-4	LIC	1953	"		4	4	
8986	SW28-36-13-4	AUTH	1953	"		9	9	
9019	NW12-36-09-4	AUTH	1953	"		42	42	
9128	SE20-37-09-4	LIC	1953	"		2	2	
8945	SE29-38-14-4	LIC	1953	"		3	3	
9181	SW11-42-11-4	AUTH	1955	"		8	8	
9473	SE12-47-01-4	AUTH	1956	"		25	25	
9607	NW12-43-11-4	AUTH	1957	"		5	5	
9726	SE03-37-09-4	LIC	1957	"		5	5	
9755	NE19-39-11-4	LIC	1958	"		8	8	
9821	NE34-37-09-4	LIC	1958	"		5	5	

TABLE A-1 CONTINUED

BATTLE RIVER BASIN - ALBERTA WATER USES

FILE #	LEGAL LOCATION	PROJECT STATUS	DATE AUTHORIZED	PURPOSE	IRRIGATED AREA (ACRES)	LICENSED ALLOCATION (AC-FT)	ESTIMATED USE (AC-FT)	ACTUAL USE (AC-FT)
9838	NE20-38-13-4	LIC	1958	STOCK.		3	3	
10033	SW19-40-15-4	LIC	1959	"		3	3	
16253	SE16-40-13-4	AUTH	1959	"		1	1	
10020	NW09-40-15-4	LIC	1959	"		6	6	
10036	NE06-40-10-4	LIC	1959	"		2	2	
10091	NW21-40-14-4	LIC	1959	"		1	1	
9735	NW07-39-07-4	LIC	1959	"		4	4	
9897	SE02-38-09-4	LIC	1959	"		4	4	
9233	SW17-36-09-4	LIC	1959	"		1	1	
10026	NW28-38-13-4	LIC	1960	"		4	4	
7638	SE33-38-13-4	AUTH	1960	"		8	8	
9844	SE07-48-05-4	AUTH	1960	"		4	4	
9896	SE20-49-07-4	LIC	1960	"		2	2	
9837	NW16-37-12-4	LIC	1960	"		15	15	
10028	NW34-39-13-4	LIC	1960	"		2	2	
10030	SE22-40-15-4	LIC	1960	"		1	1	
10224	NE21-43-09-4	AUTH	1960	"		1	1	
10305	SE08-38-14-4	LIC	1960	"		3	3	
9356	NE24-36-09-4	LIC	1960	"		46	46	
9355	SW16-37-09-4	LIC	1960	"		1	1	
9739	NE11-37-10-4	LIC	1960	"		3	3	
10247	NE14-38-09-4	LIC	1960	"		15	15	
6724	SW31-37-08-4	AUTH	1960	"		5	5	
8217	NW07-36-08-4	LIC	1960	"		8	8	
10554	SW13-49-02-4	LIC	1961	"		1	1	

TABLE A-1 CONTINUED

BATTLE RIVER BASIN - ALBERTA WATER USES

FILE #	LEGAL LOCATION	PROJECT STATUS	DATE AUTHORIZED	PURPOSE	IRRIGATED AREA (ACRES)	LICENSED ALLOCATION (AC-FT)	ESTIMATED USE (AC-FT)	ACTUAL USE (AC-FT)
10573	NW04-47-06-4	AUTH	1961	STOCK.		1	1	
10551	NW33-46-05-4	AUTH	1961	"		2	2	
10552	SE32-46-05-4	AUTH	1961	"		1	1	
10560	NE02-47-05-4	AUTH	1961	"		2	2	
10418	NE02-37-09-4	LIC	1961	"		1	1	
10553	SE31-38-06-4	LIC	1961	"		5	5	
3771	NE30-37-11-4	AUTH	1962	"		5	5	
10673	SW34-44-03-4	AUTH	1962	"		10	10	
8100	NW19-37-12-4	LIC	1962	"		8	8	
10651	SW01-40-17-4	LIC	1962	"		4	4	
10672	SE04-38-12-4	LIC	1962	"		10	10	
10697	NE22-37-14-4	AUTH	1962	"		5	5	
10544	NW14-40-06-4	LIC	1962	"		3	3	
10734	NW14-39-15-4	LIC	1962	"		2	2	
10584	SW04-47-06-4	AUTH	1962	"		2	2	
11454	SW05-47-14-4	LIC	1963	"		3	3	
10669	NE08-36-09-4	LIC	1963	"		2	2	
11134	SW26-38-09-4	LIC	1963	"		4	4	
11467	SE11-36-10-4	LIC	1963	"		10	10	
11545	NW07-40-15-4	LIC	1964	"		10	10	
11558	SE35-38-14-4	AUTH	1964	"		15	15	
11767	SW19-46-03-4	LIC	1964	"		1	1	
11309	SW10-40-13-4	AUTH	1964	"		60	60	
11574	NW26-37-13-4	LIC	1965	"		3	3	
12003	SE09-42-16-4	AUTH	1966	"		92	92	

TABLE A-1 CONTINUED

BATTLE RIVER BASIN - ALBERTA WATER USES

FILE #	LEGAL LOCATION	PROJECT STATUS	DATE AUTHORIZED	PURPOSE	IRRIGATED AREA (ACRES)	LICENSED ALLOCATION (AC-FT)	ESTIMATED USE (AC-FT)	ACTUAL USE (AC-FT)
12109	NE15-39-15-4	LIC	1966	STOCK		5	5	
12123	NE34-38-15-4	LIC	1966	"		4	4	
9983	NW01-38-09-4	LIC	1966	"		10	10	
12124	SE32-39-13-4	LIC	1967	"		4	4	
12308	SW23-38-18-4	LIC	1968	"		12	12	
12307	SE12-39-19-4	LIC	1968	"		10	10	
8238	SW09-40-14-4	AUTH	1968	"		42	42	
12380	SW19-39-11-4	LIC	1968	"		12	12	
12678	SW02-40-13-4	LIC	1969	"		8	8	
5745	SE28-39-13-4	LIC	1970	"		2	2	
13284	SW23-39-14-4	LIC	1971	"		2	2	
13296	NW11-38-12-4	LIC	1971	"		58	58	
4116	SW20-37-12-4	LIC	1971	"		8	8	
13331	SE24-38-08-4	LIC	1971	"		8	8	
13957	SE15-38-17-4	LIC	1972	"		8	8	
13958	NE27-37-14-4	LIC	1972	"		2	2	
14396	SW04-38-13-4	LIC	1972	"		10	10	
13318	SW27-39-13-4	AUTH	1972	"		1	1	
13950	SE29-37-09-4	LIC	1972	"		2	2	
13951	SE13-36-10-4	LIC	1972	"		2	2	
13952	SE19-36-09-4	LIC	1972	"		1	1	
13976	SW04-37-10-4	LIC	1972	"		9	9	
9282	NW30-37-16-4	LIC	1975	"		4	4	
6679	SW05-39-16-4	LIC	1975	"		15	15	
9280	SW23-38-17-4	LIC	1975	"		2	2	

TABLE A-1 CONTINUED

BATTLE RIVER BASIN - ALBERTA WATER USES

FILE #	LEGAL LOCATION	PROJECT STATUS	DATE AUTHORIZED	PURPOSE	IRRIGATED AREA (ACRES)	LICENSED ALLOCATION (AC-FT)	ESTIMATED USE (AC-FT)	ACTUAL USE (AC-FT)
7066	NW17-39-14-4	LIC	1975	STOCK.		3	3	
17078	SW22-39-15-4	LIC	1975	"		19	19	
17048	NE04-37-10-4	AUTH	1975	"		11	11	
17165	SW09-39-07-4	AUTH	1975	"		4	4	
17612	SE16-38-14-4	LIC	1976	"		2	2	
9989	SW02-39-15-4	LIC	1977	"		1	1	
18085	SW02-38-09-4	LIC	1977	"		3	3	
11546	NW12-40-17-4	LIC	1978	"		15	15	
18482	NW18-39-13-4	LIC	1978	"		3	3	
18710	NW31-36-09-4	LIC	1978	"		4	4	
19393	SE12-39-19-4	LIC	1979	"		7	7	
19229	SW08-39-07-4	LIC	1979	"		1	1	
19756	SE13-38-14-4	LIC	1980	"		2	2	
19803	NE02-38-09-4	AUTH	1980	"		2	2	
19976	SE15-36-10-4	LIC	1980	"		1	1	
377	SE11-44-13-4	LIC	1917	AGR.	45.0	68		
1419	SE17-43-09-4	AUTH	1922	"	100.0	100		
1766	NW32-38-13-4	LIC	1926	"	86.0	79		
2668	NW32-36-13-4	LIC	1936	"	54.5A	154		
2668	SW32-36-13-4	AUTH	1936	"	154.0	87		
3445	SE33-43-02-4	AUTH	1937	"	75.0	113		
3538	NE01-38-09-4	AUTH	1938	"	18.4	18		
4949	NE28-39-13-4	LIC	1939	"	10.5	11		
5116	SE29-39-13-4	AUTH	1940	"	29.1	15		
4418	NE26-42-03-4	AUTH	1940	"	62.0	62		

TABLE A-1 CONTINUED

BATTLE RIVER BASIN - ALBERTA WATER USES

FILE #	LEGAL LOCATION	PROJECT STATUS	DATE AUTHORIZED	PURPOSE	IRRIGATED AREA (ACRES)	LICENSED ALLOCATION (AC-FT)	ESTIMATED USE (AC-FT)	ACTUAL USE (AC-FT)
5900	NW02-47-01-4	AUTH	1941	AGR.	18.0	25		
4062	SW16-43-09-4	AUTH	1942	"	200.0	200		
8757	SE27-36-11-4	AUTH	1950	"	54.5A	20		
9103	NW06-39-13-4	AUTH	1952	"	12.0	12		
9228	NE01-38-14-4	AUTH	1955	"	73.6	50		
8392	SE15-39-16-4	LIC	1955	"	60.0	60		
9351	NE22-43-14-4	AUTH	1955	"	45.0	45		
10080	SW01-39-07-4	LIC	1959	"	20.0	30		
6724	SW31-37-08-4	AUTH	1960	"	30.0	45		
10579	NW09-40-07-4	AUTH	1961	"	53.5	54		
10539	SW22-43-10-4	AUTH	1961	"	25.6	17		
10577	NW10-45-01-4	AUTH	1961	"	54.5A	14		
8718	NE06-41-03-4	AUTH	1961	"	20.8	20		
9781	SW26-40-06-4	LIC	1961	"	80.0	80		
11293	SE18-40-15-4	LIC	1963	"	9.5	10		
11335	NE27-48-06-4	LIC	1963	"	30.0	30		
10840	NE16-43-10-4	AUTH	1963	"	118.0	65		
10888	SE16-37-14-4	LIC	1963	"	51.0	35		
11848	NW31-42-18-4	AUTH	1965	"	8.5	9		
1583	SE33-43-05-4	AUTH	1967	"	173.0	90		
12149	NE08-40-15-4	LIC	1967	"	30.9	30		
14597	SW02-40-13-4	LIC	1969	"	37.0	35		
12508	SW33-39-14-4	LIC	1969	"	20.7	20		
16250	NE17-37-12-4	LIC	1970	"	54.5A	25		
13194	NW33-40-09-4	AUTH	1970	"	70.0	45		

TABLE A-1 CONTINUED

BATTLE RIVER BASIN - ALBERTA WATER USES

FILE #	LEGAL LOCATION	PROJECT STATUS	DATE AUTHORIZED	PURPOSE	IRRIGATED AREA (ACRES)	LICENSED ALLOCATION (AC-FT)	ESTIMATED USE (AC-FT)	ACTUAL USE (AC-FT)
13439	NE10-40-16-4	LIC	1971	AGR.	54.0	54		
13440	SW22-40-17-4	LIC	1971	"	26.7	29		
13649	NW06-42-09-4	LIC	1971	"	82.3	85		
13576	NW28-38-14-4	LIC	1971		8.8	9		
13694	NW09-44-05-4	AUTH	1972	D. D.	128.0	128		
13695	NW16-44-05-4	AUTH	1972	"	88.0	38		
13696	NE19-44-04-4	AUTH	1972	"	186.0	186		
13697	NW20-44-04-4	AUTH	1972	"	190.0	190		
13701	NW28-43-05-4	AUTH	1972	"	71.0	71		
13961	SW23-39-19-4	LIC	1973	"	43.2	43		
14009	NW13-39-20-4	LIC	1973	"	210.3	53		
13537	NW27-44-05-4	AUTH	1973	"	65.0	65		
13538	SW26-44-05-4	AUTH	1973	"	66.0	66		
1583	SE33-43-05-4	AUTH	1973	"	315.0	315		
13693	SE26-44-05-4	AUTH	1973	"	70.0	70		
13694	SW25-44-05-4	AUTH	1973	"	63.0	63		
13698	NE17-44-04-4	AUTH	1973	"	85.0	85		
13699	SE16-44-04-4	AUTH	1973	"	127.0	127		
13700	NE09-44-04-4	AUTH	1973	"	47.0	47		
13913	SW10-44-04-4	AUTH	1973	"	97.0	97		
13916	NE11-41-06-4	AUTH	1973	"	197.0	197		
13918	NW30-41-05-4	AUTH	1973	"	304.0	300		
13921	SW32-41-05-4	AUTH	1973	"	48.0	48		
13926	SE14-42-06-4	AUTH	1973	"	70.0	70		
13650	SE01-42-10-4	LIC	1973	"	139.0	139		

TABLE A-1 CONTINUED

BATTLE RIVER BASIN - ALBERTA WATER USES

FILE #	LEGAL LOCATION	PROJECT STATUS	DATE AUTHORIZED	PURPOSE	IRRIGATED AREA (ACRES)	LICENSED ALLOCATION (AC-FT)	ESTIMATED USE (AC-FT)	ACTUAL USE (AC-FT)
12507	NW09-40-14-4	AUTH	1973	D. U.	14.0	14		
15472	NE05-37-13-4	AUTH	1973	"	8.1	8		
15431	NE06-38-11-4	AUTH	1973	"	18.5	19		
13695	SE25-44-05-4	AUTH	1974	AGR.+D.U.	78.0	78		
16377	SW31-35-08-4	LIC	1974	"	22.2	17		
16092	NE15-40-18-4	AUTH	1975	"	54.5A	78		
17004	SE10-39-14-4	AUTH	1975	"	6.6	8		
15982	SW31-38-18-4	LIC	1976	"	52.8	94		
15873	SE31-38-18-4	LIC	1976	"	29.3	26		
17018	NE32-37-13-4	AUTH	1976	"	54.5A	13		
17690	NW18-39-16-4	LIC	1976	"	11.1	17		
17881	SE25-36-09-4	LIC	1976	"	54.5A	160		
18018	NE26-39-15-4	LIC	1977	"	54.5A	7		
18160	NE10-40-10-4	LIC	1979	"	28.4	31		
18138	NW28-39-11-4	AUTH	1980	"	60.0	45		
10254	SW36-37-13-4	LIC	1971	MUN.		20	20	
8655	SW02-38-14-4	AUTH	1980	"		200	-	
6012	SW24-36-11-4	AUTH	1978	F. P.		36	36	
13749	SE35-43-05-4	AUTH	1979	"		15	15	
9221	SW28-40-15-4	-	1955	COOL.		370000		
9221	SW28-40-15-4	LIC	-	PROC.		-		
12796	NW06-39-11-4	LIC	1969	INJ.		1200		
12796	NW06-39-11-4	LIC	1972	"		800		
12796	NW06-39-11-4	LIC	1972	"		2000	1222	
12128	SE25-42-10-4	LIC	1966	MISC.		450	378	
16581	SW06-39-19-4	AUTH	1980	REC.		15	-	

TABLE A-2

AUTHORIZED WATER USE IN THE BATTLE RIVER BASIN BETWEEN THE ALBERTA-SASKATCHEWAN BOUNDARY AND THE BATTLE RIVER'S JUNCTION WITH THE NORTH SASKATCHEWAN RIVER.

* Based on Computerized data prepared by the Water Rights Branch of Saskatchewan Environment.

Year	Currently Active Projects (ac.ft.)	Cancelled Projects (ac.ft.)	Total Water Use (ac.ft.)
1912	0	0	0
1913	0	0	0
1914	0	149	149
1915	0	298	298
1916	0	298	298
1917	0	298	298
1918	0	298	298
1919	0	298	298
1920	0	298	298
1921	0	298	298
1922	0	298	298
1923	0	298	298
1924	0	323	323
1925	0	323	323
1926	0	323	323
1927	0	323	323
1928	0	323	323
1929	0	323	323
1930	0	323	323
1931	0	323	323
1932	0	323	323
1933	0	323	323
1934	0	323	323
1935	0	323	323
1936	0	323	323
1937	0	323	323
1938	23	323	346
1939	98	608	706
1940	106	620	726
1941	114	627	741
1942	153	680	833
1943	156	684	840
1944	251	684	935
1945	251	696	947
1946	262	696	958
1947	262	696	958
1948	272	698	970
1949	288	459	747

...../2

TABLE A-2 Concluded

Year	Currently Active Projects (ac.ft.)	Cancelled Projects (ac.ft.)	Total Water Use (ac.ft.)
1950	292	220	512
1951	302	220	522
1952	358	224	582
1953	502	222	724
1954	516	234	750
1955	518	239	757
1956	520	221	741
1957	520	223	743
1958	520	223	743
1959	528	223	751
1960	531	229	760
1961	598	229	827
1962	665	532	1197
1963	710	559	1269
1964	710	565	1275
1965	727	560	1287
1966	864	562	1426
1967	887	532	1419
1968	887	524	1411
1969	896	502	1398
1970	962	488	1450
1971	1015	519	1534
1972	1019	513	1532
1973	1019	331	1350
1974	1698	281	1979
1975	1883	0	1883
1976	1887	0	1887
1977	1891	0	1891
1978	1893	0	1893
1979	1893	0	1893
1980	2026	0	2026
1981	2197	0	2197

APPENDIX B

BATTLE RIVER BASIN PRECIPITATION AND LAKE EVAPORATION

TABLE E-1
MONTHLY GROSS LAKE EVAPORATION AT LACOMBE
(INCHES)

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	%	ANNUAL
1912	-0.12	-0.12	0.0	2.13	4.05	5.51	4.53	3.62	2.20	0.91	0.24	0.0	92	22.96
1913	-0.04	0.12	0.79	2.64	3.90	4.37	5.16	3.90	2.36	0.83	0.16	-0.04	97	24.15
1914	-0.08	0.0	0.87	2.36	4.21	4.13	5.59	4.57	1.93	0.94	0.08	-0.12	98	24.48
1915	-0.08	-0.16	0.94	2.91	3.62	4.17	5.00	5.04	2.72	0.94	0.12	-0.12	101	25.10
1916	-0.08	-0.08	0.87	2.48	3.66	4.69	5.04	3.90	2.13	0.83	0.20	-0.08	94	23.56
1917	-0.08	-0.04	0.91	2.01	3.70	5.16	5.87	4.65	2.36	0.79	0.24	-0.08	102	25.49
1918	-0.08	0.0	1.06	2.95	3.66	4.76	5.51	4.29	2.48	0.94	0.12	-0.12	103	25.57
1919	-0.08	-0.04	0.08	2.60	4.13	5.20	5.31	4.37	2.24	0.63	-0.04	-0.12	97	24.28
1920	-0.08	0.04	0.24	1.34	3.74	4.61	6.06	4.29	2.05	0.94	0.04	-0.08	93	23.19
1921	-0.08	0.12	0.79	2.64	4.21	5.24	5.55	4.02	2.20	0.98	0.04	-0.04	103	25.67
1922	-0.08	-0.08	0.79	2.17	4.06	4.41	5.67	4.13	2.36	0.91	0.20	-0.08	98	24.46
1923	-0.08	0.04	0.67	2.87	4.17	4.65	5.26	4.41	2.76	1.14	0.24	-0.08	105	26.07
1924	-0.08	0.04	0.47	2.32	4.21	5.08	5.47	3.94	2.36	0.94	-0.04	-0.12	99	24.59
1925	-0.08	-0.08	0.71	2.56	4.65	5.16	5.67	4.02	1.85	0.79	0.12	-0.04	102	25.33
1926	-0.04	0.04	1.14	3.07	4.33	4.76	5.91	3.58	1.81	0.63	0.04	-0.12	102	25.35
1927	-0.08	-0.04	0.98	2.48	3.58	4.92	5.47	4.49	2.13	0.87	0.0	-0.08	99	24.72
1928	-0.08	0.16	0.87	1.97	5.08	4.13	5.67	4.29	2.72	0.94	0.16	0.08	104	25.99
1929	-0.08	-0.04	1.14	2.13	3.90	4.76	5.83	4.45	2.05	1.14	0.24	-0.08	102	25.44
1930	-0.08	0.12	1.30	2.36	3.43	3.46	5.71	4.88	2.13	0.87	0.24	-0.08	98	24.34
1931	-0.08	0.28	0.83	2.76	4.13	5.00	5.31	4.41	1.97	1.06	0.35	0.0	104	26.02
1932	-0.04	-0.08	0.12	2.13	4.41	4.72	5.43	4.72	2.56	0.83	0.16	-0.12	100	24.86
1933	-0.08	-0.08	0.59	2.64	3.78	4.41	5.63	4.76	2.13	0.94	0.35	-0.08	100	24.99
1934	-0.04	0.28	0.87	3.19	4.57	3.78	5.43	4.53	1.61	1.06	0.24	-0.12	102	25.40
1935	-0.08	0.20	0.43	2.13	3.90	4.41	5.55	4.09	2.48	0.94	0.0	-0.16	96	23.89
1936	-0.08	-0.04	0.67	2.24	4.37	4.72	5.98	4.29	2.09	0.94	0.31	-0.04	102	25.45
1937	-0.08	0.0	0.98	2.44	4.45	5.04	5.39	4.13	1.10	0.83	0.12	-0.04	98	24.36
1938	-0.08	-0.04	0.98	2.32	4.13	4.84	5.71	3.94	2.87	1.02	0.16	-0.12	103	25.73
1939	-0.08	-0.04	0.75	2.87	4.37	4.02	4.17	5.39	1.73	0.83	0.16	-0.12	96	24.05
1940	-0.16	-0.08	0.55	1.38	4.21	5.12	5.08	5.20	2.32	0.98	-0.04	-0.12	98	24.44
1941	-0.08	-0.12	1.22	3.31	3.62	5.31	6.30	4.33	1.77	0.91	0.28	-0.08	107	26.77
1942	-0.12	-0.16	1.14	2.40	3.94	4.37	5.31	4.45	2.09	0.87	-0.24	-0.20	96	23.85
1943	-0.08	-0.16	0.98	3.23	3.70	4.13	5.91	4.09	2.68	0.94	0.31	-0.16	103	25.57
1944	-0.20	-0.16	0.12	2.91	4.09	4.72	5.28	4.33	2.01	1.22	-0.08	-0.20	96	24.04
1945	-0.16	-0.12	0.94	2.24	4.06	4.69	5.98	4.41	2.01	0.94	-0.20	-0.20	99	24.59
1946	-0.24	-0.16	0.79	2.95	4.06	4.25	5.10	4.37	2.05	0.98	-0.16	-0.20	99	24.79
1947	-0.08	-0.12	0.08	2.46	4.45	4.29	6.50	3.66	2.05	0.87	-0.28	-0.31	95	23.59
1948	-0.08	-0.16	-0.04	0.43	3.98	5.31	5.98	4.45	2.20	1.10	0.20	-0.20	93	23.17
1949	-0.08	-0.08	1.14	2.95	4.17	5.04	5.39	5.08	2.68	0.83	0.35	-0.20	109	27.27
1950	-0.04	-0.16	0.0	2.32	3.86	5.12	5.59	4.17	2.56	0.75	-0.20	-0.24	95	23.73
1951	-0.16	-0.12	-0.04	2.48	4.41	4.41	5.24	3.82	1.97	0.83	-0.12	-0.20	90	22.52
1952	-0.12	-0.20	-0.12	2.91	4.80	4.49	5.43	4.33	2.24	1.14	0.20	-0.20	100	24.90
1953	-0.16	-0.12	0.16	2.01	3.58	4.09	5.43	4.25	2.32	1.14	0.31	0.04	92	23.05
1954	-0.04	0.24	0.20	1.77	3.50	4.25	5.83	3.62	2.13	1.10	0.31	0.0	92	22.91
1955	-0.12	-0.04	0.08	2.13	4.09	6.18	5.16	5.04	2.01	0.98	-0.08	-0.08	102	25.35
1956	-0.08	-0.08	0.20	2.40	5.12	4.72	5.87	4.49	2.17	0.98	0.35	-0.04	105	26.10
1957	-0.08	-0.08	0.63	2.52	4.37	4.25	6.14	3.90	2.40	0.94	0.12	-0.08	100	25.03
1958	-0.04	-0.08	0.04	2.24	5.08	5.24	5.87	5.00	2.36	1.18	0.20	-0.16	108	26.93
1959	-0.04	-0.04	1.42	2.64	4.06	4.76	5.22	3.35	1.85	0.79	0.08	0.04	101	25.13
1960	-0.16	-0.04	0.39	2.83	4.13	4.45	6.02	3.86	2.36	0.91	0.08	-0.16	99	24.67
1961	-0.08	0.04	1.26	2.32	4.17	6.30	5.39	5.00	2.24	0.79	0.28	-0.08	111	27.63
1962	-0.04	-0.08	0.55	2.87	3.94	5.04	5.31	4.17	2.64	0.98	0.24	-0.12	102	25.50
1963	-0.08	0.0	1.22	2.52	4.02	4.92	5.67	4.76	2.68	1.18	0.04	-0.20	107	26.73
1964	-0.12	0.31	0.43	2.52	3.74	4.61	5.71	4.06	1.73	1.06	0.08	-0.04	97	24.09
1965	0.0	0.0	0.16	2.24	3.78	4.49	5.47	4.13	1.57	1.18	-0.16	-0.16	91	22.70
1966	-0.08	-0.08	0.94	2.32	4.96	4.88	5.31	3.74	2.48	0.94	-0.12	-0.20	101	25.09
1967	-0.12	-0.08	0.08	1.97	3.54	5.16	5.79	5.12	3.03	0.87	0.12	-0.12	102	25.36
1968	-0.12	0.08	1.18	2.56	4.57	4.25	5.51	3.86	1.97	0.83	0.16	-0.04	99	24.81
1969	-0.04	-0.08	0.75	2.72	4.49	5.08	5.67	5.00	2.09	0.91	0.24	-0.20	107	26.63
1970	-0.08	0.12	0.67	2.52	4.29	5.63	5.79	4.84	2.40	0.94	0.0	-0.04	109	27.08
1971	0.04	-0.04	0.47	2.80	4.80	4.33	4.09	4.76	2.80	0.91	0.20	-0.04	101	25.12
1972	0.0	0.0	0.94	2.80	4.88	4.76	4.76	5.00	1.46	0.87	0.04	-0.04	102	25.47
1973	-0.04	-0.04	1.06	2.05	4.49	4.61	5.75	4.29	2.20	0.94	-0.16	-0.12	100	25.03
1974	-0.04	0.0	0.12	2.40	3.43	5.87	5.75	3.74	2.05	1.02	0.31	0.0	99	24.65
1975	-0.12	-0.04	0.24	1.85	3.74	4.45	5.43	3.78	2.64	0.87	0.31	-0.08	93	23.07
1976	-0.04	0.16	1.06	2.87	4.41	4.17	5.35	4.17	2.64	0.87	0.31	-0.04	104	25.93
1977	-0.04	0.39	1.34	3.27	3.82	5.91	4.88	3.58	1.85	1.10	0.35	-0.08	106	26.37
1978	-0.08	-0.08	1.14	2.01	4.06	5.39	5.31	4.21	1.69	1.06	0.24	-0.04	100	24.91
1979	0.0	0.0	1.42	2.01	3.66	4.88	5.43	4.45	2.60	0.91	0.31	-0.04	103	25.63
MIN	**-0.24**	**-0.20**	**-0.12**	**0.43**	**3.43**	**3.46**	**4.09**	**3.35**	**1.10**	**0.63**	**-0.28**	**-0.31**		**22.52**
MAX	**0.04**	**0.39**	**1.42**	**3.31**	**5.12**	**6.30**	**6.50**	**5.39**	**3.03**	**1.22**	**0.35**	**0.08**		**27.63**
MEAN	**-0.08**	**-0.01**	**0.67**	**2.44**	**4.12**	**4.77**	**5.53**	**4.32**	**2.21**	**0.94**	**0.12**	**-0.10**	**100**	**24.94**

NOTE - VALUES ESTIMATED BY FI MORTON METHOD

TABLE B-2
MONTHLY PRECIPITATION AT WETASKIWIN
(INCHES)

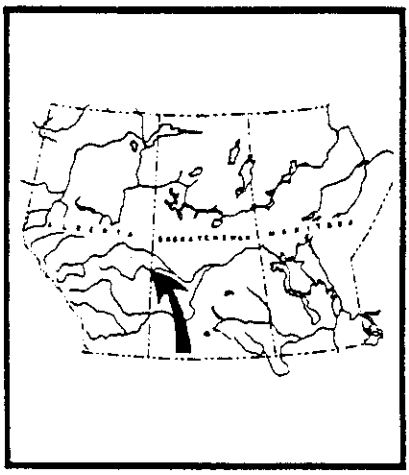
	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	%	ANNUAL
1912	1.02	0.24	0.28	0.51	2.83	4.25	5.16	2.99	1.46	0.20	0.51	0.08	109	19.53
1913	0.59	0.47	0.43	0.39	1.38	4.25	2.99	5.35	1.26	0.35	0.12	0.04	98	17.62
1914	0.87	0.83	0.31	0.55	3.94	7.24	1.69	1.85	1.26	1.18	0.75	1.46	120	21.53
1915	0.55	0.04	1.10	1.57	1.46	3.50	4.17	2.46	1.61	0.28	0.55	0.39	93	18.02
1916	0.51	0.75	1.57	1.54	2.13	2.13	2.64	3.90	2.95	0.35	0.39	1.14	109	19.54
1917	1.10	0.20	0.28	0.94	1.30	1.54	0.87	1.54	0.59	0.24	0.24	1.22	56	10.06
1918	0.35	0.31	0.87	0.20	0.75	1.69	1.85	2.99	1.42	0.04	0.12	0.55	62	11.18
1919	0.24	0.35	0.12	0.67	1.61	1.18	0.71	1.06	0.91	1.61	0.59	0.71	54	9.76
1920	0.59	0.12	1.69	0.67	0.98	1.42	2.24	0.24	1.26	1.10	0.31	0.20	60	10.82
1921	0.43	0.59	0.79	1.22	1.26	2.72	2.20	0.47	1.61	0.04	0.31	0.20	66	11.84
1922	0.59	0.12	0.31	0.55	0.51	0.71	1.06	3.27	0.24	0.83	0.12	0.55	52	9.33
1923	1.97	1.10	1.61	0.47	2.24	4.13	3.07	2.36	1.93	0.83	0.08	0.24	111	20.02
1924	0.94	0.55	1.81	3.11	1.89	1.06	2.44	3.78	0.91	2.56	0.79	3.46	129	23.22
1925	1.34	3.19	0.51	1.46	3.87	3.46	0.63	3.23	1.93	1.06	0.79	1.34	110	19.61
1926	1.30	1.10	1.22	0.08	2.83	3.46	1.34	3.35	4.21	0.35	1.02	1.57	121	21.83
1927	0.31	0.67	1.06	0.79	3.46	2.60	4.76	0.55	2.20	0.55	1.38	1.38	110	19.71
1928	0.24	0.20	0.63	0.91	0.91	3.62	3.94	1.93	0.51	0.16	0.0	0.35	75	13.40
1929	1.50	1.69	0.59	1.77	0.55	2.17	1.57	1.81	0.24	0.04	1.42	0.67	78	14.02
1930	0.75	0.12	0.63	1.06	1.14	2.76	4.57	2.68	1.34	0.47	0.79	0.12	91	16.43
1931	0.0	0.0	1.18	0.28	1.46	6.10	2.01	4.21	0.83	0.31	0.63	0.94	100	17.95
1932	0.43	0.67	0.83	2.24	2.17	3.31	1.02	0.55	1.89	1.02	1.18	0.08	86	15.39
1933	0.08	0.79	0.94	1.14	2.05	1.65	2.52	0.83	1.85	0.75	0.59	1.97	84	15.16
1934	0.20	0.20	0.98	0.55	2.60	2.13	1.30	1.02	2.48	0.31	0.39	0.47	70	12.63
1935	2.48	0.0	0.94	1.46	3.78	3.54	3.39	1.55	0.83	1.34	1.57	0.98	122	21.96
1936	1.77	0.87	0.55	1.30	3.15	1.22	2.52	2.46	1.38	0.83	0.98	0.59	98	17.66
1937	0.94	0.04	0.08	1.34	1.50	1.85	5.10	2.13	2.52	0.39	1.06	0.59	103	18.54
1938	0.47	0.83	0.43	0.98	1.97	1.73	2.28	5.00	0.31	1.02	0.51	0.83	91	16.36
1939	0.87	1.38	0.63	0.87	3.94	3.68	1.02	0.04	2.09	2.01	0.47	0.28	89	16.08
1940	1.02	0.87	3.43	3.74	1.38	2.56	2.99	4.76	2.23	1.65	1.34	0.91	118	21.16
1941	0.67	0.47	0.31	0.08	0.79	3.27	1.38	1.18	1.46	0.28	1.50	1.30	71	12.69
1942	0.75	1.10	0.16	1.26	1.89	5.04	3.35	2.52	1.93	0.16	1.73	1.18	118	21.18
1943	0.98	0.75	1.97	0.59	1.65	4.49	1.69	2.91	0.43	1.06	0.12	0.24	94	16.88
1944	0.55	1.38	1.06	0.35	2.32	6.30	6.22	1.85	1.73	0.08	0.43	0.55	127	22.82
1945	1.61	0.31	0.16	1.97	0.63	2.05	4.69	1.61	1.97	0.98	0.47	0.91	98	17.56
1946	0.71	0.67	0.28	0.67	0.87	5.67	3.23	4.13	1.46	0.31	1.06	0.75	110	19.61
1947	0.75	1.50	0.94	2.24	0.83	2.09	2.72	3.66	3.35	0.79	0.63	1.42	116	20.92
1948	1.46	1.50	0.75	3.74	1.18	0.43	6.22	2.28	1.14	0.08	0.55	0.28	109	19.61
1949	0.98	0.39	0.94	0.28	0.63	0.79	5.31	2.40	0.59	0.98	0.28	0.75	80	14.32
1950	1.97	0.43	0.59	1.14	0.43	1.77	2.40	1.97	1.14	0.94	1.02	0.51	80	14.31
1951	1.61	1.65	1.38	2.72	4.25	0.79	3.58	3.46	0.83	1.93	1.06	1.22	137	24.68
1952	1.46	0.39	0.31	0.12	2.36	5.94	3.54	1.69	1.50	0.47	0.20	0.08	101	18.06
1953	2.99	0.51	1.02	1.65	1.57	4.21	3.31	3.74	0.16	0.24	0.35	0.71	114	20.46
1954	0.63	0.28	1.61	2.56	3.78	3.19	2.40	8.90	0.75	0.28	0.16	0.55	140	25.09
1955	0.47	0.94	2.20	2.80	1.54	1.93	4.72	0.28	3.11	0.94	0.39	0.55	111	19.87
1956	0.91	0.79	1.02	0.71	0.94	5.12	4.13	2.72	1.42	1.02	0.39	1.89	117	21.03
1957	0.71	0.63	0.71	1.02	0.63	2.05	3.03	3.27	1.54	1.34	1.02	0.43	91	16.38
1958	1.06	1.10	0.59	0.39	2.01	2.36	1.77	1.02	4.17	0.20	1.10	1.50	96	17.27
1959	1.22	0.20	0.20	0.87	1.06	2.95	3.11	2.87	1.54	2.80	0.87	1.10	105	18.79
1960	0.28	1.22	0.28	0.75	1.57	5.00	2.32	3.82	1.57	0.98	0.59	0.87	107	19.25
1961	0.24	0.91	0.24	0.75	1.06	1.73	4.17	0.59	1.42	1.22	0.35	0.87	75	13.55
1962	0.83	2.01	0.87	0.79	2.09	5.71	3.15	2.28	0.94	0.83	0.43	0.43	113	20.36
1963	1.69	1.38	0.91	1.97	2.05	1.65	4.45	2.28	1.34	0.24	0.55	0.59	106	19.10
1964	0.94	0.55	0.43	0.67	2.72	1.54	2.76	2.36	3.27	0.20	1.54	0.75	99	17.73
1965	2.36	1.50	1.02	0.51	3.74	6.38	4.02	2.99	1.38	0.04	0.75	0.67	141	25.36
1966	1.18	0.83	0.31	0.55	1.73	1.65	3.07	5.16	1.34	0.43	0.94	0.35	98	17.54
1967	0.79	0.67	1.57	0.31	0.24	3.46	0.71	1.81	0.04	1.10	0.75	1.73	73	13.18
1968	1.06	0.28	0.63	0.87	0.51	1.77	3.27	2.40	2.05	0.83	0.20	1.14	84	15.01
1969	1.18	0.94	0.47	0.43	0.83	1.06	4.65	1.93	2.80	0.83	1.10	0.98	96	17.20
1970	0.71	0.87	1.30	0.20	1.38	5.83	3.54	1.57	1.02	1.73	1.30	0.63	112	20.08
1971	2.28	0.47	1.06	0.04	0.51	4.13	6.14	0.08	0.94	0.24	0.87	1.57	102	18.33
1972	1.38	1.54	1.42	1.42	1.54	4.33	2.55	3.50	1.54	0.24	1.10	0.55	118	21.12
1973	0.08	0.55	0.59	2.36	1.30	7.24	4.49	4.84	1.02	0.94	1.34	0.91	143	25.66
1974	2.52	0.59	2.32	0.75	2.91	5.79	5.04	1.69	1.18	0.31	0.16	0.63	133	23.89
1975	0.79	0.83	0.59	1.46	2.28	2.44	2.01	4.21	0.24	1.10	0.24	1.06	96	17.25
1976	0.55	0.87	1.14	0.63	1.97	3.50	2.28	2.56	0.59	0.20	0.35	0.98	87	15.62
1977	0.91	0.08	0.35	0.59	6.42	0.59	3.07	3.07	1.46	0.0	0.39	0.87	99	17.80
1978	1.61	1.46	0.31	0.79	2.76	1.02	1.54	3.90	5.28	0.79	1.38	0.47	119	21.31
1979	0.20	1.38	0.63	1.10	1.54	3.98	4.80	2.95	2.56	0.67	0.20	1.50	120	21.51
MIN	0.0	0.0	0.08	0.04	0.24	0.43	0.63	0.04	0.04	0.0	0.0	0.04		9.33
MAX	2.99	3.19	3.43	3.74	6.42	7.24	6.22	8.90	5.28	2.80	1.73	3.46		25.66
MEAN	0.98	0.77	0.83	1.10	1.83	3.09	3.08	2.51	1.54	0.73	0.69	0.84	100	17.97

NOTE - VALUES MAY DIFFER SLIGHTLY FROM RECORDED VALUES DUE TO CONVERSION FROM METRIC

TABLE B-3
MONTHLY PRECIPITATION AT STETTLER
(INCHES)

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	MEAN	%	ANNUAL
1912	0.47	0.04	0.04	0.63	3.39	3.74	4.37	6.10	1.18	1.22	0.55	0.0	131		21.73
1913	0.67	0.71	0.47	0.79	0.79	3.50	2.76	2.40	0.79	0.55	0.0	0.0	81		13.43
1914	1.10	0.39	0.31	1.18	1.34	5.12	1.54	1.42	2.56	2.83	1.38	1.02	121		20.19
1915	0.24	0.16	0.04	0.55	5.04	4.29	4.88	0.20	1.69	0.91	0.75	0.12	114		18.87
1916	0.87	1.02	0.83	1.57	4.49	3.82	5.59	6.61	3.46	0.98	0.43	0.87	184		30.54
1917	0.55	0.47	0.08	0.35	1.18	0.91	0.95	2.05	2.52	0.63	0.04	0.55	62		10.31
1918	0.91	0.20	0.28	0.20	0.71	2.01	0.63	2.13	1.02	0.0	0.04	0.39	51		8.52
1919	0.12	0.24	0.04	2.05	3.27	0.39	0.75	1.18	4.09	0.31	0.55	0.20	79		13.19
1920	0.51	0.12	2.09	1.85	2.32	2.20	1.50	0.43	0.71	0.71	0.12	1.18	83		13.74
1921	0.59	0.43	0.75	0.59	1.46	1.18	3.15	0.79	0.39	0.0	1.18	0.20	65		10.75
1922	0.51	0.08	0.24	1.54	1.50	1.85	1.69	1.81	0.39	0.55	0.12	0.12	63		10.40
1923	0.59	0.55	0.51	1.42	2.05	5.08	3.27	2.99	0.63	0.75	0.0	0.04	113		18.86
1924	0.51	0.31	0.55	1.97	0.98	1.42	2.56	1.81	0.55	1.42	0.39	2.95	93		15.42
1925	0.63	0.59	1.02	2.48	1.73	4.13	1.93	2.09	2.28	0.94	0.67	1.22	115		19.71
1926	0.59	0.75	0.94	0.12	3.35	2.68	4.09	2.44	2.68	0.67	1.42	2.13	132		21.86
1927	0.20	1.26	2.01	1.30	3.07	3.50	5.75	1.22	2.36	1.06	0.83	0.67	141		23.43
1928	0.20	0.28	1.14	1.06	0.79	5.59	3.15	3.23	0.55	0.67	0.04	0.08	101		16.78
1929	0.59	0.35	0.51	2.05	1.26	1.50	1.10	0.59	0.39	0.08	0.87	0.75	60		10.04
1930	0.04	0.04	0.35	3.11	1.26	2.20	4.41	3.46	2.28	1.06	0.0	0.31	111		18.52
1931	0.0	0.20	1.57	0.39	0.71	5.91	1.77	3.31	1.42	0.79	0.24	1.22	105		17.53
1932	0.16	0.87	0.75	2.44	1.57	2.64	1.18	0.91	2.13	1.10	1.61	0.91	98		16.27
1933	0.16	0.79	1.06	0.91	1.69	2.24	2.60	0.39	1.57	1.38	0.51	2.40	94		15.70
1934	1.34	0.16	0.71	0.20	1.50	1.93	2.52	1.34	0.98	0.0	0.39	0.71	71		11.78
1935	2.05	0.0	0.98	2.44	3.94	4.06	1.97	2.36	0.94	0.71	0.08	0.43	120		19.96
1936	2.01	0.75	1.18	0.63	2.32	2.17	0.94	2.64	0.59	0.16	0.47	0.12	84		13.98
1937	1.57	0.71	0.20	0.91	1.89	1.30	2.99	3.35	2.32	0.24	0.98	0.24	100		16.70
1938	0.91	0.87	0.87	2.09	3.27	1.93	2.80	3.66	0.59	0.87	0.39	0.39	112		18.64
1939	0.51	0.98	0.51	0.39	3.15	4.09	1.57	0.0	1.14	3.11	0.75	0.31	99		16.51
1940	0.35	0.51	3.58	2.20	0.35	1.61	2.95	0.98	1.22	1.42	0.79	0.39	96		16.35
1941	0.91	0.79	0.91	0.16	1.73	2.01	0.75	2.40	2.01	0.24	0.31	0.31	75		12.53
1942	0.31	0.91	0.71	0.24	1.26	4.80	6.73	2.05	1.57	0.39	1.30	0.31	124		20.82
1943	0.79	0.59	2.09	0.39	0.55	6.14	0.51	2.64	0.12	1.54	0.0	0.0	92		15.36
1944	0.31	1.89	2.01	0.0	1.10	5.30	4.80	1.26	2.60	0.08	0.31	0.51	127		21.17
1945	0.91	0.31	0.39	1.10	0.59	1.54	2.32	1.42	1.65	0.20	0.71	0.79	72		11.93
1946	0.12	0.20	0.39	0.24	1.02	5.30	1.57	3.90	2.28	0.79	1.30	1.30	117		19.41
1947	0.59	1.50	0.71	1.10	1.73	3.03	2.24	4.45	2.83	0.67	1.30	0.79	126		20.94
1948	0.79	1.69	0.39	2.76	0.67	0.91	2.76	0.55	0.31	0.04	0.31	0.51	70		11.69
1949	1.54	1.10	0.0	0.28	0.31	2.72	7.09	1.65	0.43	0.98	0.28	1.30	106		17.68
1950	1.10	0.16	0.20	0.28	0.51	2.36	3.27	1.42	0.63	1.69	0.75	0.31	76		12.68
1951	1.42	1.77	0.87	1.97	2.56	1.34	3.90	2.13	0.63	1.10	0.31	0.51	111		18.51
1952	0.43	0.51	0.20	0.0	1.10	7.13	2.64	1.65	1.06	0.79	0.20	0.04	95		15.75
1953	1.10	0.55	1.46	1.38	2.40	3.46	4.76	3.62	0.35	0.04	0.04	0.04	115		19.20
1954	1.61	0.39	0.71	1.42	2.56	2.44	1.46	8.62	0.91	0.20	0.04	0.31	124		20.67
1955	0.59	0.43	0.87	1.93	1.93	1.46	3.78	0.75	3.58	0.71	0.94	0.24	104		17.21
1956	0.0	0.0	0.59	0.16	0.24	3.70	2.24	3.39	1.06	0.28	0.24	1.34	80		13.24
1957	0.51	0.28	0.87	0.55	1.61	1.50	1.73	4.29	1.50	0.83	0.91	0.12	88		14.70
1958	0.75	0.43	0.75	0.28	1.34	2.44	0.67	0.51	2.09	0.0	0.83	0.28	62		10.37
1959	0.98	0.08	0.12	0.79	1.38	3.35	2.20	3.62	0.98	1.02	0.63	0.39	93		15.54
1960	0.31	0.79	0.63	0.63	0.79	1.65	2.20	1.46	0.71	0.98	0.24	0.75	67		11.14
1961	0.20	1.10	0.31	0.98	2.09	0.91	3.23	1.02	0.24	0.35	0.47	1.14	72		12.04
1962	0.59	1.54	0.71	0.31	2.09	1.61	5.98	2.13	1.77	0.43	0.20	0.39	107		17.75
1963	1.50	1.65	0.98	2.05	1.30	3.82	4.61	3.62	0.91	0.63	0.39	0.28	131		21.74
1964	1.50	0.39	1.10	1.10	3.74	1.02	1.46	1.26	2.72	0.43	0.71	1.22	100		16.65
1965	0.87	0.94	0.24	0.24	3.11	3.86	2.20	1.22	2.20	0.04	0.87	0.35	87		16.14
1966	1.14	0.55	0.31	1.02	1.14	2.17	4.57	3.66	0.75	0.79	1.18	0.12	105		17.40
1967	0.67	0.79	1.18	1.10	0.79	2.68	1.54	1.81	0.08	0.59	1.22	1.61	85		14.06
1968	0.79	0.20	0.43	0.35	1.10	2.24	4.33	1.93	2.48	0.91	0.35	1.22	98		16.33
1969	0.51	0.79	0.28	0.63	0.67	1.10	5.81	1.14	4.88	0.94	0.63	1.34	119		19.72
1970	0.43	0.47	0.91	0.39	1.42	9.53	3.11	0.43	1.02	1.34	1.22	0.35	124		20.62
1971	1.69	0.47	0.55	0.0	0.35	2.44	4.33	0.12	1.54	0.20	0.59	1.02	80		13.30
1972	0.71	1.57	0.28	0.24	2.05	5.73	3.94	1.54	1.89	0.24	0.98	0.16	122		20.33
1973	0.0	0.12	0.79	1.65	0.59	5.61	2.91	4.41	4.13	0.31	1.42	0.79	143		23.73
1974	1.85	0.83	1.50	0.75	2.52	1.89	2.91	3.50	1.30	0.16	0.08	0.87	109		18.16
1975	0.87	1.10	0.87	2.17	2.60	1.85	4.76	2.13	0.79	1.10	0.35	1.89	123		20.48
1976	0.98	0.79	1.14	0.08	1.50	4.92	1.57	2.95	0.83	0.08	0.47	1.69	102		17.00
1977	0.28	0.08	0.08	0.08	5.90	0.94	1.77	2.60	2.99	0.43	0.59	0.98	89		14.72
1978	1.06	0.47	0.12	0.75	3.15	2.36	1.18	2.24	2.87	0.79	0.71	0.20	96		15.90
1979	0.31	1.10	0.16	0.67	1.85	3.50	2.44	1.61	1.18	0.75	0.28	0.43	86		14.28
MIN	0.0	0.0	0.0	0.0	0.24	0.39	0.51	0.0	0.08	0.0	0.0	0.0			8.52
MAX	2.05	1.89	3.58	3.11	5.04	9.53	7.09	8.62	4.88	3.11	1.61	2.95			30.54
MEAN	0.73	0.63	0.74	0.89	1.79	3.07	2.89	2.25	1.55	0.71	0.58	0.68	100		16.62

NOTE - VALUES MAY DIFFER SLIGHTLY FROM RECORDED VALUES DUE TO CONVERSION FROM METRIC



APPENDIX C

BATTLE RIVER AND ADJACENT BASINS ARRAYS OF RECORDED STREAMFLOW

TABLE C-1
BATTLE RIVER NEAR PONOKA (AO5FA001)
MONTHLY MEAN RECORDED FLOWS - CFS

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	MEAN	%	AC. FT.
1912	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1913	-	-	-	-	-	169.	239.	106.	55.	44.	32.	-	-	-	-
1914	-	-	-	82.	373.	813.	198.	36.	33.	55.	33.	33.	-	-	-
1915	28.	17.	43.	134.	129.	942.	1079.	178.	71.	82.	44.	17.	231.	197	167470.
1916	8.	10.	154.	264.	229.	372.	556.	296.	832.	245.	124.	65.	263.	224	190767.
1917	51.	52.	54.	1070.	985.	414.	179.	31.	32.	34.	59.	49.	251.	214	181700.
1918	45.	50.	55.	158.	96.	97.	37.	20.	20.	24.	12.	7.	52.	44	37583.
1919	8.	4.	5.	372.	209.	88.	39.	19.	53.	22.	22.	14.	71.	60	51294.
1920	16.	17.	20.	355.	1467.	287.	88.	28.	23.	27.	20.	14.	198.	169	143760.
1921	15.	16	19.	264.	87.	62.	50.	17.	13.	13.	7.	1.	47.	40	33991.
1922	0.	0.	0.	29.	32.	26.	15.	10.	7.	7.	3.	-	-	-	-
1923	-	-	-	54.	52.	81.	97.	89.	33.	32.	-	-	-	-	-
1924	-	-	-	48.	59.	37.	17.	37.	30.	26.	16.	9.	-	-	-
1925	6.	3.	2.	545.	96.	98.	37.	26.	37.	39.	31.	26.	79.	67	56885.
1926	26.	24.	73.	253.	78.	716.	124.	54	520.	197.	83.	59.	183.	156	132526.
1927	54.	38.	54.	1132.	796.	305.	814.	85.	51.	73.	42.	39.	291.	248	210905.
1928	44.	66.	503.	407.	145.	299.	342.	65.	40.	45.	22.	18.	167.	142	120957.
1929	19.	11.	44.	140.	113.	57.	26.	10.	5.	9.	6.	4.	37.	32	26841.
1930	3.	2.	4.	41.	33.	28.	23.	15.	10.	-	-	-	-	-	-
1931	-	1.	1.	25.	-	-	-	-	-	10.	6.	3.	-	-	-
1932	2.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1933	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1934	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1935	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1936	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1937	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1938	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1939	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1940	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1941	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1942	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1943	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1944	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1945	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1946	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1947	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1948	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1949	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1950	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1951	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1955	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1956	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1957	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1958	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1961	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1962	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1963	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1964	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1965	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1966	-	-	-	-	-	-	13.	9.	4.	5.	-	-	-	-	-
1967	-	-	0.	117.	99.	68.	12.	0.	0.	0.	-	-	-	-	-
1968	-	-	90.	31.	13.	5.	2.	2.	1.	1.	-	-	-	-	-
1969	-	-	6.	371.	28.	11.	7.	3.	3.	11.	-	-	-	-	-
1970	-	-	3.	314.	40.	46.	84.	10.	7.	9.	-	-	-	-	-
1971	-	-	8.	590.	85.	58.	144.	16.	6.	9.	6.	6.	-	-	-
1972	3.	3.	22.	280.	68.	41.	36.	28.	11.	17.	11.	6.	43.	37	31558.
1973	4.	3.	29.	230.	124.	71.	265.	238.	40.	25.	20.	14.	89.	76	64642.
1974	11.	11.	11.	1164.	509.	160.	171.	59.	21.	19.	16.	5.	179.	153	129815.
1975	6.	7.	7.	220.	242.	63.	33.	10.	5.	6.	5.	3.	51.	43	36719.
1976	3.	4.	6.	125.	23.	3.	2.	19.	4.	1.	3	4.	16	14	11782.
1977	5.	6.	8.	43.	108.	86.	9.	3.	4.	5.	5.	4.	24.	20	17107.
1978	2.	1.	51.	149.	63.	46.	10.	7.	21.	17.	18.	13.	33.	28	24000.
1979	6.	4.	103.	149.	107.	58.	7.	9.	6.	10.	7.	6.	39.	34	28534.
MIN	0.	0.	0.	25.	13.	3.	2.	0.	0.	0.	3.	1.	16.		11782.
MAX	54.	66.	503.	1164.	1467.	942.	1079.	296.	832.	245.	124.	65.	291.		210905.
MEAN	16.	15.	49.	295.	216.	181.	149.	48.	62.	35.	25.	17.	117.	100	84942.

TABLE C-2
BATTLE RIVER NEAR FORESTBURG (AO5FC001)
MONTHLY MEAN RECORDED FLOWS - CFS

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	MEAN	%	AC. FT.
1912	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1913	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1914	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1915	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1916	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1917	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1918	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1919	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1920	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1921	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1922	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1923	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1924	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1925	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1926	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1927	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1928	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1929	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1930	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1931	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1932	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1933	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1934	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1935	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1936	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1937	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1938	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1939	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1940	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1941	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1942	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1943	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1944	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1945	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1946	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1947	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1948	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1949	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1950	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1951	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1955	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1956	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1957	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1958	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1961	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1962	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1963	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1964	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1965	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1966	-	-	-	-	-	-	-	-	-	28.	5.	1.	-	-	-
1967	0.	0.	0.	99.	614.	132.	28.	10.	3.	0.	-	-	-	-	-
1968	-	-	54.	70.	19.	2.	3.	0.	15.	17.	-	-	-	-	-
1969	-	-	0.	881.	305.	40.	16.	3.	8.	8.	-	-	-	-	-
1970	-	-	1.	772.	360.	78.	222.	70.	44.	32.	-	-	-	-	-
1971	-	-	1.	668.	928.	136.	155.	181.	85.	43.	-	-	-	-	-
1972	-	-	25.	552.	424.	133.	84.	37.	38.	35.	-	-	-	-	-
1973	-	-	48.	464.	347.	154.	321.	520.	280.	142.	-	-	-	-	-
1974	-	-	16.	1842.	4829.	1114.	472.	295.	155.	107.	-	-	-	-	-
1975	-	-	1.	133.	774.	220.	102.	35.	10.	16.	-	-	-	-	-
1976	-	-	12.	239.	131.	20.	7.	3.	1.	4.	-	-	-	-	-
1977	-	-	4.	32.	93.	63.	21.	4.	2.	2.	-	-	-	-	-
1978	-	-	54.	198.	120.	55.	25.	14.	128.	79.	-	-	-	-	-
1979	-	-	172.	653.	494.	119.	58.	37.	13.	29.	-	-	-	-	-
MIN	0.	0.	0.	32.	19.	2.	3.	0.	1.	0.	5.	1.	-		-
MAX	0.	0.	172.	1842.	4829.	1114.	472.	520.	280.	142.	5.	1.	-		-
MEAN	0.	0.	30.	508.	726.	174.	117.	93.	60.	39.	5.	1.	-	100	-

TABLE C-3
BATTLE RIVER NEAR UNWIN (AO5FE001)
MONTHLY MEAN RECORDED FLOWS - CFS

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	MEAN	%	AC. FT.
1912	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1913	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1914	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1915	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1916	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1917	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1918	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1919	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1920	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1921	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1922	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1923	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1924	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1925	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1926	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1927	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1928	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1929	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1930	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1931	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1932	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1933	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1934	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1935	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1936	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1937	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1938	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1939	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1940	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1941	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1942	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1943	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1944	-	-	60.	426.	183.	259.	514.	528.	246.	179.	-	-	-	-	-
1945	-	-	54.	375.	238.	117.	60.	53.	39.	38.	-	-	-	-	-
1946	-	-	109.	599.	269.	190.	214.	222.	192.	176.	-	-	-	-	-
1947	-	-	162.	1384.	566.	226.	123.	96.	148.	109.	-	-	-	-	-
1948	-	-	13.	1471.	7486.	2142.	531.	303.	211.	186.	-	-	-	-	-
1949	-	-	35.	330.	225.	93.	117.	231.	77.	65.	51.	25.	-	-	-
1950	14.	18.	44.	358.	424.	181.	156.	76.	27.	80.	43.	18.	121.	37	87289.
1951	20.	18.	21.	2266.	1969.	517.	207	137.	109.	85.	74.	54.	457.	140	330693.
1952	28.	37.	31.	3299.	974.	410.	350.	201.	127.	103.	87.	48.	471.	144	342255.
1953	34.	41.	35.	831.	1030.	395.	310.	413.	299.	223.	135.	82.	320.	98	231847.
1954	46.	35.	36.	193.	810.	1427.	895.	436.	1667.	923.	559.	265.	609.	186	440555.
1955	128.	107.	181.	1723.	2400.	1004.	379.	237.	144.	153.	79.	36.	548.	168	397523.
1956	30.	29.	22.	2818.	2424.	610.	474.	296.	220.	162.	97.	55.	602.	184	437380.
1957	21.	23.	64.	1222.	747.	210.	98.	132.	116.	82.	85.	51.	237.	73	171842.
1958	31.	38.	18.	1690.	618.	197.	76.	41.	37.	36.	31.	15.	234.	72	169764.
1959	11.	4.	43.	219.	135.	76.	37.	27.	71.	95.	62.	22.	67.	20	48428.
1960	7.	4.	154.	772.	306.	112.	73.	44.	40.	48.	36.	23.	135.	41	97648.
1961	17.	5.	38.	254.	146.	79.	38.	16.	10.	22.	20.	7.	54.	17	39296.
1962	3.	2.	1.	536.	276.	194.	484.	130.	54.	34.	27.	37.	149.	45	107646.
1963	22.	20.	343.	1697.	711.	352.	472.	165.	85.	48.	50.	36.	334.	102	241578.
1964	37.	32.	36.	167.	227.	100.	44.	27.	62.	59.	25.	23.	70.	21	50789.
1965	10.	6.	8.	2677.	2091.	1089.	1018.	550.	256.	176.	103.	50.	671.	205	485807.
1966	25.	30.	44.	1053.	448.	217.	101.	149.	83.	63.	36.	24.	189.	58	136844.
1967	26.	20.	17.	125.	1199.	356.	134.	68.	28.	27.	18.	10.	171.	52	123544.
1968	1.	1.	439.	262.	127.	66.	41.	74.	116.	181.	69.	33.	118.	36	85691.
1969	25.	26.	23.	2602.	1006.	279.	151.	77.	78.	81.	47.	35.	368.	112	266190.
1970	27.	29.	30.	2047.	894.	315.	935.	245.	112.	97.	88.	50.	406.	124	294157.
1971	33.	45.	36.	2005.	1565.	454.	357.	313.	148.	105.	74.	33.	431.	132	312158.
1972	22.	24.	104.	1047.	711.	330.	213.	156.	90.	83.	69.	22.	239.	73	173438.
1973	17.	18.	63.	1045.	628.	750.	724.	986.	480.	297.	146.	82.	438.	134	317056.
1974	58.	60.	60.	3198.	9183.	2414.	907.	586.	312.	246.	156.	68.	1446.	443	1048093.
1975	55.	48.	53.	588.	1812.	589.	415.	174.	87.	82.	77.	38.	337.	103	244105.
1976	39.	33.	36.	1032.	338.	238.	155.	52.	33.	31.	19.	32.	169.	52	122509.
1977	27.	28.	50.	146.	296.	175.	72.	35.	19.	22.	20.	17.	76.	23	54826.
1978	17.	23.	32.	531.	263.	143.	86.	29.	241.	150.	76.	43.	136.	42	98269.
1979	18.	15.	69.	879.	578.	334.	211.	151.	72.	41.	32.	21.	210.	64	152253.
MIN	**1.**	**1.**	**1.**	**125.**	**127.**	**66.**	**37.**	**16.**	**10.**	**22.**	**18.**	**7.**	**54.**		**39298.**
MAX	**128.**	**107.**	**439.**	**3299.**	**9183.**	**2414.**	**1018.**	**986.**	**1667.**	**923.**	**559.**	**265.**	**1448.**		**1048093.**
MEAN	**28.**	**27.**	**71.**	**1163.**	**1206.**	**462.**	**310.**	**207.**	**170.**	**127.**	**80.**	**44.**	**327.**	**100**	**236983.**

TABLE C-4
BATTLE RIVER AT BATTLEFORD (A05FF001)
MONTHLY MEAN RECORDED FLOWS - CFS

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	MEAN	%	AC. FT.
1912	-	-	-	-	699.	585.	1143.	1560.	1181.	727.	-	-	-	-	-
1913	57.	58.	75.	3175.	990.	447.	512.	457.	466.	388.	194.	101.	574.	96	415395.
1914	29.	21.	22.	446.	1433.	1550.	1994.	682.	394.	509.	269.	164.	622.	104	451127.
1915	104.	72.	150.	1331.	498.	647.	1954.	1790.	707.	459.	225.	102.	701.	117	508866.
1916	48.	34.	22.	955.	948.	1405.	1631.	1385.	1943.	1496.	709.	-	-	-	-
1917	122.	114.	91.	2424.	2957.	1958.	774.	370.	295.	215.	155.	47.	796.	133	576518.
1918	8.	8.	37.	1080.	446.	319.	173.	92.	67.	77.	53.	22.	198.	33	143365.
1919	11.	14.	11.	507.	648.	337.	120.	94.	75.	47.	-	-	-	-	-
1920	7.	0.	0.	1440.	3202.	2324.	801.	288.	173.	140.	149.	25.	710.	118	514661.
1921	14.	12.	4.	3049.	1025.	362.	201.	127.	135.	125.	-	-	-	-	-
1922	-	-	-	746.	342.	197.	91.	71.	87.	93.	-	-	-	-	-
1923	-	-	-	919.	283.	245.	307.	211.	149.	121.	-	-	-	-	-
1924	-	-	2.	175.	492.	305.	154.	97.	78.	80.	-	-	-	-	-
1925	-	-	1.	1834.	1113.	342.	173.	117.	101.	124.	-	-	-	-	-
1926	-	-	32.	1432.	741.	295.	309.	237.	233.	465.	-	-	-	-	-
1927	-	-	-	1491.	3660.	1727.	1220.	1119.	446.	329.	-	-	-	-	-
1928	-	-	-	1428.	1057.	494.	412.	315.	181.	140.	-	-	-	-	-
1929	-	-	62.	375.	398.	235.	103.	51.	38.	23.	-	-	-	-	-
1930	-	-	42.	190.	139.	117.	162.	63.	39.	86.	-	-	-	-	-
1931	-	-	13.	338.	155.	129.	139.	107.	119.	111.	-	-	-	-	-
1932	-	-	-	-	644.	364.	204.	104.	64.	62.	-	-	-	-	-
1933	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1934	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1935	-	-	-	-	-	-	-	-	84.	96.	-	-	-	-	-
1936	-	-	-	-	2125.	644.	-	-	-	-	-	-	-	-	-
1937	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1938	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1939	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1940	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1941	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1942	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1943	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1944	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1945	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1946	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1947	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1948	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1949	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1950	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1951	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1955	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1956	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1957	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1958	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1961	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1962	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1963	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1964	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1965	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1966	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1967	-	-	-	-	1325.	585.	218.	103.	45.	46.	-	-	-	-	-
1968	-	-	1071.	444.	189.	100.	69.	70.	78.	242.	-	-	-	-	-
1969	-	-	21.	3042.	1181.	370.	224.	109.	95.	111.	-	-	-	-	-
1970	-	-	39.	2378.	1119.	472.	971.	341.	164.	133.	-	-	-	-	-
1971	-	-	52.	2556.	1799.	594.	430.	366.	178.	132.	-	-	-	-	-
1972	-	-	121.	1493.	786.	420.	266.	205.	126.	119.	-	-	-	-	-
1973	-	-	158.	925.	691.	694.	748.	977.	559.	310.	-	-	-	-	-
1974	-	-	71.	3455.	9904.	3093.	1101.	711.	397.	289.	-	-	-	-	-
1975	-	-	57.	561.	1413.	706.	507.	245.	136.	96.	-	-	-	-	-
1976	-	-	73.	1433.	412.	405.	236.	98.	59.	56.	-	-	-	-	-
1977	-	-	34.	191.	347.	224.	126.	42.	30.	48.	-	-	-	-	-
1978	-	-	33.	482.	307.	192.	104.	55.	202.	203.	-	-	-	-	-
1979	-	-	185.	1727.	848.	424.	237.	165.	90.	72.	-	-	-	-	-
MIN	7.	0.	0.	175.	139.	100.	69.	42.	30.	23.	53.	22.	198.		143365.
MAX	142.	114.	1071.	3455.	9904.	3093.	1994.	1790.	1943.	1496.	709.	164.	796.		576518.
MEAN	47.	37.	92.	1327.	1261.	675.	524.	372.	263.	220.	254.	77.	600.	100	434764.

TABLE C-5
STURGEON RIVER NEAR FORT SASKATCHEWAN (A05EA001)
MONTHLY MEAN RECORDED FLOWS - CFS

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	MEAN	%	AC. FT.
1912	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1913	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1914	27.5	24.4	38.2	180.0	131.0	1101.0	915.0	211.0	117.0	139.0	121.0	68.6	256.7	226	185836.2
1915	57.8	58.0	89.5	531.0	156.0	697.0	663.0	216.0	117.0	138.0	150.0	87.4	246.9	217	178735.8
1916	58.9	54.4	72.8	366.0	174.0	85.5	82.6	79.4	97.2	117.0	76.6	29.7	107.7	95	78162.2
1917	21.8	28.8	19.2	499.0	593.0	365.0	161.0	122.0	126.0	117.0	88.5	52.0	184.7	163	133728.3
1918	29.3	28.8	23.3	294.0	188.0	159.0	96.5	61.3	36.5	47.0	50.2	18.1	86.1	76	62332.3
1919	6.1	6.6	7.3	181.0	143.0	63.8	28.8	14.4	12.6	22.5	33.5	18.7	46.5	41	33671.4
1920	18.0	8.2	11.8	176.0	919.0	630.0	241.0	65.2	50.2	62.0	38.8	28.4	188.0	166	136514.6
1921	20.2	23.2	19.7	265.0	142.0	67.2	41.3	27.8	19.0	18.0	9.3	5.2	54.7	48	39599.6
1922	4.8	4.1	9.0	25.1	92.9	32.4	11.9	10.5	17.4	13.0	5.7	0.9	20.4	18	14777.3
1923	0.0	0.0	4.0	50.2	67.8	-	-	-	-	-	-	-	-	-	-
1924	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1925	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1926	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1927	-	-	-	-	-	-	-	-	-	-	-	75.3	-	-	-
1928	34.8	33.3	-	-	383.0	184.0	110.0	75.8	71.3	102.0	48.3	28.8	-	-	-
1929	26.6	22.8	30.2	97.9	159.0	43.2	22.5	12.3	9.8	11.3	15.8	11.9	38.7	34	28009.0
1930	8.9	10.2	13.8	90.1	42.7	14.6	8.2	5.7	6.5	9.1	8.0	5.1	18.5	16	13402.1
1931	0.4	2.0	2.2	44.7	53.7	-	-	-	-	-	-	-	-	-	-
1932	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1933	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1934	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1935	-	-	-	303.0	926.0	334.0	161.0	122.0	109.0	175.0	-	-	-	-	-
1936	-	-	23.5	1045.0	1685.0	756.0	232.0	57.4	43.1	47.1	-	-	-	-	-
1937	-	-	24.3	248.0	97.1	26.6	21.4	22.2	24.2	28.4	-	-	-	-	-
1938	-	-	34.5	307.0	125.0	17.8	4.3	6.4	4.8	5.7	-	-	-	-	-
1939	-	-	9.0	107.0	55.0	25.8	5.1	1.8	1.3	2.9	-	-	-	-	-
1940	-	-	0.4	626.0	682.0	59.2	12.9	13.2	11.8	11.7	-	-	-	-	-
1941	-	-	12.9	125.0	32.8	11.7	8.2	5.1	5.0	5.1	-	-	-	-	-
1942	-	-	3.3	39.9	20.7	21.0	22.9	20.7	24.9	22.1	-	-	-	-	-
1943	-	-	4.0	1062.0	559.0	131.0	103.0	72.0	69.0	64.1	-	-	-	-	-
1944	-	-	50.0	346.0	123.0	664.0	817.0	307.0	180.0	168.0	-	-	-	-	-
1945	-	-	71.5	160.0	98.1	53.7	18.8	8.9	5.2	13.9	-	-	-	-	-
1946	-	-	14.0	274.0	66.5	11.2	11.2	6.8	9.3	12.8	-	-	-	-	-
1947	-	-	36.2	228.0	77.5	7.3	6.3	6.7	10.3	23.9	-	-	-	-	-
1948	-	-	4.0	412.0	2137.0	613.0	150.0	42.2	30.1	46.2	-	-	-	-	-
1949	-	-	13.0	200.0	72.1	10.7	2.7	4.1	6.3	7.6	-	-	-	-	-
1950	-	-	7.9	65.6	95.2	17.0	6.0	7.1	3.3	3.7	-	-	-	-	-
1951	-	-	2.8	154.0	238.0	38.7	15.3	9.9	10.0	11.9	-	-	-	-	-
1952	-	-	-	761.0	202.0	53.3	57.9	50.3	44.1	42.7	-	-	-	-	-
1953	-	-	13.8	128.0	419.0	189.0	77.0	870.0	434.0	139.0	-	-	-	-	-
1954	-	-	64.2	72.9	280.0	764.0	456.0	308.0	449.0	287.0	-	-	-	-	-
1955	-	-	72.3	293.0	453.0	165.0	94.8	69.3	52.6	61.4	-	-	-	-	-
1956	-	-	0.2	723.0	870.0	230.0	91.4	54.4	70.5	66.1	-	-	-	-	-
1957	-	-	60.6	247.0	155.0	28.9	18.8	12.6	11.4	23.4	-	-	-	-	-
1958	-	-	25.6	701.0	186.0	33.3	12.7	5.4	8.1	15.0	-	-	-	-	-
1959	-	-	44.2	149.0	44.1	6.6	7.3	11.0	11.8	24.9	-	-	-	-	-
1960	-	-	33.5	270.0	78.7	33.7	36.2	41.1	55.4	63.0	-	-	-	-	-
1961	-	-	84.2	373.0	80.6	11.1	8.7	7.0	12.4	11.6	-	-	-	-	-
1962	-	-	16.9	449.0	363.0	85.0	23.7	35.1	40.9	7.2	-	-	-	-	-
1963	-	-	40.1	454.0	383.0	176.0	33.7	24.7	27.2	21.3	-	-	-	-	-
1964	-	-	3.9	113.0	84.1	21.8	2.6	1.7	1.9	7.4	-	-	-	-	-
1965	-	-	3.0	476.0	691.0	298.0	1039.0	477.0	276.0	199.0	-	-	-	-	-
1966	-	-	51.6	682.0	281.0	94.3	30.8	25.1	40.7	45.9	-	-	-	-	-
1967	-	-	0.0	145.0	463.0	66.2	16.9	11.7	9.9	9.8	-	-	-	-	-
1968	-	-	143.0	99.2	21.0	2.0	2.0	10.9	4.1	2.0	-	-	-	-	-
1969	-	-	0.0	332.0	150.0	21.5	4.9	7.5	16.8	31.9	-	-	-	-	-
1970	-	-	5.3	624.0	275.0	27.4	8.7	21.9	19.1	31.1	-	-	-	-	-
1971	-	-	0.5	624.0	747.0	126.0	354.0	441.0	193.0	115.0	-	-	-	-	-
1972	-	-	15.9	930.0	744.0	257.0	117.0	66.0	50.1	36.7	-	-	-	-	-
1973	-	-	25.9	282.0	124.0	50.4	51.2	32.8	31.2	36.4	-	-	-	-	-
1974	-	-	14.7	1379.0	1912.0	655.0	1131.0	647.0	284.0	150.0	-	-	-	-	-
1975	-	-	23.5	251.0	399.0	110.0	139.0	87.8	107.0	68.7	-	-	-	-	-
1976	-	-	8.8	328.0	108.0	29.3	14.7	29.3	30.7	19.0	-	-	-	-	-
1977	-	-	30.5	296.0	144.0	163.0	80.1	43.6	55.2	94.5	-	-	-	-	-
1978	-	-	80.3	357.0	152.0	53.8	34.9	42.2	96.2	90.8	-	-	-	-	-
1979	-	-	147.3	635.7	505.0	215.4	120.4	76.3	62.2	65.7	-	-	-	-	-
MIN	0.0	0.0	0.0	35.1	20.7	2.0	2.0	1.7	1.3	2.0	5.7	0.9	18.5		13402.1
MAX	58.9	58.0	147.3	1379.0	2137.0	1101.0	1131.0	870.0	449.0	287.0	150.0	87.4	256.7		185836.2
MEAN	22.5	21.7	29.7	356.8	350.2	179.5	141.5	90.1	65.4	56.5	53.8	33.1	113.6	100	82251.7

TABLE C-6
NORTH SASKATCHEWAN RIVER AT EDMONTON (AC5DF001)
MONTHLY MEAN RECORDED FLOWS - CFS

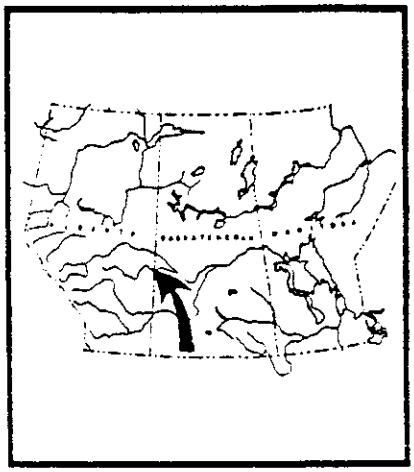
	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	MEAN	%	AC. FT.
1912	1256.0	1329.0	1317.0	4630.0	11939.0	18258.0	34168.0	26458.0	12881.0	7163.0	3177.0	1660.0	10410.7	137	7557682.0
1913	1353.0	1313.0	1315.0	6230.0	9729.0	19793.0	21453.0	18510.0	9430.0	4539.0	2357.0	1058.0	8299.0	109	6008183.0
1914	1216.0	953.0	1135.0	2884.0	9065.0	24824.0	15627.0	11098.0	6462.0	4558.0	2473.0	1103.0	7072.3	93	[illegible]
1915	1225.0	1051.0	1578.0	3333.0	8371.0	38043.0	42681.0	23568.0	10300.0	5573.0	3013.0	1718.0	11792.8	155	[illegible]
1916	1232.0	1158.0	1750.0	4778.0	9927.0	25591.0	29258.0	20900.0	18577.0	7561.0	4254.0	2585.0	10214.4	134	[illegible]
1917	2039.0	1397.0	1340.0	4935.0	25529.0	25253.0	20558.0	13151.0	8516.0	5902.0	3478.0	1833.0	9551.5	126	[illegible]
1918	1957.0	1237.0	1922.0	6960.0	6554.0	19454.0	16926.0	14119.0	8412.0	5113.0	2624.0	1444.0	7252.7	95	5250685.0
1919	1244.0	1006.0	874.0	3185.0	5850.0	9388.0	12036.0	14791.0	9766.0	3731.0	1640.0	1158.0	5418.8	71	3923031.0
1920	1181.0	1158.0	1165.0	2915.0	23353.0	16542.0	24690.0	14723.0	6495.0	3441.0	2095.0	1014.0	8275.4	109	6007582.0
1921	1169.0	1114.0	1136.0	6258.0	11630.0	15126.0	15445.0	13117.0	4495.0	2757.0	1404.0	1027.0	6258.6	82	4531027.0
1922	795.0	807.0	901.0	2440.0	6742.0	14850.0	14471.0	16677.0	6705.0	4085.0	1754.0	759.0	[illegible]	83	[illegible]
1923	708.0	946.0	888.0	2912.0	5605.0	34210.0	24123.0	19235.0	10698.0	5035.0	2517.0	2154.0	[illegible]	120	[illegible]
1924	921.0	975.0	1099.0	2081.0	12504.0	14544.0	17128.0	17310.0	9593.0	4493.0	1994.0	1225.0	7029.4	92	[illegible]
1925	1015.0	941.0	997.0	12535.0	9843.0	15370.0	18239.0	27081.0	16840.0	9383.0	2883.0	2535.0	10183.5	134	[illegible]
1926	1449.0	1394.0	1813.0	6419.0	6157.0	13487.0	16016.0	11410.0	27343.0	10385.0	4516.0	1381.0	8491.0	112	[illegible]
1927	1559.0	1470.0	2075.0	9517.0	12095.0	24103.0	27729.0	18565.0	11606.0	6828.0	2544.0	1909.0	10048.9	132	7275075.0
1928	2451.0	2344.0	3158.0	5535.0	8330.0	32310.0	33358.0	14946.0	7779.0	3970.0	2259.0	1533.0	9848.6	129	7149603.0
1929	1057.0	987.0	1283.0	2326.0	9205.0	18358.0	10033.0	10699.0	6647.0	3309.0	1683.0	1159.0	5433.2	71	3933502.0
1930	1053.0	1126.0	1540.0	4328.0	7225.0	15846.0	15571.0	12429.0	7943.0	3849.0	1899.0	1465.0	6225.1	82	4506777.0
1931	1075.0	958.0	977.0	2458.0	6425.0	14052.0	20871.0	12984.0	8473.0	4401.0	2280.0	1929.0	6429.9	84	4655047.0
1932	1433.0	1112.0	961.0	5502.0	11135.0	29657.0	15368.0	14884.0	8825.0	4306.0	2180.0	1449.0	8067.7	106	5856751.0
1933	1535.0	1230.0	1154.0	4974.0	15790.0	16793.0	16485.0	13142.0	8888.0	3225.0	1585.0	1069.0	7194.7	95	5208723.0
1934	1379.0	1247.0	2377.0	5590.0	9975.0	14478.0	11375.0	10316.0	5733.0	3712.0	1924.0	1436.0	5820.1	76	4213558.0
1935	757.0	963.0	942.0	5525.0	5643.0	18860.0	29358.0	17346.0	8033.0	4032.0	3464.0	1231.0	8422.0	111	6097274.0
1936	1224.0	1160.0	871.0	12018.0	14404.0	17543.0	12201.0	12214.0	5949.0	3565.0	2134.0	904.0	7103.5	93	[illegible]
1937	591.0	578.0	879.0	2331.0	7335.0	12785.0	18155.0	11413.0	7832.0	4233.0	3090.0	1694.0	5946.9	78	4305369.0
1938	1320.0	767.0	1091.0	2690.0	9218.0	20313.0	21546.0	15003.0	12144.0	5500.0	2411.0	1425.0	7571.2	99	5481264.0
1939	1285.0	1093.0	1920.0	3558.0	5485.0	15485.0	17200.0	12233.0	6847.0	4324.0	2887.0	1495.0	6281.4	82	[illegible]
1940	973.0	815.0	1024.0	6875.0	10491.0	11703.0	14257.0	10234.0	5045.0	4574.0	1761.0	1366.0	6271.6	82	[illegible]
1941	987.0	1030.0	1103.0	2490.0	3412.0	11201.0	14181.0	12073.0	6498.0	4139.0	1804.0	1163.0	5034.0	66	3644454.0
1942	1057.0	1020.0	868.0	3228.0	8804.0	18740.0	24571.0	17185.0	10373.0	5403.0	2805.0	2018.0	7940.2	104	[illegible]
1943	1607.0	1225.0	1277.0	11298.0	5778.0	17073.0	19790.0	13610.0	6573.0	3614.0	1550.0	895.0	7048.1	93	[illegible]
1944	1011.0	1027.0	1250.0	3373.0	7716.0	38757.0	23013.0	15458.0	9660.0	5047.0	2483.0	1057.0	9331.2	123	6773998.0
1945	1220.0	1165.0	1321.0	2255.0	8574.0	14488.0	14177.0	11547.0	6659.0	6348.0	2610.0	1778.0	6035.1	79	[illegible]
1946	1554.0	1384.0	1465.0	4612.0	7928.0	25443.0	16665.0	10590.0	7556.0	3635.0	1341.0	1972.0	7028.6	92	5088497.0
1947	1665.0	1418.0	1759.0	7665.0	10015.0	18033.0	18545.0	11809.0	8855.0	5413.0	3446.0	1944.0	7564.7	100	5491088.0
1948	1645.0	1384.0	1453.0	6951.0	39788.0	25360.0	19174.0	19752.0	8244.0	4037.0	2000.0	934.0	10946.6	144	7946855.0
1949	1184.0	1151.0	1166.0	4210.0	5842.0	8658.0	15274.0	11275.0	5845.0	3141.0	2084.0	693.0	5074.7	67	3673909.0
1950	861.0	917.0	989.0	3453.0	5849.0	19610.0	20065.0	12337.0	7301.0	3357.0	1425.0	1364.0	6489.9	85	4698501.0
1951	1078.0	942.0	970.0	3446.0	16471.0	14354.0	22090.0	12759.0	10168.0	5537.0	3277.0	1988.0	7812.1	103	5655686.0
1952	1893.0	1637.0	1718.0	10252.0	7421.0	33347.0	23600.0	16024.0	8442.0	4847.0	2227.0	957.0	9360.0	123	6794921.0
1953	1284.0	1403.0	1334.0	3162.0	12401.0	27683.0	20874.0	17990.0	9306.0	4062.0	2581.0	1327.0	8653.9	114	6265141.0
1954	1300.0	1499.0	1187.0	2732.0	18876.0	34227.0	22477.0	30516.0	24750.0	8579.0	4564.0	2629.0	12829.2	169	9287892.0
1955	1651.0	1870.0	1602.0	6292.0	13149.0	19600.0	17719.0	9457.0	6286.0	2918.0	1346.0	1331.0	6960.9	91	5039436.0
1956	1236.0	1056.0	1069.0	7554.0	8082.0	16640.0	15784.0	11646.0	6578.0	3582.0	1718.0	1123.0	6356.6	84	4614556.0
1957	1092.0	904.0	1135.0	3903.0	13556.0	14123.0	10692.0	9763.0	7948.0	5385.0	3456.0	1838.0	6179.5	81	4473724.0
1958	1545.0	1366.0	1375.0	5401.0	13772.0	20133.0	24035.0	12848.0	7353.0	3653.0	1801.0	1337.0	7929.9	104	5740964.0
1959	1232.0	1161.0	1542.0	2738.0	6417.0	22446.0	19284.0	10372.0	7332.0	4865.0	2684.0	2014.0	6865.8	90	4970605.0
1960	1467.0	1419.0	2434.0	4355.0	8258.0	13630.0	21852.0	12279.0	5624.0	3636.0	1797.0	1252.0	6529.6	86	4740195.0
1961	1286.0	1176.0	1719.0	2515.0	9132.0	17233.0	13762.0	15043.0	6237.0	3348.0	1551.0	1835.0	6270.9	82	4539932.0
1962	2059.0	2244.0	1667.0	5331.0	7911.0	13813.0	17003.0	12501.0	6522.0	3370.0	4157.0	2382.0	6606.0	87	4782554.0
1963	1917.0	2319.0	3006.0	8376.0	9675.0	16543.0	19487.0	11358.0	7366.0	3744.0	2150.0	2354.0	7385.6	97	5346947.0
1964	2367.0	2306.0	2388.0	3728.0	13128.0	25611.0	17693.0	7965.0	8116.0	6780.0	3852.0	2249.0	8038.3	106	5835395.0
1965	2095.0	2985.0	3875.0	11114.0	10292.0	38457.0	38190.0	16219.0	11340.0	8331.0	4105.0	2859.0	12525.4	165	9067990.0
1966	3605.0	3296.0	2941.0	6246.0	9021.0	12659.0	23100.0	18788.0	8421.0	6225.0	3158.0	2578.0	8385.8	110	6071019.0
1967	3067.0	3229.0	2746.0	4397.0	9011.0	24243.0	16419.0	10179.0	7180.0	3339.0	2386.0	2189.0	7375.5	97	5339587.0
1968	3128.0	3222.0	3997.0	3332.0	6544.0	12848.0	14542.0	13804.0	7136.0	4767.0	2453.0	2163.0	6513.1	86	4728203.0
1969	3213.0	2712.0	2494.0	6928.0	9121.0	14931.0	25613.0	16171.0	7363.0	3546.0	3013.0	2433.0	8173.4	107	5917302.0
1970	2372.0	2616.0	2604.0	5394.0	7544.0	18407.0	15690.0	9060.0	4213.0	2958.0	2016.0	2635.0	6309.3	83	4567737.0
1971	2203.0	1795.0	1894.0	8047.0	6974.0	20818.0	18006.0	14181.0	5277.0	3384.0	2666.0	1870.0	7283.2	96	5272803.0
1972	2533.0	2377.0	2974.0	5426.0	6782.0	31887.0	21965.0	9689.0	4639.0	5179.0	3142.0	2989.0	8298.3	109	6024185.0
1973	3745.0	4293.0	3743.0	8544.0	13196.0	11939.0	10125.0	7083.0	5853.0	5670.0	3480.0	3204.0	6751.9	89	4888125.0
1974	3783.0	5013.0	3483.0	15269.0	15219.0	14463.0	11776.0	6700.0	7195.0	6559.0	4377.0	4042.0	8158.6	107	5906589.0
1975	4495.0	3832.0	3719.0	6960.0	8078.0	6651.0	6466.0	4728.0	3830.0	3216.0	3293.0	4127.0	4956.2	65	3588128.0
1976	3831.0	4351.0	4273.0	6642.0	6603.0	7327.0	6365.0	9124.0	7586.0	5390.0	5324.0	3961.0	5897.6	78	4281333.0
1977	4610.0	3508.0	3482.0	5245.0	11430.0	12297.0	7731.0	8738.0	7936.0	5739.0	4069.0	4089.0	6589.1	87	4770293.0
1978	4495.0	5168.0	4727.0	5807.0	8423.0	18030.0	16320.0	7877.0	9470.0	6414.0	5933.0	5175.0	8159.6	107	5907302.0
1979	3955.0	4591.0	6392.0	6710.0	8582.0	7204.0	7169.0	5862.0	4556.0	3708.0	3305.0	2868.0	5414.8	71	3920159.0
MIN	591.0	578.0	868.0	2081.0	3412.0	6651.0	6365.0	4728.0	3830.0	2757.0	1341.0	693.0	4956.2		3588128.0
MAX	4610.0	5168.0	6392.0	15269.0	39788.0	38457.0	42681.0	30516.0	27343.0	10385.0	5933.0	5175.0	12829.2		9287892.0
MEAN	1792.7	1744.8	1893.2	5516.1	10197.3	19202.7	18845.5	13777.8	8611.4	4800.3	2704.1	1888.3	7609.5	100	5512779.0

TABLE C-7
RED DEER RIVER AT RED DEER (A05CC002)
MONTHLY MEAN RECORDED FLOWS - CFS

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	MEAN	%	AC. FT.
1912	241.0	274.0	-	1915.0	3955.0	3951.0	10084.0	4984.0	4532.0	2660.0	1290.0	595.0	-	-	-
1913	417.0	396.0	410.0	3886.0	4102.0	4947.0	5243.0	3284.0	1787.0	1223.0	825.0	327.0	2245.5	129	1625700.0
1914	276.0	256.0	380.0	903.0	1908.0	3668.0	2351.0	1309.0	1097.0	1440.0	783.0	328.0	1232.0	71	891943.1
1915	278.0	271.0	606.0	1251.0	4458.0	12312.0	16747.0	8121.0	3954.0	2936.0	1195.0	520.0	4418.1	255	3198533.0
1916	416.0	375.0	528.0	2119.0	3586.0	11593.0	8378.0	7505.0	7219.0	3411.0	1833.0	843.0	4010.3	231	2911283.0
1917	511.0	477.0	501.0	4179.0	9060.0	8810.0	3687.0	2074.0	1844.0	1461.0	1057.0	405.0	2882.5	166	2072380.0
1918	455.0	386.0	1410.0	2845.0	1898.0	3587.0	1856.0	1770.0	1335.0	974.0	520.0	275.0	1444.4	83	1045677.9
1919	343.0	271.0	247.0	1555.0	2066.0	1828.0	1377.0	1980.0	1155.0	662.0	366.0	211.0	1009.9	58	731115.3
1920	221.0	224.0	280.0	3094.0	9170.0	3458.0	4422.0	1652.0	818.0	562.0	297.0	198.0	2045.0	118	1484570.0
1921	204.0	175.0	175.0	2421.0	2638.0	2640.0	1818.0	1311.0	697.0	556.0	307.0	170.0	1095.9	63	793400.3
1922	181.0	154.0	173.0	492.0	3013.0	2633.0	1795.0	2139.0	1074.0	634.0	342.0	121.0	1085.0	61	771030.5
1923	142.0	133.0	159.0	874.0	1547.0	12939.0	4884.0	4482.0	1952.0	1117.0	577.0	395.0	2434.2	140	1762294.0
1924	306.0	366.0	501.0	1851.0	2930.0	3750.0	3016.0	3116.0	1297.0	839.0	486.0	322.0	1577.0	91	1144788.0
1925	298.0	255.0	378.0	3768.0	1702.0	3417.0	1920.0	2945.0	2914.0	2823.0	1210.0	635.0	1860.3	107	1346794.0
1926	485.0	503.0	2587.0	2484.0	1252.0	3232.0	2331.0	1432.0	10351.0	3925.0	1792.0	880.0	2601.4	150	1883317.0
1927	498.0	442.0	573.0	4264.0	3847.0	6309.0	5460.0	4094.0	3715.0	2338.0	960.0	500.0	2757.3	159	1996216.0
1928	541.0	574.0	1729.0	2660.0	2140.0	13829.0	7999.0	2411.0	1359.0	956.0	502.0	408.0	2929.4	168	2120032.0
1929	295.0	258.0	493.0	921.0	2672.0	6385.0	1348.0	1149.0	856.0	550.0	371.0	252.0	1295.4	75	937790.9
1930	225.0	338.0	621.0	1786.0	1718.0	3652.0	2224.0	1364.0	986.0	624.0	422.0	249.0	1185.3	68	858087.2
1931	175.0	208.0	268.0	571.0	1102.0	2466.0	2976.0	-	-	-	-	-	-	-	-
1932	-	-	-	-	3481.0	8898.0	2450.0	1630.0	1306.0	849.0	606.0	377.0	-	-	-
1933	365.0	223.0	313.0	1898.0	4656.0	3235.0	-	-	-	-	-	-	-	-	-
1934	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1935	-	-	-	809.0	1452.0	3432.0	3964.0	2293.0	1005.0	648.0	365.0	226.0	-	-	-
1936	249.0	187.0	234.0	3415.0	2170.0	2885.0	1236.0	1023.0	720.0	473.0	267.0	98.5	1078.6	62	781530.1
1937	106.0	103.0	242.0	767.0	1036.0	2540.0	1715.0	1341.0	1063.0	988.0	501.0	281.0	893.1	51	646597.6
1938	284.0	176.0	425.0	909.0	2096.0	3738.0	3765.0	1542.0	1210.0	708.0	325.0	210.0	1288.5	74	932862.1
1939	215.0	187.0	541.0	807.0	998.0	8562.0	3345.0	1245.0	873.0	719.0	510.0	353.0	1404.0	81	1016845.5
1940	183.0	186.0	314.0	3611.0	3050.0	1608.0	1648.0	1086.0	1115.0	640.0	376.0	301.0	1095.5	63	793590.6
1941	227.0	249.0	571.0	686.0	531.0	1300.0	1440.0	1750.0	1297.0	895.0	441.0	263.0	807.3	47	584487.2
1942	199.0	165.0	183.0	452.0	1954.0	3710.0	5637.0	3229.0	2903.0	1412.0	925.0	515.0	1783.6	103	1291287.0
1943	282.0	299.0	702.0	6505.0	2013.0	4895.0	3597.0	1851.0	984.0	718.0	398.0	265.0	1874.4	108	1357013.0
1944	222.0	213.0	529.0	1094.0	1817.0	6738.0	3285.0	5369.0	1715.0	1190.0	651.0	356.0	1934.5	112	1404385.0
1945	301.0	311.0	421.0	1014.0	3711.0	4018.0	3046.0	2116.0	1775.0	1703.0	809.0	550.0	1656.1	95	1198960.0
1946	486.0	416.0	1358.0	2406.0	1735.0	6206.0	3244.0	1645.0	1846.0	1082.0	485.0	418.0	1778.1	103	1287276.0
1947	443.0	341.0	1088.0	3887.0	4352.0	5154.0	2688.0	1535.0	2155.0	1966.0	968.0	669.0	2111.4	122	1528619.0
1948	445.0	339.0	341.0	5018.0	13519.0	5467.0	2799.0	2467.0	1133.0	750.0	556.0	293.0	2770.7	160	2011408.0
1949	270.0	272.0	307.0	1281.0	1240.0	1319.0	1333.0	1030.0	621.0	521.0	420.0	209.0	737.1	42	533664.8
1950	142.0	169.0	202.0	971.0	1354.0	2889.0	2308.0	1397.0	775.0	501.0	274.0	207.0	935.5	54	677242.3
1951	215.0	191.0	252.0	1309.0	3542.0	4089.0	4733.0	2627.0	4482.0	1805.0	1343.0	848.0	2128.0	123	1540601.0
1952	568.0	487.0	842.0	7245.0	2213.0	8587.0	4110.0	2339.0	1356.0	959.0	801.0	308.0	2473.5	143	1795640.0
1953	247.0	407.0	483.0	1692.0	3809.0	9183.0	4882.0	2924.0	1659.0	912.0	638.0	359.0	2270.3	131	1643607.0
1954	356.0	484.0	455.0	2265.0	6795.0	8497.0	3651.0	8889.0	6427.0	2630.0	1596.0	692.0	3574.3	206	2587655.0
1955	402.0	502.0	551.0	5823.0	5479.0	3906.0	3473.0	1443.0	1044.0	800.0	282.0	256.0	2000.6	115	1448389.0
1956	314.0	312.0	575.0	3503.0	2359.0	3275.0	2854.0	1503.0	982.0	569.0	461.0	289.0	1423.9	82	1033648.1
1957	317.0	236.0	445.0	2105.0	2824.0	2273.0	1265.0	1026.0	888.0	741.0	584.0	375.0	1092.9	63	791188.7
1958	335.0	316.0	327.0	3174.0	2941.0	3002.0	3736.0	1534.0	1059.0	628.0	366.0	324.0	1483.4	86	1073956.0
1959	251.0	264.0	271.0	676.0	1321.0	4244.0	2895.0	1534.0	1055.0	898.0	800.0	403.0	1220.5	70	883566.8
1960	312.0	353.0	2213.0	2586.0	2536.0	2352.0	2236.0	1203.0	695.0	591.0	417.0	263.0	1316.2	76	955459.8
1961	272.0	244.0	539.0	589.0	2407.0	2371.0	1340.0	1739.0	807.0	753.0	574.0	181.0	989.7	57	716475.3
1962	210.0	301.0	458.0	1005.0	1695.0	2345.0	2156.0	1749.0	1089.0	660.0	432.0	237.0	1032.0	59	747119.9
1963	189.0	390.0	640.0	1794.0	1342.0	3079.0	3825.0	2002.0	1242.0	721.0	417.0	318.0	1334.3	77	966003.9
1964	221.0	268.0	275.0	942.0	3822.0	5832.0	3674.0	1196.0	1188.0	975.0	534.0	193.0	1594.8	92	1157728.0
1965	321.0	343.0	484.0	4909.0	2198.0	7846.0	9402.0	3109.0	3605.0	1938.0	994.0	519.0	2979.0	172	2156677.0
1966	441.0	478.0	798.0	2637.0	2685.0	3350.0	4523.0	2341.0	1299.0	1117.0	561.0	396.0	1727.3	100	1250510.0
1967	363.0	410.0	386.0	1657.0	3979.0	6812.0	2301.0	1330.0	825.0	541.0	266.0	273.0	1596.3	92	1155655.0
1968	240.0	301.0	840.0	782.0	1171.0	2704.0	2017.0	2047.0	1164.0	1222.0	619.0	329.0	1122.0	65	814502.4
1969	337.0	376.0	383.0	3836.0	3454.0	4375.0	7705.0	2044.0	1224.0	936.0	715.0	436.0	2162.1	125	1565301.0
1970	252.0	304.0	466.0	2054.0	2127.0	5939.0	3782.0	1361.0	781.0	624.0	316.0	305.0	1527.9	88	1106179.0
1971	314.0	322.0	333.0	5125.0	2057.0	4431.0	2432.0	1418.0	838.0	656.0	474.0	172.0	1544.9	89	1118475.0
1972	235.0	245.0	935.0	1984.0	1905.0	5982.0	4282.0	2104.0	1495.0	1110.0	575.0	233.0	1765.3	102	1281538.0
1973	357.0	377.0	1196.0	3431.0	3778.0	4030.0	2626.0	1842.0	1183.0	755.0	561.0	404.0	1716.2	99	1242454.0
1974	321.0	369.0	337.0	3950.0	5040.0	4857.0	2647.0	1564.0	1069.0	882.0	530.0	255.0	1821.7	105	1318885.0
1975	266.0	276.0	312.0	1790.0	1964.0	1731.0	1685.0	1239.0	690.0	525.0	307.0	237.0	921.5	53	667112.6
1976	261.0	284.0	300.0	1072.0	1286.0	1579.0	1559.0	2332.0	1179.0	655.0	433.0	337.0	942.0	54	683813.4
1977	337.0	347.0	297.0	922.0	2608.0	2311.0	1146.0	1582.0	1304.0	955.0	359.0	231.0	1036.8	60	750608.8
1978	273.0	266.0	473.0	2057.0	2365.0	3969.0	2620.0	1835.0	1739.0	1044.0	556.0	445.0	1473.4	85	1066676.0
1979	267.0	240.0	929.0	1487.0	2076.0	2073.0	1490.0	1161.0	741.0	530.0	269.0	179.0	957.3	55	693048.5
MIN	**106.0**	**103.0**	**159.0**	**452.0**	**531.0**	**1300.0**	**1146.0**	**1023.0**	**621.0**	**473.0**	**266.0**	**98.5**	**737.1**		**533664.8**
MAX	**511.0**	**574.0**	**2587.0**	**7245.0**	**13519.0**	**13829.0**	**16747.0**	**8889.0**	**10351.0**	**3925.0**	**1833.0**	**880.0**	**4418.1**		**3198533.0**
MEAN	**304.2**	**306.8**	**579.3**	**2302.7**	**2951.6**	**4712.3**	**3522.2**	**2287.8**	**1762.4**	**1116.5**	**630.7**	**354.2**	**1734.7**	**100**	**1256715.0**

TABLE C-8
NORTH SASKATCHEWAN RIVER AT PRINCE ALBERT (A05GG001)
MONTHLY MEAN RECORDED FLOWS - CFS

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	MEAN	%	AC. FT
1912	1505.0	1582.0	1576.0	8161.0	11281.0	14863.0	35310.0	30055.0	22293.0	10029.0	4916.0	2316.0	12041.5	140	8741135.0
1913	1665.0	1582.0	1963.0	16337.0	12152.0	19060.0	26194.0	25103.0	14586.0	7114.0	3025.0	1821.0	10536.0	127	7647301.0
1914	1221.0	1151.0	1296.0	4351.0	13245.0	30349.0	29461.0	14555.0	10309.0	7764.0	3736.0	2894.0	10049.5	121	7295475.0
1915	1760.0	1655.0	1707.0	9047.0	7005.0	25021.0	60239.0	28119.0	15007.0	7552.0	3896.0	2238.0	13774.5	167	9928894.0
1916	1422.0	1119.0	1293.0	7429.0	9364.0	24119.0	32929.0	25987.0	23000.0	7545.0	5133.0	3145.0	12049.7	145	8689735.0
1917	2195.0	2015.0	1781.0	8705.0	26374.0	30193.0	22429.0	14325.0	10131.0	6936.0	4031.0	1445.0	10826.8	131	7810210.0
1918	1879.0	1670.0	1729.0	8701.0	7636.0	15773.0	16823.0	12428.0	8166.0	6362.0	2755.0	1403.0	7144.7	83	5172554.0
1919	1202.0	1229.0	871.0	5455.0	5446.0	7624.0	11853.0	14984.0	11260.0	4432.0	2072.0	1614.0	5695.9	68	4123663.0
1920	1450.0	1255.0	1293.0	3791.0	31585.0	24460.0	29242.0	17732.0	8892.0	5294.0	3267.0	1505.0	10873.9	127	7893890.0
1921	955.0	1121.0	966.0	14206.0	15432.0	17100.0	16810.0	14326.0	7343.0	3531.0	2226.0	1397.0	7982.5	93	5779094.0
1922	865.0	781.0	1013.0	5147.0	11220.0	14594.0	14219.0	15768.0	11232.0	5704.0	2648.0	767.0	7034.1	82	5091042.0
1923	890.0	842.0	835.0	3473.0	6280.0	26290.0	29256.0	20561.0	13565.0	6956.0	3383.0	2732.0	9535.0	112	6877588.0
1924	1021.0	1521.0	1746.0	3871.0	11919.0	13165.0	15984.0	15578.0	11491.0	5211.0	2227.0	1877.0	7158.9	83	5196981.0
1925	1510.0	1371.0	1271.0	17947.0	10800.0	16865.0	17326.0	22671.0	17960.0	10348.0	3961.0	2538.0	10413.0	121	7538700.0
1926	1713.0	1229.0	1811.0	9987.0	7222.0	9923.0	17123.0	11602.0	25840.0	11984.0	5460.0	2624.0	8896.3	104	6440645.0
1927	1515.0	1466.0	2190.0	10461.0	22294.0	21240.0	29203.0	21823.0	14125.0	8563.0	3796.0	2085.0	11637.3	136	8425044.0
1928	2732.0	1726.0	2433.0	10306.0	9489.0	26380.0	34245.0	17945.0	9350.0	4659.0	2257.0	1613.0	10288.1	120	7468540.0
1929	1206.0	970.0	1384.0	4212.0	7967.0	18756.0	9308.0	10655.0	7017.0	4205.0	1991.0	1323.0	5764.5	67	4173325.0
1930	1196.0	1260.0	1547.0	5678.0	6852.0	14492.0	17803.0	13897.0	8876.0	4375.0	1781.0	1357.0	6524.5	77	4795887.0
1931	974.0	930.0	1123.0	3944.0	5475.0	11865.0	22997.0	15345.0	10622.0	5022.0	2617.0	1805.0	6938.2	81	5023042.0
1932	1503.0	1206.0	1060.0	9825.0	14400.0	28743.0	17203.0	14161.0	11336.0	5116.0	2012.0	1630.0	9015.6	105	6544892.0
1933	1641.0	1396.0	1113.0	5023.0	17900.0	17437.0	17561.0	12475.0	10375.0	3893.0	1859.0	1467.0	7719.1	90	5588346.0
1934	1346.0	1509.0	2001.0	7892.0	9482.0	16327.0	11813.0	10663.0	7592.0	4516.0	2431.0	1499.0	6439.5	75	4662013.0
1935	731.0	845.0	1081.0	4593.0	12545.0	17543.0	28535.0	20860.0	9524.0	4875.0	2861.0	2069.0	8906.8	104	6448244.0
1936	1256.0	1082.0	940.0	13384.0	20577.0	18620.0	12658.0	12397.0	8541.0	4152.0	2098.0	1423.0	8104.1	94	5868175.0
1937	696.0	675.0	870.0	4306.0	5409.0	10826.0	16072.0	12421.0	7070.0	5411.0	3301.0	1138.0	5716.5	67	4138545.0
1938	980.0	844.0	1358.0	5853.0	4379.0	14854.0	22516.0	14147.0	12682.0	6739.0	2795.0	1700.0	7439.8	87	5386196.0
1939	1400.0	1200.0	1419.0	5879.0	5070.0	10726.0	17723.0	12292.0	8057.0	4494.0	2911.0	1719.0	6105.3	71	4420000.0
1940	1053.0	956.0	960.0	8574.0	14068.0	11354.0	12735.0	10942.0	9109.0	5021.0	2440.0	1408.0	6567.8	77	4787928.0
1941	956.0	1044.0	889.0	4377.0	2926.0	7080.0	12964.0	10878.0	8156.0	4885.0	2682.0	737.0	4820.2	56	3489653.0
1942	732.0	838.0	898.0	4425.0	4525.0	17929.0	25029.0	18665.0	12815.0	6623.0	2887.0	2191.0	8226.7	96	5955829.0
1943	1924.0	1525.0	1548.0	16850.0	9887.0	14049.0	23329.0	14994.0	8773.0	5322.0	2775.0	1129.0	8543.2	100	6184983.0
1944	853.0	1035.0	1177.0	6058.0	5703.0	37243.0	-	-	-	6782.0	2985.0	1104.0	-	-	-
1945	1070.0	1286.0	1367.0	3201.0	6105.0	14198.0	14494.0	11771.0	9133.0	6968.0	2568.0	2121.0	6218.6	72	4502050.0
1946	1712.0	1552.0	1862.0	7159.0	5641.0	22163.0	19842.0	11297.0	8438.0	4443.0	2436.0	1457.0	7351.3	86	5322068.0
1947	1339.0	1242.0	1203.0	9915.0	11468.0	16139.0	17971.0	12942.0	9825.0	6728.0	3408.0	2496.0	7923.1	92	5736084.0
1948	1786.0	1467.0	1395.0	6934.0	53419.0	33407.0	20197.0	19884.0	10748.0	5349.0	2220.0	1349.0	13242.3	154	9613250.0
1949	1412.0	1164.0	1215.0	5942.0	5387.0	8962.0	10704.0	12533.0	7459.0	3722.0	1677.0	990.0	5119.6	60	3706403.0
1950	688.0	938.0	968.0	4931.0	6466.0	15162.0	21365.0	13336.0	8275.0	4579.0	1818.0	1167.0	6578.0	78	4834676.0
1951	1175.0	931.0	919.0	13584.0	19045.0	14463.0	20474.0	14323.0	11585.0	5768.0	2740.0	2130.0	8975.6	105	6498072.0
1952	1558.0	1367.0	1306.0	16406.0	8975.0	25120.0	29106.0	17745.0	9155.0	6290.0	3484.0	1432.0	10173.1	119	7385186.0
1953	1057.0	1125.0	1389.0	3995.0	13103.0	25077.0	23790.0	18394.0	14444.0	5515.0	3133.0	1540.0	9423.0	110	6821945.0
1954	1206.0	1316.0	1358.0	3209.0	16529.0	39207.0	26271.0	23865.0	39377.0	12464.0	5544.0	3413.0	14507.5	169	10502952.0
1955	1934.0	2118.0	1542.0	14551.0	19777.0	22110.0	19810.0	11870.0	7599.0	4313.0	1601.0	1128.0	9059.5	106	6558798.0
1956	1182.0	1111.0	1027.0	17337.0	17703.0	18670.0	17174.0	13891.0	9146.0	5740.0	2830.0	1356.0	8940.7	104	6490476.0
1957	1246.0	906.0	960.0	7843.0	15020.0	14743.0	10776.0	10335.0	8429.0	5507.0	3638.0	1898.0	6802.6	79	4924878.0
1958	1304.0	1417.0	1300.0	12302.0	12505.0	20183.0	24548.0	13848.0	9439.0	4693.0	2885.0	993.0	8818.8	103	6384529.0
1959	886.0	1138.0	1072.0	5512.0	4932.0	17142.0	22132.0	13569.0	8126.0	6441.0	3043.0	1886.0	7190.1	84	5205405.0
1960	1013.0	1363.0	1327.0	10348.0	7678.0	12327.0	23781.0	14010.0	6384.0	5034.0	2509.0	1090.0	7263.6	85	5273037.0
1961	1273.0	1166.0	1095.0	5767.0	5720.0	19080.0	12817.0	18126.0	8869.0	4059.0	1827.0	913.0	6833.0	80	4946837.0
1962	1618.0	1604.0	1870.0	7887.0	9202.0	15207.0	19023.0	16264.0	8467.0	4284.0	3629.0	2387.0	7656.7	89	5543206.0
1963	1664.0	2007.0	2683.0	17714.0	13809.0	16317.0	19068.0	14290.0	9033.0	5060.0	2032.0	1747.0	8813.8	103	6380879.0
1964	2030.0	2210.0	2197.0	6295.0	12679.0	21791.0	21984.0	9589.0	7273.0	9583.0	3668.0	2698.0	8520.4	99	6185374.0
1965	1807.0	1826.0	3365.0	16073.0	17574.0	33380.0	47106.0	19705.0	11488.0	11698.0	4442.0	3488.0	14410.1	168	10432426.0
1966	3117.0	3425.0	2891.0	10573.0	9510.0	13529.0	21216.0	19990.0	10598.0	7004.0	3164.0	2608.0	9008.9	105	6522120.0
1967	2643.0	3041.0	2859.0	2470.0	13474.0	21940.0	19677.0	11557.0	8056.0	5232.0	2582.0	1499.0	7950.0	93	5755554.0
1968	1628.0	2684.0	5270.0	8504.0	5149.0	12210.0	14290.0	16271.0	9211.0	5778.0	3455.0	2041.0	7219.9	84	5241268.0
1969	2474.0	2681.0	2039.0	15589.0	12127.0	14086.0	26035.0	17529.0	9487.0	5772.0	2559.0	2421.0	9443.8	110	6837034.0
1970	2161.0	2320.0	2681.0	11530.0	10229.0	16918.0	20066.0	11791.0	6602.0	3288.0	2179.0	2006.0	7673.4	89	5555253.0
1971	2276.0	1828.0	1769.0	13765.0	14386.0	21218.0	20290.0	18756.0	7508.0	4497.0	2371.0	1904.0	9252.8	108	6698700.0
1972	2154.0	1996.0	2152.0	13029.0	11333.0	20630.0	30165.0	14379.0	5683.0	6106.0	3254.0	2217.0	9452.2	110	6861841.0
1973	3497.0	3247.0	3971.0	12301.0	14326.0	14037.0	14081.0	8878.0	7626.0	6500.0	3906.0	3634.0	8023.3	93	5808620.0
1974	3770.0	5571.0	4673.0	27205.0	40319.0	21397.0	19265.0	9967.0	8817.0	7738.0	5342.0	4371.0	13238.4	154	9584153.0
1975	3942.0	4450.0	4222.0	6968.0	15611.0	9377.0	8533.0	5239.0	4842.0	3577.0	2462.0	2890.0	6023.3	70	4360668.0
1976	3886.0	4294.0	4310.0	10051.0	7662.0	7480.0	7721.0	8934.0	7679.0	6097.0	4314.0	3439.0	6322.6	74	4589880.0
1977	3733.0	3758.0	3575.0	7942.0	10425.0	15419.0	9547.0	9129.0	9452.0	7553.0	4449.0	3715.0	7400.2	86	5357495.0
1978	4135.0	4734.0	3950.0	11176.0	9685.0	18480.0	18687.0	9548.0	10925.0	7755.0	6250.0	4949.0	9198.5	107	6659426.0
1979	3450.0	4344.0	5686.0	11089.0	18576.0	9853.0	9641.0	7416.0	5474.0	4273.0	3955.0	2599.0	7215.4	84	5223734.0
MIN	688.0	675.0	835.0	2470.0	2926.0	7080.0	7721.0	5239.0	4842.0	3288.0	1601.0	737.0	4820.2		3489653.0
MAX	4135.0	5571.0	5686.0	27205.0	53419.0	39207.0	60239.0	30055.0	39377.0	12464.0	6250.0	4949.0	14507.5		10502952.0
MEAN	1702.6	1738.8	1862.3	9078.7	12388.8	18327.6	20734.8	15051.1	10593.6	6102.0	3111.9	1990.0	8581.7	100	6216933.0



APPENDIX D

BATTLE RIVER AND ADJACENT BASINS ARRAYS OF TOTAL HISTORICAL WATER USES

TABLE D-1
BATTLE RIVER BASIN NEAR PONOKA (05FA001)
MONTHLY MEAN TOTAL HISTORIC WATER USE - CFS

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	MEAN	%	AC. FT.
1912	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1913	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1914	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1915	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1916	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1917	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1918	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1919	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1920	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1921	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1922	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1923	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1924	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1925	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1926	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1927	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1928	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1929	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1930	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1931	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1932	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1933	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1934	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1935	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1936	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1937	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1938	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1939	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1940	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1941	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1942	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1943	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1944	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1945	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1946	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1947	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1948	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1949	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1950	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1951	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1952	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1953	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1954	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1955	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1956	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1957	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1958	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1959	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1960	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1961	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1962	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	290	77.4
1963	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	89	23.8
1964	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	111	29.8
1965	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	134	35.7
1966	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	179	47.6
1967	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	179	47.6
1968	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	223	59.5
1969	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	246	65.5
1970	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	246	65.5
1971	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	313	83.3
1972	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	312	83.3
1973	0.0	0.0	0.0	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	514	136.9
1974	0.0	0.0	0.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	536	142.8
1975	0.0	0.0	0.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	536	142.8
1976	0.0	0.0	0.0	2.5	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.3	694	185.3
1977	0.0	0.0	0.0	2.6	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.3	718	191.2
1978	0.0	0.0	0.0	2.7	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.3	740	197.2
1979	0.0	0.0	0.0	2.7	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.3	740	197.2
MIN	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**		**0.0**
MAX	**0.0**	**0.0**	**0.0**	**2.7**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.0**	**0.0**	**0.3**		**197.2**
MEAN	**0.0**	**0.0**	**0.0**	**0.4**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**100**	**26.6**

TABLE D-2
BATTLE RIVER BASIN NEAR FORESTBURG (AB05EC0011)
MONTHLY MEAN TOTAL HISTORIC WATER USE - CFS

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	MEAN	%	AC. FT.
1912	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1913	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1914	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1915	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1916	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1917	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1918	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1919	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1920	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1921	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1922	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1923	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1924	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1925	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1926	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1927	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1928	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1929	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	25	148.8
1930	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	25	148.8
1931	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	25	148.8
1932	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	25	148.8
1933	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	25	148.8
1934	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	25	148.8
1935	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	25	148.8
1936	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	25	148.8
1937	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	25	148.8
1938	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	25	148.8
1939	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	25	148.8
1940	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	25	148.8
1941	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	25	148.8
1942	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	25	148.8
1943	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	25	148.8
1944	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	25	148.8
1945	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	25	148.8
1946	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	25	148.8
1947	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	25	148.8
1948	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	25	148.8
1949	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	25	148.8
1950	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	25	148.8
1951	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	25	148.8
1952	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	25	148.8
1953	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	25	148.8
1954	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	25	148.8
1955	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	25	148.8
1956	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	25	148.8
1957	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	25	148.8
1958	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	25	148.8
1959	0.0	0.0	0.0	3.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	35	202.7
1960	0.0	0.0	0.0	2.8	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	29	172.8
1961	0.0	0.0	0.0	4.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	46	268.0
1962	0.0	0.0	0.0	5.2	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	59	346.3
1963	0.0	0.0	0.0	4.7	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	50	292.0
1964	0.0	0.0	0.0	4.9	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	53	310.0
1965	0.3	0.3	0.3	5.3	0.7	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.8	93	545.5
1966	0.3	0.3	0.3	5.4	0.7	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.8	94	551.4
1967	0.3	0.3	0.3	5.4	1.0	0.6	1.0	0.6	0.5	0.3	0.3	0.3	0.9	112	654.9
1968	0.3	0.3	0.3	5.6	1.0	0.7	0.8	0.5	0.4	0.3	0.3	0.3	0.9	110	649.0
1969	0.5	0.5	0.6	6.0	1.3	1.1	0.9	0.8	0.5	0.6	0.5	0.5	1.1	141	829.5
1970	0.6	0.7	0.8	7.3	1.6	1.1	1.6	1.3	1.0	0.8	0.6	0.7	1.5	185	1088.9
1971	0.7	0.7	0.8	7.5	2.1	1.7	1.4	2.0	1.2	0.8	0.8	0.7	1.7	209	1226.0
1972	0.7	0.7	0.9	7.5	1.9	1.5	2.1	1.4	1.1	0.9	0.9	0.8	1.7	209	1229.8
1973	1.0	0.9	1.0	8.1	2.3	1.1	1.6	51.8	28.0	19.1	4.4	1.0	10.1	1245	7309.1
1974	0.9	0.7	2.0	104.9	-120.6	-16.2	-5.3	4.7	23.8	21.5	4.7	1.0	1.6	161	1122.2
1975	1.0	0.9	1.1	54.0	12.8	-8.6	-2.6	2.2	2.7	1.8	1.1	1.1	5.6	689	4047.5
1976	0.7	0.9	1.3	40.2	14.0	4.3	4.0	2.5	2.3	1.5	1.3	1.1	5.1	757	4457.3
1977	0.9	1.0	2.0	10.1	14.8	14.7	5.4	-1.6	-22.3	-27.0	-4.0	1.0	-0.4	-53	-310.4
1978	0.8	0.8	11.6	23.8	6.3	4.2	4.1	3.1	22.6	21.0	4.9	1.1	8.9	1093	6421.3
1979	1.1	1.1	7.5	28.2	6.8	9.0	2.9	2.4	2.7	3.4	1.9	0.9	5.6	696	4085.6
MIN	0.0	0.0	0.0	0.0	-120.6	-16.2	-5.3	-1.6	-22.3	-27.0	-4.0	0.0	-0.4		-310.4
MAX	1.1	1.1	11.6	104.9	14.8	14.7	5.4	51.8	28.0	21.5	4.9	1.1	10.1		7309.1
MEAN	0.1	0.1	0.5	5.2	-0.7	0.2	0.3	1.1	1.0	0.7	0.3	0.2	0.8	100	587.7

TABLE D-3
BATTLE RIVER BASIN AT UNWIN (J05FE001)
MONTHLY MEAN TOTAL HISTORIC WATER USE - CFS

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	MEAN	%	AC. FT
1912	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1913	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1914	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1915	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1916	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1917	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.1	0.0	0.0	0.0	0.1	2	60.9
1918	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.2	0.1	0.0	0.0	0.0	0.1	2	66.8
1919	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.2	0.0	0.0	0.0	0.0	0.1	2	60.7
1920	0.0	0.0	0.0	0.0	0.0	0.3	0.4	0.3	0.1	0.0	0.0	0.0	0.1	2	65.8
1921	0.0	0.0	0.0	0.0	0.1	0.3	0.3	0.3	0.1	0.0	0.0	0.0	0.1	2	66.8
1922	0.0	0.0	0.0	0.0	0.2	0.5	1.2	0.6	0.4	0.0	0.0	0.0	0.3	6	201.3
1923	0.0	0.0	0.0	0.0	0.1	0.0	0.9	0.4	0.4	0.0	0.0	0.0	0.2	3	103.9
1924	0.0	0.0	0.0	0.0	0.3	1.0	0.3	0.5	0.4	0.0	0.0	0.0	0.2	4	157.1
1925	0.0	0.0	0.0	0.0	0.2	0.4	1.2	0.6	0.0	0.0	0.0	0.0	0.2	4	146.8
1926	0.0	0.0	0.0	0.0	0.0	1.1	1.2	0.8	0.0	0.0	0.0	0.0	0.3	5	185.4
1927	0.0	0.0	0.0	0.0	0.0	0.5	0.6	1.2	0.0	0.0	0.0	0.0	0.2	5	154.2
1928	0.0	0.0	0.0	0.0	0.6	0.2	1.5	0.8	0.6	0.0	0.0	0.0	0.3	6	213.6
1929	0.0	0.0	0.0	1.9	1.0	1.5	2.1	1.4	0.7	0.0	0.0	0.0	0.7	15	520.[illegible]
1930	0.0	0.0	0.0	1.9	1.0	1.3	1.1	0.5	0.0	0.0	0.0	0.0	0.5	10	350.3
1931	0.0	0.0	0.0	1.9	1.2	0.1	1.9	0.5	0.3	0.0	0.0	0.0	0.5	10	355.2
1932	0.0	0.0	0.0	1.9	0.9	1.2	2.1	1.3	0.1	0.0	0.0	0.0	0.6	13	454.8
1933	0.0	0.0	0.0	2.0	0.9	1.3	1.6	1.4	0.3	0.0	0.0	0.0	0.6	13	454.0
1934	0.0	0.0	0.0	2.0	0.9	1.4	1.7	1.2	0.5	0.0	0.0	0.0	0.5	13	465.7
1935	0.0	0.0	0.0	2.0	0.6	0.7	1.6	0.6	0.5	0.0	0.0	0.0	0.5	11	387.2
1936	0.0	0.0	0.0	2.0	0.8	2.5	4.1	1.4	1.1	0.0	0.0	0.0	1.0	21	720.6
1937	0.0	0.0	0.0	3.0	1.1	3.5	3.4	1.2	0.1	0.0	0.0	0.0	1.0	21	743.2
1938	0.0	0.0	0.0	3.8	0.6	3.2	3.6	1.0	1.4	0.0	0.0	0.0	1.1	24	819.6
1939	0.0	0.0	0.0	[illegible]	1.5	1.6	4.6	[illegible]	1.0	0.0	0.0	0.0	1.4	28	987.6
1940	0.0	0.0	0.0	5.5	2.5	4.1	4.2	3.5	1.1	0.0	0.0	0.0	1.5	31	1251.7
1941	0.0	0.0	0.0	5.1	1.4	2.8	6.2	2.3	0.4	0.0	0.0	0.0	1.7	35	1221.5
1942	0.0	0.0	[illegible]	[illegible]	[illegible]	1.7	1.2	1.4	1.0	0.0	0.0	0.0	[illegible]	28	985.5
1943	0.0	0.0	0.0	6.5	3.0	0.1	5.4	2.7	2.7	0.0	0.0	0.0	2.0	41	1444.2
1944	0.0	0.0	0.0	7.0	2.3	0.0	3.5	4.3	0.0	0.0	0.0	0.0	1.4	30	1037.6
1945	0.0	0.0	0.0	7.6	2.9	5.6	6.3	4.1	0.9	0.0	0.0	0.0	2.3	48	1656.8
1946	0.0	0.0	0.0	8.6	2.4	0.0	7.2	1.3	0.1	0.0	0.0	0.0	1.6	34	1187.9
1947	0.0	0.0	0.0	10.1	1.6	3.8	6.4	0.6	0.0	0.0	0.0	0.0	1.9	39	1355.9
1948	0.0	0.0	0.0	10.8	2.8	6.3	5.8	5.1	2.5	0.0	0.0	0.0	2.8	57	2008.7
1949	0.0	0.0	0.0	11.1	3.3	4.2	0.8	3.9	2.4	0.0	0.0	0.0	2.1	44	1545.1
1950	0.0	0.0	0.0	12.5	3.2	4.9	5.6	4.4	2.3	0.0	0.0	0.0	2.7	57	1983.9
1951	0.0	0.0	0.0	12.9	0.7	6.2	4.8	3.5	2.3	0.0	0.0	0.0	2.5	52	1826.8
1952	0.0	0.0	0.0	12.9	2.5	0.0	6.4	4.2	2.6	0.0	0.0	0.0	2.4	49	1727.8
1953	0.0	0.0	0.0	14.9	0.9	3.5	3.8	1.7	1.9	0.0	0.0	0.0	2.2	46	1601.5
1954	0.0	0.0	0.0	14.9	0.7	4.8	7.9	0.0	0.0	0.0	0.0	0.0	2.3	49	1701.0
1955	0.0	0.0	0.0	15.0	1.6	7.3	6.0	6.6	2.4	0.3	0.0	0.0	3.3	68	2361.3
1956	0.0	0.0	0.0	15.4	4.1	3.8	8.3	2.4	1.4	0.0	0.0	0.0	2.9	61	2135.8
1957	0.0	0.0	0.0	15.6	2.1	7.2	9.0	3.8	3.3	2.8	0.0	0.0	3.6	76	2641.4
1958	0.0	0.0	0.0	33.6	-3.9	21.9	3.2	9.1	9.6	2.3	0.1	-0.9	6.2	129	4482.2
1959	-1.6	-0.5	10.8	19.3	5.1	5.9	8.9	13.1	3.6	6.5	-2.2	-0.3	5.8	120	4166.3
1960	-1.1	-0.7	9.7	20.2	0.1	16.5	13.2	11.9	7.9	4.8	1.1	-0.9	6.9	143	4997.2
1961	-2.0	-0.4	5.0	22.7	3.2	14.1	12.1	17.1	19.9	-4.6	-0.9	-1.1	7.1	147	5124.3
1962	-1.4	-10.5	6.9	49.0	1.3	12.9	4.6	10.1	6.0	4.1	0.7	-1.0	6.9	144	5011.4
1963	-2.7	4.7	3.2	26.7	4.2	22.2	22.4	6.2	7.9	3.0	-2.1	-1.0	7.9	163	5686.4
1964	-2.2	-1.8	1.2	30.7	1.6	13.5	15.5	14.6	5.4	6.8	2.4	0.5	7.3	152	5327.2
1965	-2.1	0.2	1.0	54.5	-8.7	5.3	23.1	6.2	0.8	1.5	-1.1	0.6	6.7	140	4879.7
1966	-3.7	0.0	5.8	34.4	6.6	12.1	8.5	9.7	7.9	3.5	-1.3	-1.4	6.8	142	4942.8
1967	0.3	-2.2	1.5	55.2	-3.9	12.4	23.3	15.2	9.8	3.1	-0.9	-0.3	9.4	196	6840.2
1968	-0.8	-0.9	18.0	37.2	21.0	13.0	16.6	16.3	7.9	2.0	1.2	-0.1	11.0	228	7965.4
1969	2.5	1.3	4.1	59.3	0.8	20.0	8.3	40.8	4.8	5.3	4.2	2.0	12.8	266	9273.9
1970	4.9	5.2	6.4	54.4	25.2	17.3	41.4	26.6	11.0	6.7	5.7	5.1	17.5	364	12699.9
1971	4.1	4.3	4.3	62.5	4.1	16.9	22.4	29.5	10.3	6.1	4.7	2.2	14.3	296	10326.1
1972	3.0	2.9	17.3	54.1	5.1	-3.3	21.2	21.7	11.3	6.9	3.5	3.5	12.3	255	8909.3
1973	2.8	2.6	33.5	61.1	13.2	-17.3	34.7	46.2	44.5	21.2	11.7	4.4	21.7	450	15686.9
1974	4.4	3.9	25.5	205.1	-3.8	-94.4	30.8	13.0	29.1	28.2	10.9	4.8	21.4	445	15510.9
1975	5.0	4.5	24.8	110.4	25.0	-24.7	15.1	19.4	14.7	5.4	2.7	2.7	17.1	355	12373.6
1976	2.7	1.8	21.6	84.9	35.4	-25.3	34.9	18.5	10.5	16.1	3.1	3.2	17.4	360	12600.2
1977	3.0	2.9	27.5	70.7	31.4	14.3	34.4	21.8	-9.3	-16.8	-7.8	4.1	14.8	306	10682.2
1978	3.8	3.5	50.7	89.2	12.5	-4.6	39.0	32.0	17.3	30.8	12.0	4.2	24.3	505	17609.2
1979	4.0	4.3	37.9	78.3	18.6	-16.6	40.0	28.6	15.7	23.2	5.0	3.4	20.3	422	14715.5
MIN	-3.7	-10.5	0.0	0.0	-8.7	-94.4	0.0	0.0	-9.3	-16.8	-7.8	-1.4	0.0		0.0
MAX	5.0	5.2	50.7	205.1	35.4	22.2	41.4	46.2	44.5	30.8	12.0	5.1	24.3		17609.2
MEAN	0.3	0.4	4.7	22.6	3.6	1.8	9.0	7.4	4.1	2.5	0.6	0.5	4.8	100	3489.1

TABLE D-4
BATTLE RIVER BASIN AT BATTLEFORD (05FF001)
MONTHLY MEAN TOTAL HISTORIC WATER USE - CFS

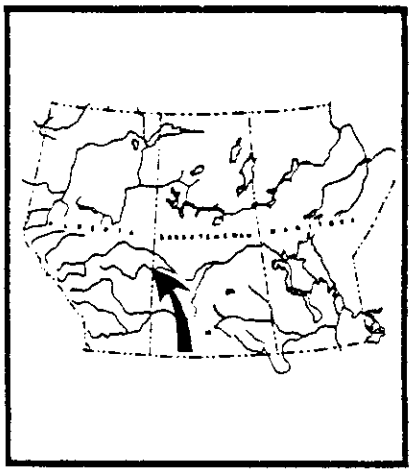
	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	MEAN	%	AC. FT.
1912	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1913	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0
1914	0.0	0.0	0.0	1.3	0.9	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.2	4	150.5
1915	0.0	0.0	0.0	2.5	1.7	0.5	0.1	0.1	0.1	0.1	0.0	0.0	0.4	7	307.4
1916	0.0	0.0	0.0	2.5	1.7	0.5	0.1	0.1	0.1	0.1	0.0	0.0	0.4	7	307.4
1917	0.0	0.0	0.0	2.5	1.8	0.8	0.5	0.3	0.1	0.1	0.0	0.0	0.5	9	368.3
1918	0.0	0.0	0.0	2.5	1.8	0.8	0.5	0.3	0.2	0.1	0.0	0.0	0.5	9	374.3
1919	0.0	0.0	0.0	2.5	1.7	0.8	0.5	0.3	0.1	0.1	0.0	0.0	0.5	8	362.2
1920	0.0	0.0	0.0	2.5	1.7	0.8	0.5	0.4	0.2	0.1	0.0	0.0	0.5	9	374.3
1921	0.0	0.0	0.0	2.5	1.8	0.8	0.4	0.4	0.2	0.1	0.0	0.0	0.5	9	374.3
1922	0.0	0.0	0.0	2.5	1.9	1.3	1.3	0.8	0.5	0.2	0.0	0.0	0.7	12	514.1
1923	0.0	0.0	0.0	2.5	1.6	0.5	0.9	0.6	0.5	0.2	0.0	0.0	0.6	10	422.6
1924	0.0	0.0	0.0	2.7	2.2	1.4	0.5	0.7	0.5	0.2	0.0	0.0	0.7	12	495.1
1925	0.0	0.0	0.0	2.7	2.1	0.9	1.2	0.8	0.2	0.1	0.0	0.0	0.7	11	484.4
1926	0.0	0.0	0.0	2.7	1.9	1.5	1.3	1.0	0.2	0.1	0.0	0.0	0.7	12	528.2
1927	0.0	0.0	0.0	2.7	1.9	1.3	0.7	1.2	0.3	0.1	0.0	0.0	0.7	12	495.7
1928	0.0	0.0	0.0	2.7	2.4	0.8	1.4	0.8	0.7	0.2	0.0	0.0	0.8	13	545.1
1929	0.0	0.0	0.0	4.3	3.7	1.9	2.1	1.6	0.9	0.2	0.0	0.0	1.2	20	852.9
1930	0.0	0.0	0.0	4.3	3.1	1.7	1.2	0.7	0.2	0.1	0.0	0.0	0.9	16	682.5
1931	0.0	0.0	0.0	4.3	3.3	0.7	1.8	0.8	0.4	0.1	0.0	0.0	1.0	16	696.2
1932	0.0	0.0	0.0	4.3	3.1	1.6	2.1	1.5	0.4	0.1	0.0	0.0	1.1	19	793.0
1933	0.0	0.0	0.0	4.4	3.1	1.7	1.7	1.5	0.5	0.1	0.0	0.0	1.1	18	786.2
1934	0.0	0.0	0.0	4.4	3.1	1.8	1.8	1.4	0.7	0.2	0.0	0.0	1.1	19	810.2
1935	0.0	0.0	0.0	4.4	2.8	1.1	1.8	1.0	0.6	0.2	0.0	0.0	1.0	17	718.6
1936	0.0	0.0	0.0	4.4	3.0	2.7	4.0	1.9	1.2	0.2	0.0	0.0	1.5	25	1053.4
1937	0.0	0.0	0.0	5.3	3.4	3.6	3.5	1.6	0.3	0.1	0.0	0.0	1.5	25	1076.2
1938	0.0	0.0	0.0	6.1	3.2	3.4	3.6	1.4	1.4	0.3	0.0	0.0	1.6	27	1171.2
1939	0.0	0.0	0.0	9.9	5.4	2.6	4.3	3.9	1.5	0.2	0.0	0.0	2.3	39	1651.6
1940	0.0	0.0	0.0	11.0	7.3	5.0	4.3	3.7	1.5	0.2	0.0	0.0	2.7	45	1954.4
1941	0.0	0.0	0.0	11.3	6.4	4.6	6.0	2.9	0.7	0.2	0.0	0.0	2.7	45	1940.9
1942	0.0	0.0	0.0	12.5	7.7	3.1	1.5	2.3	1.5	0.3	0.0	0.0	2.5	42	1804.5
1943	0.0	0.0	0.0	12.5	8.5	1.8	7.5	3.6	2.9	0.6	0.0	0.0	3.2	53	2283.4
1944	0.0	0.0	0.0	13.7	8.4	1.7	3.2	4.4	0.8	0.2	0.0	0.0	2.7	45	1960.1
1945	0.0	0.0	0.0	14.4	9.1	6.8	6.4	4.6	1.5	0.3	0.0	0.0	3.6	61	2605.1
1946	0.0	0.0	0.0	15.3	8.8	1.8	6.5	2.3	0.5	0.2	0.0	0.0	3.0	50	2141.8
1947	0.0	0.0	0.0	16.6	8.3	5.0	6.3	1.6	0.3	0.2	0.0	0.0	3.2	54	2311.5
1948	0.0	0.0	0.0	17.3	9.6	7.4	6.1	5.4	3.0	0.5	0.0	0.0	4.1	69	2976.4
1949	0.0	0.0	0.0	15.8	8.6	5.2	1.4	3.7	2.8	0.5	0.0	0.0	3.2	54	2301.6
1950	0.0	0.0	0.0	15.0	7.5	5.4	5.6	4.7	2.7	0.4	0.0	0.0	3.4	58	2493.6
1951	0.0	0.0	0.0	15.5	5.4	6.3	5.1	3.8	2.6	0.4	0.0	0.0	3.3	55	2355.8
1952	0.0	0.0	0.0	16.0	7.4	1.2	5.7	4.6	2.9	0.4	0.0	0.0	3.2	54	2309.0
1953	0.0	0.0	0.0	16.9	7.1	4.3	3.9	2.1	2.0	0.3	0.0	0.0	3.2	54	2323.4
1954	0.0	0.0	0.0	19.1	7.0	5.4	7.6	1.1	0.1	0.1	0.0	0.0	3.4	57	2435.3
1955	0.0	0.0	0.0	19.3	7.9	7.8	6.4	6.7	3.2	0.8	0.0	0.0	4.3	74	3143.4
1956	0.0	0.0	0.0	19.4	10.0	5.0	7.9	3.4	1.7	0.4	0.0	0.0	4.0	67	2887.3
1957	0.0	0.0	0.0	19.6	8.3	7.7	9.0	4.7	3.6	3.1	0.4	0.0	4.7	80	3405.8
1958	0.0	0.0	0.0	35.2	5.4	19.6	5.9	8.5	9.7	3.5	0.4	-0.8	7.2	123	5245.3
1959	-1.5	-0.6	9.3	24.3	11.5	6.9	8.7	12.7	5.0	6.3	-1.1	-0.5	6.8	115	4914.4
1960	-1.0	-0.8	8.3	25.0	7.4	15.6	13.8	12.3	8.6	5.4	1.6	-0.6	8.0	135	5780.6
1961	-1.9	-0.6	4.3	27.0	10.9	13.9	12.6	16.6	19.7	-1.2	-1.4	-1.1	8.2	140	5961.1
1962	-1.4	-9.3	4.6	53.1	15.0	13.1	6.0	9.7	6.8	4.6	1.1	-0.8	8.6	145	6210.8
1963	-2.5	3.7	3.4	34.0	14.9	21.8	22.7	8.6	8.0	3.9	-1.4	-1.1	9.7	164	6986.8
1964	-2.0	-1.9	0.8	37.2	13.2	13.8	15.5	15.0	6.9	6.9	3.0	0.7	9.1	154	6595.0
1965	-1.7	-0.1	0.9	57.9	7.4	5.4	21.0	8.7	1.8	1.4	-0.8	0.4	8.5	144	6163.2
1966	-3.1	-0.5	5.0	42.3	18.9	13.6	9.2	9.9	8.4	4.1	-0.7	-1.4	8.8	149	6376.1
1967	0.1	-1.9	1.0	59.7	12.5	12.4	22.2	16.6	10.8	4.0	-0.4	-0.4	11.4	193	8246.9
1968	-0.7	-0.9	15.5	46.1	31.8	16.1	16.4	16.6	9.3	2.8	1.3	0.1	12.9	218	9352.8
1969	2.5	1.5	3.7	63.4	17.1	19.6	10.2	36.9	9.8	5.2	4.4	2.3	14.7	249	10657.0
1970	4.5	5.1	6.2	59.8	38.0	20.5	38.5	28.9	13.4	7.2	5.8	5.1	19.5	330	14098.9
1971	4.2	4.3	4.3	67.2	21.2	17.4	22.0	28.8	13.2	6.6	4.9	2.6	16.4	278	11865.3
1972	2.9	2.9	15.4	61.7	21.0	0.0	18.2	22.0	12.9	7.5	3.9	3.5	14.3	243	10402.5
1973	2.8	2.6	29.4	68.3	26.0	-11.4	28.1	41.5	51.1	21.8	13.9	4.4	23.5	398	16990.0
1974	4.5	4.0	22.5	190.9	59.3	-108.0	26.3	12.5	27.6	29.8	13.8	4.5	24.2	411	17542.6
1975	5.0	4.6	22.1	111.2	54.2	-18.1	9.1	19.6	15.9	6.6	3.1	2.6	19.7	334	14255.2
1976	2.7	1.9	19.0	89.6	57.7	-16.4	27.2	21.1	11.8	15.4	4.7	3.2	19.9	337	14442.4
1977	3.0	2.9	24.2	80.3	47.5	20.1	32.6	23.6	-3.8	-17.2	-10.6	4.2	17.3	293	12527.8
1978	3.8	3.5	43.8	100.0	35.1	-0.3	33.6	33.3	16.2	30.8	15.0	4.2	25.9	455	19453.1
1979	4.0	4.3	33.0	87.8	40.3	-11.0	34.1	29.8	16.0	22.1	7.6	3.5	22.9	388	16588.1
MIN	-3.1	-9.3	0.0	0.0	0.0	-108.0	0.0	0.0	-3.8	-17.2	-10.6	-1.4	0.0		0.0
MAX	5.0	5.1	43.8	190.9	59.3	21.8	38.5	41.5	51.1	30.8	15.0	5.1	26.9		19453.1
MEAN	0.4	0.4	4.1	26.5	11.4	2.7	8.4	7.7	4.8	2.8	1.0	0.5	5.9	100	4275.7

TABLE D-5
BIGHORN RESERVOIR
COMPUTED CHANGES IN RESERVOIR STORAGE
IN MONTHLY MEAN CFS

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	MEAN	%	AC. FT.
1912	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1913	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1914	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1915	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1916	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1917	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1918	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1919	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1920	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1921	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1922	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1923	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1924	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1925	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1926	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1927	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1928	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1929	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1930	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1931	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1932	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1933	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1934	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1935	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1936	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1937	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1938	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1939	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1940	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1941	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1942	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1943	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1944	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1945	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1946	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1947	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1948	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1949	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1950	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1951	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1955	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1956	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1957	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1958	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1961	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1962	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1963	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1964	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1965	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1966	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1967	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1968	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1969	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1970	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1971	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1972	-	-	-	-	-	-	-	-	-	-	-1324.0	0.0	-	-	-
1973	-1397.0	-1208.0	-1124.0	-751.0	451.0	4053.0	4617.0	4107.0	-300.0	-1667.0	-771.0	-1524.0	384.8	506	278596.3
1974	-2426.0	-2589.0	-1719.0	-1754.0	-985.0	6078.0	6842.0	4477.0	19.0	-1862.0	-1890.0	-2249.0	179.4	235	129887.6
1975	-2273.0	-2774.0	-2678.0	-2181.0	-1089.0	2114.0	6639.0	3363.0	589.0	-1223.0	-1566.0	-1642.0	-205.4	-270	-148730.6
1976	-1776.0	-2671.0	-2164.0	-1670.0	866.0	2342.0	6396.0	5686.0	1047.0	-1883.0	-3074.0	-2519.0	67.4	89	48946.1
1977	-2315.0	-2016.0	-2079.0	-1329.0	436.0	4162.0	3456.0	4650.0	295.0	-1227.0	-2338.0	-1855.0	0.8	1	591.1
1978	-2527.0	-2415.0	-2290.0	-1520.0	-338.0	4379.0	6279.0	4148.0	2810.0	-1602.0	-2543.0	-2404.0	179.2	236	129730.9
1979	-2175.0	-3291.0	-3096.0	-2413.0	233.0	3136.0	4903.0	4187.0	1342.0	-780.0	-1843.0	-1382.0	-73.7	-97	-53351.4
MIN	**-2527.0**	**-3291.0**	**-3096.0**	**-2413.0**	**-1089.0**	**2114.0**	**3456.0**	**3363.0**	**-300.0**	**-1883.0**	**-3074.0**	**-2519.0**	**-205.4**		**-148730.6**
MAX	**-1397.0**	**-1208.0**	**-1124.0**	**-751.0**	**866.0**	**6078.0**	**6842.0**	**5686.0**	**2810.0**	**-780.0**	**-771.0**	**0.0**	**384.8**		**278596.3**
MEAN	**-2127.0**	**-2424.7**	**-2164.3**	**-1659.7**	**-60.9**	**3752.0**	**5590.3**	**4374.0**	**828.9**	**-1463.6**	**-1918.6**	**-1696.9**	**76.1**	**100**	**55095.7**

TABLE D-5
BRAZEAU RESERVOIR
COMPUTED CHANGES IN RESERVOIR STORAGE
IN MONTHLY MEAN CFS

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	MEAN	%	AC. FT.
1912	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1913	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1914	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1915	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1916	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1917	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1918	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1919	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1920	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1921	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1922	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1923	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1924	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1925	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1926	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1927	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1928	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1929	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1930	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1931	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1932	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1933	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1934	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1935	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1936	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1937	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1938	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1939	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1940	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1941	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1942	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1943	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1944	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1945	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1946	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1947	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1948	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1949	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1950	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1951	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1955	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1956	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1957	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1958	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1961	-	-	-	-	-	-	-	-	-	1548.0	667.0	-387.0	-	-	-
1962	-615.0	-859.0	-419.0	1350.0	-1114.0	36.0	-162.0	2899.0	2139.0	799.0	-1657.0	-1055.0	115.9	284	83922.6
1963	-1037.0	-1147.0	-966.0	32.0	-156.0	-1.0	60.0	2290.0	1770.0	851.0	-545.0	-909.0	25.7	63	18599.0
1964	-957.0	-940.0	-1226.0	-469.0	516.0	-399.0	2350.0	1956.0	3148.0	872.0	934.0	-598.0	435.7	1066	316290.2
1965	-292.0	-1534.0	-2222.0	25.0	1121.0	-454.0	728.0	1782.0	2277.0	-31.0	-731.0	921.0	144.6	354	104677.6
1966	-1790.0	-1272.0	-1048.0	-88.0	636.0	765.0	1090.0	1416.0	1869.0	65.0	-784.0	-968.0	-3.6	-9	-2626.1
1967	-1447.0	-1450.0	-1197.0	-247.0	453.0	552.0	604.0	2130.0	739.0	589.0	-425.0	-1275.0	-72.5	-177	-52488.6
1968	-1707.0	-1911.0	-1747.0	-700.0	4.0	1666.0	4822.0	799.0	1064.0	62.0	-605.0	-1347.0	40.4	99	29349.4
1969	-1714.0	-959.0	-1007.0	-201.0	209.0	1771.0	376.0	1679.0	514.0	1095.0	-374.0	-1411.0	1.3	3	952.0
1970	-1323.0	-1200.0	-981.0	-143.0	845.0	2601.0	-655.0	1083.0	584.0	363.0	-1045.0	-1394.0	-103.0	-252	-74602.3
1971	-934.0	-496.0	-746.0	824.0	2289.0	2191.0	320.0	-66.0	911.0	-165.0	-969.0	-1309.0	153.1	375	110838.3
1972	-1376.0	-1250.0	-1161.0	-158.0	2259.0	3753.0	-271.0	-161.0	600.0	-867.0	-914.0	-825.0	-34.5	-84	-25059.2
1973	-644.0	-1514.0	-781.0	-33.0	1304.0	1625.0	994.0	378.0	853.0	-115.0	-1548.0	-518.0	10.1	25	7291.2
1974	-946.0	-889.0	-483.0	384.0	1359.0	2082.0	138.0	529.0	-57.0	88.0	-553.0	-847.0	79.1	194	57254.9
1975	-1696.0	-458.0	-72.0	-746.0	592.0	725.0	2301.0	174.0	13.0	558.0	-789.0	-1203.0	-45.1	-110	-32647.9
1976	-1252.0	-730.0	-447.0	300.0	-297.0	-17.0	2340.0	1769.0	-373.0	-97.0	-542.0	-644.0	5.7	14	4149.4
1977	-1231.0	-528.0	155.0	-193.0	2794.0	125.0	340.0	13.0	333.0	-259.0	-475.0	-1354.0	-18.9	-46	-13658.2
1978	-1205.0	-560.0	-69.0	818.0	1299.0	228.0	493.0	397.0	584.0	93.0	-1119.0	-1270.0	-23.2	-57	-16804.0
1979	-1271.0	-714.0	0.0	-197.0	191.0	1812.0	574.0	492.0	206.0	444.0	-356.0	-922.0	23.9	58	17268.1
MIN	-1790.0	-1911.0	-2222.0	-746.0	-1114.0	-454.0	-655.0	-161.0	-373.0	-867.0	-1657.0	-1411.0	-103.0		-74602.3
MAX	-292.0	-458.0	155.0	1350.0	2794.0	3753.0	4822.0	2899.0	3148.0	1548.0	934.0	921.0	435.7		316290.2
MEAN	-1191.6	-1024.9	-800.9	31.0	794.1	1058.8	913.4	1092.2	954.1	310.2	-622.6	-911.3	40.9	100	29595.2



APPENDIX E

BATTLE RIVER AND ADJACENT BASINS ARRAYS OF RECORDED FLOWS ADJUSTED TO NATURAL

TABLE E-1
BATTLE RIVER BASIN NEAR PONOKA (B05FA001)
MONTHLY MEAN NATURAL FLOWS - CFS

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	MEAN	%	AC. FT.
1912	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1913	-	-	-	-	-	165.0	239.0	106.0	55.4	43.5	31.5	-	-	-	-
1914	-	-	-	81.6	373.0	510.0	198.0	35.6	32.7	54.5	32.6	32.7	-	-	-
1915	27.6	17.0	43.0	134.0	129.0	942.0	1075.0	176.0	71.1	81.9	43.6	17.3	231.2	197	167470.1
1916	6.0	5.6	154.0	264.0	229.0	372.0	556.0	296.0	832.0	245.0	124.0	64.9	262.8	224	190766.8
1917	51.4	51.8	54.3	1070.0	985.0	414.0	178.0	31.2	32.3	34.2	56.9	46.8	251.0	214	181700.1
1918	49.3	49.8	55.3	156.0	95.5	56.5	37.4	20.3	20.4	24.0	11.8	7.0	51.9	44	37583.2
1919	5.9	4.4	5.0	372.0	209.0	87.8	38.8	18.7	52.8	21.5	22.3	13.7	70.9	60	51294.1
1920	16.1	16.8	20.4	355.0	1467.0	287.0	86.0	28.0	22.8	26.6	19.5	14.0	198.0	169	143760.4
1921	16.2	15.8	19.1	264.0	86.8	81.6	50.2	17.3	13.2	12.9	6.8	1.3	47.0	40	33991.1
1922	0.2	0.1	0.1	25.3	21.6	27.5	14.5	9.5	6.9	7.4	2.6	-	-	-	-
1923	-	-	-	63.9	52.0	81.0	96.5	89.1	33.1	32.2	-	-	-	-	-
1924	-	-	-	45.1	59.7	39.8	16.5	35.7	29.8	27.9	15.9	9.2	-	-	-
1925	5.7	3.2	2.4	545.0	95.5	56.3	37.0	28.0	36.8	39.1	31.3	26.1	78.6	67	56884.7
1926	26.3	24.3	73.2	253.0	78.3	718.0	124.0	53.8	520.0	197.0	83.4	59.1	183.1	156	132525.7
1927	54.2	38.1	53.5	1132.0	796.0	305.0	814.0	84.9	51.3	72.5	42.2	39.4	291.3	248	210904.7
1928	44.1	65.7	503.0	407.0	145.0	298.0	342.0	65.0	40.3	44.8	21.9	18.4	166.6	142	120957.2
1929	19.4	10.7	43.6	140.0	113.0	57.1	25.4	10.4	5.3	8.7	6.2	3.5	37.1	32	26841.5
1930	3.0	1.7	3.6	40.9	33.3	26.3	22.8	14.9	10.3	-	-	-	-	-	-
1931	-	0.8	1.1	24.5	-	-	-	-	-	9.6	5.9	2.5	-	-	-
1932	2.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1933	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1934	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1935	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1936	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1937	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1938	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1939	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1940	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1941	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1942	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1943	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1944	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1945	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1946	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1947	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1948	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1949	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1950	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1951	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1955	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1956	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1957	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1958	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1961	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1962	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1963	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1964	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1965	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1966	-	-	-	-	-	-	12.7	8.6	4.1	4.9	-	-	-	-	-
1967	-	-	0.0	117.8	99.1	67.7	11.5	0.4	0.0	0.0	-	-	-	-	-
1968	-	-	90.0	32.1	13.2	5.2	2.1	2.1	0.9	1.2	-	-	-	-	-
1969	-	-	5.7	372.1	27.8	11.3	5.7	3.3	2.9	11.3	-	-	-	-	-
1970	-	-	3.3	315.1	39.6	46.1	84.4	10.3	7.3	8.6	-	-	-	-	-
1971	-	-	7.7	591.4	85.2	57.8	144.0	15.8	5.5	5.3	6.0	5.7	-	-	-
1972	3.1	2.9	21.6	281.4	87.9	40.7	35.6	27.9	11.4	16.6	10.9	5.9	43.6	37	31641.7
1973	3.6	2.5	25.2	232.3	124.0	71.4	265.0	238.0	40.0	25.3	20.1	14.1	89.5	76	64778.5
1974	10.8	11.0	10.7	1166.4	509.0	160.0	171.0	58.9	21.4	18.7	15.6	5.1	179.5	153	129957.4
1975	5.9	6.8	7.4	222.4	242.0	63.0	33.0	9.9	5.0	5.1	5.2	3.0	50.9	43	36862.2
1976	3.4	3.7	6.2	127.5	23.0	3.1	1.8	18.7	3.7	1.5	3.2	3.5	16.5	14	11957.0
1977	4.7	5.9	7.7	45.6	108.1	85.7	9.2	2.7	3.9	4.9	4.5	3.5	23.9	20	17297.8
1978	1.7	1.3	50.9	151.7	62.8	46.2	9.9	7.5	21.3	17.0	17.6	13.4	33.4	28	24197.5
1979	6.0	3.7	103.0	151.7	107.1	58.1	7.4	8.8	5.9	10.1	6.9	6.1	39.7	34	28730.7
MIN	**0.2**	**0.1**	**0.0**	**24.5**	**13.2**	**3.1**	**1.8**	**0.4**	**0.0**	**0.0**	**2.6**	**1.3**	**16.5**		**11957.0**
MAX	**54.2**	**65.7**	**503.0**	**1166.4**	**1467.0**	**942.0**	**1079.0**	**296.0**	**832.0**	**245.0**	**124.0**	**64.9**	**291.3**		**210904.7**
MEAN	**16.1**	**15.1**	**49.1**	**296.5**	**216.2**	**180.9**	**148.5**	**48.0**	**62.5**	**35.0**	**25.0**	**17.4**	**117.3**	**100**	**85005.3**

TABLE E-2

BATTLE RIVER BASIN NEAR FORESTBURG (B05FC001)

MONTHLY MEAN NATURAL FLOWS - CFS

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	MEAN	%	AC. FT.
1912	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1913	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1914	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1915	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1916	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1917	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1918	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1919	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1920	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1921	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1922	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1923	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1924	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1925	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1926	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1927	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1928	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1929	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1930	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1931	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1932	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1933	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1934	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1935	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1936	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1937	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1938	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1939	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1940	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1941	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1942	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1943	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1944	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1945	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1946	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1947	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1948	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1949	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1950	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1951	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1955	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1956	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1957	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1958	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1961	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1962	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1963	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1964	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1965	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1966	-	-	-	-	-	-	-	-	-	28.	5.	1.	-	-	-
1967	0.	0.	0.	104.	615.	133.	29.	11.	4.	0.	-	-	-	-	-
1968	-	-	64.	76.	20.	3.	4.	1.	15.	17.	-	-	-	-	-
1969	-	-	1.	887.	306.	41.	19.	4.	9.	9.	-	-	-	-	-
1970	-	-	2.	779.	362.	79.	224.	71.	45.	33.	-	-	-	-	-
1971	-	-	2.	676.	930.	138.	156.	183.	86.	44.	-	-	-	-	-
1972	-	-	25.	560.	426.	135.	86.	38.	39.	35.	-	-	-	-	-
1973	-	-	49.	472.	349.	155.	323.	572.	308.	161.	-	-	-	-	-
1974	-	-	18.	1947.	4708.	1098.	467.	301.	179.	129.	-	-	-	-	-
1975	-	-	2.	187.	787.	211.	99.	37.	13.	18.	-	-	-	-	-
1976	-	-	13.	279.	145.	24.	11.	6.	3.	6.	-	-	-	-	-
1977	-	-	6.	42.	108.	78.	26.	2.	0.	0.	-	-	-	-	-
1978	-	-	66.	222.	128.	59.	29.	17.	151.	100.	-	-	-	-	-
1979	-	-	180.	681.	501.	128.	61.	39.	16.	32.	-	-	-	-	-
MIN	0.	0.	0.	42.	20.	3.	4.	1.	0.	0.	5.	1.	-		-
MAX	0	0.	180.	1947.	4708.	1098.	467.	572.	308.	161.	5.	1.	-		-
MEAN	0.	0.	33.	532.	722.	175.	118.	99.	67.	44.	5.	1.	-	100	-

TABLE E-3
BATTLE RIVER BASIN AT UNWIN (B05FE001)
MONTHLY MEAN NATURAL FLOWS - CFS

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	MEAN	%	AC.-FT.
1912	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1913	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1914	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1915	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1916	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1917	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1918	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1919	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1920	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1921	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1922	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1923	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1924	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1925	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1926	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1927	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1928	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1929	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1930	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1931	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1932	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1933	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1934	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1935	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1936	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1937	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1938	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1939	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1940	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1941	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1942	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1943	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1944	-	-	60.	433.	185.	259.	517.	532.	246.	179.	-	-	-	-	-
1945	-	-	54.	386.	240.	122.	55.	57.	39.	37.	-	-	-	-	-
1946	-	-	109.	607.	271.	190.	221.	223.	192.	176.	-	-	-	-	-
1947	-	-	162.	1394.	567.	229.	129.	95.	148.	109.	-	-	-	-	-
1948	-	-	13.	1481.	7488.	2148.	536.	308.	213.	186.	-	-	-	-	-
1949	-	-	34.	341.	228.	97.	117.	234.	79.	65.	51.	26.	-	-	-
1950	14.	19.	44.	370.	427.	185.	151.	80.	29.	80.	42.	16.	123.	36	88971.
1951	20.	17.	20.	2278.	1959.	523.	211.	140.	111.	84.	74.	53.	459.	136	332158.
1952	28.	37.	30.	3311.	976.	410.	356.	205.	129.	103.	87.	48.	474.	141	343753.
1953	34.	40.	35.	845.	1030.	398.	313.	414.	300.	223.	135.	82.	322.	96	233099.
1954	46.	35.	36.	207.	810.	1431.	902.	436.	1667.	923.	559.	265.	611.	181	442032.
1955	128.	107.	181.	1738.	2401.	1011.	385.	243.	146.	153.	78.	35.	552.	164	399654.
1956	29.	29.	22.	2833.	2428.	613.	482.	258.	221.	162.	96.	54.	605.	180	439252.
1957	20.	22.	63.	1237.	749.	217.	106.	135.	119.	84.	84.	51.	240.	71	174097.
1958	30.	38.	17.	1723.	614.	218.	79.	50.	46.	38.	31.	13.	240.	71	173901.
1959	9.	3.	53.	238.	140.	81.	46.	40.	74.	101.	60.	21.	72.	21	52332.
1960	6.	3.	163.	792.	306.	128.	86.	56.	47.	52.	37.	22.	141.	42	102403.
1961	15.	4.	43.	276.	149.	92.	50.	33.	30.	17.	19.	5.	61.	18	44220.
1962	2.	0.	7.	585.	277.	206.	488.	140.	60.	37.	27.	36.	156.	46	112933.
1963	19.	24.	346.	1723.	715.	374.	494.	171.	93.	50.	47.	35.	341.	101	246566.
1964	35.	30.	37.	197.	228.	113.	59.	42.	67.	65.	27.	23.	77.	23	55833.
1965	8.	6.	9.	2732.	2082.	1094.	1041.	556.	257.	178.	102.	51.	678.	201	490697.
1966	21.	30.	50.	1087.	455.	228.	110.	159.	91.	67.	35.	23.	196.	58	141888.
1967	26.	18.	19.	180.	1195.	368.	157.	83.	38.	30.	17.	10.	180.	53	130342.
1968	0.	0.	457.	299.	148.	79.	58.	90.	124.	183.	70.	33.	129.	38	93618.
1969	28.	27.	27.	2661.	1007.	299.	159.	118.	83.	86.	51.	37.	381.	113	275500.
1970	32.	34.	36.	2101.	919.	332.	976.	272.	123.	104.	94.	55.	424.	126	306776.
1971	37.	49.	40.	2068.	1569.	471.	379.	343.	158.	111.	78.	35.	445.	132	322485.
1972	25.	27.	121.	1101.	716.	327.	234.	178.	101.	90.	73.	26.	251.	75	182346.
1973	20.	21.	97.	1106.	641.	733.	759.	1032.	525.	318.	158.	86.	460.	136	332809.
1974	62.	64.	86.	3403.	9179.	2320.	936.	599.	341.	274.	167.	73.	1469.	436	1063662.
1975	60.	53.	78.	698.	1837.	564.	430.	193.	102.	87.	80.	41.	354.	105	256483.
1976	42.	35.	58.	1117.	373.	213.	190.	71.	44.	47.	22.	35.	186.	55	135255.
1977	30.	31.	78.	217.	327.	189.	106.	57.	10.	5.	12.	21.	91.	27	65558.
1978	21.	27.	83.	620.	276.	138.	125.	61.	256.	181.	88.	47.	160.	48	116013.
1979	22.	19.	107.	957.	697.	317.	251.	180.	88.	64.	37.	24.	231.	68	167002.
MIN	0.	0.	7.	180.	140.	79.	46.	33.	10.	5.	12.	5.	61.		44220.
MAX	128.	107.	457.	3403.	9179.	2320.	1041.	1032.	1667.	923.	559.	265.	1469.		1063662.
MEAN	29.	28.	80.	1204.	1212.	464.	325.	220.	178.	132.	82.	45.	337.	100	244067.

TABLE E-4

BATTLE RIVER BASIN AT BATTLEFORD (B05FF001)

MONTHLY MEAN NATURAL FLOWS - CFS

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	MEAN	%	AC. FT.
1912	-	-	-	-	598.	585.	1143.	1560.	1181.	727.	-	-	-	-	-
1913	57.	58.	75.	3175.	990.	447.	512.	457.	468.	365.	194.	101.	574.	96	415361.
1914	29.	21.	22.	447.	1427.	1550.	1994.	582.	394.	509.	289.	164.	623.	104	451319.
1915	104.	72.	150.	1334.	500.	948.	1964.	1790.	707.	459.	225.	102.	700.	117	506872.
1916	46.	34.	23.	958.	951.	1406.	1631.	1365.	1943.	1496.	709.	-	-	-	-
1917	142.	114.	91.	2427.	2959.	1959.	775.	370.	295.	215.	156.	47.	797.	133	576880.
1918	8.	8.	37.	1063.	448.	320.	174.	92.	67.	77.	53.	22.	199.	33	143777.
1919	11.	14.	11.	510.	650.	338.	121.	94.	75.	47.	-	-	-	-	-
1920	7.	0.	0.	1443.	3204.	2325.	802.	255.	173.	140.	149.	26.	711.	118	515959.
1921	14.	12.	4.	3052.	1027.	363.	201.	127.	135.	125.	-	-	-	-	-
1922	-	-	-	749.	344.	198.	92.	72.	58.	63.	-	-	-	-	-
1923	-	-	-	222.	205.	250.	308.	212.	149.	121.	-	-	-	-	-
1924	-	-	2.	178.	494.	309.	155.	78.	78.	80.	-	-	-	-	-
1925	-	-	1.	1637.	1115.	343.	174.	118.	101.	124.	-	-	-	-	-
1926	-	-	32.	1435.	743.	297.	310.	238.	233.	465.	-	-	-	-	-
1927	-	-	-	1494.	3662.	1728.	1221.	1120.	446.	329.	-	-	-	-	-
1928	-	-	-	1431.	1069.	495.	413.	317.	182.	140.	-	-	-	-	-
1929	-	-	62.	380.	399.	237.	105.	53.	39.	23.	-	-	-	-	-
1930	-	-	42.	194.	142.	119.	163.	64.	39.	86.	-	-	-	-	-
1931	-	-	13.	342.	158.	130.	141.	108.	119.	111.	-	-	-	-	-
1932	-	-	-	-	647.	366.	206.	106.	84.	62.	-	-	-	-	-
1933	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1934	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1935	-	-	-	-	-	-	-	-	85.	96.	-	-	-	-	-
1936	-	-	-	-	2128.	647.	-	-	-	-	-	-	-	-	-
1937	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1938	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1939	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1940	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1941	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1942	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1943	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1944	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1945	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1946	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1947	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1948	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1949	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1950	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1951	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1955	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1956	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1957	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1958	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1961	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1962	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1963	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1964	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1965	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1966	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1967	-	-	-	-	1338.	597.	240.	120.	56.	50.	-	-	-	-	-
1968	-	-	1087.	490.	221.	116.	85.	87.	87.	245.	-	-	-	-	-
1969	-	-	25.	3105.	1198.	390.	234.	146.	105.	116.	-	-	-	-	-
1970	-	-	45.	2438.	1157.	493.	1010.	370.	177.	140.	-	-	-	-	-
1971	-	-	56.	2623.	1820.	611.	452.	395.	191.	139.	-	-	-	-	-
1972	-	-	136.	1555.	807.	420.	284.	227.	139.	127.	-	-	-	-	-
1973	-	-	167.	993.	719.	683.	776.	1019.	610.	332.	-	-	-	-	-
1974	-	-	94.	3646.	9963.	2985.	1129.	724.	425.	319.	-	-	-	-	-
1975	-	-	79.	672.	1467.	688.	516.	265.	152.	103.	-	-	-	-	-
1976	-	-	92.	1523.	470.	390.	263.	119.	71.	71.	-	-	-	-	-
1977	-	-	58.	271.	395.	244.	159.	66.	26.	31.	-	-	-	-	-
1978	-	-	77.	582.	342.	192.	138.	88.	220.	234.	-	-	-	-	-
1979	-	-	218.	1815.	888.	413.	271.	195.	108.	94.	-	-	-	-	-
MIN	7.	0.	0.	178.	142.	116.	85.	53.	26.	23.	53.	22.	199.		143777.
MAX	142.	114.	1087.	3646.	9963.	2985.	1994.	1790.	1943.	1496.	709.	164.	797.		576880.
MEAN	46.	37.	101.	1361.	1276.	674.	534.	382.	269.	225.	254.	77.	601.	100	435028.

TABLE E-5
STURGEON RIVER NEAR FORT SASKATCHEWAN (B05EA001)
MONTHLY MEAN NATURAL FLOWS - CFS

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	MEAN	%	AC. FT.
1912	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1913	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1914	27.5	24.4	36.2	180.0	131.0	1101.0	915.0	211.0	117.0	139.0	121.0	68.6	256.7	226	185836.2
1915	57.8	56.0	89.5	531.0	156.0	697.0	663.0	216.0	117.0	138.0	150.0	87.4	246.9	217	178735.8
1916	58.9	54.4	72.6	366.0	174.0	86.5	82.6	79.4	97.2	117.0	76.6	29.7	107.7	95	78162.2
1917	21.8	26.8	19.2	499.0	593.0	366.0	181.0	122.0	126.0	117.0	88.5	52.0	184.7	163	133728.3
1918	29.3	28.8	23.3	294.0	188.0	159.0	96.5	61.3	38.5	47.0	50.2	18.1	86.1	76	62332.3
1919	6.1	6.6	7.3	181.0	143.0	83.8	28.6	14.4	12.6	22.5	33.5	18.7	46.5	41	33671.4
1920	18.0	8.2	11.8	176.0	919.0	630.0	241.0	66.2	50.2	62.0	36.8	28.4	188.0	166	136514.8
1921	20.2	23.2	19.7	265.0	142.0	67.2	41.3	27.8	19.0	18.0	9.3	5.2	54.7	48	39599.6
1922	4.8	4.1	5.0	35.1	92.9	32.4	11.9	16.5	17.4	13.0	5.7	0.9	20.4	18	14777.3
1923	0.0	0.0	4.0	50.2	67.6	-	-	-	-	-	-	-	-	-	-
1924	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1925	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1926	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1927	-	-	-	-	-	-	-	-	-	-	-	75.3	-	-	-
1928	34.8	33.3	-	-	383.0	184.0	110.0	75.6	71.3	102.0	48.3	28.8	-	-	-
1929	26.6	22.8	30.2	97.9	159.0	43.2	22.5	12.3	9.8	11.3	15.6	11.9	38.7	34	28009.0
1930	8.9	10.2	13.6	90.1	42.7	14.6	8.2	5.7	6.6	9.1	8.0	5.1	18.5	16	13402.1
1931	0.4	2.0	2.2	44.7	53.7	-	-	-	-	-	-	-	-	-	-
1932	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1933	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1934	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1935	-	-	-	303.0	928.0	334.0	161.0	122.0	105.0	175.0	-	-	-	-	-
1936	-	-	23.5	1046.0	1685.0	756.0	232.0	57.4	43.1	47.1	-	-	-	-	-
1937	-	-	24.3	248.0	97.1	26.6	21.4	22.2	24.2	28.4	-	-	-	-	-
1938	-	-	34.5	307.0	125.0	17.8	4.3	5.4	4.5	5.7	-	-	-	-	-
1939	-	-	9.0	107.0	58.0	25.8	6.1	1.8	1.3	2.9	-	-	-	-	-
1940	-	-	0.4	626.0	682.0	59.2	12.9	13.2	11.8	11.7	-	-	-	-	-
1941	-	-	12.9	125.0	32.6	11.7	6.2	5.1	5.0	6.1	-	-	-	-	-
1942	-	-	3.3	39.9	20.7	21.0	23.6	23.7	24.9	22.7	-	-	-	-	-
1943	-	-	4.0	1052.0	559.0	131.0	103.0	72.0	69.0	54.1	-	-	-	-	-
1944	-	-	50.0	346.0	123.0	664.0	817.0	307.0	180.0	158.0	-	-	-	-	-
1945	-	-	71.5	160.0	98.1	53.7	18.6	8.9	9.2	13.9	-	-	-	-	-
1946	-	-	14.0	274.0	66.5	11.2	11.2	6.8	9.3	12.8	-	-	-	-	-
1947	-	-	36.2	228.0	77.5	7.3	6.3	6.7	10.3	23.9	-	-	-	-	-
1948	-	-	4.0	412.0	2137.0	613.0	150.0	42.2	30.1	46.2	-	-	-	-	-
1949	-	-	13.0	200.0	72.1	10.7	2.7	4.1	6.3	7.6	-	-	-	-	-
1950	-	-	7.9	65.6	95.2	17.0	6.0	7.1	3.3	3.7	-	-	-	-	-
1951	-	-	2.8	154.0	238.0	38.7	15.3	9.9	10.0	11.9	-	-	-	-	-
1952	-	-	-	761.0	202.0	53.3	57.9	50.3	44.1	42.7	-	-	-	-	-
1953	-	-	13.8	128.0	419.0	189.0	77.0	870.0	434.0	139.0	-	-	-	-	-
1954	-	-	64.2	72.9	280.0	764.0	458.0	308.0	449.0	287.0	-	-	-	-	-
1955	-	-	72.3	293.0	453.0	165.0	94.8	69.3	52.6	61.4	-	-	-	-	-
1956	-	-	0.2	723.0	870.0	230.0	91.4	54.4	70.5	68.1	-	-	-	-	-
1957	-	-	60.6	247.0	155.0	28.9	18.8	12.6	11.4	23.4	-	-	-	-	-
1958	-	-	25.6	701.0	186.0	33.3	12.7	5.4	8.1	15.0	-	-	-	-	-
1959	-	-	44.2	149.0	44.1	6.6	7.3	11.0	11.8	24.5	-	-	-	-	-
1960	-	-	33.5	270.0	78.7	33.7	36.2	41.1	55.4	63.0	-	-	-	-	-
1961	-	-	84.2	373.0	80.6	11.1	8.7	7.0	12.4	11.6	-	-	-	-	-
1962	-	-	18.9	449.0	363.0	85.0	23.7	35.1	40.9	7.2	-	-	-	-	-
1963	-	-	40.1	454.0	383.0	176.0	33.7	24.7	27.2	21.3	-	-	-	-	-
1964	-	-	3.9	113.0	84.1	21.6	2.6	1.7	1.9	7.4	-	-	-	-	-
1965	-	-	3.0	476.0	691.0	298.0	1039.0	477.0	276.0	199.0	-	-	-	-	-
1966	-	-	51.6	682.0	281.0	94.3	30.8	25.1	40.7	45.9	-	-	-	-	-
1967	-	-	0.0	145.0	463.0	66.2	16.9	11.7	9.9	9.6	-	-	-	-	-
1968	-	-	143.0	99.2	21.0	2.0	2.0	10.9	4.1	2.0	-	-	-	-	-
1969	-	-	0.0	332.0	150.0	21.5	4.9	7.5	16.6	31.9	-	-	-	-	-
1970	-	-	5.3	624.0	275.0	27.4	8.7	21.9	19.1	31.1	-	-	-	-	-
1971	-	-	0.5	624.0	747.0	128.0	354.0	441.0	193.0	115.0	-	-	-	-	-
1972	-	-	15.9	930.0	744.0	257.0	117.0	66.0	50.1	38.7	-	-	-	-	-
1973	-	-	25.9	282.0	124.0	50.4	51.2	32.8	31.2	36.4	-	-	-	-	-
1974	-	-	14.7	1379.0	1912.0	655.0	1131.0	647.0	284.0	150.0	-	-	-	-	-
1975	-	-	23.5	251.0	399.0	110.0	139.0	87.8	107.0	68.7	-	-	-	-	-
1976	-	-	8.8	328.0	108.0	29.3	14.7	29.3	30.7	19.0	-	-	-	-	-
1977	-	-	30.5	296.0	144.0	163.0	80.1	43.6	55.2	94.5	-	-	-	-	-
1978	-	-	80.3	357.0	152.0	53.8	34.9	42.2	96.2	90.8	-	-	-	-	-
1979	-	-	147.3	635.7	505.0	215.4	120.4	76.3	62.2	65.7	-	-	-	-	-
MIN	**0.0**	**0.0**	**0.0**	**35.1**	**20.7**	**2.0**	**2.0**	**1.7**	**1.3**	**2.0**	**5.7**	**0.9**	**18.5**		**13402.1**
MAX	**58.9**	**58.0**	**147.3**	**1379.0**	**2137.0**	**1101.0**	**1131.0**	**870.0**	**449.0**	**287.0**	**150.0**	**87.4**	**256.7**		**185836.2**
MEAN	**22.5**	**21.7**	**29.7**	**356.8**	**350.2**	**179.5**	**141.5**	**90.1**	**85.4**	**56.5**	**53.8**	**33.1**	**113.6**	**100**	**82251.7**

TABLE E-6
NORTH SASKATCHEWAN RIVER AT EDMONTON (B05DF001)
MONTHLY MEAN NATURAL FLOWS - CFS

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	MEAN	%	AC. FT.
1912	1255.0	1325.0	1317.0	4630.0	11939.0	18258.0	34168.0	26458.0	12881.0	7163.0	3177.0	1680.0	10410.7	136	7557682.0
1913	1393.0	1313.0	1315.0	8230.0	9726.0	19783.0	21458.0	18510.0	9430.0	4535.0	2357.0	1056.0	8299.0	109	6008183.0
1914	1016.0	953.0	1136.0	2984.0	9066.0	24624.0	18887.0	11095.0	6492.0	4558.0	2473.0	1103.0	7076.3	93	5123033.0
1915	1225.0	1081.0	1275.0	3323.0	8371.0	18743.0	42581.0	23582.0	10300.0	5573.0	3013.0	1716.0	11788.8	154	8534591.0
1916	1232.0	1158.0	1780.0	4778.0	6927.0	25590.0	29258.0	20894.0	16577.0	7501.0	4294.0	2585.0	10234.4	134	7409598.0
1917	2035.0	1397.0	1340.0	4935.0	25529.0	25283.0	20558.0	13151.0	8516.0	5902.0	3476.0	1833.0	9551.8	125	6915031.0
1918	1957.0	1237.0	1522.0	6960.0	6554.0	19454.0	16926.0	14119.0	8412.0	5113.0	2624.0	1444.0	7252.7	95	5250685.0
1919	1244.0	1006.0	874.0	3189.0	5850.0	9388.0	12036.0	14791.0	9765.0	3731.0	1640.0	1158.0	5418.8	71	3923031.0
1920	1181.0	1158.0	1188.0	2815.0	23353.0	16542.0	24690.0	14723.0	6499.0	3441.0	2095.0	1014.0	8275.4	108	5990582.0
1921	1169.0	1114.0	1136.0	6258.0	11630.0	15126.0	15445.0	13117.0	4495.0	2757.0	1404.0	1027.0	6258.6	82	4531027.0
1922	795.0	807.0	931.0	2440.0	8742.0	14850.0	14471.0	16677.0	8705.0	4089.0	1754.0	769.0	6267.3	82	4537291.0
1923	908.0	948.0	888.0	2912.0	5608.0	34210.0	24123.0	19235.0	10696.0	5035.0	2517.0	2154.0	9122.6	120	6604478.0
1924	921.0	975.0	1099.0	2081.0	12604.0	14544.0	19128.0	17310.0	9593.0	4493.0	1994.0	1225.0	7029.4	93	5102980.0
1925	1018.0	941.0	997.0	12535.0	9843.0	19370.0	18239.0	27081.0	16840.0	9383.0	2883.0	2536.0	10182.9	133	7372825.0
1926	1448.0	1394.0	1613.0	6419.0	8167.0	13487.0	16016.0	11410.0	27343.0	10385.0	4516.0	1381.0	8491.0	111	6147236.0
1927	1559.0	1470.0	2075.0	9517.0	12096.0	24103.0	27729.0	18555.0	11606.0	6828.0	2544.0	1909.0	10048.9	132	7275075.0
1928	2451.0	2344.0	3158.0	5535.0	8330.0	32310.0	33358.0	14946.0	7779.0	3970.0	2259.0	1533.0	9848.6	129	7149603.0
1929	1057.0	987.0	1283.0	2325.0	9205.0	16358.0	10033.0	10699.0	6847.0	3309.0	1683.0	1159.0	5433.3	71	3933522.0
1930	1053.0	1126.0	1540.0	4326.0	7225.0	15848.0	15871.0	12426.0	7943.0	3849.0	1899.0	1465.0	6225.1	82	4506777.0
1931	1075.0	955.0	977.0	2456.0	6425.0	14052.0	20671.0	12984.0	8473.0	4401.0	2280.0	1929.0	6429.5	84	4655047.0
1932	1433.0	1112.0	961.0	5502.0	11135.0	29657.0	15368.0	14884.0	8825.0	4306.0	2180.0	1449.0	8067.7	106	5856761.0
1933	1535.0	1230.0	1154.0	4974.0	15790.0	16793.0	16485.0	13142.0	8888.0	3225.0	1585.0	1069.0	7194.7	94	5208733.0
1934	1375.0	1247.0	2377.0	5590.0	9975.0	14478.0	11375.0	10316.0	5733.0	3712.0	1924.0	1436.0	5820.1	76	4213558.0
1935	757.0	963.0	942.0	5525.0	9843.0	16880.0	29358.0	17346.0	8033.0	4032.0	3464.0	1231.0	8422.0	110	6097274.0
1936	1224.0	1160.0	871.0	12016.0	14404.0	17543.0	12201.0	12214.0	6949.0	3568.0	2134.0	904.0	7103.6	93	5156877.0
1937	591.0	578.0	879.0	2331.0	7335.0	12785.0	18155.0	11413.0	7832.0	4233.0	3090.0	1694.0	5946.9	78	4305369.0
1938	1320.0	767.0	1091.0	2690.0	6216.0	20313.0	21548.0	15003.0	12144.0	5500.0	2411.0	1425.0	7571.2	99	5481264.0
1939	1285.0	1093.0	1920.0	3558.0	6405.0	15485.0	17209.0	12238.0	5547.0	4334.0	2897.0	1485.0	6265.4	82	4535958.0
1940	973.0	819.0	1024.0	8875.0	10491.0	11703.0	14287.0	10234.0	5046.0	4534.0	1761.0	1366.0	5271.8	82	4553017.0
1941	987.0	1030.0	1103.0	2490.0	3412.0	11201.0	14181.0	12073.0	6498.0	4139.0	1804.0	1163.0	5034.0	66	3644484.0
1942	1097.0	1020.0	868.0	3226.0	5804.0	16740.0	24971.0	17185.0	10873.0	5403.0	2829.0	2018.0	7945.5	104	5753188.0
1943	1607.0	1225.0	1277.0	11295.0	5779.0	17073.0	19790.0	13512.0	6573.0	3614.0	1550.0	895.0	7049.1	92	5103298.0
1944	1011.0	1027.0	1250.0	3373.0	7716.0	36787.0	23013.0	19458.0	9660.0	5047.0	2483.0	1097.0	9331.2	122	6773999.0
1945	1220.0	1165.0	1321.0	2255.0	8574.0	14489.0	14177.0	11947.0	6559.0	5348.0	2610.0	1778.0	6038.1	79	4371361.0
1946	1554.0	1384.0	1465.0	4612.0	7928.0	25442.0	16665.0	10590.0	7558.0	3635.0	1341.0	1972.0	7028.6	92	5088497.0
1947	1665.0	1418.0	1759.0	7665.0	10015.0	18033.0	18645.0	11809.0	8855.0	5413.0	3446.0	1944.0	7584.7	99	5491088.0
1948	1645.0	1384.0	1453.0	6951.0	39768.0	25360.0	19174.0	19752.0	8244.0	4037.0	2000.0	934.0	10946.6	143	7946655.0
1949	1184.0	1151.0	1166.0	4210.0	5842.0	8568.0	15274.0	11275.0	5845.0	3141.0	2084.0	693.0	5074.7	67	3673909.0
1950	861.0	917.0	989.0	3453.0	5849.0	19610.0	20065.0	12337.0	7301.0	3357.0	1425.0	1364.0	6489.9	85	4698501.0
1951	1078.0	942.0	970.0	3446.0	16471.0	14354.0	22090.0	12759.0	10168.0	5537.0	3277.0	1988.0	7812.1	102	5655686.0
1952	1893.0	1637.0	1718.0	10252.0	7421.0	33347.0	23600.0	16024.0	8442.0	4847.0	2227.0	957.0	9360.0	123	6794921.0
1953	1284.0	1403.0	1334.0	3162.0	12401.0	27683.0	20874.0	17990.0	9306.0	4062.0	2581.0	1327.0	8653.9	113	6265141.0
1954	1300.0	1499.0	1187.0	2732.0	18876.0	34227.0	22477.0	30516.0	24750.0	8579.0	4564.0	2629.0	12829.2	168	9287892.0
1955	1651.0	1870.0	1602.0	6292.0	13149.0	19600.0	17718.0	9457.0	6286.0	2918.0	1346.0	1331.0	6960.9	91	5039438.0
1956	1235.0	1056.0	1069.0	7554.0	8082.0	15640.0	15784.0	11646.0	6678.0	3582.0	1718.0	1123.0	6356.6	83	4614556.0
1957	1092.0	904.0	1135.0	3903.0	13556.0	14123.0	10692.0	9763.0	7948.0	5385.0	3456.0	1838.0	6179.5	81	4473724.0
1958	1545.0	1366.0	1375.0	5401.0	13772.0	20133.0	24035.0	12848.0	7353.0	3653.0	1801.0	1337.0	7929.9	104	5740864.0
1959	1232.0	1161.0	1542.0	2738.0	6417.0	22446.0	19284.0	10372.0	7332.0	4865.0	2684.0	2014.0	6865.8	90	4970605.0
1960	1467.0	1419.0	2434.0	4355.0	8258.0	13630.0	21852.0	12279.0	5624.0	3636.0	1787.0	1252.0	6529.6	86	4740195.0
1961	1286.0	1176.0	1719.0	2515.0	9132.0	17233.0	13762.0	15043.0	6237.0	4898.0	2217.0	1443.0	6424.0	84	4650765.0
1962	1445.0	1381.0	1251.0	6680.0	6796.0	13836.0	16838.0	15399.0	8659.0	4169.0	2503.0	1325.0	6720.3	88	4865297.0
1963	883.0	1173.0	2044.0	8412.0	9514.0	16499.0	19560.0	13690.0	9140.0	4591.0	1605.0	1441.0	7413.5	97	5367147.0
1964	1413.0	1370.0	1164.0	3261.0	13515.0	25201.0	20250.0	9926.0	11304.0	7652.0	2916.0	1660.0	8323.2	109	6042249.0
1965	1808.0	1456.0	1658.0	11125.0	11421.0	38046.0	38929.0	17982.0	13577.0	8299.0	3379.0	1939.0	12514.2	164	9059888.0
1966	1810.0	2028.0	1892.0	6162.0	9656.0	13465.0	24190.0	20216.0	10289.0	6285.0	2412.0	1612.0	8389.4	110	6073615.0
1967	1623.0	1780.0	1553.0	4153.0	9463.0	29752.0	17004.0	12330.0	7915.0	3929.0	1955.0	915.0	7711.9	101	5583147.0
1968	1423.0	1309.0	2253.0	2630.0	6544.0	14466.0	19322.0	14599.0	8204.0	4832.0	1845.0	813.0	6545.6	86	4751755.0
1969	1496.0	1751.0	1483.0	6729.0	9329.0	16671.0	25976.0	17879.0	7874.0	4645.0	2636.0	1019.0	8172.5	107	5916624.0
1970	1047.0	1420.0	1619.0	5747.0	8385.0	21001.0	15045.0	10143.0	4794.0	3323.0	975.0	1245.0	6247.4	82	4522944.0
1971	1266.0	1304.0	1144.0	8874.0	9259.0	22991.0	18320.0	14134.0	6191.0	3215.0	1701.0	561.0	7435.9	97	5383320.0
1972	1152.0	1120.0	1809.0	5272.0	9039.0	35653.0	21729.0	9529.0	5240.0	4313.0	2226.0	841.0	8155.7	107	5920624.0
1973	1699.0	1568.0	1835.0	7756.0	14955.0	17578.0	15711.0	11565.0	6403.0	3886.0	1161.0	1158.0	7139.7	94	5168895.0
1974	408.0	1532.0	1278.0	13930.0	15574.0	22650.0	18780.0	11806.0	7152.0	4785.0	1937.0	944.0	8422.2	110	6097370.0
1975	531.0	598.0	970.0	4033.0	7583.0	9489.0	15410.0	8267.0	4432.0	2555.0	935.0	1285.0	4707.0	62	3407692.0
1976	792.0	949.0	1659.0	5270.0	7169.0	9655.0	15096.0	16575.0	8264.0	3410.0	1704.0	797.0	5989.3	78	4333386.0
1977	1064.0	966.0	1556.0	3728.0	14630.0	16587.0	11526.0	13403.0	8568.0	4254.0	1257.0	881.0	6569.8	86	4756327.0
1978	758.0	2195.0	2371.0	5108.0	9381.0	22607.0	23072.0	12425.0	12864.0	4901.0	2268.0	1494.0	8310.5	109	6016525.0
1979	509.0	587.0	3296.0	4100.0	9005.0	12152.0	12646.0	10541.0	6103.0	3372.0	1107.0	564.0	5365.0	70	3884070.0
MIN	408.0	578.0	868.0	2081.0	3412.0	8568.0	10033.0	8267.0	4432.0	2555.0	935.0	561.0	4707.0		3407692.0
MAX	2451.0	2344.0	3296.0	13930.0	39768.0	38046.0	42681.0	30516.0	27343.0	10385.0	4564.0	2629.0	12829.2		9287892.0
MEAN	1258.2	1225.3	1458.4	5361.3	10400.0	19940.7	19662.3	14518.7	8949.4	4736.3	2297.1	1387.3	7630.8	100	5528176.0

TABLE E-7
RED DEER RIVER AT RED DEER (B05CC002)
MONTHLY MEAN NATURAL FLOWS - CFS

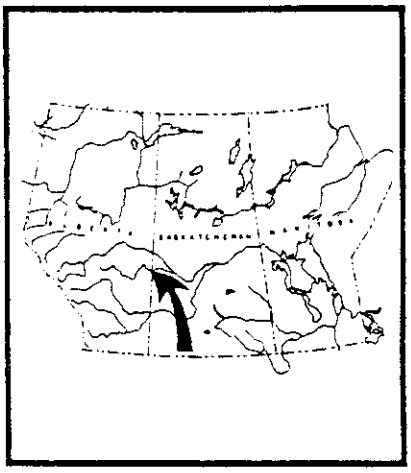
	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	MEAN	%	AC. FT.
1912	241.0	274.0	504.0	1919.0	3955.0	3951.0	10084.0	4964.0	4532.0	2660.0	1290.0	595.0	2930.1	170	2127111.0
1913	417.0	396.0	410.0	3886.0	4102.0	4947.0	5243.0	3284.0	1787.0	1223.0	825.0	327.0	2245.5	131	1625700.0
1914	278.0	298.0	380.0	903.0	1908.0	3666.0	2351.0	1309.0	1097.0	1440.0	783.0	328.0	1232.0	72	891943.1
1915	278.0	271.0	506.0	1251.0	4458.0	12312.0	16747.0	8121.0	3954.0	2936.0	1195.0	520.0	4418.1	257	3198533.0
1916	416.0	375.0	828.0	2119.0	3586.0	11593.0	8378.0	7505.0	7219.0	3411.0	1833.0	843.0	4010.3	233	2911283.0
1917	611.0	477.0	501.0	4175.0	9060.0	8910.0	3587.0	2074.0	1844.0	1461.0	1057.0	405.0	2862.5	167	2072380.0
1918	455.0	386.0	1410.0	2845.0	1898.0	3587.0	1856.0	1770.0	1335.0	974.0	520.0	275.0	1444.4	84	1045677.9
1919	343.0	271.0	247.0	1559.0	2066.0	1828.0	1377.0	1990.0	1155.0	662.0	366.0	211.0	1005.9	59	731115.3
1920	221.0	224.0	290.0	3094.0	9170.0	3458.0	4422.0	1652.0	818.0	562.0	297.0	198.0	2045.0	119	1484570.0
1921	204.0	175.0	179.0	2421.0	2638.0	2640.0	1818.0	1311.0	697.0	556.0	307.0	170.0	1095.9	64	793400.3
1922	131.0	154.0	173.0	492.0	3013.0	2633.0	1795.0	2139.0	1074.0	634.0	342.0	121.0	1065.0	62	771030.6
1923	142.0	133.0	159.0	874.0	1547.0	12939.0	4884.0	4482.0	1952.0	1117.0	577.0	395.0	2434.2	142	1762294.0
1924	306.0	366.0	601.0	1851.0	2930.0	3750.0	3016.0	3116.0	1297.0	839.0	486.0	322.0	1577.0	92	1144788.0
1925	298.0	286.0	378.0	3768.0	1702.0	3417.0	1920.0	2945.0	2914.0	2823.0	1210.0	635.0	1860.3	108	1346794.0
1926	485.0	503.0	2587.0	2484.0	1252.0	3232.0	2331.0	1432.0	10351.0	3925.0	1792.0	880.0	2601.4	151	1883317.0
1927	498.0	442.0	573.0	4264.0	3847.0	6309.0	5460.0	4094.0	3715.0	2338.0	960.0	500.0	2757.3	160	1996216.0
1928	541.0	574.0	1729.0	2660.0	2140.0	13829.0	7999.0	2411.0	1359.0	956.0	502.0	408.0	2920.4	170	2120032.0
1929	295.0	258.0	493.0	921.0	2672.0	6385.0	1348.0	1149.0	858.0	550.0	371.0	252.0	1295.4	75	937790.9
1930	225.0	338.0	621.0	1786.0	1718.0	3652.0	2224.0	1364.0	986.0	624.0	422.0	249.0	1185.3	69	858087.2
1931	175.0	208.0	268.0	571.0	1102.0	2486.0	2976.0	1303.0	924.0	663.0	432.0	351.0	957.8	56	693405.6
1932	318.0	285.0	331.0	1904.0	3481.0	8898.0	2450.0	1630.0	1306.0	849.0	606.0	377.0	1863.9	108	1353125.0
1933	365.0	223.0	313.0	1898.0	4656.0	3235.0	2072.0	1472.0	1075.0	598.0	484.0	263.0	1394.3	81	1009414.1
1934	289.0	305.0	902.0	1777.0	1751.0	2172.0	1146.0	909.0	601.0	457.0	331.0	270.0	910.7	53	659333.5
1935	202.0	242.0	288.0	809.0	1452.0	3432.0	3964.0	2293.0	1005.0	648.0	365.0	226.0	1250.3	73	905194.6
1936	249.0	187.0	234.0	3415.0	2170.0	2885.0	1236.0	1023.0	720.0	473.0	267.0	99.0	1076.6	63	781560.9
1937	106.0	103.0	242.0	767.0	1036.0	2540.0	1715.0	1341.0	1063.0	988.0	501.0	281.0	893.1	52	646597.6
1938	284.0	176.0	425.0	909.0	2096.0	3738.0	3765.0	1542.0	1210.0	708.0	325.0	210.0	1288.5	75	932862.1
1939	215.0	187.0	541.0	807.0	998.0	6963.0	3345.0	1245.0	873.0	710.0	610.0	353.0	1404.0	82	1016415.8
1940	183.0	185.0	310.0	3811.0	3050.0	1808.0	1648.0	1086.0	1115.0	640.0	376.0	301.0	1208.9	70	877590.6
1941	227.0	249.0	571.0	586.0	531.0	1300.0	1440.0	1750.0	1297.0	895.0	441.0	263.0	807.3	47	584487.2
1942	199.0	165.0	163.0	452.0	1954.0	3710.0	5637.0	3239.0	2803.0	1412.0	925.0	515.0	1783.5	104	1291257.0
1943	282.0	295.0	702.0	6506.0	2013.0	4895.0	3597.0	1851.0	984.0	718.0	398.0	266.0	1874.4	109	1357013.0
1944	222.0	213.0	529.0	1094.0	1817.0	6738.0	3285.0	5369.0	1719.0	1190.0	651.0	356.0	1934.5	113	1404386.0
1945	301.0	311.0	421.0	1014.0	3711.0	4018.0	3045.0	2116.0	1775.0	1703.0	809.0	550.0	1656.1	96	1198960.0
1946	486.0	418.0	1358.0	2406.0	1735.0	5206.0	3244.0	1645.0	1846.0	1082.0	485.0	418.0	1778.1	103	1287276.0
1947	443.0	341.0	1088.0	3887.0	4392.0	5154.0	2688.0	1535.0	2155.0	1966.0	968.0	669.0	2111.4	123	1528619.0
1948	445.0	339.0	341.0	5018.0	13519.0	5467.0	2799.0	2467.0	1133.0	750.0	556.0	293.0	2770.7	161	2011408.0
1949	270.0	272.0	307.0	1281.0	1240.0	1319.0	1333.0	1030.0	621.0	521.0	420.0	209.0	737.1	43	533664.8
1950	142.0	169.0	202.0	971.0	1354.0	2885.0	2308.0	1397.0	775.0	501.0	274.0	207.0	935.5	54	677242.3
1951	215.0	191.0	252.0	1309.0	3542.0	4089.0	4733.0	2627.0	4482.0	1805.0	1343.0	848.0	2128.0	124	1540501.0
1952	568.0	487.0	842.0	7245.0	2213.0	8587.0	4110.0	2339.0	1356.0	959.0	801.0	308.0	2473.5	144	1795540.0
1953	247.0	407.0	483.0	1692.0	3809.0	9183.0	4882.0	2924.0	1659.0	912.0	638.0	359.0	2270.3	132	1643607.0
1954	356.0	484.0	455.0	2265.0	5795.0	8497.0	3651.0	8889.0	6427.0	2630.0	1596.0	682.0	3574.3	208	2587655.0
1955	402.0	502.0	551.0	5823.0	5479.0	3906.0	3473.0	1443.0	1044.0	800.0	282.0	256.0	2000.6	116	1448389.0
1956	314.0	312.0	675.0	3503.0	2359.0	3275.0	2854.0	1503.0	982.0	569.0	461.0	289.0	1423.9	83	1033648.1
1957	317.0	236.0	445.0	2105.0	2824.0	2273.0	1265.0	1026.0	888.0	741.0	584.0	375.0	1092.9	64	791188.7
1958	335.0	315.0	327.0	3174.0	2941.0	3002.0	3736.0	1534.0	1059.0	628.0	366.0	324.0	1483.4	86	1073955.0
1959	251.0	264.0	271.0	678.0	1321.0	4244.0	2895.0	1534.0	1055.0	898.0	800.0	403.0	1220.5	71	883565.8
1960	312.0	353.0	2213.0	2586.0	2536.0	2352.0	2236.0	1203.0	695.0	591.0	417.0	263.0	1316.2	77	955455.8
1961	272.0	244.0	539.0	589.0	2407.0	2371.0	1340.0	1739.0	807.0	753.0	574.0	181.0	989.7	58	716475.3
1962	210.0	301.0	458.0	1005.0	1695.0	2345.0	2156.0	1749.0	1089.0	660.0	432.0	237.0	1032.0	60	747119.9
1963	189.0	390.0	640.0	1794.0	1342.0	3079.0	3825.0	2002.0	1242.0	721.0	417.0	318.0	1334.3	78	966003.9
1964	221.0	268.0	275.0	942.0	3822.0	5832.0	3674.0	1196.0	1188.0	975.0	534.0	193.0	1594.8	93	1157728.0
1965	321.0	343.0	484.0	4909.0	2198.0	7846.0	9402.0	3109.0	3605.0	1938.0	994.0	519.0	2979.0	173	2156677.0
1966	441.0	478.0	799.0	2637.0	2695.0	3350.0	4523.0	2341.0	1299.0	1117.0	561.0	396.0	1727.3	101	1250510.0
1967	363.0	410.0	386.0	1657.0	3979.0	6812.0	2301.0	1330.0	825.0	541.0	266.0	273.0	1596.3	93	1155655.0
1968	240.0	301.0	840.0	782.0	1171.0	2704.0	2017.0	2047.0	1164.0	1222.0	619.0	329.0	1122.0	65	814502.4
1969	337.0	376.0	383.0	3836.0	3454.0	4375.0	7705.0	2044.0	1224.0	936.0	715.0	436.0	2162.1	126	1565301.0
1970	252.0	304.0	466.0	2054.0	2127.0	5939.0	3782.0	1361.0	781.0	624.0	316.0	305.0	1527.9	89	1106179.0
1971	314.0	322.0	333.0	5125.0	2057.0	4431.0	2432.0	1418.0	838.0	656.0	474.0	172.0	1544.9	90	1118475.0
1972	235.0	245.0	935.0	1984.0	1905.0	5982.0	4282.0	2104.0	1495.0	1110.0	675.0	233.0	1755.3	103	1281538.0
1973	357.0	377.0	1196.0	3431.0	3778.0	4030.0	2626.0	1842.0	1183.0	755.0	561.0	404.0	1716.2	100	1242454.0
1974	321.0	369.0	337.0	3950.0	5040.0	4857.0	2647.0	1564.0	1069.0	882.0	530.0	255.0	1821.7	106	1318885.0
1975	266.0	276.0	312.0	1790.0	1964.0	1731.0	1685.0	1239.0	690.0	525.0	307.0	237.0	921.5	54	667112.6
1976	261.0	284.0	300.0	1072.0	1285.0	1579.0	1559.0	2332.0	1179.0	655.0	433.0	337.0	942.0	55	683813.4
1977	337.0	347.0	297.0	922.0	2608.0	2311.0	1146.0	1582.0	1304.0	955.0	359.0	231.0	1036.8	60	750608.6
1978	273.0	266.0	473.0	2057.0	2365.0	3969.0	2620.0	1835.0	1739.0	1044.0	556.0	445.0	1473.4	86	1066676.0
1979	267.0	240.0	928.0	1487.0	2076.0	2073.0	1490.0	1161.0	741.0	530.0	268.0	179.0	957.3	56	693048.5
MIN	106.0	103.0	159.0	452.0	531.0	1300.0	1146.0	909.0	601.0	457.0	266.0	99.0	737.1		533664.8
MAX	611.0	574.0	2587.0	7245.0	13519.0	13829.0	16747.0	8889.0	10351.0	3925.0	1833.0	880.0	4418.1		3198533.0
MEAN	302.7	305.5	575.0	2289.1	2933.9	4675.0	3465.9	2241.1	1722.8	1092.6	621.2	351.6	1718.6	100	1245058.0

TABLE E-6
NORTH SASKATCHEWAN RIVER AT PRINCE ALBERT (B05GG001)
MONTHLY MEAN NATURAL FLOWS - CFS

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	MEAN	%	AC. FT.
1912	1505.0	1583.0	1578.0	6161.0	11281.0	14863.0	35310.0	30055.0	22093.0	10029.0	4916.0	2316.0	12041.5	140	8741535.0
1913	1565.0	1586.0	1983.0	16337.0	12152.0	19060.0	25154.0	25103.0	14580.0	7114.0	3025.0	1821.0	10939.0	127	7917301.0
1914	1021.0	1191.0	1298.0	4351.0	13245.0	30349.0	29451.0	14932.0	10302.0	7754.0	3736.0	2534.0	10049.5	117	7276478.0
1915	1760.0	1655.0	1707.0	9047.0	7705.0	25021.0	60239.0	23113.0	15007.0	7650.0	3895.0	2208.0	13714.5	159	9928900.0
1916	1420.0	1119.0	1293.0	7429.0	5354.0	24119.0	32929.0	25051.0	23021.0	11546.0	6133.0	3148.0	12245.7	142	8889735.0
1917	2193.0	2015.0	1781.0	8705.0	28374.0	30193.0	22429.0	14005.0	10131.0	5930.0	4031.0	1445.0	10926.9	127	7910710.0
1918	1879.0	1670.0	1725.0	8701.0	7636.0	15773.0	16923.0	12428.0	8166.0	5362.0	2755.0	1403.0	7144.7	83	5172554.0
1919	1202.0	1220.0	671.0	5455.0	5448.0	7624.0	11853.0	14964.0	11260.0	4432.0	2072.0	1614.0	5695.9	66	4123663.0
1920	1450.0	1255.0	1237.0	3791.0	21555.0	24460.0	29242.0	17732.0	8852.0	5294.0	3287.0	1506.0	10873.9	126	7893890.0
1921	955.0	1121.0	966.0	14206.0	15432.0	17100.0	15810.0	14325.0	7343.0	3531.0	2226.0	1397.0	7982.5	93	5779094.0
1922	885.0	781.0	1013.0	5140.0	11220.0	14594.0	14219.0	12752.0	11232.0	5704.0	2645.0	767.0	7032.1	82	5091042.0
1923	890.0	842.0	835.0	3473.0	6280.0	26290.0	29258.0	20591.0	13569.0	6958.0	3363.0	2732.0	9538.0	112	6977588.0
1924	1021.0	1521.0	1746.0	3871.0	11919.0	13165.0	15964.0	15578.0	11491.0	5211.0	2227.0	1877.0	7153.9	83	5196581.0
1925	1510.0	1371.0	1271.0	17947.0	10800.0	16855.0	17326.0	22871.0	17560.0	10348.0	3951.0	2538.0	10413.0	121	7538700.0
1926	1713.0	1229.0	1811.0	9987.0	7222.0	9923.0	17123.0	11592.0	25840.0	11984.0	5460.0	2624.0	8895.3	103	6440649.0
1927	1515.0	1468.0	2190.0	10461.0	22294.0	21240.0	29203.0	21833.0	14125.0	8563.0	3796.0	2085.0	11527.3	135	8425044.0
1928	2732.0	1726.0	2433.0	10306.0	9489.0	28380.0	34245.0	17945.0	9350.0	4659.0	2257.0	1613.0	10286.1	119	7468640.0
1929	1205.0	970.0	1384.0	4212.0	7967.0	18756.0	9308.0	10855.0	7017.0	4205.0	1991.0	1323.0	5764.5	67	4173325.0
1930	1196.0	1260.0	1547.0	5678.0	6852.0	14492.0	17603.0	13897.0	8875.0	4375.0	1781.0	1357.0	6624.5	77	4795887.0
1931	974.0	930.0	1123.0	3944.0	5475.0	11865.0	22997.0	15345.0	10622.0	5022.0	2617.0	1805.0	6936.2	81	5023042.0
1932	1503.0	1206.0	1060.0	9825.0	14400.0	28743.0	17203.0	14161.0	11336.0	5116.0	2012.0	1630.0	9015.6	105	6544892.0
1933	1641.0	1396.0	1113.0	5023.0	17900.0	17437.0	17561.0	12475.0	10375.0	3893.0	1855.0	1467.0	7719.1	90	5588346.0
1934	1346.0	1509.0	2001.0	7892.0	9482.0	16327.0	11813.0	10663.0	7592.0	4516.0	2431.0	1499.0	6439.5	75	4662013.0
1935	731.0	845.0	1081.0	4593.0	12545.0	17543.0	28535.0	20860.0	9524.0	4879.0	2861.0	2069.0	8906.8	103	6448244.0
1936	1256.0	1082.0	940.0	13384.0	20577.0	18520.0	12658.0	12397.0	8541.0	4152.0	2095.0	1423.0	8104.1	94	5883175.0
1937	696.0	675.0	870.0	4306.0	5409.0	10826.0	16072.0	12421.0	7070.0	5411.0	3301.0	1138.0	5716.5	66	4138545.0
1938	980.0	844.0	1358.0	5853.0	4379.0	14854.0	22516.0	14147.0	12682.0	6739.0	2795.0	1700.0	7439.8	86	5386196.0
1939	1400.0	1200.0	1419.0	5879.0	5070.0	10728.0	17723.0	12292.0	8057.0	4494.0	2911.0	1719.0	6105.3	71	4420000.0
1940	1053.0	956.0	960.0	8574.0	14068.0	11254.0	12735.0	10942.0	9109.0	5021.0	2440.0	1408.0	6587.8	76	4767926.0
1941	956.0	1044.0	889.0	4377.0	2926.0	7080.0	12964.0	10878.0	8156.0	4885.0	2682.0	737.0	4820.2	56	3489653.0
1942	732.0	836.0	886.0	4426.0	4525.0	17929.0	25625.0	18665.0	12815.0	6635.0	2887.0	2191.0	8226.7	95	5955829.0
1943	1924.0	1525.0	1548.0	16850.0	9887.0	14049.0	23329.0	14994.0	8773.0	5322.0	2776.0	1129.0	8543.2	99	6184983.0
1944	853.0	1035.0	1177.0	6058.0	5703.0	37243.0	26077.0	19176.0	13273.0	6782.0	2985.0	1104.0	10120.0	117	7346651.0
1945	1070.0	1285.0	1387.0	3201.0	6105.0	14198.0	14494.0	11771.0	9133.0	6968.0	2588.0	2121.0	6218.6	72	4502050.0
1946	1712.0	1552.0	1862.0	7159.0	5641.0	22163.0	19842.0	11297.0	8438.0	4443.0	2436.0	1457.0	7351.3	85	5322068.0
1947	1339.0	1242.0	1203.0	9915.0	11468.0	16139.0	17971.0	12942.0	9825.0	6726.0	3408.0	2496.0	7923.1	92	5736084.0
1948	1786.0	1467.0	1399.0	6934.0	53419.0	33407.0	20197.0	19884.0	10748.0	5349.0	2220.0	1349.0	13242.3	154	9613260.0
1949	1412.0	1164.0	1215.0	5942.0	5387.0	8962.0	10704.0	12533.0	7459.0	3722.0	1677.0	990.0	5119.6	59	3706403.0
1950	688.0	938.0	968.0	4931.0	6466.0	15162.0	21365.0	13336.0	8275.0	4579.0	1818.0	1167.0	6678.0	78	4834676.0
1951	1175.0	931.0	919.0	13584.0	19045.0	14463.0	20474.0	14323.0	11586.0	5768.0	2740.0	2130.0	8975.6	104	6498072.0
1952	1558.0	1367.0	1306.0	16406.0	8975.0	25120.0	29106.0	17745.0	9155.0	6290.0	3484.0	1432.0	10173.1	118	7385186.0
1953	1057.0	1125.0	1389.0	3995.0	13103.0	25077.0	23790.0	18394.0	14444.0	5515.0	3133.0	1540.0	9423.0	109	6821945.0
1954	1206.0	1316.0	1358.0	3209.0	16529.0	39207.0	26271.0	23865.0	39377.0	12464.0	5544.0	3413.0	14507.5	168	10502962.0
1955	1934.0	2118.0	1542.0	14551.0	19777.0	22110.0	19810.0	11870.0	7599.0	4313.0	1601.0	1128.0	9059.5	105	5558798.0
1956	1182.0	1111.0	1027.0	17337.0	17703.0	18670.0	17174.0	13891.0	9146.0	5740.0	2830.0	1366.0	8940.7	104	6490476.0
1957	1246.0	906.0	960.0	7843.0	15020.0	14743.0	10776.0	10335.0	8429.0	5507.0	3638.0	1898.0	6802.6	79	4924878.0
1958	1304.0	1417.0	1300.0	12302.0	12505.0	20183.0	24548.0	13848.0	9439.0	4693.0	2885.0	993.0	8818.8	102	6384529.0
1959	886.0	1138.0	1072.0	5512.0	4932.0	17142.0	22132.0	13569.0	8126.0	6441.0	3043.0	1866.0	7190.1	83	5205405.0
1960	1013.0	1363.0	1327.0	10348.0	7678.0	12327.0	23781.0	14010.0	6384.0	5034.0	2509.0	1090.0	7263.6	84	5273037.0
1961	1273.0	1166.0	1095.0	5767.0	6720.0	19080.0	12817.0	18126.0	8869.0	4059.0	1827.0	913.0	6833.0	79	4946837.0
1962	1618.0	1604.0	1870.0	7887.0	9202.0	15207.0	19023.0	16264.0	8467.0	4284.0	3629.0	2387.0	7656.7	89	5543206.0
1963	607.0	901.0	1669.0	17571.0	13658.0	16244.0	19123.0	15987.0	10920.0	6155.0	1843.0	945.0	8835.7	103	6396757.0
1964	1083.0	1273.0	1067.0	5635.0	12681.0	21781.0	23711.0	11672.0	10111.0	11029.0	3247.0	2019.0	8801.3	102	6389273.0
1965	1461.0	611.0	1302.0	15447.0	18403.0	33561.0	47575.0	21216.0	13605.0	12152.0	4046.0	2643.0	14422.4	167	10441367.0
1966	1520.0	2004.0	1797.0	10160.0	10029.0	14301.0	22164.0	21290.0	12450.0	7455.0	2567.0	1736.0	9003.2	104	6518028.0
1967	1327.0	1585.0	1607.0	1885.0	13834.0	22470.0	20174.0	13402.0	9165.0	5879.0	2369.0	416.0	7881.8	91	5706166.0
1968	60.0	758.0	3532.0	7632.0	5005.0	13555.0	18331.0	18020.0	10201.0	6047.0	2974.0	853.0	7268.1	84	5276290.0
1969	866.0	1565.0	1022.0	15239.0	12260.0	15391.0	26899.0	18713.0	10194.0	6733.0	2480.0	1243.0	9432.2	109	6828606.0
1970	822.0	1092.0	1669.0	11189.0	10833.0	19084.0	20159.0	12480.0	7317.0	3681.0	1487.0	516.0	7555.9	88	5470230.0
1971	1228.0	1245.0	1076.0	14360.0	16375.0	23411.0	20940.0	18851.0	8170.0	4561.0	1577.0	697.0	9413.6	109	6815142.0
1972	811.0	732.0	972.0	12612.0	12981.0	23931.0	30859.0	14288.0	6113.0	5595.0	2649.0	443.0	9357.4	109	6792985.0
1973	1476.0	714.0	1857.0	11345.0	14831.0	19127.0	19810.0	13573.0	9058.0	5248.0	1716.0	1528.0	8398.3	97	6080101.0
1974	704.0	2117.0	2549.0	25755.0	40292.0	27766.0	26519.0	15504.0	9952.0	6362.0	3053.0	1426.0	13560.0	157	9816975.0
1975	174.0	1048.0	1361.0	4081.0	13644.0	11950.0	16070.0	10018.0	6119.0	3203.0	496.0	157.0	5731.9	67	4149740.0
1976	893.0	975.0	1518.0	8406.0	7785.0	9401.0	14983.0	16683.0	9913.0	4727.0	1075.0	171.0	6398.0	74	4644664.0
1977	276.0	983.0	1509.0	6328.0	12562.0	19463.0	13456.0	13593.0	11008.0	6553.0	1941.0	597.0	7382.6	86	5344759.0
1978	523.0	1585.0	1450.0	10092.0	10264.0	22248.0	24961.0	14606.0	14583.0	7374.0	3083.0	1278.0	9366.3	109	6780884.0
1979	1.0	468.0	2381.0	8367.0	18302.0	13760.0	14996.0	12279.0	7742.0	4370.0	2185.0	319.0	7141.9	83	5170535.0
MIN	1.0	468.0	835.0	1885.0	2926.0	7080.0	9308.0	10018.0	6113.0	3203.0	496.0	157.0	4820.2		3489653.0
MAX	2732.0	2118.0	3532.0	25755.0	53419.0	39207.0	60239.0	30055.0	39377.0	12464.0	6133.0	3413.0	14507.5		10502962.0
MEAN	1194.7	1228.3	1421.8	8840.8	12489.8	18906.8	21598.0	15835.4	11028.2	6096.3	2794.4	1530.6	8615.9	100	6241901.0

TABLE E-9
BLINDMAN RIVER NEAR BLACKFALDS (BO5CC001)
MONTHLY MEAN NATURAL FLOWS - CFS

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	MEAN	%	AC. FT.
1912	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1913	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1914	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1915	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1916	-	-	-	-	227.0	394.0	782.0	481.0	635.0	298.0	164.0	64.9	-	-	-
1917	57.8	47.1	41.2	978.0	855.0	251.0	133.0	54.1	56.8	85.4	66.4	43.7	223.0	216	161416.4
1918	34.8	32.8	53.5	341.0	111.0	121.0	46.1	32.3	27.5	29.2	17.9	16.0	71.6	69	51868.3
1919	16.5	14.3	32.0	205.0	186.0	131.0	25.9	37.9	76.7	33.7	27.8	10.3	67.0	65	48536.9
1920	6.6	3.4	7.7	774.0	2094.0	369.0	62.5	21.1	31.7	31.6	21.1	9.8	287.4	278	208670.4
1921	9.5	12.5	14.5	456.0	112.0	86.1	45.9	31.6	10.9	15.2	9.1	2.7	67.6	66	49083.7
1922	5.5	1.4	4.2	117.0	56.0	22.9	20.5	25.9	15.5	16.6	7.8	-	-	-	-
1923	-	-	-	117.0	19.4	-	-	-	-	-	-	-	-	-	-
1924	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1925	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1926	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1927	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1928	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1929	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1930	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1931	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1932	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1933	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1934	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1935	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1936	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1937	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1938	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1939	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1940	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1941	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1942	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1943	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1944	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1945	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1946	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1947	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1948	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1949	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1950	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1951	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1955	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1956	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1957	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1958	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1961	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1962	-	-	-	276.0	31.3	64.2	15.8	36.9	45.3	15.7	-	-	-	-	-
1963	-	-	149.0	446.0	128.0	36.6	127.0	16.8	6.0	4.9	-	-	-	-	-
1964	-	-	12.6	63.8	196.0	73.3	31.4	12.4	151.0	85.7	-	-	-	-	-
1965	-	-	9.1	1489.0	419.0	690.0	571.0	48.0	63.6	42.1	-	-	-	-	-
1966	-	-	67.9	592.0	99.0	51.2	38.5	29.4	25.4	25.5	-	-	-	-	-
1967	-	-	2.9	233.0	136.0	168.0	23.1	8.2	2.3	3.2	-	-	-	-	-
1968	-	-	36.7	40.5	15.9	21.3	50.9	27.0	12.9	24.1	-	-	-	-	-
1969	-	-	6.4	637.0	60.0	12.2	114.0	22.0	65.2	56.0	19.1	16.3	-	-	-
1970	10.8	6.6	8.4	546.0	79.6	79.0	137.0	29.9	10.1	20.9	19.5	7.9	79.5	77	57545.0
1971	7.2	7.4	8.1	956.0	111.0	135.0	291.0	15.6	8.9	13.4	8.8	6.7	130.2	126	94237.0
1972	4.3	2.1	7.0	413.0	130.0	132.0	66.2	24.7	10.5	19.9	15.7	7.2	68.9	67	50053.3
1973	9.4	6.5	69.7	545.0	144.0	123.0	319.0	269.0	54.6	36.1	23.2	17.3	135.2	131	97900.7
1974	13.0	12.3	13.7	1428.0	409.0	183.0	229.0	29.9	21.9	29.1	16.8	9.0	198.8	192	143898.7
1975	9.4	10.1	10.6	322.0	177.0	48.5	34.9	7.4	7.7	6.9	8.3	7.8	54.1	52	39177.1
1976	5.1	6.1	8.8	174.0	24.1	16.9	8.2	43.8	8.8	12.7	9.2	8.3	27.0	26	19606.4
1977	7.3	7.5	8.2	121.0	290.0	87.8	3.1	4.2	21.4	11.1	7.1	7.2	48.2	47	34895.4
1978	6.2	6.8	127.0	200.0	85.8	92.8	8.1	6.7	44.4	27.0	30.9	16.6	54.3	53	39337.7
1979	4.5	2.5	112.0	163.0	86.0	30.6	18.0	1.5	1.2	1.0	7.1	9.4	36.5	35	26442.4
MIN	**2.9**	**1.4**	**2.9**	**40.5**	**15.9**	**12.2**	**3.1**	**1.5**	**1.2**	**1.0**	**7.1**	**2.7**	**27.0**		**19606.4**
MAX	**57.8**	**47.1**	**149.0**	**1489.0**	**2094.0**	**690.0**	**782.0**	**481.0**	**635.0**	**298.0**	**164.0**	**64.9**	**287.4**		**208670.4**
MEAN	**12.8**	**11.2**	**35.3**	**485.6**	**241.6**	**137.4**	**128.2**	**52.7**	**56.7**	**37.8**	**26.8**	**15.4**	**103.3**	**100**	**74844.5**



APPENDIX F

BATTLE RIVER AND ADJACENT BASINS ARRAYS OF EXTENDED NATURAL FLOWS

TABLE F-1

BATTLE RIVER NEAR PONOKA - 05FA01

SUMMARY OF REGRESSION RESULTS

DEPENDENT VARIABLES C5F-A01

PRIORITY 1

	INTERCEPT	INDEPENDENT VARIABLES					R = Coeff. of corr.	Se = Std. error of est.
		LAG 1	B5F-E01	B5E-A01	B5D-F01	B5G-G01		
JAN.	- .9435	.7105	.6603				.857	.178
FEB.	- 1.0734	.7775	.7610				.969	.095
MAR.	- 7.0257	- .7779	1.9131	.3731		1.3748	.974	.155
APR.	- 2.4504		.6393	.3157	1.2926	- .7065	.964	.137
MAY	- 5.9202	- .4833	.3136			1.9418	.894	.221
JUN.	- 5.6667	1.0576	-.3581			1.4485	.938	.202
JUL.	- 5.0371	.9140			.1084	1.0425	.863	.393
AUG.	- 3.7023	.6204			1.0191	- .0594	.799	.377
SEPT.	- 5.9098	.8218			1.2379	.2877	.911	.290
OCT.	- .3537	.7962			- .2546	.4072	.931	.227
NOV.	.0534	.4541	.2332				.907	.143
DEC.	.2071	.8010	-.1218				.837	.160

PRIORITY 2

		LAG 1	B5F-E01	B5E-A01	B5D-F01	B5G-G01		
JAN.	- 3.3567		1.5491		.7347	- .2219	.688	.280
FEB.								
MAR.	- 9.1485	- 1.0227	2.3676			1.9701	.940	.206
APR.	- 2.7726		.7148		1.4447	- .6189	.954	.146
MAY								
JUN.								
JUL.								
AUG.								
SEPT.								
OCT.								
NOV.								
DEC.								

JAN.								
FEB.								
MAR.								
APR.								
MAY								
JUN.								
JUL.								
AUG.								
SEPT.								
OCT.								
NOV.								
DEC.								

NOTE - B5F-E01 was replaced by C5F-E01 for the void filling portion of the analyses.

TABLE F-1
BATTLE RIVER NEAR PONOKA (C05FA001)
MONTHLY MEAN NATURAL FLOWS EXTENDED - CFS

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	MEAN	%	AC.-FT.
1912	1.	1.	12.	152.	55.	19.	23.	24.	37.	35.	24.	11.	33.	49	23762.
1913	16.	33.	1.	515.	42.	169.	239.	106.	55.	43.	31.	15.	105.	156	76058.
1914	11.	13.	0.	81.	373.	813.	198.	35.	32.	54.	32.	32.	139.	208	100953.
1915	27.	17.	43.	134.	129.	942.	1079.	178.	71.	81.	43.	17.	231.	344	167306.
1916	8.	9.	154.	264.	229.	372.	556.	296.	832.	245.	124.	64.	263.	391	190577.
1917	51.	51.	54.	1070.	985.	414.	179.	31.	32.	34.	58.	48.	251.	373	181466.
1918	49.	49.	55.	156.	95.	96.	37.	20.	20.	24.	11.	7.	52.	77	37327.
1919	5.	4.	5.	372.	209.	87.	36.	18.	52.	21.	22.	13.	70.	105	50936.
1920	16.	16.	20.	355.	1467.	287.	88.	28.	22.	26.	19.	14.	198.	294	143570.
1921	16.	15.	19.	264.	86.	61.	50.	17.	13.	12.	6.	1.	46.	69	33661.
1922	0.	0.	0.	29.	31.	27.	14.	9.	6.	7.	2.	2.	11.	16	7682.
1923	1.	0.	0.	63.	52.	81.	96.	89.	33.	32.	14.	9.	39.	59	28520.
1924	4.	2.	0.	48.	58.	36.	16.	36.	29.	27.	15.	9.	23.	35	16955.
1925	5.	3.	2.	545.	95.	98.	37.	28.	36.	39.	31.	26.	78.	117	56684.
1926	26.	24.	73.	253.	78.	716.	124.	53.	520.	197.	83.	59.	185.	272	132381.
1927	54.	38.	53.	1132.	796.	305.	814.	84.	51.	72.	42.	39.	291.	433	210716.
1928	44.	65.	503.	407.	145.	299.	342.	85.	40.	44.	21.	18.	166.	248	120766.
1929	19.	10.	43.	140.	113.	57.	26.	10.	5.	8.	6.	3.	37.	55	26582.
1930	3.	1.	3.	40.	33.	28.	22.	14.	10.	10.	7.	6.	15.	22	10709.
1931	2.	1.	1.	24.	21.	9.	7.	6.	6.	9.	5.	2.	8.	12	5625.
1932	2.	1.	2.	197.	60.	86.	40.	20.	16.	16.	9.	6.	39.	59	28592.
1933	2.	1.	3.	163.	151.	76.	37.	17.	14.	13.	10.	6.	42.	63	30401.
1934	3.	2.	76.	194.	34.	16.	6.	4.	2.	3.	4.	4.	29.	43	20957.
1935	2.	1.	1.	150.	77.	35.	33.	20.	14.	14.	8.	6.	30.	45	21840.
1936	2.	1.	3.	933.	112.	53.	18.	10.	6.	7.	7.	5.	95.	142	69156.
1937	2.	1.	3.	45.	17.	6.	3.	3.	3.	4.	5.	4.	8.	12	5780.
1938	1.	0.	18.	60.	9.	5.	4.	5.	8.	9.	7.	5.	11.	16	7896.
1939	2.	1.	7.	54.	13.	5.	3.	3.	2.	3.	4.	3.	8.	12	6014.
1940	2.	1.	0.	574.	58.	15.	6.	4.	4.	5.	6.	4.	56.	83	40556.
1941	2.	1.	4.	36.	4.	1.	1.	2.	1.	2.	3.	3.	5.	7	3602.
1942	1.	0.	0.	28.	12.	9.	8.	8.	11.	12.	9.	6.	9.	13	6282.
1943	3.	2.	3.	1045.	22.	7.	6.	5.	4.	5.	6.	4.	91.	136	66137.
1944	3.	2.	10.	84.	14.	20.	17.	15.	15.	16.	12.	7.	18.	27	12952.
1945	5.	4.	7.	57.	21.	10.	5.	4.	3.	4.	5.	4.	11.	16	7759.
1946	2.	1.	62.	129.	13.	10.	7.	5.	4.	5.	7.	5.	21.	31	15068.
1947	3.	3.	44.	317.	41.	20.	11.	7.	7.	8.	8.	5.	39.	58	28429.
1948	4.	3.	0.	451.	1556.	1171.	525.	128.	58.	50.	20.	11.	333.	496	241747.
1949	6.	5.	1.	82.	14.	4.	1.	2.	1.	2.	4.	3.	10.	15	7476.
1950	1.	1.	4.	54.	29.	13.	9.	7.	5.	6.	6.	5.	12.	17	8448.
1951	3.	1.	1.	109.	274.	92.	53.	20.	20.	18.	11.	7.	51.	76	36980.
1952	4.	4.	1.	824.	19.	13.	13.	10.	8.	10.	9.	6.	76.	113	54920.
1953	4.	4.	2.	116.	105.	82.	55.	29.	25.	23.	15.	8.	39.	58	28280.
1954	6.	5.	2.	38.	263.	260.	178.	101.	314.	200.	55.	20.	121.	180	87312.
1955	24.	35.	15.	234.	217.	105.	56.	16.	8.	9.	8.	6.	61.	91	44158.
1956	4.	3.	0.	476.	125.	55.	27.	12.	7.	9.	9.	6.	61.	90	43974.
1957	3.	2.	9.	149.	110.	49.	14.	7.	5.	6.	7.	5.	30.	45	22076.
1958	3.	3.	1.	283.	53.	36.	27.	13.	9.	10.	7.	6.	37.	56	27049.
1959	2.	0.	11.	36.	15.	11.	8.	5.	4.	5.	6.	5.	9.	13	6528.
1960	1.	0.	118.	109.	25.	10.	8.	6.	3.	4.	5.	4.	25.	37	17825.
1961	2.	0.	10.	46.	25.	20.	8.	7.	4.	5.	5.	5.	11.	17	8275.
1962	1.	0.	0.	222.	26.	11.	7.	7.	6.	7.	6.	4.	25.	37	17776.
1963	2.	2.	422.	340.	60.	25.	15.	10.	5.	11.	8.	6.	76.	113	55184.
1964	4.	3.	1.	36.	108.	108.	71.	19.	20.	22.	10.	7.	34.	51	24791.
1965	2.	1.	0.	729.	104.	86.	127.	48.	50.	53.	20.	11.	103.	153	74525.
1966	5.	4.	7.	284.	31.	12.	12.	8.	4.	4.	5.	4.	31.	47	22737.
1967	3.	2.	0.	117.	99.	67.	11.	0.	0.	0.	2.	2.	25.	38	18250.
1968	0.	0.	90.	32.	13.	5.	2.	2.	1.	1.	3.	3.	13.	19	9265.
1969	2.	2.	5.	372.	27.	11.	6.	3.	2.	11.	8.	6.	38.	56	27185.
1970	4.	4.	3.	315.	39.	46.	84.	10.	7.	8.	8.	5.	44.	66	32003.
1971	4.	5.	7.	591.	85.	57.	144.	15.	5.	9.	6.	5.	77.	115	56031.
1972	3.	2.	21.	281.	67.	40.	35.	27.	11.	16.	10.	5.	43.	64	31164.
1973	3.	2.	29.	232.	124.	71.	265.	238.	40.	25.	20.	14.	89.	133	64629.
1974	10.	11.	10.	1166.	509.	160.	171.	58.	21.	16.	15.	5.	179.	267	129677.
1975	5.	6.	7.	222.	242.	63.	33.	9.	5.	6.	5.	3.	51.	75	36641.
1976	3.	3.	6.	127.	23.	3.	1.	18.	3.	1.	3.	3.	16.	24	11647.
1977	4.	5.	7.	45.	108.	85.	9.	2.	3.	4.	4.	3.	23.	35	16854.
1978	1.	1.	50.	151.	62.	46.	9.	7.	21.	17.	17.	13.	33.	49	23816.
1979	6.	3.	103.	151.	107.	58.	7.	8.	5.	10.	6.	6.	39.	58	28445.
MIN	0.	0.	0.	24.	4.	1.	1.	0.	0.	0.	2.	1.	5.		3602.
MAX	54.	65.	503.	1166.	1556.	1171.	1079.	296.	832.	245.	124.	64.	333.		241747.
MEAN	8.	7.	33.	273.	154.	120.	91.	31.	40.	25.	15.	10.	67.	100	48668.

TABLE F-2

BATTLE RIVER NEAR UNWIN - 05FE01

SUMMARY OF REGRESSION RESULTS

DEPENDENT VARIABLE B5F-E01

PRIORITY 1

	INTERCEPT	INDEPENDENT VARIABLES					R = Coeff. of corr.	Se = Std. error of est.
		B5F-F01	B5D-F01	B5C-C02	LAG1	B5G-G01		
JAN.	.4649		- .2507	- .0375	1.1169		.857	.226
FEB.	- .6248		.1121	.0223	1.1314		.941	.179
MAR.	.4654	.7133					.947	.106
APR.	- .0290	.9812					.963	.102
MAY	- .2934	1.0760					.993	.055
JUN.	- .2732	1.0541					.983	.069
JUL.	- .3781	1.1121					.991	.053
AUG.	- .2150	1.0518					.986	.069
SEPT.	- .5011	1.1826					.964	.123
OCT.	-1.1688	1.4742					.962	.133
NOV.	.4408		- .4597	.5502	.6986		.943	.119
DEC.	- .1046		- .2996	.5311	.7021		.870	.162

PRIORITY 2

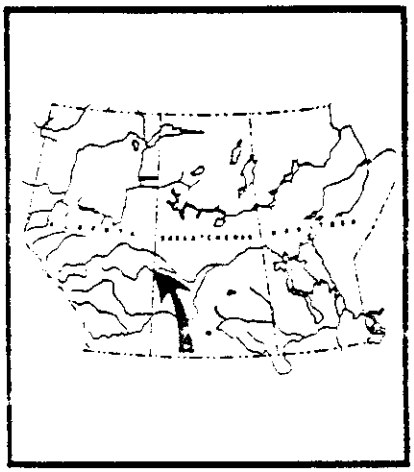
		LAG1	B5E-A01	B5C-C02	B5D-F01	B5G-G01		
JAN.	1.3553			1.8646	-1.7771	.2913	.619	.345
FEB.								
MAR.	-1.0895		.2794	.5573		.3083	.648	.324
APR.	-2.5101		.1306	.5440		.8461	.897	.180
MAY	-2.5733	.2544	.1909		- .3713	1.3988	.934	.171
JUN.	-1.5535	.5851	.1042		- .5712	1.0879	.951	.125
JUL.	.5224	.7129	.0780		- .8547	.8306	.832	.235
AUG.	.1254	.7255	.0799		- .0946	.1507	.864	.202
SEPT.	-3.9679	.7594	- .0110		.3694	.7325	.828	.242
OCT.	.6672	1.0117	- .1717		-1.0285	.8607	.957	.122
NOV.								
DEC.								

PRIORITY 3

		LAG1	B5C-C02	B5D-F01	B5G-G01			
JAN.								
FEB.								
MAR.	-2.8400		.4870	1.0220			.512	.356
APR.	-2.7307		.5400	.0657	.9266		.894	.183
MAY	-2.9503	.2512		- .6298	1.8578		.932	.178
JUN.	-2.3798	.6327		- .8564	1.5794		.946	.129
JUL.	.2886	.8058		-1.0652	1.0591		.833	.231
AUG.	- .7512	.8055		- .2510	.4991		.863	.199
SEPT.	-3.9180	.7506		.3884	.7022		.834	.235
OCT.	.7102	.9176		- .5503	.3674		.942	.139
NOV.								
DEC.								

TABLE F-2
BATTLE RIVER NEAR UNWIN (DO5FE001)
MONTHLY MEAN NATURAL FLOWS EXTENDED - CFS

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	MEAN	%	AC.-FT.
1912	46.	14.	45.	809.	496.	440.	1054.	1392.	1355.	1121.	471.	190.	619.	192	449038.
1913	133.	153.	64.	2552.	851.	331.	431.	383.	454.	406.	208.	89.	503.	156	364366.
1914	60.	60.	26.	373.	1260.	1229.	1957.	493.	370.	663.	278.	109.	578.	179	418092.
1915	75.	77.	104.	1089.	407.	731.	1924.	1608.	739.	569.	268.	125.	649.	201	469562.
1916	86.	92.	26.	787.	814.	1108.	1565.	1209.	2442.	3249.	1046.	352.	1067.	331	774524.
1917	237.	298.	72.	1960.	2763.	1573.	683.	306.	263.	186.	115.	56.	710.	220	513852.
1918	31.	30.	36.	887.	352.	232.	129.	71.	46.	41.	31.	20.	159.	49	115382.
1919	11.	9.	15.	423.	540.	246.	86.	72.	52.	20.	19.	13.	126.	39	91079.
1920	7.	5.	3.	1176.	3010.	1884.	710.	207.	140.	99.	47.	24.	610.	189	443137.
1921	14.	12.	8.	2454.	884.	265.	152.	99.	104.	84.	51.	24.	345.	107	249463.
1922	18.	13.	22.	618.	272.	140.	64.	55.	38.	30.	24.	13.	108.	34	78538.
1923	8.	8.	16.	187.	156.	179.	244.	170.	116.	80.	52.	30.	104.	32	75396.
1924	19.	17.	3.	151.	403.	225.	113.	59.	55.	43.	35.	24.	96.	30	69535.
1925	15.	12.	3.	1332.	967.	250.	130.	91.	74.	83.	77.	49.	257.	80	186058.
1926	29.	27.	34.	1170.	624.	215.	247.	193.	199.	580.	303.	182.	318.	99	229934.
1927	122.	142.	77.	1217.	3476.	1379.	1133.	582.	428.	348.	196.	90.	805.	250	582434.
1928	50.	54.	203.	1167.	924.	368.	340.	260.	147.	99.	60.	38.	309.	96	224450.
1929	24.	21.	55.	318.	220.	169.	74.	39.	23.	7.	8.	8.	88.	28	64453.
1930	5.	3.	42.	164.	105.	81.	121.	48.	24.	47.	35.	20.	58.	18	42113.
1931	12.	10.	17.	287.	118.	89.	102.	83.	90.	70.	43.	26.	79.	24	57160.
1932	14.	12.	27.	957.	538.	268.	157.	81.	59.	30.	29.	22.	183.	57	132847.
1933	12.	10.	32.	515.	973.	390.	262.	161.	124.	104.	72.	38.	226.	70	163343.
1934	22.	20.	110.	761.	440.	242.	173.	114.	64.	55.	35.	21.	172.	53	124237.
1935	13.	11.	25.	312.	255.	370.	256.	194.	55.	57.	28.	17.	176.	55	127349.
1936	10.	8.	34.	1988.	1935.	489.	346.	218.	123.	90.	41.	16.	442.	137	320737.
1937	11.	8.	34.	280.	164.	86.	72.	65.	45.	38.	27.	17.	71.	22	51164.
1938	9.	7.	55.	409.	150.	85.	72.	58.	76.	76.	38.	20.	88.	27	63866.
1939	11.	9.	47.	336.	154.	73.	66.	50.	40.	41.	32.	23.	74.	23	53224.
1940	14.	11.	17.	1353.	1185.	329.	183.	122.	92.	79.	49.	29.	288.	89	209272.
1941	18.	15.	46.	244.	73.	33.	34.	33.	26.	29.	26.	18.	50.	15	35962.
1942	11.	8.	15.	169.	87.	81.	78.	71.	84.	68.	58.	39.	64.	20	46459.
1943	22.	20.	45.	3436.	1102.	348.	280.	194.	112.	95.	61.	36.	477.	148	345648.
1944	23.	20.	60.	423.	185.	255.	517.	532.	246.	179.	100.	56.	218.	68	158344.
1945	35.	34.	54.	386.	240.	122.	65.	57.	39.	37.	37.	30.	95.	29	68489.
1946	16.	14.	109.	607.	271.	190.	221.	223.	192.	176.	112.	55.	183.	57	132145.
1947	32.	30.	162.	1394.	567.	229.	129.	96.	148.	109.	76.	54.	252.	78	182219.
1948	31.	30.	13.	1481.	7488.	2148.	536.	308.	213.	186.	105.	54.	1056.	327	766366.
1949	35.	33.	34.	341.	226.	97.	117.	234.	75.	65.	51.	26.	112.	35	81070.
1950	14.	19.	44.	370.	427.	185.	161.	80.	29.	80.	42.	18.	123.	38	88971.
1951	20.	17.	20.	2278.	1965.	523.	211.	140.	111.	84.	74.	53.	459.	142	332158.
1952	28.	37.	30.	3311.	976.	410.	356.	205.	129.	103.	87.	48.	474.	147	343753.
1953	34.	40.	35.	845.	1030.	398.	313.	414.	300.	223.	135.	82.	322.	100	233099.
1954	46.	35.	36.	207.	810.	1431.	902.	436.	1667.	923.	559.	265.	611.	189	442032.
1955	126.	107.	181.	1738.	2401.	1011.	385.	243.	146.	153.	78.	35.	552.	171	399654.
1956	29.	29.	22.	2833.	2428.	613.	482.	298.	221.	162.	96.	54.	605.	188	439252.
1957	20.	22.	63.	1237.	749.	217.	106.	135.	119.	84.	84.	51.	240.	75	174097.
1958	30.	36.	17.	1723.	614.	218.	79.	50.	46.	38.	31.	13.	240.	75	173901.
1959	9.	3.	53.	238.	140.	81.	46.	40.	74.	101.	60.	21.	72.	22	52332.
1960	6.	3.	163.	792.	306.	128.	86.	56.	47.	52.	37.	22.	141.	44	102403.
1961	15.	4.	43.	276.	149.	92.	50.	33.	30.	17.	19.	5.	61.	19	44220.
1962	2.	0.	7.	585.	277.	206.	488.	140.	60.	37.	27.	36.	156.	48	112933.
1963	19.	24.	346.	1723.	715.	374.	494.	171.	93.	50.	47.	35.	341.	106	246966.
1964	35.	30.	37.	197.	228.	113.	59.	42.	67.	65.	27.	23.	77.	24	55833.
1965	8.	6.	9.	2732.	2082.	1094.	1041.	556.	257.	178.	102.	51.	678.	210	490697.
1966	21.	30.	50.	1087.	455.	229.	110.	159.	91.	67.	35.	23.	196.	61	141888.
1967	26.	18.	19.	180.	1195.	368.	157.	83.	38.	30.	17.	10.	180.	56	130342.
1968	0.	0.	457.	299.	148.	79.	58.	90.	124.	183.	70.	33.	129.	40	93618.
1969	28.	27.	27.	2661.	1007.	299.	159.	118.	83.	86.	51.	37.	381.	118	275500.
1970	32.	34.	36.	2101.	919.	332.	976.	272.	123.	104.	94.	55.	424.	131	306776.
1971	37.	49.	40.	2068.	1569.	471.	379.	343.	158.	111.	79.	35.	445.	138	322485.
1972	25.	27.	121.	1101.	716.	327.	234.	176.	101.	90.	73.	26.	251.	78	182346.
1973	20.	21.	97.	1106.	641.	733.	759.	1032.	525.	318.	158.	86.	460.	143	332809.
1974	62.	64.	86.	3403.	9179.	2320.	938.	599.	341.	274.	167.	73.	1469.	456	1063662.
1975	60.	53.	78.	698.	1837.	564.	430.	193.	102.	87.	80.	41.	354.	110	256483.
1976	42.	35.	58.	1117.	373.	213.	190.	71.	44.	47.	22.	35.	186.	58	135255.
1977	30.	31.	78.	217.	327.	189.	106.	57.	10.	5.	12.	21.	91.	28	65558.
1978	21.	27.	83.	620.	276.	138.	125.	61.	258.	181.	88.	47.	160.	50	116013.
1979	22.	19.	107.	957.	597.	317.	251.	180.	88.	64.	37.	24.	231.	72	167002.
MIN	0.	0.	3.	151.	73.	33.	34.	33.	10.	5.	9.	5.	50.		35962.
MAX	237.	298.	457.	3436.	9179.	2320.	1957.	1608.	2442.	3249.	1046.	352.	1469.		1063662.
MEAN	32.	32.	62.	1077.	1028.	451.	367.	252.	213.	196.	101.	50.	322.	100	233578.



APPENDIX G

BATTLE RIVER BASIN ARRAYS OF NATURAL FLOWS FOR PROJECT SITES

TABLE G-1
BATTLE RIVER AT ALBERTA-SASKATCHEWAN BORDER
MONTHLY MEAN FLOWS DERIVED FROM C-FILE DATA IN CFS

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	MEAN	%	AC.-FT.
1912	16.	14.	44.	790.	484.	429.	1029.	1359.	1323.	1094.	460.	185.	604.	192	438361.
1913	130.	149.	62.	2491.	831.	323.	421.	374.	443.	396.	203.	87.	491.	156	355542.
1914	59.	59.	25.	364.	1230.	1200.	1910.	481.	361.	647.	271.	106.	554.	179	408059.
1915	73.	75.	102.	1053.	397.	714.	1878.	1570.	721.	555.	281.	122.	633.	201	458335.
1916	84.	90.	25.	766.	795.	1082.	1528.	1180.	2384.	3171.	1021.	344.	1042.	331	756093.
1917	231.	291.	70.	1913.	2697.	1535.	667.	299.	257.	182.	112.	55.	693.	220	501598.
1918	30.	29.	37.	866.	353.	226.	126.	69.	45.	40.	30.	20.	155.	49	112556.
1919	11.	9.	15.	413.	527.	240.	84.	70.	51.	20.	19.	13.	123.	39	89022.
1920	7.	5.	3.	1148.	2938.	1639.	693.	202.	137.	97.	46.	23.	596.	189	432591.
1921	14.	12.	8.	2395.	863.	259.	148.	97.	102.	82.	50.	23.	336.	107	243572.
1922	16.	13.	21.	603.	265.	137.	83.	54.	37.	29.	23.	13.	105.	34	76610.
1923	8.	6.	16.	183.	152.	175.	238.	186.	113.	78.	51.	29.	102.	32	73638.
1924	19.	17.	3.	147.	393.	220.	110.	56.	54.	42.	34.	23.	94.	30	67896.
1925	15.	12.	3.	1300.	944.	244.	127.	89.	72.	81.	75.	48.	251.	80	181852.
1926	26.	26.	33.	1142.	609.	210.	241.	188.	194.	565.	296.	178.	310.	98	224372.
1927	119.	139.	75.	1188.	3393.	1346.	1106.	959.	416.	340.	191.	88.	785.	250	568586.
1928	49.	53.	198.	1139.	902.	359.	332.	254.	143.	97.	59.	37.	302.	96	219126.
1929	23.	20.	54.	310.	312.	165.	72.	38.	22.	7.	9.	8.	87.	28	62824.
1930	5.	3.	41.	160.	102.	75.	118.	47.	23.	46.	34.	20.	57.	18	41084.
1931	12.	10.	17.	280.	115.	67.	100.	61.	88.	68.	42.	25.	77.	25	55831.
1932	14.	12.	26.	944.	525.	262.	153.	79.	58.	29.	28.	21.	179.	57	129650.
1933	12.	10.	31.	503.	950.	381.	256.	157.	121.	102.	70.	37.	220.	70	159521.
1934	21.	20.	107.	743.	429.	236.	169.	111.	62.	55.	34.	20.	167.	53	121154.
1935	13.	11.	24.	305.	737.	361.	250.	189.	58.	56.	27.	17.	172.	55	124372.
1936	10.	8.	33.	1940.	1893.	477.	338.	213.	120.	88.	40.	16.	431.	137	313117.
1937	11.	8.	33.	273.	160.	84.	70.	63.	44.	37.	26.	17.	69.	22	49894.
1938	9.	7.	58.	399.	146.	83.	70.	57.	74.	74.	37.	20.	88.	27	62360.
1939	11.	9.	46.	326.	150.	71.	64.	49.	35.	40.	31.	22.	72.	23	51895.
1940	14.	11.	17.	1321.	1157.	321.	179.	119.	90.	77.	48.	28.	282.	89	204377.
1941	16.	15.	45.	238.	71.	32.	33.	32.	27.	28.	25.	16.	48.	15	35058.
1942	11.	8.	15.	165.	85.	79.	76.	65.	82.	66.	57.	38.	63.	20	45370.
1943	21.	20.	44.	3354.	1076.	340.	273.	189.	105.	93.	60.	35.	466.	148	337410.
1944	22.	20.	59.	423.	181.	252.	505.	519.	240.	175.	98.	55.	213.	68	154703.
1945	34.	33.	53.	377.	234.	119.	63.	56.	38.	36.	36.	29.	92.	29	66801.
1946	16.	14.	106.	592.	265.	185.	216.	218.	187.	172.	109.	54.	178.	57	129003.
1947	31.	29.	158.	1361.	553.	224.	126.	94.	144.	106.	74.	53.	246.	78	177824.
1948	30.	29.	13.	1446.	7309.	2087.	523.	301.	208.	182.	102.	53.	1031.	327	748110.
1949	34.	32.	33.	333.	223.	95.	114.	228.	77.	63.	50.	25.	109.	35	79073.
1950	14.	19.	43.	361.	417.	181.	157.	78.	28.	78.	41.	18.	120.	38	86910.
1951	20.	17.	20.	2224.	1922.	511.	206.	137.	108.	82.	72.	52.	448.	142	324367.
1952	27.	36.	29.	3232.	953.	400.	347.	200.	126.	101.	85.	47.	462.	147	335520.
1953	33.	39.	34.	825.	1005.	388.	306.	404.	293.	218.	132.	80.	314.	100	227528.
1954	45.	34.	35.	202.	791.	1397.	880.	426.	1527.	901.	546.	259.	596.	189	431522.
1955	125.	104.	177.	1696.	2344.	987.	376.	237.	143.	149.	76.	34.	539.	171	390097.
1956	28.	28.	21.	2765.	2370.	598.	470.	291.	216.	158.	94.	53.	591.	188	428674.
1957	20.	21.	61.	1207.	731.	212.	103.	132.	116.	82.	82.	50.	235.	75	169878.
1958	29.	37.	17.	1682.	599.	213.	77.	49.	45.	37.	30.	13.	234.	75	169759.
1959	9.	3.	52.	232.	137.	78.	45.	39.	72.	99.	59.	20.	71.	22	51124.
1960	6.	3.	159.	773.	299.	125.	84.	55.	46.	51.	36.	21.	138.	44	99991.
1961	15.	4.	42.	269.	145.	90.	49.	32.	29.	17.	19.	5.	60.	19	43194.
1962	2.	0.	7.	571.	270.	201.	476.	137.	59.	36.	26.	35.	152.	48	110208.
1963	19.	23.	338.	1682.	696.	365.	482.	167.	91.	49.	46.	34.	333.	106	241113.
1964	34.	29.	36.	192.	223.	110.	58.	41.	65.	63.	26.	22.	75.	24	54383.
1965	8.	6.	9.	2667.	2032.	1068.	1016.	543.	251.	174.	100.	50.	662.	210	479088.
1966	20.	29.	49.	1061.	444.	224.	107.	155.	89.	65.	34.	22.	191.	61	138395.
1967	25.	18.	19.	176.	1166.	359.	153.	81.	37.	29.	17.	10.	176.	56	127234.
1968	0.	0.	446.	292.	144.	77.	57.	88.	121.	175.	68.	32.	126.	40	91371.
1969	27.	26.	26.	2597.	983.	292.	155.	115.	81.	84.	50.	36.	371.	118	268828.
1970	31.	33.	35.	2051.	897.	324.	953.	265.	120.	102.	92.	54.	414.	131	299466.
1971	36.	48.	39.	2019.	1532.	460.	370.	335.	154.	108.	77.	34.	435.	138	314813.
1972	24.	26.	118.	1075.	699.	319.	228.	174.	99.	88.	71.	25.	245.	78	177937.
1973	20.	20.	95.	1080.	626.	715.	741.	1007.	512.	310.	154.	84.	449.	143	324819.
1974	61.	62.	84.	3322.	8960.	2265.	916.	585.	333.	267.	163.	71.	1434.	456	1038327.
1975	59.	52.	76.	681.	1793.	551.	420.	188.	100.	85.	78.	40.	346.	110	250407.
1976	41.	34.	57.	1090.	364.	208.	185.	69.	43.	46.	21.	34.	182.	58	131944.
1977	29.	30.	76.	212.	319.	184.	103.	56.	10.	5.	12.	20.	88.	28	63923.
1978	20.	26.	81.	605.	269.	135.	122.	60.	252.	177.	86.	46.	156.	50	113242.
1979	21.	19.	104.	934.	680.	309.	245.	176.	86.	62.	36.	23.	225.	71	162889.
MIN	**0.**	**0.**	**3.**	**147.**	**71.**	**32.**	**33.**	**32.**	**10.**	**5.**	**9.**	**5.**	**48.**		**35058.**
MAX	**231.**	**291.**	**446.**	**3354.**	**8960.**	**2265.**	**1910.**	**1570.**	**2384.**	**3171.**	**1021.**	**344.**	**1434.**		**1038327.**
MEAN	**31.**	**32.**	**61.**	**1051.**	**1004.**	**440.**	**358.**	**246.**	**208.**	**191.**	**98.**	**49.**	**315.**	**100**	**228001.**

TABLE G-2
PIPESTONE CREEK AT CONFLUENCE WITH COAL LAKE
MONTHLY MEAN FLOWS DERIVED FROM C-FILE DATA IN CFS

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	MEAN	%	AC.-FT.
1912	1.	1.	7.	91.	33.	11.	14.	14.	22.	21.	14.	7.	20.	49	14233.
1913	10.	20.	1.	307.	25.	101.	143.	63.	33.	26.	18.	9.	63.	157	45485.
1914	7.	8.	0.	48.	222.	455.	116.	21.	19.	32.	19.	19.	83.	207	60164.
1915	16.	10.	26.	80.	77.	562.	644.	106.	42.	48.	26.	10.	138.	344	99802.
1916	5.	5.	92.	157.	137.	222.	332.	177.	496.	146.	74.	38.	157.	391	113756.
1917	30.	30.	32.	638.	587.	247.	107.	18.	19.	20.	35.	29.	149.	373	108145.
1918	29.	29.	33.	94.	57.	57.	22.	12.	12.	14.	7.	4.	31.	77	22241.
1919	3.	2.	3.	222.	125.	52.	23.	11.	31.	13.	13.	8.	42.	105	30470.
1920	10.	10.	12.	212.	875.	171.	52.	17.	13.	16.	11.	8.	116.	294	85666.
1921	10.	9.	11.	157.	51.	36.	30.	10.	8.	7.	4.	1.	28.	69	20077.
1922	0.	0.	0.	17.	18.	18.	8.	5.	4.	4.	1.	1.	6.	15	4475.
1923	1.	0.	0.	38.	31.	48.	57.	53.	20.	19.	8.	5.	23.	59	16990.
1924	2.	1.	0.	29.	35.	21.	10.	21.	17.	16.	9.	5.	14.	35	10052
1925	3.	2.	1.	325.	57.	58.	22.	17.	21.	23.	16.	16.	47.	118	33785.
1926	16.	14.	44.	151.	47.	427.	74.	32.	310.	117.	50.	35.	109.	272	78035.
1927	32.	23.	32.	675.	475.	182.	485.	50.	30.	43.	25.	23.	174.	433	125641.
1928	26.	39.	300.	243.	86.	178.	204.	39.	24.	26.	13.	11.	99.	246	72046.
1929	11.	6.	26.	83.	67.	34.	16.	6.	3.	5.	4.	2.	22.	55	15890.
1930	2.	1.	2.	24.	20.	17.	13.	8.	6.	6.	4.	4.	9.	22	6472.
1931	1.	1.	1.	14.	13.	5.	4.	4.	4.	5.	3.	1.	5.	12	3366.
1932	1.	1.	1.	117.	48.	51.	24.	12.	10.	10.	5.	4.	24.	59	17095.
1933	1.	1.	2.	97.	96.	45.	22.	10.	8.	8.	6.	4.	25.	62	18131.
1934	2.	1.	45.	116.	20.	10.	4.	2.	1.	2.	2.	2.	17.	43	12466.
1935	1.	1.	1.	89.	46.	21.	20.	12.	8.	8.	5.	4.	18.	45	13031.
1936	1.	1.	2.	556.	67.	32.	11.	6.	4.	4.	4.	3.	57.	142	41302.
1937	1.	1.	2.	27.	10.	4.	2.	2.	2.	2.	3.	2.	5.	12	3489.
1938	1.	0.	11.	36.	5.	3.	2.	3.	5.	5.	4.	3.	6.	16	4901.
1939	1.	1.	4.	32.	8.	3.	2.	2.	1.	2.	2.	2.	5.	12	3608.
1940	1.	1.	0.	342.	35.	9.	4.	2.	2.	3.	4.	2.	33.	83	24190.
1941	1.	1.	2.	21.	2.	1.	1.	1.	1.	1.	2.	2.	3.	7	2158.
1942	1.	0.	0.	17.	7.	5.	5.	5.	7.	7.	5.	4.	5.	13	3806.
1943	2.	1.	2.	620.	13.	4.	4.	3.	2.	3.	4.	2.	54.	136	39445.
1944	2.	1.	6.	50.	8.	12.	10.	9.	9.	10.	7.	4.	11.	26	7712.
1945	3.	2.	4.	34.	13.	6.	3.	2.	2.	2.	3.	2.	6.	16	4572.
1946	1.	1.	37.	77.	8.	6.	4.	3.	2.	3.	4.	3.	12.	31	8979.
1947	2.	2.	26.	189.	24.	12.	7.	4.	4.	5.	5.	3.	25.	58	16973.
1948	2.	2.	0.	269.	928.	698.	313.	76.	41.	30.	12.	7.	199.	495	144186.
1949	4.	3.	1.	49.	8.	2.	1.	1.	1.	1.	2.	2.	6.	15	4487.
1950	1.	1.	2.	32.	17.	8.	5.	4.	3.	4.	4.	3.	7.	17	5065.
1951	2.	1.	1.	65.	163.	55.	32.	12.	12.	11.	7.	4.	31.	76	22161.
1952	2.	2.	1.	491.	11.	8.	8.	6.	5.	6.	5.	4.	45.	112	32739.
1953	2.	2.	1.	69.	63.	49.	33.	17.	15.	14.	9.	5.	23.	58	16861.
1954	4.	3.	1.	23.	157.	155.	106.	60.	187.	119.	33.	12.	72.	179	52072.
1955	14.	21.	9.	140.	129.	63.	33.	10.	5.	5.	5.	4.	36.	91	26384.
1956	2.	2.	0.	284.	75.	33.	16.	7.	4.	5.	5.	4.	36.	90	26216.
1957	2.	1.	5.	89.	66.	29.	8.	4.	3.	4.	4.	3.	18.	45	13150.
1958	2.	2.	1.	169.	32.	21.	16.	8.	5.	6.	4.	4.	22.	56	16195.
1959	1.	0.	7.	21.	9.	7.	5.	3.	2.	3.	4.	3.	5.	14	3929.
1960	1.	0.	70.	65.	16.	6.	5.	4.	2.	2.	3.	2.	15.	37	10671.
1961	1.	0.	6.	27.	15.	12.	5.	4.	2.	3.	3.	3.	7.	17	4893.
1962	1.	0.	0.	132.	16.	7.	4.	4.	4.	4.	4.	2.	15.	37	10653.
1963	1.	1.	252.	203.	38.	15.	9.	6.	5.	7.	5.	4.	46.	114	32991.
1964	2.	2.	1.	21.	64.	64.	42.	11.	12.	13.	6.	4.	20.	50	14668.
1965	1.	1.	0.	435.	62.	51.	76.	29.	36.	32.	12.	7.	62.	154	44559.
1966	3.	2.	4.	169.	18.	7.	7.	5.	2.	2.	3.	2.	19.	46	13402.
1967	2.	1.	0.	70.	59.	40.	7.	0.	0.	0.	1.	1.	15.	38	10903.
1968	0.	0.	54.	19.	8.	3.	1.	1.	1.	1.	2.	2.	8.	19	5607.
1969	1.	1.	3.	222.	16.	7.	4.	2.	1.	7.	5.	4.	23.	56	16314.
1970	2.	2.	2.	188.	23.	27.	50.	6.	4.	5.	5.	3.	26.	66	19035.
1971	2.	3.	4.	352.	51.	34.	86.	9.	3.	5.	4.	3.	46.	115	33390.
1972	2.	1.	13.	168.	40.	24.	21.	16.	7.	10.	6.	3.	26.	64	18712.
1973	2.	1.	17.	138.	74.	42.	158.	142.	24.	15.	12.	8.	53.	133	38487.
1974	6.	7.	6.	695.	304.	95.	102.	35.	13.	11.	9.	3.	107.	267	77421.
1975	3.	4.	4.	132.	144.	38.	20.	5.	3.	4.	3.	2.	30.	75	21886.
1976	2.	2.	4.	76.	14.	2.	1.	11.	2.	1.	2.	2.	10.	25	7145.
1977	2.	3.	4	27.	64.	51.	5.	1.	2.	2.	2.	2.	14.	34	9965.
1978	1.	1.	30.	90.	37.	27.	5.	4.	13.	10.	10.	8.	20.	49	14227.
1979	4.	2.	61.	90.	64.	35.	4.	5.	3.	6.	4.	4.	24.	59	17066.
MIN	**0.**	**0.**	**0.**	**14.**	**2.**	**1.**	**1.**	**0.**	**0.**	**0.**	**1.**	**1.**	**3.**		**2158.**
MAX	**32.**	**39.**	**300.**	**695.**	**928.**	**698.**	**644.**	**177.**	**496.**	**146.**	**74.**	**38.**	**199.**		**144186.**
MEAN	**5.**	**4.**	**20.**	**162.**	**92.**	**72.**	**54.**	**19.**	**24.**	**15.**	**9.**	**6.**	**40.**	**100**	**29042.**

TABLE G-3
COAL LAKE INFLOWS
MONTHLY MEAN FLOWS DERIVED FROM C-FILE DATA IN CFS

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	MEAN	%	AC.-FT.
1912	0.	0.	1.	7.	3.	1.	1.	1.	2.	2.	1.	1.	2.	52	1208.
1913	1.	2.	0.	25.	2.	8.	12.	5.	3.	2.	2.	1.	5.	163	3786.
1914	1.	1.	0.	4.	18.	40.	10.	2.	2.	3.	2.	2.	7.	220	5125.
1915	1.	1.	2.	7.	8.	46.	53.	9.	3.	4.	2.	1.	11.	352	8180.
1916	0.	0.	8.	13.	11.	18.	27.	14.	41.	12.	6.	3.	13.	397	9253.
1917	2.	2.	3.	52.	48.	20.	9.	2.	2.	2.	3.	2.	12.	382	8874.
1918	2.	2.	3.	8.	5.	5.	2.	1.	1.	1.	1.	0.	3.	80	1864.
1919	0.	0.	0.	18.	10.	4.	2.	1.	3.	1.	1.	1.	3.	106	2469.
1920	1.	1.	1.	17.	72.	14.	4.	1.	1.	1.	1.	1.	10.	300	7002.
1921	1.	1.	1.	13.	4.	3.	2.	1.	1.	1.	0.	0.	2.	72	1682.
1922	0.	0.	0.	1.	2.	1.	1.	0.	0.	0.	0.	0.	0.	13	303.
1923	0.	0.	0.	3.	3.	4.	5.	4.	2.	2.	1.	0.	2.	63	1456.
1924	0.	0.	0.	2.	3.	2.	1.	2.	1.	1.	1.	0.	1	34	787.
1925	0.	0.	0.	27.	5.	5.	2.	1.	2.	2.	2.	1.	4.	121	2819.
1926	1.	1.	4.	12.	4.	35.	6.	3.	25.	10.	4.	3.	9.	279	6484.
1927	3.	2.	3.	55.	39.	15.	40.	4.	2.	4.	2.	2.	14.	445	10356.
1928	2.	3.	25.	20.	7.	15.	17.	3.	2.	2.	1.	1.	8.	255	5939.
1929	1.	0.	2.	7.	6.	3.	1.	0.	0.	0.	0.	0.	2.	52	1210.
1930	0.	0.	0.	2.	2.	1.	1.	1.	0.	0.	0.	0.	1.	18	424.
1931	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.	5	121.
1932	0.	0.	0.	10.	4.	4.	2.	1.	1.	1.	0.	0.	2.	59	1384.
1933	0.	0.	0.	8.	8.	4.	2.	1.	1.	1.	0.	0.	2.	65	1511.
1934	0.	0.	4.	9.	2.	1.	0.	0.	0.	0.	0.	0.	1.	41	964.
1935	0.	0.	0.	7.	4.	2.	2.	1.	1.	1.	0.	0.	2.	47	1087.
1936	0.	0.	0.	46.	5.	3.	1.	0.	0.	0.	0.	0.	5.	141	3285.
1937	0.	0.	0.	2.	1.	0.	0.	0.	0.	0.	0.	0.	0.	8	180.
1938	0.	0.	1.	3.	0.	0.	0.	0.	0.	0.	0.	0.	0.	10	240.
1939	0.	0.	0	3.	1.	0	0.	0.	0.	0.	0.	0.	0.	10	240.
1940	0.	0.	0.	28.	3.	1.	0.	0.	0.	0.	0.	0.	3.	82	1910.
1941	0.	0.	0.	2.	0.	0.	0.	0.	0.	0.	0.	0.	0.	5	119.
1942	0.	0.	0.	1.	1.	0.	0.	0.	1.	1.	0.	0.	0.	10	242.
1943	0.	0.	0.	51.	1.	0.	0.	0.	0.	0.	0.	0.	4.	133	3095.
1944	0.	0.	0.	4.	1.	1.	1.	1.	1.	1.	1.	0.	1.	28	662.
1945	0.	0.	0.	3.	1.	0.	0.	0.	0.	0.	0.	0.	0.	10	240.
1946	0.	0.	3.	6.	1.	0.	0.	0.	0.	0.	0.	0.	1.	26	603.
1947	0.	0.	2.	15.	2.	1.	1.	0.	0.	0.	0.	0.	2.	54	1260.
1948	0.	0.	0.	22.	76.	57.	26.	6.	3.	2.	1.	1.	16.	505	11764.
1949	0.	0.	0.	4.	1.	0.	0.	0.	0.	0.	0.	0.	0.	13	300.
1950	0.	0.	0.	3.	1.	1.	0.	0.	0.	0.	0.	0.	0.	13	300.
1951	0.	0.	0.	5.	13.	4.	3.	1.	1.	1.	1.	0.	2.	76	1761.
1952	0.	0.	0.	40.	1.	1.	1.	0.	0.	0.	0.	0.	4.	110	2563.
1953	0.	0.	0.	6.	5.	4.	3.	1.	1.	1.	1.	0.	2.	57	1329.
1954	0.	0.	0.	2.	13.	13.	9.	5.	15.	10.	3.	1.	6.	185	4300.
1955	1.	2.	1.	11.	11.	5.	3.	1.	0.	0.	0.	0.	3.	91	2108.
1956	0.	0.	0.	23.	6.	3.	1.	1.	0.	0.	0.	0.	3.	87	2035.
1957	0.	0.	0.	7.	5.	2.	1.	0.	0.	0.	0.	0.	1.	39	904.
1958	0.	0.	0.	14.	3.	2.	1.	1.	0.	0.	0.	0.	2.	54	1260.
1959	0.	0.	1.	2.	1.	1.	0.	0.	0.	0.	0.	0.	0.	13	301.
1960	0.	0.	6.	5.	1.	0.	0.	0.	0.	0.	0.	0.	1.	31	728.
1961	0.	0.	0.	2.	1.	1.	0.	0.	0.	0.	0.	0.	0.	10	240.
1962	0.	0.	0.	11.	1.	1.	0.	0.	0.	0.	0.	0.	1.	33	776.
1963	0.	0.	21.	17.	3.	1.	1.	0.	0.	1.	0.	0.	4.	115	2670.
1964	0.	0.	0.	2.	5.	5.	3.	1.	1.	1.	0.	0.	2.	47	1091.
1965	0.	0.	0	36.	5.	4.	6.	2.	3.	3.	1.	1.	5.	158	3663.
1966	0.	0.	0.	14.	2.	1.	1.	0.	0.	0.	0.	0.	1.	46	1077.
1967	0.	0.	0.	6.	5.	3.	1.	0.	0.	0.	0.	0.	1.	39	904.
1968	0.	0.	4.	2.	1.	0.	0.	0.	0.	0.	0.	0.	1.	18	426.
1969	0.	0.	0.	18.	1.	1.	0.	0.	0.	1.	0.	0.	2.	54	1254.
1970	0.	0.	0.	15.	2.	2.	4.	0.	0.	0.	0.	0.	2.	59	1380.
1971	0.	0.	0.	29.	4.	3.	7.	1.	0.	0.	0.	0.	4.	114	2642.
1972	0.	0.	1.	14.	3.	2.	2.	1.	1.	1.	0.	0.	2.	64	1503.
1973	0.	0.	1.	11.	6.	3.	13.	12.	2.	1.	1.	1.	4.	133	3102.
1974	0.	1.	0.	57.	25.	8.	8.	3.	1.	1.	1.	0.	9.	272	6317.
1975	0.	0.	0.	11.	12.	3.	2.	0.	0.	0.	0.	0.	2.	73	1694.
1976	0.	0.	0.	6.	1.	0.	0.	1.	0.	0	0.	0.	1.	21	480.
1977	0.	0.	0.	2.	5.	4.	0.	0.	0.	0.	0.	0.	1.	29	664.
1978	0.	0.	2.	7.	3.	2.	0.	0.	1.	1.	1.	1.	1.	47	1085.
1979	0.	0.	5.	7.	5.	3.	0.	0.	0.	0.	0.	0.	2.	52	1210.
MIN	**0.**	**0.**	**0.**	**1.**	**0.**	**0.**	**0.**	**0.**	**0.**	**0.**	**0.**	**0.**	**0.**		**119.**
MAX	**3.**	**3.**	**25.**	**57.**	**76.**	**57.**	**53.**	**14.**	**41.**	**12.**	**6.**	**3.**	**16.**		**11764.**
MEAN	**0.**	**0.**	**2.**	**13.**	**8.**	**6.**	**4.**	**1.**	**2.**	**1.**	**1.**	**0.**	**3.**	**100**	**2326.**

APPENDIX H

BATTLE RIVER BASIN ARRAYS OF HISTORIC WATER USES FOR SELECTED SITES AT PRESENT (1979) LEVEL OF DEVELOPMENT

TABLE H-1
COAL LAKE EVAPORATION LOSSES - CONSUMPTIVE USES
MONTHLY MEAN VALUES IN CFS

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	MEAN	%	AC. FT.
1912	-4.	-1.	-1.	7.	5.	6.	-1.	3.	3.	3.	-1.	0.	2.	56	1142.
1913	-2.	-1.	2.	9.	10.	2.	9.	-5.	5.	2.	1.	0.	3.	95	1940.
1914	-2.	-3.	3.	7.	2.	-10.	16.	11.	3.	-0.	-2.	-5.	2.	61	1252.
1915	-2.	-0.	4.	6.	9.	4.	4.	10.	5.	3.	-1.	-1.	3.	122	2493.
1916	-3	-3.	1.	4.	6.	11.	10.	1.	-3.	2.	-0.	-4.	2.	65	1341.
1917	-4.	-0.	3.	5.	9.	15.	20.	12.	7.	3.	1.	-4.	6.	198	4064.
1918	-1.	-1.	1.	11.	11.	13.	15.	5.	4.	4.	1.	-2.	5.	180	3699.
1919	-1.	-1.	0.	6.	10.	16.	18.	13.	5.	-3.	-2.	-3.	5.	178	3642.
1920	-2.	0.	-5.	3.	11.	13.	15.	16.	3.	-0.	-1.	-1	4	154	3152.
1921	-1.	-1.	1.	6.	12.	11.	14.	14.	3.	4.	-1.	-0.	5.	184	3780.
1922	-2.	-(	2.	5.	14.	15.	18.	4.	8.	1.	1.	-2.	5.	189	3878.
1923	-7.	-3.	-3.	9.	8.	3.	9.	8.	4.	2.	1.	-1.	3.	89	1829.
1924	-3.	-1	-5.	-2.	9.	16.	13.	1.	6.	-6.	-2.	-13.	1.	37	768.
1925	-5.	-12.	1.	5.	15.	8.	20.	3.	0.	-1.	-2.	-5.	2.	83	1710.
1926	-5.	-3.	0.	12.	6.	6.	18.	1.	-8.	2.	-3.	-6.	2.	60	1234.
1927	-1.	-2.	0.	7.	1.	10.	4.	15.	0.	2.	-5.	-5.	2.	77	1587.
1926	-1.	0.	1.	4.	16.	3.	8.	9.	9.	3.	1.	-1.	4.	154	3164.
1929	-5.	-6.	3.	2.	13.	11.	17.	10.	7.	5.	-4.	-2.	4.	153	3140.
1930	-3.	1.	3.	5.	9.	4.	5.	9.	3.	2.	-2.	-0.	3.	107	2188.
1931	0.	2.	-1.	10.	10.	-3.	14.	1.	5.	3.	-1.	-3.	3.	109	2241.
1932	-1.	-2.	-2.	0.	9.	6.	18.	16.	3.	-0.	-3.	-0.	4.	131	2701.
1933	-0.	-3.	-1.	6.	7.	12.	13.	15.	2.	1.	-0.	-7.	4.	134	2745.
1934	-0.	1.	0.	10.	8.	7.	17.	14.	-3.	3.	-0.	-2.	5.	163	3348.
1935	-9.	1.	-1.	3.	1.	4.	9.	10.	7.	-1.	-5.	-4.	1.	44	899.
1936	-6.	-3.	1.	4.	5.	14.	14.	7.	3.	1.	-2.	-2.	3.	105	2188.
1937	-3.	0.	4.	5.	12.	13.	-1.	8.	-5.	2.	-3.	-2.	3.	89	1825.
1938	-2.	-3.	3.	6.	9.	13.	14.	-3.	10.	1.	-1.	-3.	4	130	2668.
1939	-2.	-5.	1.	8.	2.	6.	13.	21.	-1.	-4.	-1.	-1.	3.	[illegible]	2281.
1940	-4.	-3.	-10.	-8.	11.	11.	9.	17.	8.	-3.	-5.	-3.	2.	60	1230.
1941	-2.	-2.	4.	13.	11.	9.	20.	12.	2.	3.	-4.	-5.	5.	182	3723.
1942	-3.	-4.	4.	5.	8.	-1.	8.	8.	1.	3.	-7.	-5.	1.	52	1073.
1943	-3.	-3.	-3.	10.	8.	-0.	17.	5.	9.	0.	1.	-1.	3.	119	2438.
1944	-2.	-5.	-3.	10.	7.	-5.	-2.	10.	2.	5.	-1.	-2.	1.	42	869.
1945	-6.	-1.	3.	2.	13.	11.	6.	10.	1.	0.	-2.	-4.	3.	98	2011.
1946	-3.	-3.	2.	9.	12.	-4.	12.	1.	3.	3.	-4.	-3.	2.	75	1547.
1947	-3.	-6.	-3.	1.	14.	9.	15.	1.	-4.	1.	-3.	-6.	1.	49	1014.
1948	-5.	-6.	-2.	-12.	11.	19.	0.	9.	4.	4.	-1.	-1.	2.	60	1234.
1949	-3.	-1.	1.	10.	14.	17.	1.	11.	8.	-0.	1.	-3.	5.	165	3378.
1950	-7.	-2.	-2.	5.	13.	14.	13.	9.	6.	-0.	-4.	-2.	4.	128	2614.
1951	-7.	-6.	-5.	-0.	1.	15.	7.	2.	5.	-4.	-4.	-5.	-0.	-3	-58.
1952	-5.	-2.	-1.	11.	10.	-4.	8.	10.	3.	3.	1.	-1.	3.	98	2015.
1953	-11.	-2.	-3.	2.	8.	1.	9.	2.	9.	4.	0.	-2.	1.	50	1033.
1954	-2.	0.	-5.	-2.	-1.	5.	14.	-19.	6.	4.	1.	-2.	-0.	-4	-81.
1955	-2.	-3.	-7.	-2.	10.	17.	3.	18.	-4.	1.	-1.	-2.	2.	84	1720.
1956	-3.	-3.	-3.	7.	16.	-0.	8.	7.	3.	0.	0.	-7.	2.	74	1529.
1957	-2.	-2.	0.	6.	14.	9.	13.	3.	4.	-1.	-3.	-1.	3.	119	2440.
1958	-4.	-4.	-2.	7.	12.	12.	17.	15.	-6.	4.	-3.	-6.	4.	126	2586.
1959	-4.	-0.	5.	7.	12.	8.	13.	2.	2.	-7.	-2.	-3.	3.	98	1999.
1960	-1.	-4.	1.	8.	10.	-1.	15.	1.	3.	0.	-1.	-3.	2.	84	1720.
1961	-1.	-3.	4.	6.	12.	18.	6.	17.	4.	-1.	0.	-3.	5.	175	3590.
1962	-3.	-7.	-1.	8.	7.	-1.	9.	8.	7.	1.	-0.	-2.	2.	79	1613.
1963	-6.	-5.	2.	3.	8.	13.	6.	10.	6.	4.	-1.	-2.	3.	113	2325.
1964	-3.	-0.	1.	7.	4.	13.	12.	7.	-5.	4.	-5.	-2.	3.	98	2009.
1965	-8.	-5.	-3.	7.	1.	-6.	7.	5.	1.	5.	-3.	-3.	-0.	-4	-91.
1966	-4.	-3.	3.	7.	13.	13.	10.	-5.	5.	2.	-3.	-2.	3.	107	2188.
1967	-3.	-2.	-5.	7.	13.	8.	20.	13.	12.	-0.	-2.	-6.	5.	163	3344.
1968	-4.	-0.	3.	7.	16.	10.	10.	6.	0.	1.	0.	-4.	4.	133	2733.
1969	-4.	-3.	2.	9.	14.	16.	5.	12.	-2.	1.	-3.	-4.	4.	128	2622.
1970	-2.	-2.	-2.	9.	11.	0.	10.	13.	6.	-2.	-4.	-2.	3.	104	2142.
1971	-8.	-1.	-2.	11.	17.	2.	-6.	18.	7.	3.	-2.	-6.	3.	98	1999.
1972	-5.	-5.	-1.	6.	13.	3.	9.	6.	0.	3.	-3.	-2.	2.	72	1484.
1973	0.	-2.	2.	-1.	12.	-9.	6.	-2.	5.	1.	-5.	-3.	0.	14	278.
1974	-9.	-2.	-8.	7.	2.	1.	4.	8.	4.	3.	1.	-2.	1.	26	540.
1975	-3.	-3.	-1.	2.	6.	9.	14.	-1.	9.	-0.	1.	-4.	2.	86	1759.
1976	-2.	-2.	0.	9.	10.	4.	13.	7.	8.	3.	0.	-3.	4.	139	2856.
1977	-3.	2.	4.	11.	-9.	21.	8.	2.	2.	5.	0.	-3.	3.	116	2380.
1978	-6.	-5.	4.	5.	5.	18.	15.	2.	-13.	2.	-4.	-1.	2.	67	1371.
1979	-0.	-5.	3.	4.	8.	5.	4.	6.	1.	1.	1.	-5.	2.	69	1422.
MIN	-11.	-12.	-10.	-12.	-9.	-10.	-6.	-19.	-13.	-7.	-7.	-13.	-0.		-91.
MAX	0.	2.	5.	13.	17.	21.	20.	21.	12.	5.	1.	0.	5.		4064.
MEAN	-3.	-2.	-0.	5.	9.	7.	10.	7.	3.	1.	-2.	-3.	3.	100	2052.

TABLE H-2
APL RESERVOIR EVAPORATION LOSSES
MONTHLY MEAN VALUES IN CFS

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	MEAN	%	AC. FT.
1912	-1.	-0.	-0.	1.	1.	2.	0.	-2.	1.	-0.	-0.	0.	0.	23	115.
1913	-1.	-1.	0.	2.	3.	1.	2.	1.	1.	0.	0.	-0.	1.	99	490.
1914	-1.	-0.	1.	1.	3.	-1.	4.	3.	-1.	-2.	-1.	-1	0.	63	311.
1915	-0.	-0.	1.	2.	-1.	-0	0.	5.	1.	0.	-1.	-0.	1.	85	426.
[illegible]	-1	-1.	0	1.	-1.	1.	-1.	-3.	-1.	-0.	-0.	-1	-1.	-86	-428.
[illegible]	-1.	-0.	1.	2.	2.	4.	5.	2.	-0.	0	0.	-1.	1.	172	849.
1918	-1.	-0.	1.	3.	3.	3.	5.	2.	1.	1.	0.	-0.	2.	221	1093.
1919	-0.	-0.	0.	1.	1.	5.	4.	3.	-2.	0.	-1.	-0.	1.	135	670.
1920	-1.	-0.	-2.	-0.	1.	2.	4.	4.	1.	0.	-0.	-1.	1.	98	486.
1921	-1.	-0.	0.	2.	3.	4.	2.	3.	2.	1.	-1.	-0.	1.	184	908.
1922	-1.	-0.	1.	1.	2.	2.	4.	2.	2.	0.	0.	-0.	1.	160	789.
1923	-1.	-0.	0.	1.	2.	-1.	2.	1.	2.	0.	0.	-0.	1.	74	365.
1924	-1.	-0.	-0.	0.	3.	3.	3.	2.	2.	-0.	-0.	-3.	1.	110	543.
1925	-1	-1.	-0.	0.	3.	1.	4.	2.	-0.	-0.	-1.	-1.	1.	76	375.
1926	-1.	-1.	0.	3.	1.	2.	2.	1.	-1.	0.	-1.	-2.	0.	37	184.
1927	-0.	-1.	-1.	1.	0.	1.	-0.	3.	-0.	-0.	-1.	-1.	0.	13	65.
1928	-0.	-0.	-0.	1.	4.	-1.	2.	1.	2.	0.	0.	0.	1.	111	549.
1929	-1.	-0.	1.	0.	3.	3.	4.	4.	2.	1.	-1.	-1.	1.	185	914.
1930	-0.	0.	1.	-1.	2.	1.	1.	1.	-0.	-0.	0.	-0.	0	62	307.
1931	-0.	0.	-1.	2.	3.	-1.	3.	1.	1.	0.	0.	-1.	1.	86	426.
1932	-0.	-1.	-1.	-0.	3.	2.	4.	4.	0.	-0.	-1.	-1.	1.	112	555.
1933	-0.	-1.	-0.	2.	2.	2.	3.	4.	1.	-0.	-0.	-2.	1.	136	672.
1934	-1.	0.	0.	3.	3.	2.	3.	3.	1.	1.	-0.	-1.	1.	172	849.
1935	-2.	0.	-1.	-0.	-0.	0.	3.	2.	1.	0.	-0.	-1.	0.	24	121.
1936	-2.	-1.	-0.	2.	2.	2.	5.	2.	1.	1.	-0.	-0.	1.	147	732.
1937	-2.	-1.	1.	1.	2.	4.	2.	1.	-1.	1.	-1.	-0.	1.	87	430.
1938	-1.	-1.	0.	0.	1.	3.	3.	0.	2.	0.	-0.	-0.	1.	86	426
1939	-1.	-1.	0.	2.	1.	-0.	2.	5.	1.	-2.	-1.	-0.	1.	75	371
1940	-0.	-1.	-3.	-1.	4.	3.	2.	4.	1.	-0.	-1.	-0.	1.	99	492.
1941	-1.	-1.	0.	3.	2.	3.	5.	2.	-0.	1.	-0.	-0.	1.	173	855.
1942	-0.	-1.	0.	2.	3.	-0.	-1.	2.	0.	0.	-1.	-0.	0.	51	250.
1943	-1.	-1.	-1.	3.	3.	-2.	5.	1.	2.	-1.	0.	-0.	1.	99	492.
1944	-0.	-2.	-2.	3.	3.	-2.	0.	3.	-1.	1.	-0.	-1.	0.	26	131.
1945	-1.	-0.	1.	1.	3.	3.	3.	3.	0.	1.	-1.	-1.	1.	148	732.
1946	-0.	-0.	0.	3.	3.	-2.	4.	0.	-0.	0.	-1.	-1.	1.	75	369.
1947	-1.	-2.	-1.	1.	3.	1.	4.	-1.	-1.	0.	-2.	-1.	0.	3	14.
1948	-1.	-2.	-0.	-2.	3.	4.	3.	4.	2.	1.	-0.	-1.	1.	136	676.
1949	-2.	-1.	1.	3.	4.	2.	-2.	3.	2.	-0.	0.	-1.	1.	110	545.
1950	-1.	-0.	-0.	2.	3.	3.	2.	3.	2.	-1.	-1.	-1.	1.	134	664.
1951	-2.	-2.	-1.	0.	2.	3.	1.	2.	1.	-0.	-0.	-1.	0.	38	188.
1952	-1.	-1.	-0.	3.	4.	-3.	3.	3.	1.	0.	0.	-0.	1.	112	555.
1953	-1.	-1.	-1.	1.	1.	1.	1.	1.	2.	1.	0.	0.	0.	62	305.
1954	-2.	-0.	-0.	0.	1.	2.	4.	-5.	1.	1.	0.	-0.	0.	24	117.
1955	-1.	-0.	-1.	0.	2.	4.	1.	4.	-1.	0.	-1.	-0.	1.	86	426.
1956	-0.	-0.	-0.	2.	5.	1.	3.	1.	1.	1.	0.	-1.	1.	159	791.
1957	-1.	-0.	-0.	2.	3.	3.	4.	-0.	1.	0.	-1.	-0.	1.	135	666.
1958	-1.	-0.	-1.	2.	4.	3.	5.	4.	0.	1.	-1.	-0.	1.	197	976.
1959	-1.	-0.	1.	2.	3.	1.	4.	-0.	1.	-0.	-1.	-0.	1.	123	609.
1960	-0.	-1.	-0.	2.	3.	3.	4.	2.	2.	-0.	-0.	-1.	1.	171	851.
1961	-0.	-1.	1.	1.	2.	5.	2.	4.	2.	0.	-0.	-1.	1.	184	912.
1962	-1.	-2.	-0.	2.	2.	3.	-1.	2.	1.	1.	0.	-0.	1.	87	430.
1963	-2.	-2.	0.	0.	3.	1.	1.	1.	2.	1.	-0.	-0.	0.	63	313.
1964	-2.	-0.	-1.	1.	0.	3.	4.	3.	-1.	1.	-1.	-1.	1.	74	365.
1965	-1.	-1.	-0.	2.	1.	1.	3.	3.	-1.	1.	-1.	-0.	1.	88	434.
1966	-1.	-1.	1.	1.	4.	3.	1.	0.	2.	0.	-1.	-0.	1.	111	549.
1967	-1.	-1.	-1.	1.	3.	2.	4.	3.	3.	0.	-1.	-2.	1.	123	611.
1968	-1.	-0.	1.	2.	3.	2.	1.	2.	-0.	-0.	-0.	-1.	1.	110	545.
1969	-1.	-1.	0.	2.	4.	4.	-1.	4.	-3.	-0.	-0.	-1.	1.	87	430.
1970	-0.	-0.	-0.	2.	3.	-4.	3.	4.	1.	-0.	-1.	-0.	1.	100	496.
1971	-2.	-0.	-0.	3.	4.	2.	-0.	4.	1.	1.	-0.	-1.	1.	147	726.
1972	-1.	-1.	1.	2.	3.	-2.	1.	3.	-0.	1.	-1.	-0.	1.	76	375.
1973	-0.	-0.	0.	0.	4.	-2.	3.	-0.	-2.	1.	-2.	-1.	0.	15	73.
1974	-2.	-1.	-1.	2.	1.	4.	3.	0.	1.	1.	0.	-1.	1.	85	422.
1975	-1.	-1.	-1.	-0.	1.	2.	1.	2.	2.	-0.	-0.	-2.	0.	37	182.
1976	-1.	-1.	-0.	3.	3.	-1.	4.	1.	2.	1.	-0.	-2.	1.	111	549.
1977	-0.	0.	1.	3.	-0.	5.	3.	1.	-1.	1.	-0.	-1.	1.	146	724.
1978	-1.	-1.	1.	1.	1.	3.	4.	2.	-1.	0.	-0.	-0.	1.	112	553.
1979	-0.	-1.	1.	1.	2.	1.	3.	3.	1.	0.	0.	-0.	1.	137	676.
MIN	-2.	-2.	-3.	-2.	-1.	-4.	-2.	-5.	-3.	-2.	-2.	-3.	-1.		-428.
MAX	-0.	-0.	1.	3.	5.	5.	5.	5.	3.	1.	-0.	0.	2.		1093.
MEAN	-1.	-1.	-0.	1.	2.	2.	2.	2.	1.	0.	-0.	-1.	1.	100	495.

TABLE H-3
BATTLE RIVER BASIN AT ALBERTA-SASKATCHEWAN BOUNDARY
MINOR WATER USES AT 1979 LEVEL OF DEVELOPMENT
MONTHLY MEAN VALUES IN CFS

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	MEAN	%	AC.-FT.
1912	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11599.
1913	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1914	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1915	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1916	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1917	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11599.
1918	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1919	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1920	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1921	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11599.
1922	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1923	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1924	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1925	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11599.
1926	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1927	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1928	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1929	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11599.
1930	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1931	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1932	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1933	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11599.
1934	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1935	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1936	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1937	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11599.
1938	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1939	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1940	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1941	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11599.
1942	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1943	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1944	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1945	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11599.
1946	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1947	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1948	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1949	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11589.
1950	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1951	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1952	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1953	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11599.
1954	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1955	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1956	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1957	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11599.
1958	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1959	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1960	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1961	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11599.
1962	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1963	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1964	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1965	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11599.
1966	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1967	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1968	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1969	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11599.
1970	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1971	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1972	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1973	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11599.
1974	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1975	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1976	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1977	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11599.
1978	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
1979	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11591.
MIN	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.		11591.
MAX	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.		11599.
MEAN	4.	4.	35.	67.	9.	-14.	31.	25.	8.	14.	4.	4.	16.	100	11593.

TABLE H-4

PIPESTONE CREEK CONSUMPTIVE USES

DUE TO EVAPORATION AND LICENCED USES

MONTHLY MEAN VALUES IN CFS

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	MEAN	%	AC.-FT.
1912	0.	0.	0.	0.	2.	5.	0.	2.	1.	1.	0.	0.	1.	37	664.
1913	0.	0.	1.	0.	8.	0.	0.	0.	2.	0.	0.	0.	1.	38	672.
1914	0.	0.	0.	6.	0.	0.	6.	10.	1.	0.	0.	0.	2.	78	1400.
1915	0.	0.	1.	0.	2.	0.	0.	1.	1.	0.	0.	0.	0.	17	305.
1916	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0	0.
1917	0.	0.	0.	0.	0.	0.	11.	11.	6.	1.	0.	0.	2.	99	1771.
1918	0.	0.	0.	3.	7.	8.	13.	4.	3.	3.	0.	0.	3.	139	2493.
1919	0.	0.	0.	0.	0.	12.	17.	11.	4.	0.	0.	0.	4.	150	2674.
1920	0.	0.	0.	0.	0.	0.	11.	14.	2.	0.	0.	0.	2.	92	1656.
1921	0.	0.	0.	0.	7.	8.	11.	10.	5.	3.	0.	0.	4.	150	2680.
1922	0.	0.	1.	5.	12.	14.	8.	5.	4.	4.	1.	1.	5.	187	3334.
1923	0.	0.	0.	6.	5.	0.	5.	4.	2.	0.	0.	0.	2.	75	1337.
1924	0.	0.	0.	0.	6.	14.	10.	2.	5.	0.	0.	0.	3.	125	2237.
1925	0.	0.	1.	0.	10.	3.	18.	2.	0.	0.	0.	0.	3.	117	2085.
1926	0.	0.	0.	0.	2.	0.	12.	0.	0.	0.	0.	0.	1.	48	861.
1927	0.	0.	0.	0.	0.	0.	0.	11.	0.	0.	0.	0.	1.	38	676.
1928	0.	0.	0.	0.	9.	0.	0.	6.	7.	1.	0.	0.	2.	78	1400.
1929	0.	0.	0.	0.	8.	8.	16.	6.	3.	5.	4.	0.	4.	170	3045.
1930	0.	0.	2.	4.	7.	2.	4.	8.	3.	2.	0.	0.	3.	109	1950.
1931	0.	1.	0.	9.	9.	0.	4.	4.	4.	5.	3.	0.	3.	132	2360.
1932	0.	0	0.	0.	5.	2.	16.	12.	5.	0.	0.	0.	3.	136	2446.
1933	0.	0.	0.	0.	0.	8.	11.	10.	5.	1.	0.	0.	3.	119	2126.
1934	0.	1.	0.	1.	6.	7.	4.	2.	1.	2.	2.	2.	2.	95	1694.
1935	1.	1.	1.	0.	0.	3.	8.	9.	6.	0.	0.	0.	2.	98	1758.
1936	0.	0.	1.	0.	0.	12.	11.	6.	4.	3.	0.	0.	3.	125	2243.
1937	0.	0.	2.	4.	10.	4.	2.	2.	2.	2.	2.	0.	3.	102	1821.
1938	0.	0.	2.	3.	5.	3.	2.	3.	5.	5.	4.	3.	3.	119	2122.
1939	1.	0.	1.	5.	1.	3.	2.	2.	1.	2.	2.	2.	2.	74	1331.
1940	1.	1.	0.	0.	8.	9.	4.	2.	2.	3.	4.	2.	3.	122	2180.
1941	1.	0.	2.	12.	2.	1.	1.	1.	1.	1.	2.	2.	2.	88	1567.
1942	1.	0.	0.	17.	7.	5.	5.	5.	7.	7.	1.	0.	5.	186	3322.
1943	0.	0.	0.	0.	7.	0.	4.	3.	2.	3.	4.	2.	2.	85	1525.
1944	2.	1.	0.	6.	6.	0.	0.	9.	1.	4.	0.	0.	2.	98	1765.
1945	0.	0.	3.	0.	12.	6.	3.	2.	2.	2.	3.	2.	3.	119	2130.
1946	0.	0.	0.	3.	8.	0.	4.	3.	2.	3.	1.	0.	2.	82	1464.
1947	0.	0.	0.	0.	12.	8.	7.	4.	0.	0.	0.	0.	3.	106	1890.
1948	0.	0.	0.	0.	0.	0.	0.	2.	1.	2.	0.	0.	0.	17	305.
1949	0.	0.	1.	7.	8.	2.	1.	1.	1.	1.	2.	2.	2.	88	1575.
1950	1.	1.	2.	17.	12.	8.	5.	4.	3.	4.	4.	3.	5.	216	3866.
1951	0.	0.	0.	0.	0.	10.	5.	1.	4.	0.	0.	0.	2.	67	1202.
1952	0.	0.	0.	0.	9.	0.	8.	6.	5.	5.	0.	0.	3.	113	2019.
1953	0.	0.	0.	0.	3.	0.	6.	1.	7.	3.	0.	0.	2.	68	1216.
1954	0.	0.	0.	0.	0.	0.	5.	0.	0.	0.	0.	0.	0.	17	307.
1955	0.	0.	0.	0.	0.	12.	0.	10.	4.	0.	0.	0.	2.	88	1567.
1956	0.	0.	0.	0.	10.	0.	6.	7.	3.	0.	0.	0.	2.	89	1593.
1957	0.	0.	0.	0.	9.	7.	8.	4.	3.	1.	0.	0.	3.	109	1948.
1958	0.	0.	0.	0.	9.	10.	15.	8.	0.	4.	0.	0.	4.	157	2809.
1959	0.	0.	5.	5.	9.	7.	5.	3.	2.	1.	0.	0.	3.	126	2247.
1960	0.	0.	0.	3.	9.	0.	5.	4.	2.	2.	3.	0.	2.	95	1706.
1961	0.	0.	4.	4.	11.	12.	5.	4.	2.	3.	3.	3.	4.	173	3094.
1962	1.	0.	0.	0.	6.	0.	4.	4.	4.	4.	4.	2.	2.	99	1767.
1963	0.	0.	0.	0.	5.	12.	5.	6.	5.	7.	0.	0.	3.	136	2426.
1964	0.	0.	0.	6.	0.	7.	9.	6.	0.	3.	0.	0.	3.	105	1880.
1965	0.	0.	0.	0.	0.	0.	0.	2.	0.	2.	0.	0.	0.	14	246.
1966	0.	0.	3.	0.	11.	7.	7.	2.	2.	2.	0.	0.	3.	116	2073.
1967	0.	0.	0.	1.	8.	4.	7.	1.	1.	1.	1.	1.	2.	85	1523.
1968	0.	0.	19.	5.	8.	3.	1.	1.	1.	1.	2.	2.	4.	146	2622.
1969	1.	1.	3.	0.	13.	7.	4.	2.	1.	7.	5.	0.	4.	150	2674.
1970	0.	0.	0.	0.	9.	0.	6.	6.	4.	5.	0.	0.	3.	103	1837.
1971	0.	0.	0.	0.	12.	0.	0.	9.	3.	5.	4.	0.	3.	113	2015.
1972	0.	0.	0.	0.	10.	1.	8.	5.	0.	2.	0.	0.	2.	89	1597.
1973	0.	0.	1.	0.	6.	0.	0.	0.	3.	0.	0.	0.	1.	34	609.
1974	0.	0.	0.	0.	0.	0.	0.	5.	3.	2.	0.	0.	1.	34	609.
1975	0.	0.	0.	0.	0.	6.	12.	0.	3.	4.	3.	0.	2.	95	1698.
1976	0.	0.	0.	3.	9.	2.	1.	11.	2.	1.	2.	2.	3.	112	2011.
1977	2.	3.	4.	11.	0.	17.	5.	1.	2.	2.	2.	0.	4.	164	2932.
1978	0.	0.	1.	0.	2.	15.	5.	4.	0.	1.	0.	0.	2.	95	1692.
1979	0.	0.	0.	0.	3.	2.	3.	5.	1.	1.	1.	0.	1.	55	976.
MIN	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.		0.
MAX	2.	3.	19.	17.	13.	17.	18.	14.	7.	7.	5.	3.	5.		3866.
MEAN	0.	0.	1.	2.	6.	4.	6.	5.	3.	2.	1.	0.	2.	100	1789.

TABLE H-5
BATTLE RIVER BASIN AT ALBERTA-SASKATCHEWAN BOUNDARY
TOTAL WATER USES AT 1979 LEVEL OF DEVELOPMENT
MONTHLY MEAN VALUES IN CFS

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	MEAN	%	AC.-FT.
1912	3.	4.	35.	68.	11.	-8.	34.	24.	11.	15.	5.	4.	17.	90	12500.
1913	3.	3.	36.	69.	17.	-10.	34.	26.	11.	15.	5.	4.	18.	93	12930.
1914	2.	3.	36.	71.	15.	-15.	39.	36.	12.	13.	3.	3.	18.	96	13245.
1915	3.	3.	37.	69.	9.	-13.	31.	30.	10.	15.	4.	3.	17.	88	12202.
1916	3.	3.	35.	67.	9.	-13.	31.	22.	7.	14.	4.	3.	15.	81	11234.
1917	3.	3.	36.	69.	12.	-10.	42.	38.	16.	17.	5.	3.	20.	102	14152.
1918	3.	4.	36.	71.	17.	-4.	47.	35.	13.	18.	6.	3.	21.	109	15116.
1919	3.	3	35.	67.	10.	-2.	50.	41.	13.	16.	4.	3.	20.	107	14761.
1920	3.	4.	34.	68.	11.	-11.	42.	42.	17.	15.	4.	3.	19.	101	13976.
1921	3.	3.	35.	68.	16.	-2.	43.	39.	17.	19.	5.	3.	21.	109	15118.
1922	3.	4.	36.	70.	21.	2.	46.	34.	14.	18.	7.	5.	22.	114	15779.
1923	3.	3.	35.	72.	17.	-13.	36.	30.	13.	15.	5.	4.	18.	96	13357.
1924	3.	3.	35.	67.	16.	1.	46.	32.	13.	18	4.	1.	20.	104	14392.
1925	3.	3.	36.	67.	18.	-7.	47.	36.	8.	14.	4.	3	19.	102	14104.
1926	3.	3.	35.	69.	12.	-11.	40.	31.	7.	14.	3.	2.	17.	91	12637.
1927	3.	2.	34.	68.	10.	-12.	31.	34.	13.	14	4.	3.	17.	89	12387.
1928	3.	4.	35.	67.	19.	-11.	34.	29.	17.	18.	5.	4.	19.	98	13603.
1929	3.	3.	36.	67.	16.	-3.	48.	39.	14.	19.	8.	4.	21.	111	15429.
1930	3.	4.	37.	69.	18.	-8.	36.	33.	13.	16.	5.	3.	19.	100	13900.
1931	3.	4.	35.	74.	22.	-11.	37.	30.	12.	19.	9.	4.	20.	104	14444.
1932	2.	3.	35.	66.	15.	-6.	45.	42.	17.	16.	3.	3.	20.	105	14590.
1933	3.	3.	35.	66.	11.	-7.	44.	40.	16.	16.	4.	1.	20.	103	14210.
1934	2.	4.	36.	70.	16.	-6.	39.	31.	10.	17.	6.	5.	19.	101	13960.
1935	3.	5.	35.	66.	9.	-12.	40.	35.	17.	17.	4.	3.	19.	97	13472.
1936	2.	2.	35.	68.	11.	-5.	47.	34.	14.	18.	6.	4.	20.	104	14396.
1937	2.	3.	37.	71.	20.	-4.	36.	27.	9.	17.	6.	4.	19.	100	13839.
1938	3.	3.	36.	69.	14.	-7.	37.	28.	14.	19.	9.	7.	19.	102	14079.
1939	5.	3.	36.	72.	14.	-11.	36.	32.	10.	13.	6.	5.	19.	97	13418.
1940	4.	4.	33.	66.	18.	-2.	39.	32.	11.	16.	7.	6.	20.	102	14210.
1941	4.	4.	37.	77.	18.	-9.	37.	28.	9.	16.	6.	5.	19.	102	14077.
1942	4.	3.	36.	78.	23.	-8.	35.	32.	14.	21.	6.	4.	21.	109	15053.
1943	3.	3.	34.	69.	16.	-13.	38.	30.	13.	16.	8.	6.	19.	98	13541.
1944	5.	3.	34.	73.	18.	-12.	32.	33.	12.	18.	6.	3.	19.	98	13666.
1945	2.	3.	38.	69.	20.	-2.	39.	30.	10.	17.	6.	5.	20.	104	14390.
1946	4.	3.	36.	71.	18.	-12.	38.	29.	10.	17.	5.	3.	19.	97	13486.
1947	3.	2.	35.	68.	19.	-3.	43.	29.	9.	15.	3.	3.	19.	99	13732.
1948	3.	2.	35.	64.	13.	-10.	34.	30.	11.	17.	5.	3.	17.	91	12581.
1949	2.	3.	37.	73.	21.	-7.	31.	29.	11.	15.	6.	4.	19.	99	13652.
1950	4.	4.	37.	79.	27.	-2.	40.	32.	13.	17.	7.	6.	22.	116	16017.
1951	3.	2.	34.	67.	11.	-5.	40.	29.	12.	15.	4.	3.	18.	94	13053.
1952	3.	3.	35.	69.	18.	-12.	38.	34.	14.	19.	6.	3.	19.	101	13978.
1953	2.	3.	34.	67.	12.	-12.	35.	29.	15.	20.	6.	4.	18.	95	13113.
1954	2.	4.	35.	67.	10.	-12.	39.	22.	9.	15.	5.	3.	17.	87	12075.
1955	3.	3.	35.	67.	11.	-2.	38.	34.	13.	16.	4.	3.	19.	99	13654.
1956	3.	4.	35.	69.	20.	-8.	38.	32.	14.	16.	5.	2.	19.	101	13968.
1957	3.	3.	35.	68.	17.	-3.	43.	30.	12.	16.	4.	4.	19.	102	14067.
1958	3.	3.	35.	68.	18.	-1.	49.	40.	12.	17.	5.	3.	21.	111	15310.
1959	3.	4.	39.	73.	19.	-5.	41.	28.	11.	16.	5.	3.	20.	104	14382.
1960	3.	3.	35.	70.	19.	-7.	38.	31.	12.	16.	7.	4.	19.	101	14029.
1961	3.	3.	38.	72.	19.	3.	41.	33.	13.	17.	7.	6.	21.	112	15473.
1962	5.	2.	35.	69.	15.	-8.	33.	31.	13.	19.	8.	6.	19.	100	13845.
1963	3.	2.	36.	67.	15.	-4.	40.	32.	15.	21.	7.	3.	20.	104	14392.
1964	2.	4.	35.	71.	12.	-6.	44.	35.	10.	16.	5.	3.	19.	101	14029.
1965	3.	3.	35.	68.	10.	-13.	35.	29.	8.	16.	4.	3.	17.	88	12208.
1966	2.	3.	37.	69.	19.	-2.	39.	29.	12.	17.	4.	3.	19.	102	14083.
1967	3.	3.	34.	68.	17.	-5.	41.	31.	11.	15.	4.	3	19.	99	13662.
1968	3.	4.	47.	80.	19.	-7.	34.	28.	8.	15.	6.	4.	20.	105	14630.
1969	4.	4.	38.	70.	20.	-1.	35.	31.	7.	18.	10.	4.	20.	105	14563.
1970	3.	3.	35.	69.	18.	-13.	37.	35.	14.	18.	5.	3.	19.	100	13791.
1971	2.	3.	35.	69.	21.	-7.	31.	34.	15.	19.	8.	4.	20.	103	14202.
1972	3.	2.	36.	69.	18.	-11.	37.	34.	10.	16.	4.	4.	19.	97	13500.
1973	3.	4.	36.	67.	17.	-13.	34.	25.	8.	16.	3.	3.	17.	89	12329.
1974	2.	3.	34.	68.	10.	-10.	34.	28.	13.	17.	6.	3.	17.	91	12619.
1975	3.	3.	35.	66.	10.	-8.	41.	32.	11.	17.	7.	3.	18.	96	13359.
1976	3.	3.	35.	71.	18.	-10.	36.	32.	15.	16.	6.	4.	19.	100	13906.
1977	5.	7.	40.	78.	14.	1.	45.	29.	8.	17.	7.	4.	21.	112	15451.
1978	2.	3.	37.	68.	12.	-1.	45.	31.	9.	15.	4.	3.	19.	100	13843.
1979	3.	3.	36.	68.	13.	-10.	37.	32.	12.	15.	5.	4.	18.	96	13238.
MIN	2.	2.	33.	64.	9.	-15.	31.	22.	7.	13.	3.	1.	15.		11234.
MAX	5.	7.	47.	80.	27.	3.	50.	42.	17.	21.	10.	7.	22.		16017.
MEAN	3.	3.	36.	69.	16.	-7.	39.	32.	12.	17.	5.	4.	19.	100	13859.

APPENDIX I

BATTLE RIVER BASIN
ARRAY OF WATER BALANCE
AFTER APPLICATION OF
APPORTIONMENT PRINCIPLE

TABLE 1-1
BATTLE RIVER AT ALBERTA-SASKATCHEWAN BOUNDARY
MONTHLY MEAN FLOW SURPLUS IN CFS

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	MEAN	%	AC.-FT.
1912	5.	3.	-13.	327.	231.	223.	481.	656.	651.	532.	225.	89.	285.	205	206832.
1913	62.	72.	-5.	1177.	399.	172.	177.	161.	211.	183.	97.	40.	228.	164	165130.
1914	28.	27.	-13.	111.	600.	615.	916.	205.	169.	311.	133.	50.	265.	190	191609.
1915	34.	35.	14.	463.	190.	370.	908.	755.	351.	263.	137.	58.	300.	216	217174.
1916	39.	42.	-13.	317.	389.	554.	733.	568.	1185.	1572.	507.	169.	505.	364	367488.
1917	113.	143.	-1.	889.	1337.	778.	292.	112.	113.	74.	51.	25.	327.	235	236918.
1918	12.	11.	-18.	362.	160.	117.	16.	-1.	10.	2.	9.	7.	57.	41	41185.
1919	3.	2.	-8.	140.	254.	122.	-8.	-6.	13.	-6.	6.	4.	43.	31	31158.
1920	1.	-2.	-2.	506.	1456.	931.	305.	59.	52.	34.	19.	9.	281.	202	204349.
1921	4.	3.	-4.	1130.	416.	132.	31.	10.	34.	22.	20.	9.	150.	108	108480.
1922	5.	3.	-11.	232.	112.	57.	-15.	-7.	5.	-4.	5.	2.	33.	23	23595.
1923	1.	0.	-8.	20.	55.	101.	83.	53.	44.	24.	21.	11.	34.	25	24780.
1924	7.	5.	-2.	7.	181.	109.	9.	-3.	14.	5.	13.	11.	30.	21	21644.
1925	5.	3.	-2.	563.	454.	129.	17.	9.	26.	27.	34.	21.	109.	78	78673.
1926	11.	10.	-17.	502.	293.	116.	81.	63.	90.	269.	145.	87.	138.	99	99703.
1927	57.	68.	4.	526.	1687.	885.	522.	446.	196.	156.	92.	41.	376.	270	272087.
1928	23.	23.	64.	503.	432.	191.	132.	98.	55.	31.	25.	15.	133.	95	96200.
1929	9.	7.	-9.	88.	140.	86.	-12.	-19.	-3.	-4.	-4.	0.	23.	17	16782.
1930	-1.	-2.	-17.	11.	33.	48.	23.	-10.	-2	7.	12.	7.	9.	7	6577.
1931	3.	1.	-9.	66.	36.	55.	13.	11.	32.	15.	12.	9.	20.	15	14670.
1932	4.	3.	-13.	406.	248.	139.	32.	-3.	12.	-2.	11.	8.	70.	50	50819.
1933	3.	2.	-16.	184.	464.	198.	84.	39.	45.	35.	31.	18.	91.	65	65917.
1934	9.	5.	18.	302.	199.	124.	46.	25.	21.	11.	11.	5.	65.	47	46832.
1935	4.	1.	-12.	87.	360.	193.	85.	60.	12.	11.	10.	6.	69.	49	49630.
1936	3.	1.	-17.	902.	936.	244.	122.	73.	46.	26.	14.	4.	195.	141	142346.
1937	4.	1.	-17.	66.	60.	46.	-1.	5.	13.	2.	7.	5.	16.	11	11476.
1938	2.	1.	-7.	131.	89.	49.	-2.	3.	23.	18.	10.	3.	24.	17	17280.
1939	1.	2.	-13.	92.	81.	47.	-4.	-8.	10.	7.	10.	6.	17.	13	12647.
1940	3.	2.	-9.	595.	561.	163.	51.	28.	34.	23.	17.	8.	123.	88	89143.
1941	5.	4.	-15.	42.	18.	25.	-17.	-12.	5.	-2.	7.	4.	5.	4	3755.
1942	2.	1.	-8.	5.	20.	46.	3.	3.	27.	12.	23.	15.	13.	9	9074.
1943	8.	7.	-12.	1608.	522.	183.	99.	65.	42.	31.	22.	12.	215.	154	155347.
1944	6.	7.	-5.	139.	73.	139.	221.	227.	108.	70.	43.	25.	88.	63	63868.
1945	15.	14.	-12.	120.	97.	62.	-8.	-2.	9.	1.	12.	10.	26.	19	19067.
1946	4.	4.	17.	225.	115.	105.	70.	80.	84.	69.	50.	24.	71.	51	51136.
1947	13.	13.	44.	613.	258.	115.	20.	18.	63.	38.	34.	24.	104.	75	75330.
1948	12.	13.	-7.	659.	3642.	1059.	228.	121.	93.	74.	45.	24.	500.	360	362977.
1949	15.	13.	-17.	94.	91.	55.	26.	85.	28.	17.	19.	9.	36.	26	26281.
1950	3.	5.	-16.	102.	182.	93.	39.	7.	1.	22.	14.	3.	38.	27	27565.
1951	7.	7.	-10.	1045.	950.	261.	63.	40.	42.	26.	32.	23.	207.	149	150079.
1952	11.	15.	-15.	1547.	459.	212.	136.	66.	45.	32.	37.	21.	213.	153	154304.
1953	15.	17.	-17.	346.	491.	206.	117.	173.	132.	89.	60.	36.	139.	100	100800.
1954	21.	13.	-18.	34.	386.	711.	401.	191.	805.	436.	265.	127.	282.	203	203837.
1955	50.	49.	54.	781.	1161.	496.	150.	85.	59.	59.	34.	14.	251.	180	181577.
1956	11.	10.	-11.	1314.	1165.	307.	197.	114.	94.	63.	42.	25.	277.	199	201291.
1957	7.	5.	-5.	536.	345.	109.	9.	36.	46.	25.	37.	21.	98.	70	70941.
1958	12.	16.	-9.	773.	282.	108.	-11.	-16.	11.	2.	10.	4.	98.	70	70794.
1959	2.	-2.	-13.	43.	50.	45.	-19.	-9.	25.	34.	25.	7.	16.	11	11298.
1960	0.	-2.	45.	317.	131.	70.	4.	-4.	11.	10.	11.	7.	50.	36	36089.
1961	5.	-1.	-17.	63.	54.	42.	-17.	-16.	2.	-9.	3.	-3.	9.	6	6305.
1962	-1.	-0.	-4.	217.	120.	109.	205.	38.	17.	-1.	5.	12.	60.	43	43396.
1963	7.	10.	133.	774.	334.	187.	201.	52.	31.	4.	16.	14.	147.	106	106344.
1964	15.	11.	-17.	25.	100.	51.	-15.	-15.	23.	15.	6.	8.	18.	13	13252.
1965	1.	0.	-5.	1266.	1006.	547.	473.	243.	118.	71.	46.	22.	316.	228	226994.
1966	8.	12.	-13.	462.	203.	114.	15.	49.	33.	16.	13.	8.	76.	55	55263.
1967	10.	6.	-10.	20.	566.	185.	36.	10.	8.	-1.	5.	2.	70.	51	50997.
1968	-0.	-0.	176.	66.	53.	45.	-6.	16.	53.	75.	28.	12.	43.	31	31529.
1969	10.	9.	-13.	1229.	472.	147.	43.	27.	34.	24.	15.	14.	167.	120	120772.
1970	13.	14.	-16.	957.	431.	175.	440.	98.	46.	33.	41.	24.	188.	135	136092.
1971	16.	21.	-16.	941.	745.	237.	154.	134.	62.	35.	31.	13.	198.	142	143264.
1972	9.	11.	23.	469.	332.	171.	77.	53.	40.	28.	32.	9.	104.	75	75650.
1973	7.	5.	12.	473.	296.	371.	337.	479.	248.	139.	74.	39.	207.	149	150202.
1974	29.	28.	8.	1593.	4470.	1143.	424.	255.	154.	117.	76.	33.	700.	504	506757.
1975	27.	23.	3.	275.	887.	284.	166.	62.	39.	26.	32.	17.	155.	111	111997.
1976	18.	14.	-7.	474.	164.	114.	57.	3.	7.	7.	5.	13.	72.	52	52187.
1977	10	8.	-2.	28.	146.	91.	7.	-1.	-3.	-3.	-1.	6.	24.	17	17310.
1978	8.	10.	4.	235.	123.	69.	16.	-1.	117.	74.	39.	20.	59.	43	42930.
1979	8.	7.	16.	398.	327.	165.	86.	56.	31.	16.	13.	8.	94.	68	68356.
MIN	-1.	-2.	-18.	5.	18.	25.	-19.	-19.	-3.	-9.	-4.	-3.	5.		3755.
MAX	113.	143.	176.	1608.	4470.	1143.	916.	755.	1185.	1572.	507.	169.	700.		506757.
MEAN	13.	13.	1.	456.	486.	228.	140.	91.	92.	80.	44.	21.	139.	100	100711.

AINAGE AREAS
RIVER DRAINAGE BASIN

JG STATIONS AND IN THE STUDY	GROSS (sq.mi)	EFFECTIVE (sq.mi)
ONOKA FA001	710	643
EFORD F001	11579	5250
WIN E001	10002	4307
RESTBURG C001	2966	1623
WETASKIWIN A012	396	329
	71.8	31.4
TTLE RIVER IAL BOUNDARY	9600	4204

:

AUGING STATION (STREAM)
AUGING STATION (LAKE)
POWER LAKE LEVEL RECORDER
OVINCIAL APPORTIONMENT POINT
ATION STATIONS
OLOGIC STATION USED FOR ESTIMATES OF EVAPORATION
RAINAGE AREA

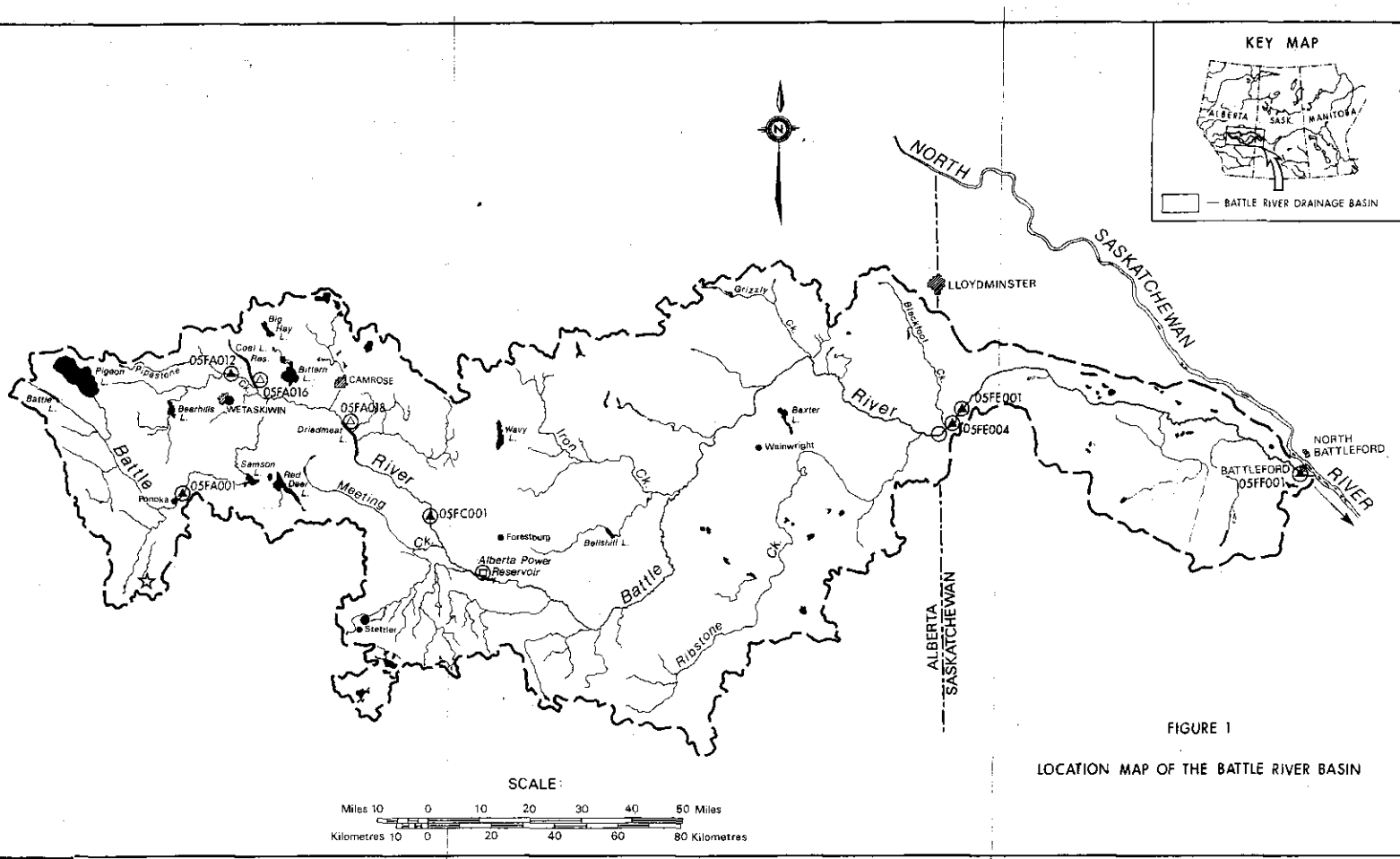


FIGURE 1

LOCATION MAP OF THE BATTLE RIVER BASIN