BATTLE and LODGE
BASINS
APPORTIONMENT STUDY

MARCH, 1981

PPWB REPORT #61

PRAIRIE PROVINCES WATER BOARD
REGIE DES EAUX DES PROVINCES DES PRAIRIES
ROOM 306, MOTHERWELL BUILDING, 1901 VICTORIA AVENUE, REGINA, SASKATCHEWAN S4P 3R4 522-6671

March 25, 1981

Dr. W.B. Mountain
Chairman
Prairie Provinces Water Board
Environmental Conservation Service
Inland Waters Directorate
Environment Canada
Vincent Massey Place
Ottawa, Ontario
K1A 0E7

Dear Dr. Mountain:

Re: The Interprovincial Apportionment of Water in Battle and Lodge Creek Basins

The task of determining how the 1969 Prairie Provinces Water Board Apportionment Agreement might be applied to Battle and Lodge Creek basins was assigned to the Committee on Interjurisdictional Agreements Administration at Meeting No. 7 of the Board on March 20, 1973. That task is discussed in the report entitled "Battle and Lodge Creek Basins - Apportionment Studies".

The report is, by copy of this letter, submitted to the Board for your consideration and the Committee members recommend that you accept both the report and its recommendations.

Submitted by -

The COMMITTEE ON INTERJURISDICTIONAL AGREEMENTS ADMINISTRATION

B.N. Johnson, DOE, Canada

R.B. Godwin, PPWB

B.W. Boyson, Alberta

A.L. Jones, Saskatchewan

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D.D. Nargang, Saskatchewan

c.c. PPWB Members
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BATTLE AND LODGE BASINS

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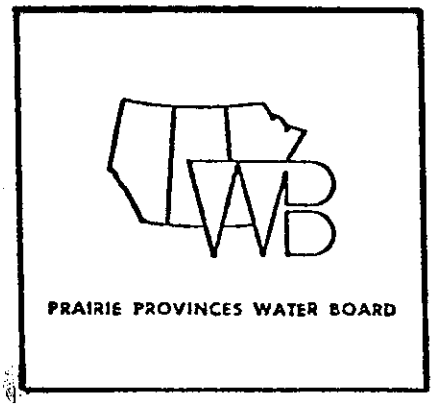
MARCH 1981

Prepared by:
Committee on Interjurisdictional
Agreements Administration
Prairie Provinces Water Board



SYNOPSIS

Battle and Lodge Creeks originate in Alberta, flow easterly into Saskatchewan and from there south to the United States. The gross drainage areas for Battle and Lodge Creeks tributary at the international boundary are approximately 2 590 square kilometres (1,000 square miles) and 2 070 square kilometres (800 square miles) respectively.

Canada's share of natural flow in a median year is 12 800 dam^3 (10,340 acre-feet) for Battle Creek basin and 13 200 dam^3 (10,660 acre-feet) for Lodge Creek basin.

The Committee recommends that streamflow in Battle, Lodge and Middle Creek basins be apportioned in accordance with Article 3 of Schedule A of the Master Agreement on Apportionment. This means that Alberta may retain 25% of natural flow at the Alberta-Saskatchewan boundary, passing the remaining 75% into Saskatchewan to enable Saskatchewan to pass 50% of natural flow to the United States and to retain 25% for consumptive uses. Each province would be responsible for the channel losses that occur in their portion of the stream.

The Committee further recommends that the apportionment period be one calendar year, and that all flows be balanced before the end of the current apportionment period. Three audit periods are recommended for Lodge Creek, Middle

Creek, and Battle Creek where they cross the Alberta-Saskatchewan boundary to provide an opportunity to audit the balance of flow in May, July and October. The audit dates are selected individually for each tributary to ensure compatibility with existing balancing procedures at the international boundary.

Summaries of the balance of flow between Canada and United States from 1959 to 1978 indicate that Canada passed an average of 62% of natural flow in the Battle Creek basin. Similarly, in the Lodge Creek basin some 67% has been passed.

In some drier than average years shortages will occur in both basins. The shortage situation has already been modified by storage in Cypress Lake, Middle Creek Reservoir, and Altawan Reservoir and may be further improved by additional storage in both basins. This report does not assess the effect that such additional storage might have on each basin's present capabilities because such developments are, and will be, a function of each province's use of its share of water.

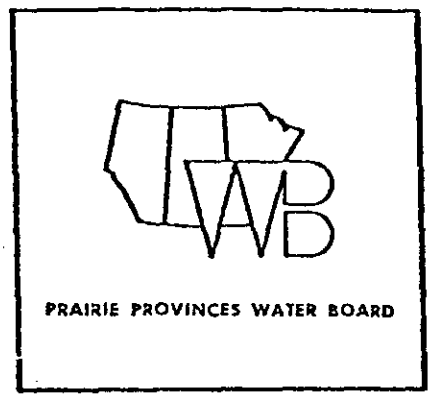
TABLE OF CONTENTS

TABLE OF CONTENTS (Continued)

TABLES

TABLE OF CONTENTS (Continued)

TABLE OF CONTENTS (Continued)



Chapter 1

INTRODUCTION

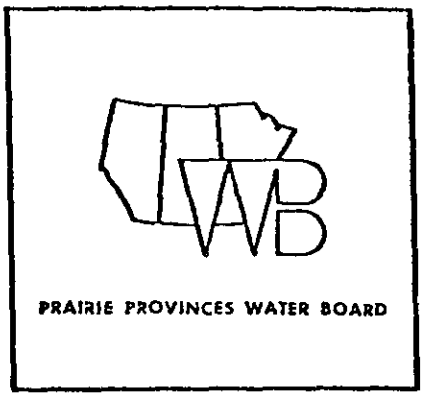
This report describes the results of a study by the PPWB Committee on Interjurisdictional Agreements Administration to determine how the 1969 Master Agreement on Apportionment might be applied to the Battle and Lodge Creek basins and how these basins might be administered to meet the terms of the Agreement.

The Committee was given the specific assignment of developing a methodology for the efficient administration of Battle and Lodge Creek basins at the March 20, 1973 meeting of the Board (Meeting No. 7). The assignment resulted in part from a Battle-Lodge Study previously done for the Board by Environment Canada(1). The previous study had not addressed the third term of reference, 'to develop procedures for the efficient administration of interjurisdictional agreements.'

The Battle and Lodge Creek basins have long been the subjects of considerable study. Battle Creek, Lodge Creek and Middle Creek, a major tributary of Lodge Creek, rise in Alberta and flow through Saskatchewan and, hence to the United States. Interprovincial apportionment is complicated by the Boundary Waters Treaty of 1909 and the requirement to deliver one-half the natural flow of Battle and Lodge Creek to the United States as defined in the 1921 Order of the International Joint Commission respecting the St. Mary and Milk Rivers and their

tributaries. Water use in the basins dates back to the early 1900s and, because of the arid nature of the area, water use has grown steadily in the ensuing years. Water Survey of Canada (WSC) has calculated a ten-day balance of natural flow for Battle and Lodge Creeks since July 1956 and 1961 respectively. Prior to that time annual water use and recorded streamflow for both basins was shown in the annual reports of the International Joint Commission but apportionment of the basins was not formally reported. Based on the ten-day natural flow estimates Canada attempts to ensure each year that 50% of natural flow is passed to the United States. Normally the water rights administrative agencies in each province attempt to allocate water up to the median natural flow of the stream. The result, in lower than normal years, is that some portions of the basin will suffer varying degrees of shortage. International commitments must be met first because they take precedence over provincial legislation. Many man-hours are spent each year administering the international apportionment requirements to ensure an equitable division of international water.

The report first discusses the special provisions made for the Battle and Lodge Creek basins in the Apportionment Agreement. The subsequent sections deal with ways of administering the basins' water supplies. The conclusions and the recommendations of the committee are then presented with more detailed hydrologic and water right data being shown in the appendices.



Chapter 2

DEFINITIONS

Many of the words and phrases used have specific meanings that must be defined for the purposes of this report. They are:

Alberta Act - means the Water Resources Act ch. 388, RSA 1970 with amendments to date.

Apportionment Agreement (also called the Agreement) - means the Master Agreement on Apportionment (including Schedules A to D inclusive) executed the Thirtieth day of October, 1969, A.D. by Canada, Alberta, Saskatchewan and Manitoba.

Apportionment Flow - is the quantity of flow subject to apportionment. In the case of Battle, Lodge and Middle Creeks at the Alberta-Saskatchewan boundary it is the quantity of water received by Saskatchewan from Alberta apportioned individually for each of the three creeks.

Apportionment Period - The Agreement states in Section 3 of Schedule A that the Apportionment Period for volumetric flow between Alberta and Saskatchewan shall be the calendar year.

Audit Period - is a specified period of less than twelve months for which natural flows are calculated and comparisons with

actual flows are made to determine the flow adjustments necessary to effect apportionment.

Balance Period - is the period, following an audit period, within which flow adjustments necessary to effect apportionment are made. This period may not extend beyond the current apportionment period.

Board - means the Prairie Provinces Water Board (PPWB).

COIAA - means the Committee on Interjurisdictional Agreements Administration.

Consumptive Use - means the quantity of water consumed by the project, but does not include distribution losses, evaporation losses and return flow.

Discharge - means a rate of streamflow or a quantity of flow per unit time.

Effective Drainage Area - is that portion of a drainage basin which might be expected to entirely contribute runoff to the main stream during a flood with a return period of two years. This area excludes marsh and slough areas and other natural storage areas which would prevent runoff from reaching the main stream in a year of average runoff.

Flow - means a quantity of streamflow.

Gross Diversion - means the quantity of water required to operate a project.

Gross Diversion = Consumptive use + Losses + Return Flow

Master Agreement - means the Master Agreement on Apportionment not including Schedules A to D inclusive.

Median Annual Flow - is the annual flow which is neither greater than or smaller than the value of one-half the number of the annual flows.

Monitor - the term "monitor" when used in the Master Agreement has two distinct meanings. Section 7 of the Master Agreement states that "....the parties agree that the monitoring of the quantity and quality..." will be the responsibility of Canada. The term "monitoring" in this context means the actual determination of flow or the measurement of the concentration of various constituents in the water bodies crossing the interprovincial boundaries. In Section 10 of the Master Agreement the term "monitoring" is used as follows: "...The Prairie Provinces Water Board shall monitor and report on the apportionment of waters...". In this context monitor means to review or administer and to maintain a watching brief.

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

Net Depletion - means the quantity of water by which the project depletes the source of supply.

Net Depletion = Consumptive Use + Losses
= Gross Diversion - Return Flow

PFRA - means the Prairie Farm Rehabilitation Administration.

Return Flow - the quantity of water that returns to a stream (source of supply) after being diverted and becomes available for reallocation.

Return Flow = Gross Diversion - Net Depletion

Saskatchewan Act - means the Water Rights Act, ch. W-8, RSS 1978 with amendments to date.

Secretariat - means the operational unit established by the Board to carry out the day-to-day affairs of the Board.

Schedule A - means the Agreement between Alberta and Saskatchewan apportioning eastward flowing water between Alberta and Saskatchewan.

Schedule C - means the Master Agreement on Apportionment between Canada, Alberta, Saskatchewan and Manitoba reconstituting the Prairie Provinces Water Board.

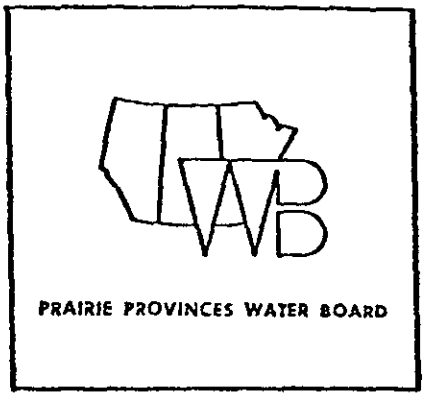
Shortage - a shortage has occurred if, at the end of an apportionment period, the terms of the 1969 Agreement have not been met at a specific apportionment point.

Subsisting Right - is a right that has not lapsed under provisions of the Alberta Act (Section 55) or the Saskatchewan Act (Section 53) or has not been cancelled under Alberta Act (Section 52, 53 or 54) or the Saskatchewan Act (Section 52).

Water Rights Branch - Alberta - means the branch of the Water Resources Management Division of the Alberta Department of Environment.

Water Rights Branch - Saskatchewan - means the branch of the Saskatchewan Department of Environment.

WSC - means Water Survey of Canada.



Chapter 3

INTERPRETATION OF EXISTING LEGISLATION

Article 6 of Schedule A of the Master Agreement on Apportionment states:

> *"This agreement shall not adversely affect any right to water in Battle or Lodge Creeks which has been given by the Government of Canada prior to the transfer of the natural resources to the Provinces and is still subsisting, or any right to such water given by either Province heretofore which has been recognized and approved by both Provinces."*

This article of the Agreement was discussed by the Board at its seventh meeting on October 17, 1972. Minute 7-25 records the agreement that "....apportionment under Article 3, Schedule A, would be applicable only in those instances where the prior rights referred to in Article 6 had been met."thus, Article 6 has precedence over Article 3, (the clause that describes the apportionment formula).

The water uses considered in each basin will be limited to water diversions that occur within the basin's effective drainage area as defined by PFRA. Any water diversion made outside of the effective drainage area will not be considered in the international balance of water and will not adversely affect the balance of water considerations between the two provinces.

The major problem in interpreting the intent of Article 6 and the subsequent Board decision is to determine exactly what constitutes a water right recognized by both provinces. Article 6 divides water rights in two categories; those granted by Canada prior to transfer of natural resources to the provinces on April 1, 1931 and those given by one province and approved by the other province that are still subsisting.

The first category seems to be straight forward and provides for the protection of any right to water granted before 1931. The term "still subsisting" refers to a right as it exists today. The project may be the same as originally licensed or quantities may have been modified to reflect increases or decreases in project size. Thus "still subsisting" reflects the updating of records made in connection with this study (see Appendix III). Similarly, a project may have changed owners but is "still subsisting" because both provinces provide that water rights are appurtenant to the undertaking as shown on approved plans (see Alberta Act, section 21 (2), Regulations 6 and 7 under the Saskatchewan Act).

The project is no longer subsisting if its rights have lapsed (Alberta Act, Section 55 and Saskatchewan Act, Section 53) or has been cancelled (Alberta Act, Sections 52, 53 and 54, and Saskatchewan Act, Section 52).

A second category provides for the protection of rights heretofore granted by either province that have been recognized and approved by both provinces. Interpretation of rights in this case is less explicit. The adverb 'heretofore' is defined by Webster as meaning "up to this time" so the rights referred to are those granted prior to October 30, 1969, the date of the signing of the Apportionment Agreement.

For a short time after the transfer of resources to the provinces in 1931, Alberta and Saskatchewan consulted each other formally on the granting of water rights in these basins. Water rights were numbered consecutively according to date of application regardless of the province granting the right, in effect, a water right granted by Alberta was also recorded in Saskatchewan and vice versa. This practice continued until 1937 when it became evident that the procedure was too cumbersome due to the greatly increased number of applications for water development under PFRA (Saskatchewan reported receiving 400 applications in two days). The above arrangement ended on January 1, 1938 with both provinces agreeing to exchange lists every six months in order to update their records and thus be able to recognize each other's priorities (See Appendix V). Hope was also expressed that the problem may be resolved by the establishment of a Western Water Board. This procedure is evidence that both provinces "recognized and approved" projects that had been applied for within each jurisdiction.

Following the establishment of the Prairie Provinces Water Board (PPWB) in July 1948 more positive procedures were developed for recognizing projects interprovincially. The Board continued to allocate on a project by project basis until the mid 1960s when it was agreed that apportionment was a preferable long term solution.

Based on the above information, the Committee believes that the phrase "...given by either province heretofore which has been recognized and approved by both provinces." should be interpreted to mean "...approved by <u>either</u> Province." That interpretation is reasonable and it protects all water rights granted prior to the signing of the 1969 Agreement. To interpret the phrase otherwise would impose hardships on many water users and would not be compatible with the co-operative and equitable approach embodied in the Master Agreement.

Further, Article 6 was specifically included to protect existing water users from shortages which may result through imposition of 50-50 apportionment (Article 3).

Applications for water use that have been made prior to 1969 should also be considered. A user has no legal right to the use of water until his works are licensed. However, when the works are completed, and the water put to use, his priority dates back to the date he filed a complete and acceptable application [see Alberta Act, Section 11 (2) and 37 (1) and Saskatchewan Act, Sections 15 (2) and 40 (2)]. Thus any project which was applied for prior to October 30, 1969 and is still in good standing in records of the respective water rights branches may be considered as having a right to be protected under the agreement. As noted previously this assumes that quantities have been updated as necessary to reflect currently existing usage; and that rights have not lapsed nor been cancelled as provided in the statutes (see Appendix III).

There are five projects in the effective drainage area of the two basins for which applications were made prior to October 30, 1969 but are not yet licensed. All five projects are in Saskatchewan, three in the Battle Creek basin and two in the Lodge Creek basin. Details are as follows:

User	File No.	Application Date	Net Depletion		Creek
			dam^3	ac-ft.	
PFRA	3152	1938-10-31	5 260	4,557	Battle
PFRA	6527	1951-09-24	143	116	Battle*
Ormiston G.	11362	1969-02-21	23	19	Battle*
PFRA	10169	1964-04-06	247	200	Lodge
Saville J.	10600	1965-08-09	69	56	Lodge

* These two projects are located on tributaries to Battle Creek in Saskatchewan

All five of the above projects have been using water for several years. Under the criteria established above, if these projects were licensed tomorrow, they would be considered to have a subsisting right for the indicated quantities. It is not the intention of the Water Rights Branch of Saskatchewan to prosecute these users or prevent them from using water. If such action was to be taken, it should have been taken some time ago. If the intention of the province is not to prosecute these users, then it follows that the province is implicitly allowing such use. This implied approval, while not a licence per se, seems to be one of the type of rights which Article 6 is designed to protect.

The meaning of subsisting right in terms of the actual amount of water a user is allowed to use must also be interpreted. The Apportionment Agreement was designed to protect the flow actually used or consumed by the projects and does not include the return flow. Therefore it protects the net depletion requirements of each subsisting right.

The net depletion figures shown in Appendix III are based on current information from both Alberta and Saskatchewan water rights offices. These values were checked by provincial water rights staff and the PPWB Secretariat. The methodology used to determine net depletion for projects was made consistent for both provinces to ensure that all water use figures were based on the same water use procedures (see Appendix III).

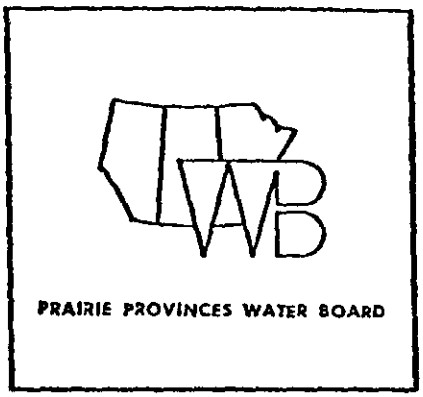
The Board decision on Article 6 states in part "...apportionment under Article 3, Schedule A, would be applicable only in those instances where the prior rights...have been met...". This would seem to indicate that 50-50 apportionment at the Alberta-Saskatchewan boundary should take place only if Canada's share of the natural flow volume at the international boundary exceeds the total net depletion in

Alberta and Saskatchewan on each stream. Thus one might assume that apportionment under Article 3 is only applicable after the subsisting rights protected by Article 6 have been satisfied or if they are adequately protected by Article 3. The question of how to apportion water between projects until all subsisting rights are satisfied still remains.

Current water rights procedures could still be applied to the entire basin regardless of province. Additional water rights licences would have a priority that would be a function of their date of application. Thus the most recent licencee would have the right to receive water only after prior licencees have received their allocation.

In practice, each user usually receives some water in below normal years with shortages being shared. Similarly, the concept of sharing shortages between water users might be further extended by having Alberta and Saskatchewan divide the water available after satisfying international commitments.

Article 3 defines the time period for apportionment as the calendar year. It states in part "....the actual flow shall be adjusted from time to time on an equitable basis during each calendar year...." Formal apportionment of water for periods of less than one year might interfere with normal operation of the basins and add to the difficulty of administering water in the basins. Considerable management time is already spent by agencies responsible for operating the basins and additional constraints would further complicate an already complex situation. Furthermore, annual apportionment should adequately serve the two provinces involved without appreciably adding to the detail required to administer water in the basins.



Chapter 4

ALTERNATIVE METHODS OF APPORTIONMENT

The Master Agreement on Apportionment outlines the sharing of eastward flowing streams across interprovincial boundaries. In the case of Battle and Lodge Creeks, it states that, in these basins, apportionment shall be such as to protect the right to water granted prior to October 30, 1969.

The water rights included in this report are; rights protected by licences, rights covered by authorization to proceed, and rights covered by the user's application for a licence. All such rights will only be considered if they divert water from the effective drainage area of the watersheds in Alberta or Saskatchewan.

In addition to the rules specified in the Master Agreement on Apportionment, natural flows of Battle and Lodge Creek basins are subject to the 1921 Order which defines that the sharing of natural flow between Canada and the United States shall be on a 50-50 basis.

Both the Master Agreement on Apportionment and the 1921 Order establish a set of rules to follow in dividing natural flow between Alberta, Saskatchewan and United States. The managing jurisdiction in Canada must decide how the two basins may be managed effectively without contravening these rules.

Alberta and Saskatchewan both recognize that, based on subsisting projects, licensed uses (on paper) exceed Canada's share of natural flow in below median years and that modification of some existing water right licences to reflect actual use may be required. For example, actual use for each of the seven reservoirs monitored regularly in the Lodge Creek basin is highly variable (see Table 5, Appendix II on page 11-4).

While the upstream jurisdiction has a responsibility to share water on the main stem of streams in the downstream province it may not be reasonable to consider uses on projects that are located on tributaries in the downstream province if those tributaries do not cross interprovincial boundaries.

Five approaches were considered by the committee and each is discussed briefly in the following text. The committee, after considering the five alternatives, agreed that a 50-50 division of Canada's share of available flow would best serve the future interests of both provinces (Method 5). In discussing the five methods it is pointed out why this method would be preferable.

Not all five of the methods are practical to be considered for apportionment purposes but all five have, during committee deliberations been proposed as possible alternatives. They are presented in this text to illustrate that the approach recommended has been picked from several alternative methods not arbitrarily selected as the best, and only, alternative considered by the committee.

Method 1 - Subsisting Water Rights

All currently subsisting licences in both Alberta and Saskatchewan have a priority based on the date that an application was received (and subsequently approved) by the

licencing jurisdiction. Theoretically, in water short years, the basin could be administered to guarantee that all users received water in order of their priority (see Appendix IV, page IV-1). Practically, the interprovincial adjudication of such water is not considered to be feasible because of the time needed to enforce rights interprovincially and to apportion water in below normal years. The physical nature of the basin would make this type of interprovincial water management both impractical and extremely expensive. The divided jurisdiction between Alberta and Saskatchewan make such administration of water impractical and no further consideration was given to Method 1.

Method 2 - Lump-Sum Allocations

Method 2 has been included for illustrative purpose only. It is not compatible with existing provincial legislation or with the intent of the Apportionment Agreement.

The method would allow Alberta to withdraw a previously established volume of water each year and to release the remainder of the flow to Saskatchewan. Saskatchewan would then balance the flow and ensure that 50% of natural flow was released to the United States to fulfill the terms of the 1921 Order of the International Joint Commission (3).

The quantity of water that Alberta would be entitled to withdraw annually would have to be defined and would be an optimum quantity such that it served the best interests of both parties and minimized negative effects.

For example, based on the historical natural flow, water right data, and known uses in the basin, a constant quantity of 620 dam^3 (500 acre-feet) for Battle Creek basin

6 200 dam^3 (5,000 acre-feet) for Lodge Basin might be allocated to Alberta (see Appendix IV, page IV-2). In a dry year Alberta might withdraw all of the natural flow, 6 200 dam^3 (5,000 acre-feet), of the Lodge Creek basin leaving Saskatchewan unable to meet Canada's commitment to pass 50% of natural flow to the United States. In a wet year Alberta would be unable to store surplus water even though Saskatchewan might be unable to utilize that surplus in their downstream storage facilities.

This type of division is not administratively compatible with present legislation. Operational restrictions would give neither province sufficient flexibility in the internal management of their water resources and would offer no long term advantage to Method 5. Furthermore, because of the variability of flow in these two basins, the method is not technically practical. No further consideration was given to Method 2.

Method 3 - October 30, 1969 Level of Net Depletion

Water use in the two basins being studied dates back to the early 1900s and all subsisting water rights prior to October 30, 1969 have been recognized by both provinces as discussed in Chapter 3 of this report. Therefore, it may be logically assumed that apportionment should be based on the percentage of net depletions in each province as of that date (see Appendix III).

Apportionment of the natural flow available to Canada at the international boundary would be based on percentages established by the October 30, 1969 level of net depletion for each province. The percentages used to calculate the quantities to be retained by Alberta would be 5% for the Battle Creek basin and 48% for the Lodge Creek basin (see Appendix IV, Page IV-4).

The division of the flow would be maintained until the pre October 30, 1969 total net depletion level was satisfied in each year. Surplus flow would then be divided equally on a 50-50 basis.

Method 3 protects each province's right to water as described in Article 6 of Schedule A but it has no advantage over Method 5 and is more difficult to administer. As subsisting rights are modified the ratios used to apportion water might also have to be changed.

The use of a total basin division at the Canada - United States boundary will make it more difficult for the jurisdictions involved to balance water at the Alberta-Saskatchewan boundary. For instance, no provision is made for a division of water between Lodge and Middle Creek. The overall balance, will be very close to the balance obtained using Method 5. Method 3, while it does have some advantages, requires interprovincial scrutiny of individual subsisting licences and is less desirable than Method 5.

Method 4 - October 30, 1969 Level of Net Depletion Considering Main Stem Projects in Saskatchewan.

Water crossing the Alberta-Saskatchewan boundary in the main stem of Battle, Lodge or Middle Creek can only be used to supply downstream uses on the main stem of each of these three creeks. If water is apportioned based on flow at the Alberta-Saskatchewan boundary of each basin, it is logical to suggest that projects on tributary basins in Saskatchewan not be considered in determining the percentage of flow to be divided between the two provinces.

Apportionment of the natural flow available to Canada at the international boundary would be based on percentages

established using the October 30, 1969 level of net depletion for all projects in Alberta and for main stream projects only in Saskatchewan. The percentages used to compute the quantities to be retained by Alberta would be 7% for the Battle Creek basin and 51% for the Lodge Creek basin (see Appendix IV, page IV-5).

There is very little difference between the percentages used in Methods 3 and 4 and Method 4 retains all of the administrational disadvantages of Method 3. Furthermore, it penalizes Saskatchewan by making less of the total water resources of each basin available. Therefore, Method 4 is also rejected because it is less desirable than Method 5.

Consideration was also given to apportioning the natural flow available to Canada at the Alberta-Saskatchewan boundary based on the October 30, 1969 level of net depletion in Alberta and on the net depletion of projects on the main stem of the same creek in Saskatchewan. Alberta, using this approach, would be entitled to retain 7% of the flow of Battle Creek, 32% of the flow in Middle Creek, and 63% of the flow in the Lodge Creek (see Appendix IV, page IV-5). This alternative was rejected because it would penalize Alberta unfairly in the Battle Creek basin and would create further imbalances in the Lodge Creek basin.

Method 5 - Article 3 of Schedule A

This method would require that 50% of the natural flow originating in Alberta be released to the United States via Saskatchewan, and that Alberta share the remaining flow on a 50-50 basis with Saskatchewan. In any given year, Alberta would be entitled to use 25% of the flow originating in Alberta and would be obligated to release 75% of the total quantity to Saskatchewan. Saskatchewan would then be required to balance the flow at the international boundary. (See Appendix IV, page IV-6.)

Balance points would be maintained on each stream at the international boundary and at the interprovincial boundary. Alberta would be responsible for channel losses in Alberta and Saskatchewan for channel losses in Saskatchewan. Apportionment calculations at the interprovincial boundary would be based on existing hydrometric stations but would require additional office work to do the calculations needed to maintain the new balance points. If the proposed audit periods were implemented, additional field work may be required.

This method, of the five considered is, in the viewpoint of the committee, the easiest to administer. Licensed use of water may increase, decrease, or be cancelled as users and uses change. A 50-50 share of the natural flow available to Canada, as determined at the provincial boundary, leaves the onus on each provincial agency to balance their predetermined share of the variable supply of water and to plan for the future accordingly. It removes the necessity of revising the share each time that a use changes or a major reservoir is built in any one of the three drainage basins. The method is compatible with the intent of Article 6 of Schedule A, agrees with Article 3, and will require no additional legislative action to implement.

The method can be effectively monitored using the existing network of hydrometric stations. The necessary audit periods can be an extension of the present procedures for calculating natural flow for each basin at the international boundary.

If Method 5 is accepted, apportionment, balance, and audit period will have to be established on Battle, Lodge, and Middle Creeks at the Alberta-Saskatchewan boundary to implement apportionment. The approach used should be similar to that employed in balancing flow in other interprovincial

eastward flowing streams (see the report on "Administration of the Apportionment Agreement" - PPWB report No. 58). The time periods, to coincide with this methodology should be as follows:

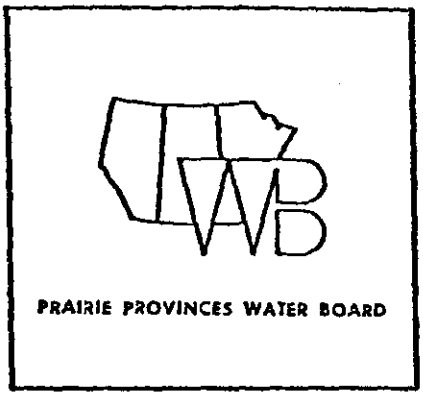
1) The apportionment period should be the calendar year (from January 1 to December 31). This agrees with Article 3 of Schedule A of the Apportionment Agreement.
2) The balance period should be the same as the apportionment period of January 1 to December 31.
3) There should be three audit periods: one in spring at the end of the spring runoff period; one in the summer to account for summer rains and to balance deficits left after the spring audit period; and one in the fall before the open water period has ended to balance the yearly operation. The dates for audit period should be compatible with the calculations made for the international apportionment of the same streams. Thus audits should be made on the following dates:

	Spring	Summer	Fall
Battle Creek	May 19	July 29	October 25
Lodge Creek	May 18	July 29	October 29
Middle Creek	May 17	July 28	October 28

The committee agrees that Method 5 provides the best way to administer streamflow in Battle and Lodge Creek basins and the method is recommended in Chapter 5 with recommendations on the apportionment period, balance period and audit periods to be used for the two basins.

The use of Method 5 to apportion water between the two provinces will not guarantee that water shortages will not occur in future years in the two basins but neither will any of the other four methods.

Comparisons of the five methods are discussed in more detail in Appendix IV.



Chapter 5

CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

The committee, in evaluating the relative merits of the methods described in Chapter 4, has concluded that:

1. The ratio of water developments in Alberta and Saskatchewan for both basins being studied has remained relatively constant for the past seventy years.
2. In average years, relatively large amounts of surplus water are passed to the United States in both drainage basins. For instance, in the twenty year period of 1959 to 1978 inclusive 62% of Canada's share was passed to the United States in the Battle Creek basin and 67% was passed to the United States in the Lodge Creek basin.
3. More efficient use of available water supplies in the Battle and Lodge Creek basins will be a function of improved water management practices not of additional water use legislation.
4. Methods 1 and 2 as described in Chapter 4 cannot be implemented and methods 3 and 4 have no advantage to offer in comparison to Method 5. Method 5, because it is compatible with present jurisdictional procedures, is the best method. It satisfies the requirements of Article 6 and enables water to be apportioned consistent with the terms of Article 3.

RECOMMENDATIONS

Based on the above four conclusions the committee recommends to the Board that:

1) The annual flow of each of the three watercourses known as Battle Creek, Lodge Creek, and Middle Creek be apportioned at the Alberta-Saskatchewan boundary with Alberta permitting a quantity of water equal to 75% of the natural flow of each watercourse to flow into the province of Saskatchewan. This apportionment will enable Saskatchewan to use, consumptively, 25% of the natural flow at the Alberta-Saskatchewan boundary and to allow the remaining 50% of natural flow to pass into the United States at the International boundary of each stream.

2) Apportionment, balance and audit periods be established on Battle Creek, Lodge Creek, and Middle Creek at the Alberta-Saskatchewan boundary to implement apportionment. The approach used is similar to that employed in balancing flow in other streams at interprovincial boundaries. The periods should be:

a. One apportionment period per year extending from January 1 to December 31.

b. One balance period per year not to extend beyond the current apportionment period.

c. Three audit periods; one in the spring one in the summer and one in the fall as indicated below.

	Spring	Summer	Fall
Battle Creek	May 19	July 29	October 25
Lodge Creek	May 18	July 29	October 29
Middle Creek	May 17	July 28	October 28

(Note: The dates are compatible with the present balance of water calculations made for international apportionment of the same streams.)

3) The period used for calculating natural flow at the Alberta-Saskatchewan boundary correspond to the period used for existing balance of water calculations for international apportionment in the same basins.

4) The methodology used to determine natural flow in each basin be the same as that used to calculate natural flow for the eastern or northern tributaries of the Milk River system. Each province will be responsible for channel losses occurring within its provincial boundaries.

PRAIRIE PROVINCES WATER BOARD

BIBLIOGRAPHY

1. Report to the Prairie Provinces Water Board on water use and water supply studies of Battle and Lodge Creek Basins. Water Planning and Management Branch, Canada Department of the Environment. November 1972.

2. "Boundary Waters Treaty (1909)" International Joint Commission.

3. "In the Matter of the Measurement and Apportionment of the Waters of the St. Mary and Milk Rivers and their Tributaries in the United States and Canada", 1921 Order of International Joint Commission, 1923.

4. Alberta Water Resources Act.

5. Saskatchewan Water Rights Act.

6. Water Supply and Irrigation in the Battle Creek Basin, Canada Department of Agriculture, Prairie Farm Rehabilitation Administration, Hydrology Report #3. June 1953.

7. Water Supply and Water Use in The Lodge Creek Basin, Canada Department of Agriculture, Prairie Farm Rehabilitation Administration, Hydrology Report #5. October 1953.

8. Water Supply for the Saskatchewan-Nelson Basin, Appendix 4 Hydrology, Volume 2. 1972.

9. Report to the International Joint Commission on the Division of Waters of St. Mary and Milk Rivers.

PRAIRIE PROVINCES WATER BOARD

Appendix I

HYDROMETRIC DATA

Hydrometric data in the form of both recorded and natural flows was required at the Alberta-Saskatchewan boundary crossings of Battle, Lodge and Middle Creeks, and at the international boundary crossings of Battle and Lodge Creeks. For the most part these data were available from existing sources and new computations were not necessary. Additional computations were avoided where possible to eliminate the creation of yet another data set of natural flows for the points required. This Appendix describes the hydrometric data available, the data used, and, where necessary, the procedures used for making new computations.

SOURCES OF DATA AND PREFERENCES

Several data sources were available. Water Survey of Canada (WSC) gauges both the main stems of Battle and Lodge Creeks and significant tributaries. Much of the gauging activity is carried out in support of international and interprovincial division of the water in the multi-jurisdictional basins. All important boundary crossings are gauged as well as diversions into, out of, and within the basins, and major reservoirs in the basins. The data is contained in WSC and International Joint Commission (IJC) publications. When data from these sources were not available, PFRA records and/or estimates were used.

Natural flows on Battle and Lodge Creeks are computed at the international boundary by WSC on behalf of the IJC. These computations are generally recognized to be of high quality and were used where available. WSC also computes natural flow at some interprovincial boundary crossings using similar techniques to those employed for IJC computations. The results of these computations are used when available.

A report entitled "Water Use and Water Supply Studies of Battle and Lodge Creek Basins"(1), prepared by the Inland Waters Directorate (IWD) of Environment Canada for the Prairie Provinces Water Board (PPWB) in 1972, provides natural flows at many points in the two basins. The results of these computations were used when IJC data was not available.

The Hydrology Division of PFRA completed reports on Battle Creek (6) and Lodge Creek (7) in 1953. The two reports also contain natural flows for many points of interest. These values were used where the above described sources would not provide the necessary data.

Details of data use and natural flow computations follow.

PERIOD OF RECORD

The period of record chosen for the study was 1920-1978 inclusive. The choice of period was based on the availability of record and because it covers a wide variety of hydrologic phenomena.

BATTLE CREEK

Recorded Flow at International Boundary

Water Survey of Canada records at Battle Creek at international boundary (11AB027) exist back to 1917. Therefore WSC records were used for the period 1920-1939. One month of data was missing in 1926 and this was estimated to complete the record. For the period 1940-1978 records were taken directly from the "Report to International Joint Commission on the Division of the Waters of St. Mary and Milk Rivers" (9). The reports contain WSC records that have been checked and approved by Canadian and United States officers responsible for administering the agreement.

Natural Flow at International Boundary

Natural flows of Battle Creek at the international boundary have been calculated by WSC for the IJC since 1940, therefore, these values were used for the period 1940-1978. For the period 1920-1939 natural flow values computed by IWD were used.

Recorded Flow at Alberta-Saskatchewan Boundary

WSC has had a gauging station in operation for Battle Creek at the Alberta-Saskatchewan Boundary (11AB117) since 1975. Records for 1975-1978 were used. WSC had previously developed a relationship between Battle Creek at the Ranger Station (11AB081) and the boundary to estimate records for 1952 to 1974 inclusive. Alberta-Saskatchewan Boundary flows for the period 1952-1974 were estimated by multiplying the Ranger Station records by a factor of 0.5726.

Natural flows as estimated by IWD were used for the remainder of the period. There are only two licensed water users in Alberta on Battle Creek. The larger use is Reesor Reservoir, built in 1962. The second use is relatively small with an annual net depletion of 75 acre-feet. Therefore, for the missing period 1920-1951 it was felt that natural and recorded flow would be identical and the IWD values were not adjusted to compensate for upstream uses.

Natural Flow at Alberta-Saskatchewan Boundary

As previously noted recorded flows may be considered natural prior to the construction of Reesor Lake in 1962. Therefore for the period 1920-1962 natural flows were made equal to the recorded flows, the derivation of which is described above. For the period 1963-1978 storage changes and evaporation losses on Reesor Lake were applied to recorded values to produce natural flows. Reesor Lake storage changes and evaporation losses were taken from IJC reports (9). Both Reesor Lake adjustments and the resulting natural flows at the Alberta-Saskatchewan Boundary are shown in Table 1.

TABLE 1. NATURAL FLOW - BATTLE CREEK AT ALBERTA-SASKATCHEWAN BOUNDARY (1963-1978)

(acre-feet)

YEAR	RECORDED AT ALTA.-SASK. BDRY.	REESOR LAKE STORAGE & EVAP.	NATURAL FLOW AT ALTA.-SASK. BDRY
1963	4,000	54	4,054
1964	4,210	436	4,646
1965	7,620	159	7,779
1966	3,100	174	3,274
1967	12,900	436	13,336
1968	5,730	311	6,041
1969	4,830	541	5,371
1970	9,910	829	10,739
1971	7,270	577	7,847
1972	4,680	420	5,100
1973	2,770	311	3,081
1974	5,170	56	5,226
1975	12,500	311	12,811
1976	6,240	244	6,484
1977	2,950	2	2,952
1978	4,770	-127	4,643

LODGE CREEK

Recorded Flow at International Boundary

For the period 1950-1978 recorded flows at Lodge Creek below McRae Creek at International Boundary (11AB083) were taken from IJC reports. Records at station 11AB083 date back only to 1952, so for the remaining period (1920-1949) another approach had to be used.

The station Lodge Creek at International Boundary (11AB006) was operated on Lodge Creek above McRae Creek from 1910 to 1951. Another station on McRae Coulee at International Boundary (11AB070) was operated from 1927 to 1951, with some missing winter record. For the period 1927-1949, annual flows on McRae Creek were determined by assuming that all the missing winter records were zero.

The next step was to fill in McRae Creek flows for the period 1920-1926. A regression was done with flows at station 11AB006, Lodge Creek at International Boundary (above the confluence with the Creek). The following equation was determined and used to estimate annual flow in acre-feet.

$$Y = 0.0478X + 307$$

Where X = Annual Flow of Lodge Creek at International Boundary (11AB006) in acre-feet.

Where Y = Annual Flow of McRae Coulee at International Boundary (11AB070) in acre-feet.

The McRae Creek flows were then added to the Lodge Creek flows above the Creek to get recorded flows below McRae Creek at International Boundary (11AB083) for the period 1920-1949. The values derived are shown in Table 2.

Natural Flow at International Boundary

For the period 1950-1978 natural flows of Lodge Creek at the International Boundary were taken as calculated and reported by the IJC. Inland Waters Directorate values were used for the period 1920-1949.

Recorded Flows at Alberta-Saskatchewan Boundary

Flows have been recorded for Lodge Creek at the Alberta-Saskatchewan Boundary by WSC since 1951 (station 11AB082). These values were used for the period 1951-1978. For the period 1920-1950 no data were available and no attempt was made to provide estimates.

TABLE 2. RECORDED FLOW - LODGE CREEK AT INTERNATIONAL BOUNDARY (1920-1949)

(acre-feet)

YEAR	RECORDED McRAE CR. 11AB070	ESTIMATED McRAE CR. 11AB070	RECORDED LODGE ABOVE McRAE 11AB006	CALCULATED LODGE BELOW McRAE 11AB083
1920		1,368	22,200	23,570
1921		1,415	23,200	24,620
1922		2,529	46,500	49,030
1923		1,210	18,900	20,110
1924		519	4,440	4,960
1925		2,333	42,400	44,730
1926		789	10,100	10,890
1927	3,860		82,200	86,060
1928	1,168		39,000	40,170
1929	0		16,800	16,800
1930	1,925		16,300	18,230
1931	87		489	576
1932	40		9,910	9,950
1933	14.5		12,600	12,610
1934	676		12,500	13,180
1935	941		16,700	17,640
1936	1,143		12,500	13,640
1937	830		15,600	16,430
1938	887		22,200	23,090
1939	1,116		28,900	30,020
1940	2,722		44,600	47,320
1941	1,847		17,500	19,350
1942	170		10,400	10,570
1943	4,344		36,100	40,440
1944	754		2,680	3,430
1945	519		7,930	8,450
1946	350		9,350	9,700
1947	1,448		19,300	20,750
1948	0		19,100	19,100
1949	0		353	353

Natural Flow at Alberta-Saskatchewan Boundary

Natural Flows computed by WSC for the period 1964-1978 were used.

Lodge Creek, for the remaining period, 1920-1963 natural flows derived by IWD were used.

MIDDLE CREEK

Recorded flow at Alberta-Saskatchewan Boundary

Water Survey of Canada has measured the flows at Middle Creek near the Alberta Boundary (11AB009) since 1950. These values were used for the period 1950-1978. For the period 1920-1949, estimated recorded flows published in Table T4 of PFRA Hydrology Report #5 (7) were used. The recorded flow was published for a portion of the period. For the balance of the period, the records were re-constructed using a correlation with Lodge Creek at the International Boundary (11AB006).

Natural flow at Alberta-Saskatchewan Boundary

Natural flows at Middle Creek near Alberta Boundary (11AB009) have been computed by WSC since 1964 and these values were used for the period 1964-1978. PFRA computed natural flows (PFRA Hydrology Report #5(7)) up to 1950 and these were used for the period 1920-1950.

Natural flows were estimated by the Secretariat for the 1951-1963 period by correlating natural flows to recorded flows. The correlation gave good results, probably due to relatively constant irrigation use patterns and storage in Mitchell Reservoir over the period and was used to estimate natural flows for the 1951-1963 period.

A summary of Battle and Lodge hydrometric data is given in Table 3.

TABLE 3. SUMMARY OF BATTLE - LODGE HYDROMETRIC DATA

(acre-feet)

YEAR	BATTLE @ INTL RECORDED	BATTLE @ INTL NATURAL	BATTLE @ A-S RECORDED	BATTLE @ A-S NATURAL	LODGE @ INTL RECORDED	LODGE @ INTL NATURAL	LODGE @ A-S RECORDED	LODGE @ A-S NATURAL	MIDDLE @ A-S RECORDED	MIDDLE @ A-S NATURAL
1920	26200.	27611.	4732.	4732.	23570.	24032.	-99999.	15237.	4285.	4310.
1921	19500.	20674.	4799.	4799.	24620.	25805.	-99999.	16361.	3589.	3660.
1922	53400.	54046.	7127.	7127.	49030.	51894.	-99999.	32901.	9698.	9720.
1923	16900.	17215.	3378.	3378.	20110.	20992.	-99999.	13308.	1923.	2090.
1924	9480.	10328.	2379.	2379.	4960.	4977.	-99999.	3156.	910.	950.
1925	43300.	44241.	5298.	5298.	44730.	46906.	-99999.	29738.	6509.	6560.
1926	5820.	5132.	2885.	2885.	10890.	11049.	-99999.	7005.	1920.	1890.
1927	97900.	98360.	12062.	12062.	86060.	90274.	-99999.	57233.	22700.	22600.
1928	48900.	37140.	6086.	6086.	40170.	40052.	-99999.	25393.	8900.	8970.
1929	23700.	23997.	5385.	5385.	16800.	16884.	-99999.	10704.	3870.	4000.
1930	31500.	32552.	3655.	3655.	18230.	23135.	-99999.	14668.	3430.	3530.
1931	2430.	2838.	1621.	1621.	576.	574.	-99999.	364.	200.	190.
1932	11800.	11807.	2220.	2220.	9950.	11137.	-99999.	7061.	1980.	2100.
1933	14400.	14486.	1883.	1883.	12610.	12565.	-99999.	7966.	2200.	2310.
1934	12100.	12127.	1577.	1577.	13180.	16631.	-99999.	10544.	2840.	2940.
1935	20000.	19551.	2542.	2542.	17640.	17683.	-99999.	11211.	3100.	3210.
1936	15200.	15453.	1578.	1578.	13640.	13837.	-99999.	8773.	2200.	1550.
1937	4910.	5001.	651.	651.	16430.	16756.	-99999.	10623.	3240.	3600.
1938	9360.	9387.	1221.	1221.	23090.	23097.	-99999.	14643.	4250.	4530.
1939	12100.	14950.	1896.	1896.	30020.	29797.	-99999.	18892.	6180.	6690.
1940	26020.	36510.	3606.	3606.	47320.	48055.	-99999.	30467.	10500.	11000.
1941	16910.	25360.	1985.	1985.	19350.	23985.	-99999.	17211.	4470.	4980.
1942	10940.	22300.	3530.	3530.	10570.	10716.	-99999.	6794.	1830.	2370.
1943	22670.	33000.	3317.	3317.	40440.	40260.	-99999.	24525.	7890.	8400.
1944	7670.	10540.	1039.	1039.	3430.	3433.	-99999.	2177.	240.	300.
1945	8080.	8920.	894.	894.	8450.	8344.	-99999.	5290.	4740.	5280.
1946	6960.	10390.	1299.	1299.	9700.	9602.	-99999.	6087.	1980.	2520.
1947	6920.	11260.	1817.	1817.	20750.	20811.	-99999.	13194.	4380.	4950.
1948	7840.	18730.	3131.	3131.	19100.	19341.	-99999.	12262.	5640.	6180.
1949	1750.	1340.	544.	544.	353.	360.	-99999.	229.	90.	90.
1950	10320.	19290.	1638.	1638.	13460.	14510.	-99999.	9478.	1240.	2640.
1951	16570.	29110.	7430.	7430.	40700.	51040.	35800.	36561.	9980.	10550.
1952	103600.	112240.	10540.	10540.	119300.	130800.	79400.	83128.	20600.	20800.
1953	28180.	37760.	14540.	14540.	22080.	31000.	22300.	25612.	7650.	8300.
1954	25550.	33180.	7040.	7040.	6180.	10580.	4860.	6608.	2510.	3210.
1955	95360.	89730.	20440.	20440.	61120.	78700.	44100.	47708.	16000.	16370.
1956	20180.	25610.	6760.	6760.	12750.	17170.	10400.	12813.	3450.	4240.
1957	18640.	27490.	9390.	9390.	19860.	26560.	17100.	21594.	6350.	7070.
1958	20300.	27800.	4190.	4190.	34120.	39060.	24500.	25415.	4140.	4900.
1959	11900.	18120.	5530.	5530.	11590.	17200.	8630.	10345.	4170.	4990.
1960	15690.	27990.	5340.	5340.	23920.	32100.	15300.	15073.	6830.	7500.
1961	4460.	5650.	1560.	1560.	830.	1790.	1580.	3795.	157.	280.
1962	4870.	7370.	2860.	2860.	15280.	20780.	4610.	6125.	528.	820.
1963	4700.	8040.	4000.	4054.	6080.	11560.	8570.	9281.	1610.	2190.
1964	5410.	10620.	4210.	4646.	4160.	7940.	5960.	7080.	1560.	2370.
1965	27520.	54610.	7620.	7779.	55180.	77350.	41640.	42950.	15680.	16057.
1966	20150.	37180.	3100.	3274.	24470.	35860.	16930.	17967.	7090.	8322.
1967	54860.	65230.	12900.	13336.	59390.	73270.	43140.	44370.	10510.	11149.
1968	10390.	16290.	5730.	6041.	2150.	3980.	2270.	2756.	1080.	1131.
1969	17520.	28740.	4830.	5371.	16920.	29930.	14900.	16852.	4910.	5531.
1970	18300.	31030.	9910.	10739.	13080.	23560.	14700.	16527.	9920.	10339.
1971	12500.	19280.	7270.	7847.	10600.	21320.	12500.	13865.	4790.	5709.
1972	13950.	22250.	4680.	5100.	11010.	22200.	10300.	12284.	3370.	4419.
1973	5000.	9570.	2770.	3081.	865.	1690.	1640.	2008.	237.	402.
1974	12350.	19230.	5170.	5226.	11760.	21870.	10900.	12629.	3560.	4247.
1975	26300.	44140.	12500.	12811.	28000.	38910.	23000.	23963.	5730.	6213.
1976	17200.	27980.	6240.	6484.	18100.	23900.	15500.	16267.	3800.	3427.
1977	2700.	4740.	2950.	2952.	720.	1000.	157.	230.	125.	125.
1978	13500.	23120.	4770.	4643.	18120.	30180.	15300.	18247.	3090.	3759.
Mean	20892.	26079.	4916.	4996.	22332.	26759.	18071.	16874.	5023.	5399.
Median	15200.	20674.	4000.	4054.	16920.	21320.	14700.	13194.	3800.	4247.

PRAIRIE PROVINCES WATER BOARD

Appendix II

WATER SUPPLY

Natural flows were assembled for the major boundary crossings of Battle, Lodge, and Middle Creeks. Appendix II describes the computational procedures followed to compare the natural flows in tabular and graphical form.

Natural runoff in the basins occurs predominantly in March, April and May. Approximately 80% of the natural flow in most years occurs in these three months. The pattern of natural flow in the basin tend to be high in the spring period, gradually reducing and eventually declining to zero in the winter months.

BATTLE CREEK

In Battle Creek, a small portion of the drainage basin in Alberta produces a relatively small proportion of the natural flow at the international boundary. Figure 1 shows the relative contribution of natural flow from each province.

Annual natural flow originating in Alberta ranges from 544 acre-feet to 20,440 acre-feet with an average of 4,996 acre-feet.

Natural flow data at the Alberta-Saskatchewan and international boundaries for the year 1920-1978 are plotted in decreasing order of magnitude, as shown in Figure 2.

	Mean Annual Natural Flow (acre-feet)	Median Annual Natural Flow (acre-feet)
Battle Creek at Alberta-Sask. Boundary	4,996	4,054
Battle Creek at International Boundary	26,079	20,674

LODGE CREEK (includes Lodge, Middle and McRae Creeks)

The majority of the Lodge Creek basin lies in Alberta and the majority of the basin's flow originates in Alberta. Figure 3 shows the relative contribution of natural flow from each province.

Annual natural flow originating in Alberta ranges from 319 acre-feet to 103,928 acre-feet with an average of 22,273 acre-feet.

Natural flow data at the Alberta-Saskatchewan boundary for Lodge Creek, Middle Creek, Lodge and Middle for the year 1920-1978, are plotted in decreasing order of magnitude, as shown in Figures 4, 5 and 6. Natural flow for Lodge Creek at the international boundary is shown in Figure 6.

Historical natural flow data in Lodge Creek indicates that in seven out of 59 years that natural flow at the Alberta-Saskatchewan boundary exceeds natural flow at the international boundary. Apparently the natural flow produced by Saskatchewan in these years was insufficient to balance the channel losses and evaporation losses that occurred in the Saskatchewan portion of the basin.

	Mean Annual Natural Flow (acre-feet)	Median Annual Natural Flow (acre-feet)
Lodge Creek at Alta.-Sask. boundary	16,874	13,194
Middle Creek at Alta.-Sask. boundary	5,399	4,247
Lodge + Middle at Alta.-Sask. boundary	22,273	18,198
Lodge Creek at international boundary	26,759	21,320

RESERVOIR STORAGES IN THE BATTLE AND LODGE CREEK BASINS

Battle Basin

There are now two major storage reservoirs in the Battle Creek Basin (see Figure 15). Reesor Lake has a storage capacity of 1,750 acre-feet; is operated for recreation purposes, and is not used to regulate downstream flow conditions. Cypress Lake is used as a storage reservoir for

both the Frenchman River and Battle Creek basins. It is located outside the boundary of the Battle Creek basin and is connected to that basin by two canals. An inflow canal diverts flow from Battle Creek to Cypress Lake and an outflow canal carries flow from the lake to the Battle Creek basin.

Cypress Lake has a storage capacity of 104,278 acre-feet with an estimated live storage of approximately 80,000 acre-feet (based on PFRA's operating criteria). Most of the irrigation projects in the Battle Creek basin are downstream from Cypress Lake.

Lodge Basin

There are now two major storage reservoirs in the Lodge Basin (see Figure 16). Middle Creek Reservoir is the larger. It is located on Middle Creek at the Alberta-Saskatchewan boundary with a storage capacity of approximately 13,200 acre-feet. Altawan Reservoir is located on Lodge Creek immediately below the Alberta-Saskatchewan boundary and has a storage capacity of 5,600 acre-feet.

Table 4 gives a summary of storage capacity for reservoirs in Battle and Lodge Basins.

To provide a general comparison between water use and licensed use of reservoirs in the basins, five years of water use data and licensed use for upper Lodge reservoirs were compared. As shown in Table 5, the actual water use is less than licensed use in most of the cases.

TABLE 4. STORAGE CAPACITY for RESERVOIRS in the LODGE and BATTLE BASINS

BASIN	FILE NO. ALTA.	FILE NO. SASK.	RESERVOIR	STORAGE CAPACITY (acre-feet)
Lodge Basin	9,951		Michele	800
	11,966		Greasewood	84
	8,097		Massy	153
	8,632		Bare Creek	1,508
	12,234		Cressday	650
	303		Mitchell	804
	9,564		Jaydot	400
		771	Middle Creek	13,200
		8,059	Altawan	5,600
Battle Basin	232		Reesor	1,750
	562		Adams Lake	672
		1,186	Cypress	(at FSL)104,278 (live) 80,000

TABLE 5. LICENSED USE AND ACTUAL WATER USE FOR RESERVOIRS IN THE UPPER LODGE BASIN (1975 to 1979)

(acre-feet)

FILE NO. (ALTA.)	RESERVOIR	LICENSED USE	ACTUAL WATER USE 1975	1976	1977	1978	1979
9,951	Michele	400	151	222	175	480	466
11,966	Greasewood	50	87	30	28	42	40
8,097	Massy	150	63	26	101	145	48
8,632	Bare Creek	800	373	-14	-216	845	243
12,234	Cressday	650	266	135	22	585	251
9,564	Jaydot	400	218	12	4	498	54
303	Mitchell	275	371	-423	0	244	623
	Total	2,725	1,529	-12	114	2,839	1,725

FIGURE 1. RELATIVE CONTRIBUTION OF NATURAL FLOW FROM ALBERTA AND SASKATCHEWAN FOR BATTLE CREEK BASIN.

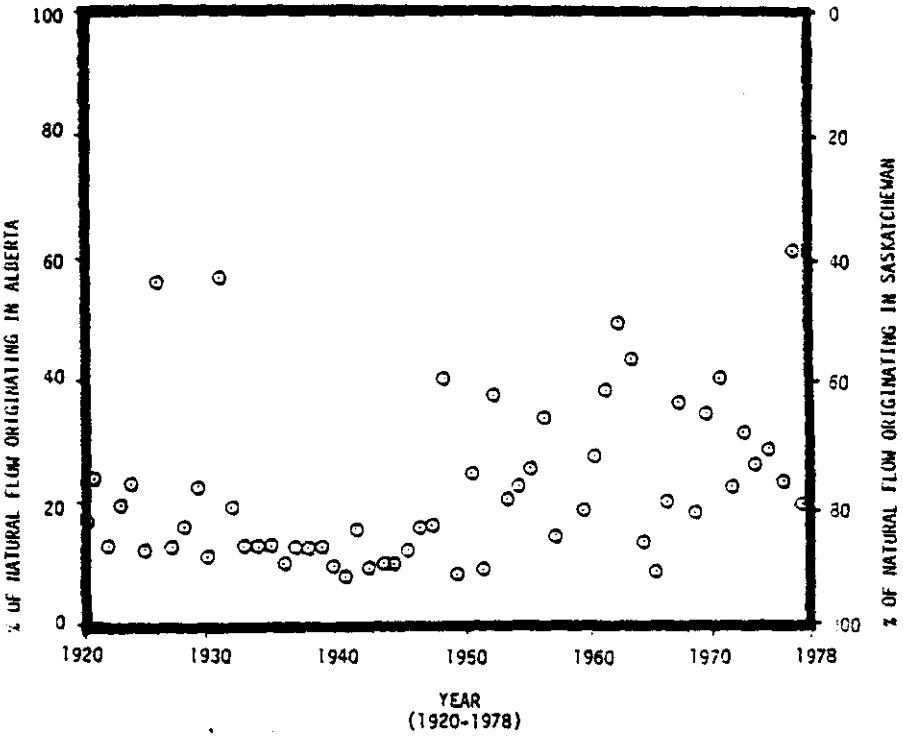
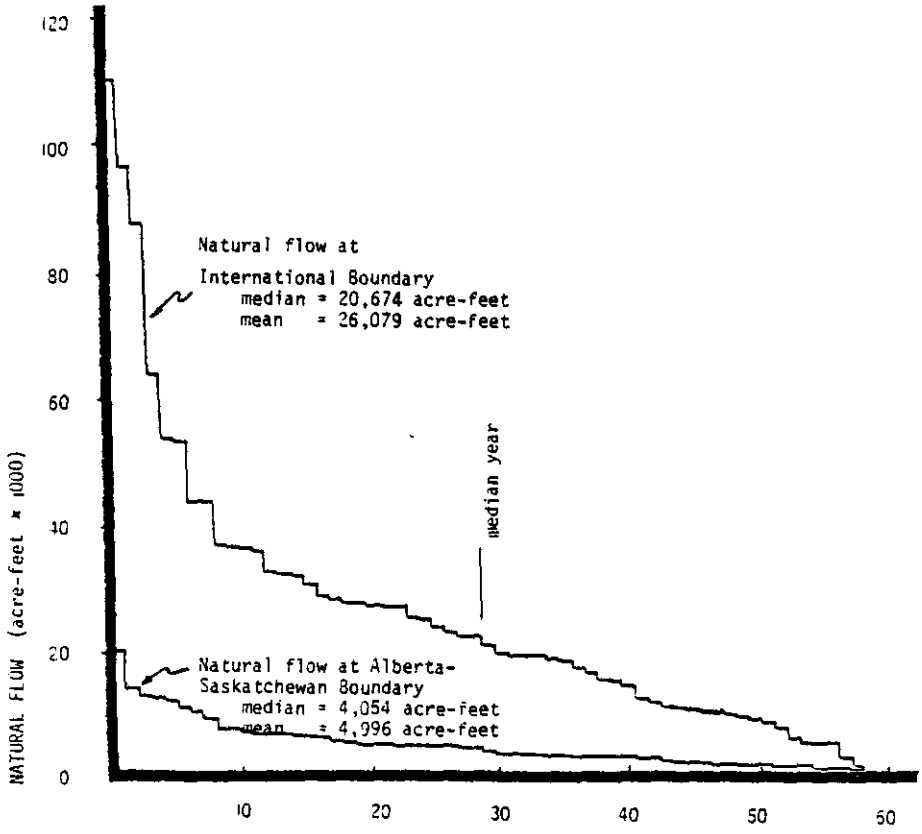


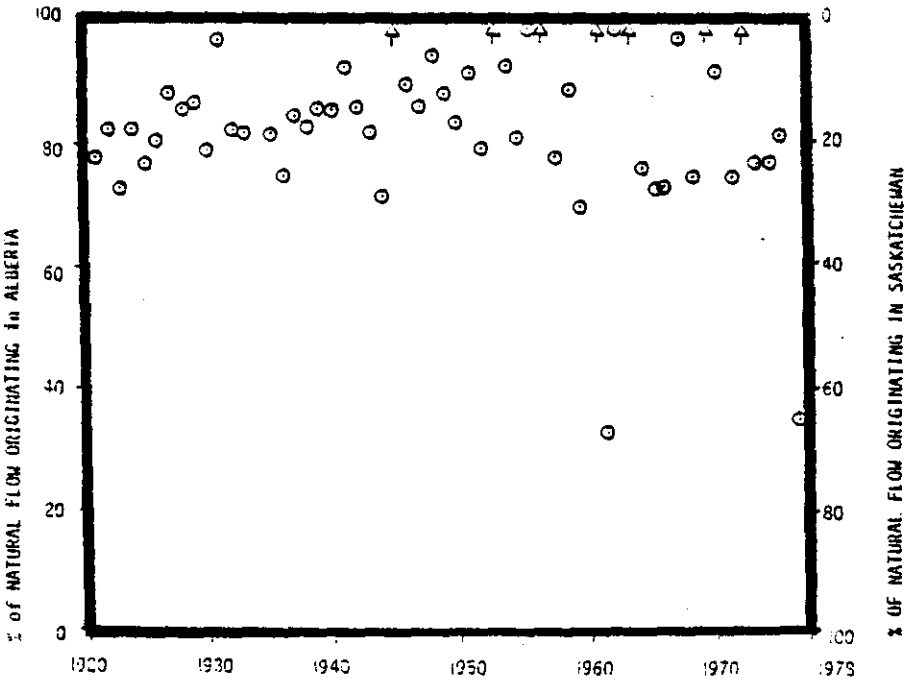
FIGURE 2. NUMBER OF YEARS THAT NATURAL FLOW WILL BE EQUALLED OR EXCEEDED FOR BATTLE CREEK AT THE INTERNATIONAL AND ALBERTA-SASKATCHEWAN BOUNDARIES.



Number of years that flow will be equalled or exceeded.

Note: (Based on period of 59 years)

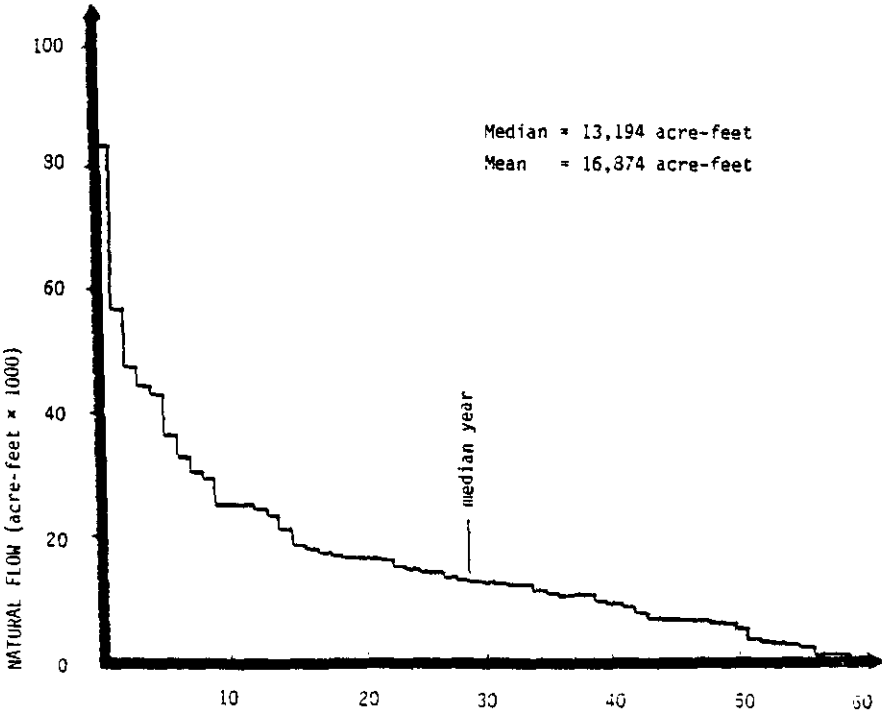
FIGURE 3. RELATIVE CONTRIBUTIONS OF NATURAL FLOW FROM ALBERTA AND SASKATCHEWAN FOR LODGE CREEK BASIN*



* Includes Lodge, Middle, and McRae Creeks.

Natural flow originating in Alberta exceeds natural flow at International boundary.

FIGURE 4. NUMBER OF YEARS THAT NATURAL FLOW WILL BE EQUALLED OR EXCEEDED FOR LODGE CREEK AT THE ALBERTA - SASKATCHEWAN BOUNDARY.



Number of years that flow will be equalled or exceeded.

Note: (Based on a period of 59 years.)

FIGURE 5. NUMBER OF YEARS THAT NATURAL FLOW WILL BE EQUALLED OR EXCEEDED FOR MIDDLE CREEK AT THE ALBERTA - SASKATCHEWAN BOUNDARY.

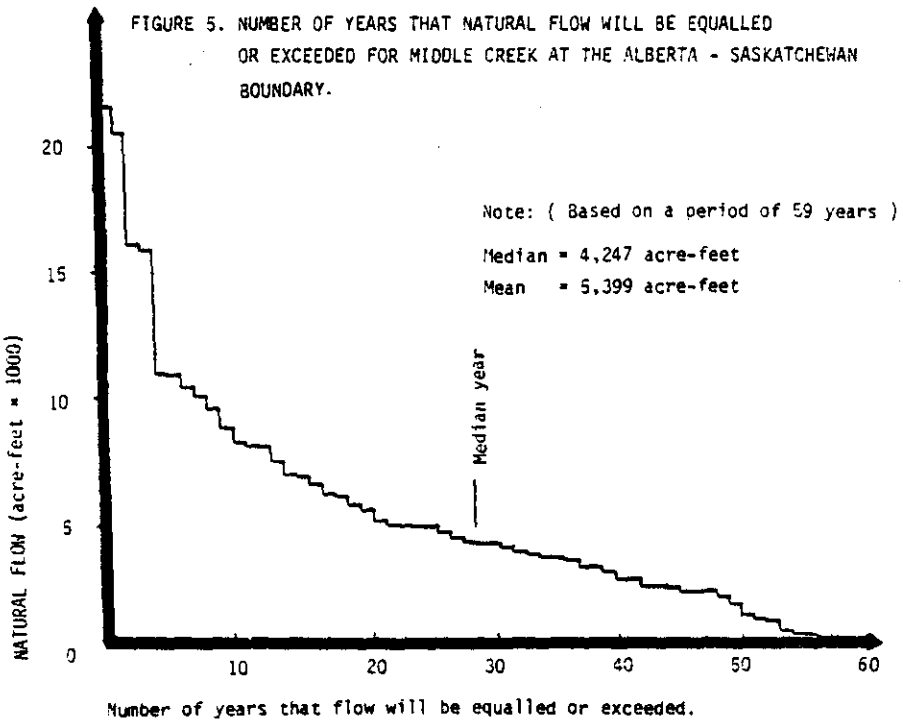
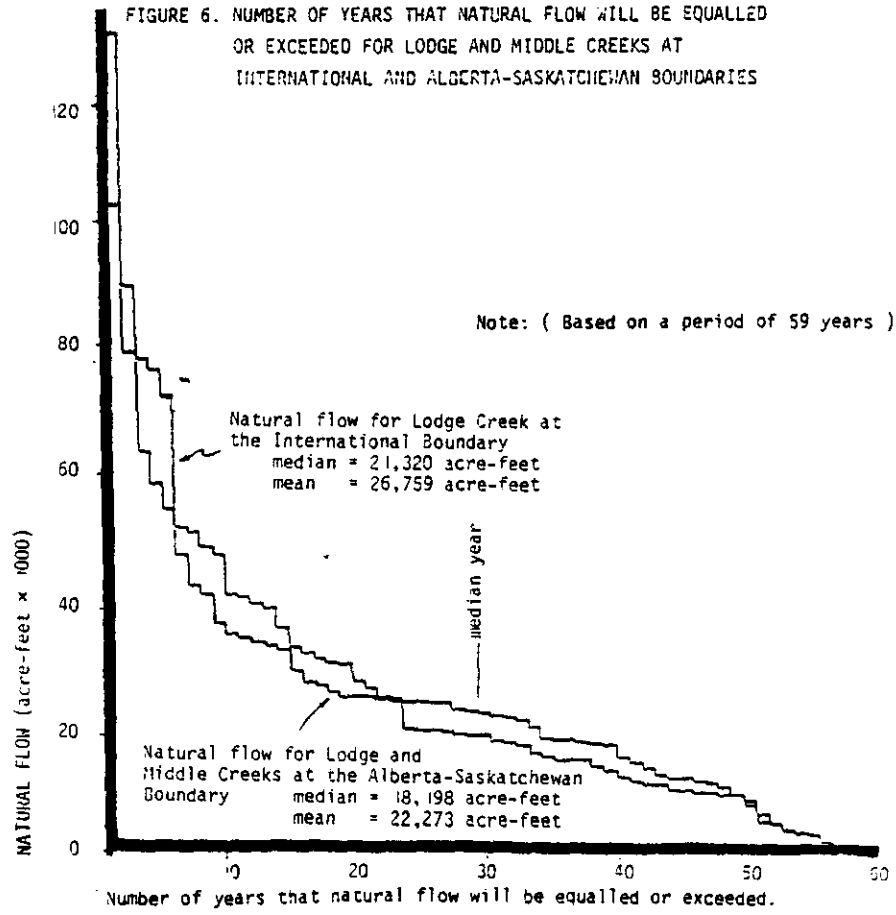


FIGURE 6. NUMBER OF YEARS THAT NATURAL FLOW WILL BE EQUALLED OR EXCEEDED FOR LODGE AND MIDDLE CREEKS AT INTERNATIONAL AND ALBERTA-SASKATCHEWAN BOUNDARIES



PRAIRIE PROVINCES WATER BOARD

Appendix III

WATER RIGHTS DATA

Current water rights information for both the Lodge and Battle Creek basins has been provided by the Alberta and Saskatchewan Departments of Environment. The data was reviewed and checked prior to submission to the study group. It provides an up-to-date and accurate picture of the "right-to-water" of the area.

There are some differences on the way that water is allocated in the two provinces. In Alberta, the allocation defines the amount of water needed to operate a project (gross diversion) and consists of the total of consumptive use, losses and return flow. In Saskatchewan, the allocation defines the consumptive use only. The other losses are shown on Saskatchewan water use permits but are not charged to the water user.

The prior rights, protected by Article 6, are assumed to be the quantity of water actually taken and/or consumed by the project, the "Net Depletion". Net depletion in this study is defined as consumptive use plus project losses, or as gross diversion minus return flow.

The gross diversion for each project has been split into three components to calculate net depletion; consumptive use, project losses, and return flow. There is no return flow information on Saskatchewan printout, but it is assumed that return flow for major irrigation projects in Saskatchewan is 20 percent of gross diversion.

EXPLANATION OF DATA GROUPING

In each basin, or partial basin, the data is arranged under a 'group' numbering system. The groups of data are as follows based on:

1. All projects, in both the effective and noneffective drainage area of the watersheds for the complete period of record up to the present time.

2. All projects located in the effective drainage area of the watersheds for the complete period of record, up to the present time.

3. All projects located in the effective drainage area of the basins with application dates prior to October 30, 1969. This group includes projects in the application, authorization permits and licence stage.

4. All projects located in the effective drainage part of the basins that are authorized and licensed that have application dates prior to October 30, 1969.

5. All licensed projects located in the effective drainage area of the basins that have application dates prior to October 30, 1969.

Water rights data are also separated into four alphabetic groups for comparison and discussion purposes. They are:

A. Projects within the effective drainage area with an application date prior to April 1, 1931.

B. Projects within the effective drainage area with an application date prior to January 1, 1940.

C. Projects within the effective drainage area with an application date prior to January 1, 1950

D. Projects within the effective drainage area with an application date prior to January 1, 1960

Some explanation is needed to define the terms used above. When someone applies to use water for any purpose, the application is allocated a file number or priority number. After project plans have been submitted and approved, the applicant is given the authorization to proceed with construction. An inspection is made after completion of the project and, if the works are approved, a licence is issued.

In Saskatchewan, the file number denotes a priority to store or use water, based on the date when the project was first applied for. In Alberta, the priority is established by a priority number, also based on the date of application. The file number, in Alberta, may only be used as an index and is not related to the project's priority. Thus, both in Alberta and Saskatchewan, a project's priority is based on the date of application, not on the date of authorization or licence.

BATTLE CREEK BASIN

Project Information in terms of total net depletion in Alberta and Saskatchewan is shown in Table 6. The pre October 1969 net depletion in Alberta is 775 acre-feet for all conditions and ranges from 6,543 to 18,092 acre-feet in Saskatchewan.

The historical trend of net depletion in Alberta and Saskatchewan is shown in Figure 7. It indicates that after 1931, the year that federal government transferred control of water resources to the provinces, there were two major increases in Saskatchewan water rights; one in 1938, amounting to 4,632 acre-feet, one in 1951, amounting to 2,884 acre-feet.

Net depletion in Alberta is relatively small compared with that in Saskatchewan and, based on past history suggests that development potential in the Alberta portion of Battle Creek basin is limited.

Battle Creek - Alberta

In the Alberta portion of the Battle Creek basin there were only two water rights allocated prior to October 30, 1969. Their total annual net depletion is 775 acre-feet.

One licence is held by the Alberta Water Resources Division and is for a reservoir having a storage capacity of 1,750 acre-feet. The total of consumptive uses and losses from this reservoir is estimated to be 700 acre-feet per year. The second licence is for irrigation of 50 acres. Consumptive uses and losses for this project are estimated at 75 acre-feet per year.

The total net depletions in Alberta, for all conditions, are shown in Table 6.

Battle Creek - Saskatchewan

In the Saskatchewan portion of the Battle Creek basin, projects within effective drainage area and having application dates prior to October 30, 1969, can be categorized as follows:

	Number of Projects	Net Depletion (acre-feet)
Application	6	4,692
Authority	11	2,952
Licence	250	6,543
Total	267	14,187

One of the six projects in the application stage is a PFRA project designed to irrigate 2,958 acres of land, with an annual depletion of 4,557 acre-feet. The record also shows that the date of application for this project was October 31, 1938.

LODGE CREEK BASIN
(Includes Lodge, Middle and McRae Creeks)

Project information in terms of total net depletion in Alberta and Saskatchewan is given in Table 7 with a more specific breakdown in terms of subbasin being given in Table 8.

The historical trend of net depletions for Lodge Creek basin is shown in Figure 8. It indicates that after 1931, the year federal government transferred the natural resources to the provinces, there were three major increases in net depletion in Alberta. These were:

Year	Increase in Net Depletion (acre-feet)
1965	452
1966	807
1967	652

In Saskatchewan, there were two major increases after 1931. These were:

Year	Increase in Net Depletion (acre-feet)
1935	2,284
1959	523

The historical trend of net depletions for Middle and Lodge Creek basins is shown in Figure 9 and Figure 10.

Lodge and Middle Creek Basins - Alberta

Projects within the effective drainage area of the Alberta portion of the Lodge and Middle basins and having an

application date prior to October 30, 1969 can be summarized as follows:

	Number of Projects	Net Depletion (acre-feet)
Application	0	0
Authority	10	821
Licence	79	4,203
Total	89	5,024

Lodge, Middle and McRae Creek Basins - Saskatchewan

Projects within the effective drainage area, of the Saskatchewan portion of Lodge, Middle and McRae Creek basins, and having an application date prior to October 30, 1969 can be summarized as follows:

	Number of Projects	Net Depletion (acre-feet)
Application	3	256
Authority	3	1,250
Licence	90	4,031
Total	96	5,537

PROJECT LISTING

Current project information for Battle and Lodge Creek Basins, provided by Alberta and Saskatchewan Departments of Environment, is listed in the following orders:

(A) Project by project for each basin, based on the application date.

(1) Battle Creek basin - Alberta and Saskatchewan (Table 9)
(2) Lodge, Middle, and McRae Creek basins - Alberta and Saskatchewan (Table 10)

(B) Project by project for each basin and for each province, based on the application date.

(1) Battle Creek Basin - Alberta (Table 11)
(2) Lodge Creek Basin - Alberta (Table 12)
(3) Middle Creek Basin - Alberta (Table 13)
(4) Battle Creek Basin - Saskatchewan (Table 14)
(5) Lodge Creek Basin - Saskatchewan (Table 15)
(6) Middle Creek Basin - Saskatchewan (Table 16)
(7) McRae Creek Basin - Saskatchewan (Table 17)

TABLE 6. NET DEPLETION FOR BATTLE CREEK BASIN

Unit acre-feet

		Alberta	Saskatchewan	Total
1	All data on file.	775	18,092	18,867
2	All data on file. Effective drainage area only.	775	14,315	15,090
3	Data from all file numbers having application dates prior to 1969 - 10 - 30 Effective drainage area only.	775	14,187	14,962
4	Data from licence and authority numbers only having application dates prior to 1969 - 10 - 30. Effective drainage area only.	775	9,495	10,270
5	Data from licences only having application dates prior to 1969 - 10 - 30. Effective drainage area only.	775	6,543	7,318
A	Data from all file numbers having application dates prior to 1931 - 04 - 01. Effective drainage area only.	75	4,161	4,236
B	Data from all file numbers having application dates prior to 1940 - 01 - 01. Effective drainage area only.	75	9,538	9,613
C	Data from all file numbers having application dates prior to 1950 - 01 - 01. Effective drainage area only.	75	10,088	10,163
D	Data from all file numbers having application dates prior to 1960 - 01 - 01. Effective drainage area only.	75	13,396	13,471

TABLE 7. NET DEPLETION FOR *LODGE CREEK BASIN

Unit acre-feet

		Alberta	Saskatchewan	Total
1	All data on file.	5,694	5,857	11,551
2	All data on file. Effective drainage area only	5,534	5,791	11,325
3	Data from all file numbers having application dates prior to 1969 - 10 - 30. Effective drainage area only.	5,024	5,537	10,561
4	Data from licence and authority numbers only having application dates prior to 1969 - 10 - 30. Effective drainage area only.	5,024	5,281	10,305
5	Data from licences only having application dates prior to 1969 - 10 - 30. Effective drainage area only.	4,203	4,031	8,234
A	Data from all file numbers having application dates prior to 1931 - 04 - 01. Effective drainage area only.	1,640	1,734	3,374
B	Data from all file numbers having application dates prior to 1940 - 01 - 01. Effective drainage area only.	2,061	4,101	6,162
C	Data from all file numbers having application dates prior to 1950 - 01 - 01. Effecitve drainage area only.	2,262	4,310	6,572
D	Data from all file numbers having application dates prior to 1960 - 01 - 01. Effective drainage area only.	2,502	4,920	7,422

* Includes Lodge, Middle and McRae Creeks.

TABLE 8. NET DEPLETION FOR MIDDLE, LODGE AND McRAE CREEK BASINS

Unit acre-feet

		Alberta		Saskatchewan		
		Lodge	Middle	Lodge	Middle	McRae
1	All data on file.	4,316	1,378	2,354	3,255	248
2	All data on file. Effective drainage area only.	4,316	1,218	2,347	3,196	248
3	Data from all file numbers having application dates prior to 1969 - 10 - 30. Effective drainage area only.	3,809	1,215	2,317	2,985	235
4	Data from licence and authority numbers only having application dates prior to 1969 - 10 - 30. Effective drainage area only.	3,809	1,215	2,317	2,729	235
5	Data from licences only having application dates prior to 1969 - 10 - 30. Effective drainage area only.	3,248	955	2,317	1,479	235
A	Data from all file numbers having application dates prior to 1931 - 04 - 01. Effective drainage area only.	1,001	639	1,629	105	0
B	Data from all file numbers having application dates prior to 1940 - 01 - 01. Effective drainage area only.	1,042	1,019	1,756	2,310	35
C	Data from all file numbers having application dates prior to 1950 - 01 - 01. Effective drainage area only.	1,225	1,037	1,756	2,488	66
D	Data from all file numbers having application dates prior to 1960 - 01 - 01. Effective drainage area only.	1,333	1,169	2,261	2,559	100

TABLE 9. PROJECT INFORMATION FOR BATTLE CREEK BASIN - ALBERTA AND SASKATCHEWAN

ALLOCATION DATA - ORDERED ACCORDING TO APPLICATION DATE (acre-feet)

NAME	LOCATION	FILE NUM	DATE	IRRIGATED ACREAGE	DUTY IN	GROSS DIV	CONSUMPTIVE USE	LOSSES	RETURN FLOW	NET DEPLETION	PROVINCE STREAM	
GAFF D.L.	NW34-05-29-3	36	25- 4-99	150.	18.0	347.0	225.0	122.0	0.0	347.0	S B	
GAFF D.L.	NW34-05-29-3	38	20- 5-99	0.	0.0	0.0	0.0	0.0	0.0	0.0	S B	
GAFF J.A.	NW34-05-29-3	37	20- 5-99	457.	18.0	685.0	685.0	0.0	0.0	685.0	S B	
BATTLE CR RANCH	NE09-06-29-3	52	1- 5- 0	128.	18.0	192.0	192.0	0.0	0.0	192.0	S B	
CAN PAC RWY	NE20-04-26-3	56	26- 7- 2	0.	0.0	23.0	4.0	19.0	0.0	23.0	S B	
RICHARDSON S.J.	SW11-05-27-3	58	26- 7- 2	0.	0.0	0.0	0.0	0.0	0.0	0.0	S B	
MCKINNON J.	SW31-04-26-3	57	26- 7- 2	0.	0.0	0.0	0.0	0.0	0.0	0.0	S B	
BLACK J.R.	NE06-07-28-3	59	11-10- 2	138.	15.0	173.0	173.0	0.0	0.0	173.0	S B	
NUTTAL R.F.	SE22-07-29-3	71	11- 6- 3	94.	12.0	94.0	94.0	0.0	0.0	94.0	S B	
WOOD D.	NW23-07-29-3	73	12- 6- 3	13.	8.0	11.0	9.0	2.0	0.0	11.0	S B	
LESLIE J.	SW12-08-29-3	77	4- 1- 4	80.	8.0	54.0	54.0	0.0	0.0	54.0	S B	
RCMP	NW21-07-29-3	81	24- 2- 4	1.	8.0	1.0	1.0	0.0	0.0	1.0	S B	
PARSONAGE RANCH	NE28-05-28-3	86	28- 7- 4	277.	18.0	423.0	423.0	0.0	0.0	423.0	S B	
REESOR W.K.	NW13-08-01-4	232	10-10- 4	50.	11.0	75.0	45.0	30.0	0.0	75.0	A B	
NELSON N.C.	NE20-05-24-3	98	18- 3- 5	366.	18.0	994.0	549.0	445.0	0.0	994.0	S B	N
SHEPHERD J.C.	SW29-05-28-3	110	19- 3- 6	115.	18.0	175.0	173.0	2.0	0.0	175.0	S B	
MCKINNON C.	SW31-04-26-3	115	20- 6- 6	0.	0.0	0.0	0.0	0.0	0.0	0.0	S B	
CAN GOVT VLA.A.	SW31-04-26-3	117	20- 6- 6	0.	0.0	0.0	0.0	0.0	0.0	0.0	S B	
REESOR D.R.P.	SW31-04-26-3	116	20- 6- 6	0.	0.0	0.0	0.0	0.0	0.0	0.0	S B	
RICHARDSON L.E.	NE33-04-26-3	172	26- 4- 9	0.	0.0	0.0	0.0	0.0	0.0	0.0	S B	
WILKES R.W.	NE08-06-27-3	174	29- 5- 9	0.	0.0	0.0	0.0	0.0	0.0	0.0	S B	
STIRLING I.	SE28-03-27-3	178	28- 8- 9	470.	18.0	1036.0	705.0	124.0	207.0	829.0	S B	
STIRLING I.	SE28-03-27-3	177	28- 8- 9	698.	8.0	466.0	466.0	0.0	0.0	466.0	S B	
SPANGLER C.B.	SW12-07-28-3	183	20-11- 9	50.	18.0	50.0	50.0	0.0	0.0	50.0	S B	
SPANGLER C.B.	NE10-07-28-3	182	20-11- 9	50.	18.0	50.0	50.0	0.0	0.0	50.0	S B	
SPANGLER C.B.	NE03-07-28-3	181	20-11- 9	24.	18.0	24.0	24.0	0.0	0.0	24.0	S B	
RICHARD L.E.	SW11-05-27-3	186	10-12- 9	0.	0.0	0.0	0.0	0.0	0.0	0.0	S B	
PATTERSON W.G.	SE04-06-29-3	190	14- 4-10	260.	17.0	175.0	175.0	0.0	0.0	175.0	S B	
CATON ANNA S	NW19-04-24-3	197	22- 8-10	48.	18.0	87.0	71.0	16.0	0.0	87.0	S B	N
SHEPHERD J.C.	NW34-05-28-3	219	2-10-11	64.	18.0	96.0	96.0	0.0	0.0	96.0	S B	
SPANGLER C.B.	NW03-07-28-3	237	31- 8-12	26.	18.0	26.0	26.0	0.0	0.0	26.0	S B	
CAN PAC RWY	NE20-04-26-3	268	4-11-14	0.	0.0	0.0	0.0	0.0	0.0	0.0	S B	
FUNK B.	NE06-03-26-3	323	27- 5-18	136.	8.0	94.0	91.0	3.0	0.0	94.0	S B	
SCHMIDT D.E.	SE31-02-26-3	338	18- 2-19	18.	12.0	18.0	18.0	0.0	0.0	18.0	S B	
LEWIS H.	SW19-03-25-3	354	12- 9-19	0.	0.0	3.0	1.0	2.0	0.0	3.0	S B	
LEWIS T.J.	SW33-03-25-3	353	22- 9-19	0.	0.0	11.0	6.0	5.0	0.0	11.0	S B	N
NEITZ P.	SW18-06-27-3	358	21-11-19	134.	8.0	90.0	90.0	0.0	0.0	90.0	S B	
SWIHART J.W.	SE24-03-27-3	377	12- 1-21	0.	0.0	2.0	2.0	0.0	0.0	2.0	S B	N
REESOR D.H.P.	SE36-04-27-3	384	18- 7-21	60.	12.0	60.0	60.0	0.0	0.0	60.0	S B	
AMUNDSON E.	NW35-03-25-3	397	17- 2-22	0.	0.0	1.0	1.0	0.0	0.0	1.0	S B	N
SASK GOVT AGR	NE36-03-25-3	399	12- 4-22	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B	N
STEFER L.	NW16-03-27-3	403	24- 7-22	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B	
SCRIVEN J.F.	SE26-03-27-3	409	19-12-22	0.	0.0	3.0	1.0	2.0	0.0	3.0	S B	N
LESLIE R.M.	NW18-08-28-3	462	5-10-25	24.	8.0	16.0	16.0	0.0	0.0	16.0	S B	N
PFRA	SW14-08-29-3	592	12- 7-35*	0.	0.0	96.0	0.0	96.0	0.0	96.0	S B	
BERG G.	NW18-04-25-3	606	25- 7-35	32.	8.0	21.0	21.0	0.0	0.0	21.0	S B	
FRANK J.	NW34-02-27-3	622	6- 8-35	124.	8.0	83.0	83.0	0.0	0.0	83.0	S B	
PARSONAGE RANCH	NE07-06-28-3	625	9- 8-35	0.	0.0	6.0	2.0	4.0	0.0	6.0	S B	N
REYONDS A. E.	NE35-03-26-3	644	16- 8-35	0.	0.0	5.0	1.0	4.0	0.0	5.0	S B	
ROYAL TRUST CO	NE26-03-26-3	645	16- 8-35	0.	0.0	3.0	1.0	2.0	0.0	3.0	S B	N
KRUPP F.M.	SE04-07-28-3	651	21- 8-35	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B	
GAFF V.	NW01-06-29-3	652	21- 8-35	0.	0.0	10.0	5.0	5.0	0.0	10.0	S B	
PFRA	SW04-04-25-3	678	27- 8-35	0.	0.0	5.0	3.0	2.0	0.0	5.0	S B	N
PFRA	SW24-04-28-3	680	27- 8-35	0.	0.0	4.0	2.0	2.0	0.0	4.0	S B	N
BROWATZKE K.B.	SE23-04-28-3	679	27- 8-35	0.	0.0	4.0	2.0	2.0	0.0	4.0	S B	N
SWIHART J.W.	SE17-03-26-3	710	5- 9-35	19.	8.0	13.0	13.0	0.0	0.0	13.0	S B	
ARNESON M.	SW28-03-25-3	716	10- 9-35	0.	0.0	4.0	1.0	3.0	0.0	4.0	S B	
WORTHY CR COOP	NE36-02-28-3	758	1-10-35	25.	6.0	13.0	13.0	0.0	0.0	13.0	S B	N
SVEUND E.	SE09-05-25-3	765	3-10-35	18.	8.0	12.0	12.0	0.0	0.0	12.0	S B	
CHAVTUR J.F.	NE34-03-25-3	803	25-10-35	0.	0.0	3.0	2.0	1.0	0.0	3.0	S B	N
PARSONAGE RANCH	NE31-06-28-3	809	26-10-35	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B	
WAGNER O.D.	NW02-04-28-3	810	28-10-35	0.	0.0	5.0	1.0	4.0	0.0	5.0	S B	
NEITZ PAUL	NE06-06-27-3	829	12-11-35	0.	0.0	14.0	1.0	13.0	0.0	14.0	S B	
WATSON M.O.	SW02-03-26-3	864	27- 1-36	0.	0.0	8.0	2.0	6.0	0.0	8.0	S B	
FRANK J..	NW03-03-27-3	900	1- 5-36	153.	8.0	101.0	101.0	0.0	0.0	101.0	S B	
NOTUKEU GRAZING	SW32-03-27-3	926	22- 6-36	0.	0.0	4.0	1.0	3.0	0.0	4.0	S B	
STIRLING R.	NW23-03-27-3	985	17- 7-36	24.	8.0	16.0	16.0	0.0	0.0	16.0	S B	
FRAME G.W.	SE04-05-28-3	1009	28- 7-36*	34.	8.0	23.0	23.0	0.0	0.0	23.0	S B	N
CHIPMAN R.E.	SE14-03-26-3	1059	8- 8-36	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B	N
GREEN WM.	SW17-04-25-3	1071	11- 8-36*	0.	0.0	80.0	80.0	0.0	0.0	80.0	S B	N
GRAVEN R.R.	NE36-05-23-3	1097	19- 8-36	0.	0.0	1.0	1.0	0.0	0.0	1.0	S B	N
GENERT L.D.	NE24-03-26-3	1108	20- 8-36	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B	
GENERT L.D.	NE30-03-25-3	1107	20- 8-36	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B	N
GENERT L.D.	SW30-03-25-3	1106	20- 8-36	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B	N
COVLIN M.G.	NW20-06-28-3	1156	31- 8-36	0.	0.0	3.0	1.0	2.0	0.0	3.0	S B	
REYNOLDS A.E.	NE06-05-28-3	1158	31- 8-36	0.	0.0	4.0	1.0	3.0	0.0	4.0	S B	N
PEDERSEN W.L.	NW20-05-25-3	1182	3- 9-36	0.	0.0	5.0	1.0	4.0	0.0	5.0	S B	N
CAN GOVT PFRA	NW01-06-28-3	1183	3- 9-36*	0.	0.0	0.0	0.0	0.0	0.0	0.0	S B	
DEMARTIN H.	SW10-03-26-3	1191	4- 9-36	0.	0.0	4.0	1.0	3.0	0.0	4.0	S B	
PETTYJOHN WM.M.	SE11-06-29-3	1199	8- 9-36	0.	0.0	1.0	1.0	0.0	0.0	1.0	S B	
REESOR R.W.	NW30-04-28-3	1223	10- 9-36	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B	N
PALMER J.	NE35-04-26-3	1248	15- 9-36	0.	0.0	3.0	1.0	2.0	0.0	3.0	S B	
MCCUAIG D.J.	SE03-04-27-3	1247	15- 9-36	17.	8.0	12.0	12.0	0.0	0.0	12.0	S B	
MCCUAIG D.J.	NE03-04-27-3	1246	15- 9-36	0.	0.0	3.0	1.0	2.0	0.0	3.0	S B	
SWIHART H.E.	SW34-04-26-3	1245	15- 9-36	0.	0.0	0.0	0.0	0.0	0.0	0.0	S B	
DOLOSKY J.	NW36-02-26-3	1332	1-10-36	0.	0.0	3.0	1.0	2.0	0.0	3.0	S B	
RABE R.	SW11-05-26-3	1350	5-10-36	0.	0.0	4.0	1.0	3.0	0.0	4.0	S B	
WENZEL K.	SE19-05-26-3	1444	9-11-36	0.	0.0	5.0	1.0	4.0	0.0	5.0	S B	N
FUNK B.	NE10-03-26-3	1458	18-11-36	0.	0.0	4.0	3.0	1.0	0.0	4.0	S B	
HOWELL W.	NW36-05-26-3	1479	23-11-36	25.	8.0	17.0	17.0	0.0	0.0	17.0	S B	
REAMER M.	NE21-03-26-3	1499	1-12-36	22.	8.0	15.0	15.0	0.0	0.0	15.0	S B	
CHRISTIANSON M.	SW33-05-25-3	1614	13- 3-37	0.	0.0	3.0	1.0	2.0	0.0	3.0	S B	N
LEISMEISTER A.	NW23-04-29-3	1707	19- 4-37	11.	0.0	9.0	9.0	0.0	0.0	9.0	S B	N
BEHRMAN W.	SE22-04-26-3	1754	12- 5-37	92.	6.0	75.0	44.0	31.0	0.0	75.0	S B	
BEHRMAN W.	SW23-04-26-3	1753	13- 5-37	46.	7.0	28.0	28.0	0.0	0.0	28.0	S B	
WEISGERBER EST	SW33-03-28-3	1774	21- 5-37	0.	0.0	3.0	2.0	1.0	0.0	3.0	S B	N
BACKMAN L.C.	SE16-05-26-3	1786	22- 5-37	21.	8.0	14.0	14.0	0.0	0.0	14.0	S B	N

BATTLE CREEK ALLOCATION DATA - SASKATCHEWAN AND ALBERTA
ALLOCATION DATA - ORDERED ACCORDING TO APPLICATION DATE (acre-feet)

NAME	LOCATION	FILE NUM	DATE	IRRIGATED ACREAGE	DUTY IN	GROSS DIV	CONSUMPTIVE USE	LOSSES	RETURN FLOW	NET DEPLETION	PROVINCE STREAM
WAGNER D.	SW35-04-29-3	1855	8- 6-37	18.	8.0	12.0	12.0	0.0	0.0	12.0	S B N
FRENCH P.A.	SW33-03-27-3	1983	12- 7-37	7.	8.0	4.0	4.0	0.0	0.0	4.0	S B
GENERT C.	SW31-03-25-3	1994	16- 7-37	0.	0.0	3.0	1.0	2.0	0.0	3.0	S B N
REYNOLDS R.H.	SW02-04-28-3	2048	31- 7-37	0.	0.0	7.0	1.0	6.0	0.0	7.0	S B
REYNOLDS A.E.	NW36-04-29-3	2080	11- 8-37	7.	8.0	5.0	5.0	0.0	0.0	5.0	S B N
WAGNER O.O.	SE10-04-28-3	2114	23- 8-37*	45.	8.0	30.0	30.0	0.0	0.0	30.0	S B
SVEUND E.C.	SW09-05-25-3	2124	26- 8-37	17.	8.0	16.0	11.0	5.0	0.0	16.0	S B N
ECCLES R.	SE15-04-27-3	2159	10- 9-37	6.	8.0	4.0	4.0	0.0	0.0	4.0	S B
OLSON H.C.	NW10-05-25-3	2282	14-10-37	7.	8.0	5.0	5.0	0.0	0.0	5.0	S B N
NOBLE H.I.	SW36-05-23-3	2281	14-10-37	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B N
OLOSON H.C.	NW10-05-25-3	2283	14-10-37	17.	8.0	12.0	12.0	0.0	0.0	12.0	S B N
HADFORD L.A.	NW33-05-23-3	2315	23-10-37	0.	0.0	6.0	3.0	3.0	0.0	6.0	S B
SANDERSON L.	NW32-04-28-3	2346	28-10-37	17.	8.0	12.0	12.0	0.0	0.0	12.0	S B N
JOHNSON F.	NE35-04-25-3	2446	13-11-37	18.	8.0	12.0	12.0	0.0	0.0	12.0	S B N
ECCLES R.	SW23-04-27-3	2500	26-11-37	4.	8.0	3.0	3.0	0.0	0.0	3.0	S B
ROCKY VIEW LTD	NE33-05-23-3	2581	14- 1-38	0.	0.0	6.0	3.0	3.0	0.0	6.0	S B
WARDBERG J.	SW23-05-24-3	2612	26- 1-38	0.	0.0	7.0	3.0	4.0	0.0	7.0	S B
JOHNSON F.	SW35-04-25-3	2611	26- 1-38	52.	8.0	34.0	34.0	0.0	0.0	34.0	S B N
MCINNIS A.A.	SE30-05-25-3	2656	19- 2-38	0.	0.0	1.0	1.0	0.0	0.0	1.0	S B
NOBLE E.	SE08-04-26-3	2655	19- 2-38*	20.	8.0	14.0	14.0	0.0	0.0	14.0	S B N
STIRLING S.	NE09-04-28-3	2661	24- 2-38	0.	0.0	2.0	2.0	0.0	0.0	2.0	S B
WEISGERBER O.P.	NE33-03-28-3	2685	8- 3-38	8.	8.0	6.0	6.0	0.0	0.0	6.0	S B N
FORSETH ENTERPR.	NE15-03-25-3	2712	21- 3-38	0.	0.0	1.0	1.0	0.0	0.0	1.0	S B
JOHNSON M.M.	SW05-05-25-3	2755	5- 4-38	67.	7.0	37.0	37.0	0.0	0.0	37.0	S B
MCCUAIG D.J.	SW02-04-27-3	2841	12- 5-38	15.	8.0	10.0	10.0	0.0	0.0	10.0	S B
WEISGERBER H.E.	SW25-03-28-3	2919	23- 6-38	0.	0.0	6.0	3.0	3.0	0.0	6.0	S B N
SCHMIDT O.F.	NW31-02-26-3	2954	18- 7-38	2.	8.0	2.0	2.0	0.0	0.0	2.0	S B
THOMPSON D.	SW04-06-25-3	2963	26- 7-38	0.	0.0	3.0	3.0	0.0	0.0	3.0	S B
WARNBERG N.	SW24-03-25-3	2973	1- 8-38	0.	0.0	1.0	1.0	0.0	0.0	1.0	S B
BLACK J.R.	SE01-07-29-3	3062	26- 9-38	0.	0.0	5.0	5.0	0.0	0.0	5.0	S B
PFRA	NE08-06-27-3	3152	31-10-38**	2958.	18.0	5696.0	4437.0	120.0	1139.0	4557.0	S B
MORRISON R.C.	NW24-05-25-3	3182	7-11-38	4.	4.0	2.0	2.0	0.0	0.0	2.0	S B N
PFRA	SW12-01-27-3	3426	6- 5-39	0.	0.0	5.0	3.0	2.0	0.0	5.0	S B N
PFRA	NE20-02-27-3	3425	6- 5-39	0.	0.0	6.0	4.0	2.0	0.0	6.0	S B N
PFRA	NE07-01-26-3	3423	6- 5-39	0.	0.0	2.0	2.0	0.0	0.0	2.0	S B
PFRA	NW14-02-26-3	3422	6- 5-39	0.	0.0	9.0	5.0	4.0	0.0	9.0	S B
PFRA	SW24-02-27-3	3427	6- 5-39*	0.	0.0	22.0	14.0	8.0	0.0	22.0	S B
AMUNDSON R	NE12-03-25-3	3564	27- 6-39	0.	0.0	6.0	3.0	3.0	0.0	6.0	S B N
PEDERSEN W.L.	SW24-05-26-3	3586	10- 7-39	16.	8.0	11.0	11.0	0.0	0.0	11.0	S B
AGAR R.	SW17-05-26-3	3630	8- 8-39	0.	0.0	5.0	1.0	4.0	0.0	5.0	S B N
WILSON J.W.	SE14-06-28-3	3713	23-10-39	44.	8.0	46.0	29.0	17.0	0.0	46.0	S B
SCHMIDT A.J.	NW12-03-27-3	3739	25-10-39	19.	8.0	20.0	12.0	8.0	0.0	20.0	S B N
FRAME G.W.	SW04-05-28-3	3768	24-11-39	48.	6.0	27.0	24.0	3.0	0.0	27.0	S B N
PFRA	SW26-01-26-3	3809	5-12-39	0.	0.0	3.0	2.0	1.0	0.0	3.0	S B
PFRA	NE12-02-26-3	3808	5-12-39	0.	0.0	6.0	4.0	2.0	0.0	6.0	S B
PFRA	SE04-04-27-3	3807	5-12-39	0.	0.0	4.0	2.0	2.0	0.0	4.0	S B
PFRA	NE35-01-27-3	3806	5-12-39	0.	0.0	5.0	4.0	1.0	0.0	5.0	S B
PFRA	NE08-04-27-3	3805	5-12-39	0.	0.0	4.0	2.0	2.0	0.0	4.0	S B
PFRA	SW12-02-27-3	3804	5-12-39*	0.	0.0	3.0	2.0	1.0	0.0	3.0	S B
PFRA	NE02-04-25-3	3803	5-12-39	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B N
PFRA	NW10-04-25-3	3802	5-12-39	0.	0.0	4.0	2.0	2.0	0.0	4.0	S B N
PFRA	SE33-01-27-3	3801	5-12-39	0.	0.0	6.0	4.0	2.0	0.0	6.0	S B
GLAGAU E.	SW20-03-27-3	3855	6- 2-40	15.	8.0	10.0	10.0	0.0	0.0	10.0	S B
FRANK J.	NE07-03-27-3	3863	27- 2-40	0.	0.0	4.0	3.0	1.0	0.0	4.0	S B
GODICH J.	NW22-03-27-3	3931	8- 5-40	4.	8.0	2.0	2.0	0.0	0.0	2.0	S B
GODICH J.	NW22-03-27-3	3930	8- 5-40	2.	8.0	1.0	1.0	0.0	0.0	1.0	S B
SWIFT L.J.	SE22-01-26-3	4071	7- 7-41	0.	0.0	3.0	1.0	2.0	0.0	3.0	S B
LEISMEISTER A.	SE25-04-29-3	4237	13-12-41	0.	0.0	6.0	1.0	5.0	0.0	6.0	S B N
STRYCKER J.E.	NE15-04-27-3	4244	2- 1-42	0.	0.0	3.0	1.0	2.0	0.0	3.0	S B
DEMARTIN H.	NW26-01-26-3	4270	14- 3-42	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B N
CHAPMAN R.E.	SW21-03-26-3	4271	14- 3-42	0.	0.0	1.0	0.0	1.0	0.0	1.0	S B
ANDERSON J.	NE10-05-25-3	4444	26- 9-42	3.	8.0	2.0	2.0	0.0	0.0	2.0	S B N
FUNK B.	NE20-03-26-3	4490	5- 6-43	68.	4.0	23.0	23.0	0.0	0.0	23.0	S B N
TITTLE A.R.	NW30-02-26-3	4492	10- 6-43	40.	8.0	27.0	27.0	0.0	0.0	27.0	S B
WAGNER O.O.	NW03-04-28-3	4562	11- 1-44	0.	0.0	1.0	1.0	0.0	0.0	1.0	S B
PFRA	NE18-04-27-3	4578	18- 3-44	0.	0.0	24.0	5.0	19.0	0.0	24.0	S B
TEIGEN G.	SW17-05-25-3	4622	26- 6-44	0.	0.0	6.0	1.0	5.0	0.0	6.0	S B
MCGREGOR O.	SW26-03-27-3	4630	11- 7-44	0.	0.0	3.0	1.0	2.0	0.0	3.0	S B
CHAPMAN R.	NW22-03-26-3	4631	20- 7-44	0.	0.0	5.0	3.0	2.0	0.0	5.0	S B
GLAGAU E.	NE21-03-27-3	4662	12-10-44	0.	0.0	5.0	3.0	2.0	0.0	5.0	S B
DUCKS UNLIMITED	NW27-04-25-3	4691	9- 1-45*	0.	0.0	749.0	0.0	749.0	0.0	749.0	S B N
CHAPMAN R.F.	SW18-03-25-3	4713	9- 5-45	6.	12.0	21.0	8.0	13.0	0.0	21.0	S B
MCLUHAN J.A.	SW21-05-28-3	4737	2- 8-45	0.	0.0	5.0	3.0	2.0	0.0	5.0	S B N
CAN GOVT PFRA	SW31-04-26-3	4801	14-12-45	0.	0.0	0.0	0.0	0.0	0.0	0.0	S B
HEGLUND L.W.	SW31-04-26-3	4813	14- 2-46**	0.	0.0	0.0	0.0	0.0	0.0	0.0	S B
SCHMIDT O.F.	SE05-03-26-3	4851	15- 6-46	24.	8.0	16.0	16.0	0.0	0.0	16.0	S B
PRIDMORE J.	NE29-05-27-3	4942	4-10-46	25.	8.0	17.0	17.0	0.0	0.0	17.0	S B
REAMER G.	SE21-03-26-3	4953	17-10-46	0.	0.0	3.0	3.0	0.0	0.0	3.0	S B
WRIGGLESWORTH F.	NW07-05-24-3	4979	15-11-46	24.	8.0	16.0	16.0	0.0	0.0	16.0	S B N
LEISMEISTER A.	SE35-04-29-3	4998	2- 1-47	20.	8.0	14.0	14.0	0.0	0.0	14.0	S B N
SCHMIDT A.J.	NW08-03-26-3	5003	30- 1-47	0.	0.0	8.0	2.0	6.0	0.0	8.0	S B
STIRLING S.	NE08-04-28-3	5046	16- 5-47	7.	8.0	5.0	5.0	0.0	0.0	5.0	S B
MOELLER R.J.	NE17-04-28-3	5056	31- 5-47	16.	8.0	11.0	11.0	0.0	0.0	11.0	S B N
REYNOLDS R.H.	NE36-03-28-3	5055	31- 5-47	10.	8.0	7.0	7.0	0.0	0.0	7.0	S B
STIRLING S.	SE17-04-28-3	5111	21- 7-47	0.	0.0	4.0	2.0	2.0	0.0	4.0	S B
PIERCE J.D.	NE03-05-28-3	5141	19- 8-47	7.	8.0	5.0	5.0	0.0	0.0	5.0	S B N
WENAAS K.	SE21-05-25-3	5159	5- 9-47	25.	8.0	17.0	17.0	0.0	0.0	17.0	S B N
PARSONAGE R.G.	NW11-07-29-3	5193	20-10-47	35.	8.0	24.0	24.0	0.0	0.0	24.0	S B
REAMER G.S.	NE21-03-26-3	5225	17-12-47	0.	0.0	3.0	2.0	1.0	0.0	3.0	S B
RABE R.	NE36-04-26-3	5263	31- 5-48	60.	8.0	40.0	40.0	0.0	0.0	40.0	S B
PETTYJOHN W.D.	NE34-05-26-3	5275	10- 6-48	14.	8.0	10.0	10.0	0.0	0.0	10.0	S B N
DOLOSKY J.	SW06-03-25-3	5285	28- 6-48	9.	8.0	27.0	7.0	20.0	0.0	27.0	S B
GLAGAU E.	SW23-03-27-3	5293	12- 7-48	9.	3.0	6.0	6.0	0.0	0.0	6.0	S B
MCCUAIG D.J.	NE01-04-27-3	5292	12- 7-48	23.	8.0	20.0	20.0	0.0	0.0	20.0	S B
WAGNER O.A.	SW35-04-29-3	5361	15- 9-48	18.	0.0	12.0	12.0	0.0	0.0	12.0	S B N
SASK GOVT AGRIC	SW18-03-24-3	5418	15-10-48	0.	0.0	15.0	5.0	10.0	0.0	15.0	S B N

BATTLE CREEK ALLOCATION DATA - SASKATCHEWAN AND ALBERTA
ALLOCATION DATA - ORDERED ACCORDING TO APPLICATION DATE

NAME	LOCATION	FILE NUM	DATE	IRRIGATED ACREAGE	DUTY IN	GROSS DIV	CONSUMPTIVE USE	(acre-feet) LOSSES	RETURN FLOW	NET DEPLETION	PROVINCE STREAM
SVEUND E.C.	SW09-05-25-3	5422	15-10-48	4.	8.0	3.0	3.0	0.0	0.0	3.0	S B N
SVEUND E.C.	NE09-05-25-3	5421	15-10-48	22.	8.0	15.0	15.0	0.0	0.0	15.0	S B N
SVEUND E.C.	SW09-05-25-3	5420	15-10-48	13.	8.0	9.0	9.0	0.0	0.0	9.0	S B N
DOLGOPOL N.	SW02-05-29-3	5419	15-10-48	15.	8.0	10.0	10.0	0.0	0.0	10.0	S B N
WARBERG G	NW23-03-25-3	5438	2-11-48	6.	8.0	8.0	4.0	4.0	0.0	8.0	S B N
KISELL J.	NW15-03-27-3	5441	8-11-48	45.	8.0	30.0	30.0	0.0	0.0	30.0	S B
KISELL J.	SE16-03-27-3	5442	8-11-48	44.	8.0	30.0	30.0	0.0	0.0	30.0	S B
PALMER J.	NE26-04-26-3	5453	18-11-48	38.	8.0	26.0	26.0	0.0	0.0	26.0	S B
TEICEN G.	NW17-05-25-3	5455	22-11-48	37.	8.0	25.0	25.0	0.0	0.0	25.0	S B N
WARDBERG A.	SW25-05-25-3	5497	8- 2-49	21.	8.0	14.0	14.0	0.0	0.0	14.0	S B N
WARDBERG A.	SE25-05-25-3	5498	8- 2-49	18.	8.0	12.0	12.0	0.0	0.0	12.0	S B N
NOTUKEU G.	NE28-03-27-3	5512	3- 3-49	4.	8.0	3.0	3.0	0.0	0.0	3.0	S B
BLACK J.R.	NW01-07-29-3	5527	21- 4-49	138.	3.0	35.0	35.0	0.0	0.0	35.0	S B
STETAR L.	NE16-03-27-3	5529	21- 4-49	13.	8.0	9.0	9.0	0.0	0.0	9.0	S B
STETAR L.	NE16-03-27-3	5528	21- 4-49	13.	8.0	9.0	9.0	0.0	0.0	9.0	S B
BACKMAN L.C.	SE15-05-26-3	5539	2- 5-49	45.	8.0	30.0	30.0	0.0	0.0	30.0	S B
BACKMAN L.C.	SW15-05-26-3	5540	2- 5-49	35.	8.0	24.0	24.0	0.0	0.0	24.0	S B N
GLAGAU O.M.	NE01-05-27-3	5557	18- 5-49	13.	8.0	9.0	9.0	0.0	0.0	9.0	S B N
PRIDMORE J.E.	NW28-05-27-3	5609	18- 6-49	24.	8.0	16.0	16.0	0.0	0.0	16.0	S B
WATSON M.O.	SE02-03-26-3	5672	29- 7-49	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B
REYNOLDS A.E.	NE35-03-28-3	5691	17- 8-49	10.	8.0	7.0	7.0	0.0	0.0	7.0	S B
COCHRANE R.G.	SW13-06-29-3	5709	30- 8-49	0.	0.0	7.0	3.0	4.0	0.0	7.0	S B
DAHL A.I.	SW27-05-25-3	5740	17- 9-49	11.	8.0	8.0	8.0	0.0	0.0	8.0	S B N
MIDDLEFORK R.	SE04-05-29-3	5770	6-10-49	46.	8.0	31.0	31.0	0.0	0.0	31.0	S B N
SCHMIDT O.F.	NE31-02-26-3	5784	13-10-49	10.	8.0	7.0	7.0	0.0	0.0	7.0	S B
ARENDT R.	SW23-05-23-3	5818	25-10-49	27.	0.0	18.0	18.0	0.0	0.0	18.0	S B N
GAFF EVA	SW26-05-29-3	5819	25-10-49**	0.	0.0	0.0	0.0	0.0	0.0	0.0	S B
PEDERSON W.L.	SW24-05-26-3	5874	18-11-49	5.	8.0	3.0	3.0	0.0	0.0	3.0	S B
STIRLING R.	NW19-03-27-3	5940	14-12-49	68.	8.0	45.0	45.0	0.0	0.0	45.0	S B
BRAUN A.F.	NE24-04-29-3	5977	19- 1-50	0.	0.0	12.0	1.0	11.0	0.0	12.0	S B N
AUSTIN E.	SE33-04-25-3	6053	27- 4-50	11.	8.0	8.0	8.0	0.0	0.0	8.0	S B
SAWDEN L.	SE34-02-27-3	6052	27- 4-50	16.	8.0	11.0	11.0	0.0	0.0	11.0	S B N
REAMER G.S.	NE16-03-26-3	6139	29- 6-50	13.	8.0	9.0	9.0	0.0	0.0	9.0	S B
KISELL J.	SW16-03-27-3	6150	4- 7-50	12.	8.0	8.0	8.0	0.0	0.0	8.0	S B
DOLGOPOL P.	SE16-04-27-3	6243	6- 9-50	0.	0.0	5.0	3.0	2.0	0.0	5.0	S B
SKAUGE E.L.K.	SE27-05-25-3	6259	15- 9-50	10.	8.0	7.0	7.0	0.0	0.0	7.0	S B N
SVEUND E.C.	SE09-05-25-3	6308	26-10-50	20.	8.0	14.0	14.0	0.0	0.0	14.0	S B N
WAGNER O.D.	NW12-04-28-3	6310	30-10-50	0.	0.0	4.0	1.0	3.0	0.0	4.0	S B
AGAR R.B.	NW25-05-29-3	6317	3-11-50	62.	8.0	42.0	42.0	0.0	0.0	42.0	S B
VIDORA USERS	NE06-06-27-3	6375	12- 4-51*	2484.	12.0	3453.0	2484.0	278.0	691.0	2762.0	S B
REYNOLDS R.H.	SE35-03-28-3	6387	20- 4-51	8.	8.0	6.0	6.0	0.0	0.0	6.0	S B
MOORE O.L.	NE27-05-23-3	6421	18- 6-51	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B N
MADSON M.K.	NE29-03-25-3	6523	19- 9-51	94.	8.0	63.0	63.0	0.0	0.0	63.0	S B N
PFRA	SW17-02-25-3	6527	24- 9-51**	0.	0.0	116.0	116.0	0.0	0.0	116.0	S B
DUCKS UNLIMITED	SW03-05-23-3	6547	25-10-51	0.	0.0	3.0	0.0	3.0	0.0	3.0	S B N
DUCKS UNLIMITED	SW21-04-24-3	6601	25- 3-52	0.	0.0	4.0	0.0	4.0	0.0	4.0	S B N
DUCKS UNLIMITED	SE11-04-24-3	6602	25- 3-52	0.	0.0	9.0	0.0	9.0	0.0	9.0	S B N
FUNK BEN	SE03-03-26-3	6705	8-12-52	0.	0.0	5.0	2.0	3.0	0.0	5.0	S B
GLAGAU E.	SW20-03-27-3	6708	19-12-52	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B
FUNK B.	NE04-03-26-3	6714	15- 1-53	22.	8.0	15.0	15.0	0.0	0.0	15.0	S B
FUNK BEN	SE04-03-26-3	6719	13- 2-53	50.	8.0	35.0	35.0	0.0	0.0	35.0	S B
PETTYJOHN T.E.	NW33-05-29-3	6744	14- 4-53	21.	8.0	14.0	14.0	0.0	0.0	14.0	S B
FRANK J.	SW02-03-27-3	6795	23- 7-53	21.	8.0	14.0	14.0	0.0	0.0	14.0	S B
ASLIN L.	NW16-05-23-3	6828	10- 9-53	0.	0.0	5.0	1.0	4.0	0.0	5.0	S B N
HALYUNG P.	SW27-02-25-3	6840	8-10-53	0.	0.0	4.0	2.0	2.0	0.0	4.0	S B
BACKMAN B.	NW16-05-26-3	7055	6- 1-55	0.	0.0	3.0	1.0	2.0	0.0	3.0	S B
DUCKS UNLIMITED	NE06-04-24-3	7086	31- 3-55	0.	0.0	197.0	0.0	197.0	0.0	197.0	S B N
THOMPSON R.	NE35-05-26-3	7136	1- 8-55	11.	8.0	8.0	8.0	0.0	0.0	8.0	S B N
DOLOSKY J.	NE05-01-25-3	7144	16- 8-55	46.	8.0	42.0	31.0	11.0	0.0	42.0	S B
MERRYFLAT GR	SE21-06-30-3	7197	3-11-55	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B
MERRYFLAT GR	SE27-06-30-3	7198	3-11-55	0.	0.0	1.0	1.0	0.0	0.0	1.0	S B
NELUBOWICH A	NE36-04-25-3	7223	19- 1-56	32.	8.0	22.0	22.0	0.0	0.0	22.0	S B N
HEGLUND L.W.	NW19-04-26-3	7241	13- 3-56	6.	8.0	4.0	4.0	0.0	0.0	4.0	S B
HEGLUND L.W.	NW19-04-26-3	7240	13- 3-56	0.	0.0	3.0	1.0	2.0	0.0	3.0	S B
PARSONAGE R.C.	NE16-06-28-3	7320	14- 9-56	0.	0.0	3.0	2.0	1.0	0.0	3.0	S B
PARSONAGE R.C.	NW34-06-29-3	7319	14- 9-56	0.	0.0	4.0	2.0	2.0	0.0	4.0	S B
PARSONAGE W.	SE36-06-29-3	7344	17-10-56	0.	0.0	7.0	5.0	2.0	0.0	7.0	S B N
BATTLE CK RANCH	SW14-06-30-3	7499	2- 7-57	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B
BATTLE CK RANCH	NW19-06-29-3	7498	2- 7-57	0.	0.0	1.0	1.0	0.0	0.0	1.0	S B
BATTLE CK RANCH	NE13-06-30-3	7496	2- 7-57	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B
HADFORD L.A.	SW32-05-23-3	7511	16- 7-57	0.	0.0	3.0	2.0	1.0	0.0	3.0	S B N
HUERY J.	NW30-02-25-3	7548	19- 9-57	0.	0.0	3.0	1.0	2.0	0.0	3.0	S B
ZENTNER C.	NE22-02-28-3	7585	5-11-57	0.	0.0	5.0	2.0	3.0	0.0	5.0	S B
HUERY J.	SW32-02-25-3	7591	8-11-57	0.	0.0	4.0	2.0	2.0	0.0	4.0	S B
HUERY M.	NW33-02-25-3	7647	11- 3-58	0.	0.0	4.0	2.0	2.0	0.0	4.0	S B N
MADSON WALLACE	SE14-03-25-3	7680	6- 5-58	0.	0.0	14.0	7.0	7.0	0.0	14.0	S B N
PFRA	NE05-04-25-3	7699	29- 5-58	0.	0.0	7.0	5.0	2.0	0.0	7.0	S B N
PFRA	SW13-01-27-3	7698	29- 5-58*	0.	0.0	9.0	5.0	4.0	0.0	9.0	S B
WORTHY G. COOP	NE06-03-27-3	7745	7- 7-58	0.	0.0	4.0	2.0	2.0	0.0	4.0	S B
BATTLE CK RANCH	SE11-06-30-3	7776	4- 8-58*	0.	0.0	20.0	5.0	15.0	0.0	20.0	S B
NELSON R.J.	SW16-05-26-3	7874	14-10-58	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B
HEGLUND L.W.	NW23-04-27-3	8052	13- 5-59	0.	0.0	5.0	3.0	2.0	0.0	5.0	S B
STETAR L.	SE21-03-27-3	8056	20- 5-59	26.	8.0	18.0	18.0	0.0	0.0	18.0	S B
PEDERSEN W.L.	SW13-05-26-3	8107	17- 6-59	33.	8.0	22.0	22.0	0.0	0.0	22.0	S B
THRONBERG A.A.	SW12-05-23-3	8174	6- 8-59	0.	0.0	1.0	1.0	0.0	0.0	1.0	S B N
RABE R.	NE36-04-26-3	8192	19- 8-59	27.	8.0	18.0	18.0	0.0	0.0	18.0	S B
SANDOR G.	SE02-06-26-3	8194	21- 8-59	0.	0.0	15.0	1.0	14.0	0.0	15.0	S B
PEDERSEN W.L.	NW13-05-26-3	8193	21- 8-59	0.	0.0	6.0	2.0	4.0	0.0	6.0	S B
BRETON L	SE03-05-23-3	8213	3- 9-59	22.	6.0	11.0	11.0	0.0	0.0	11.0	S B N
REAMER G.S.	SE34-03-26-3	8225	15- 9-59	5.	8.0	3.0	3.0	0.0	0.0	3.0	S B
MADSON W.	NE11-03-25-3	8224	15- 9-59	0.	0.0	5.0	2.0	3.0	0.0	5.0	S B N
SWIFT L.J.	SW27-02-26-3	8232	15- 9-59	0.	0.0	4.0	2.0	2.0	0.0	4.0	S B
SWANSON E.	NW13-03-26-3	8231	15- 9-59*	0.	0.0	4.0	1.0	3.0	0.0	4.0	S B
CHAPMAN R.C.	NE08-03-25-3	8230	15- 9-59	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B
STIRLING R.	SW22-03-27-3	8229	15- 9-59**	0.	0.0	0.0	0.0	0.0	0.0	0.0	S B
FRANK J.	SE02-03-27-3	8228	15- 9-59	28.	8.0	20.0	18.0	2.0	0.0	20.0	S B

BATTLE CREEK ALLOCATION DATA - SASKATCHEWAN AND ALBERTA
ALLOCATION DATA - ORDERED ACCORDING TO APPLICATION DATE

NAME	LOCATION	FILE NUM	DATE	IRRIGATED ACREAGE	DUTY IN	GROSS DIV	CONSUMPTIVE USE	(acre-feet) LOSSES	RETURN FLOW	NET DEPLETION	PROVINCE STREAM
FRANK J.	SW18-03-27-3	8227	15- 9-59	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B
REAMER G.	SW27-03-26-3	8226	15- 9-59	0.	0.0	4.0	1.0	3.0	0.0	4.0	S B
TITTLE A.R.	SW30-02-26-3	8296	9-11-59	3.	8.0	3.0	3.0	0.0	0.0	3.0	S B N
FUNK B.	SE04-03-26-3	8314	26-11-59	32.	6.0	22.0	22.0	0.0	0.0	22.0	S B
HARMON P.	NE19-02-25-3	8336	5- 1-60	25.	8.0	17.0	17.0	0.0	0.0	17.0	S B
PFRA	SE07-01-26-3	8392	15- 3-60	0.	0.0	10.0	8.0	2.0	0.0	10.0	S B
PFRA	NE03-02-26-3	8391	15- 3-60	0.	0.0	6.0	3.0	3.0	0.0	6.0	S B
PFRA	SW36-01-26-3	8390	15- 3-60	0.	0.0	4.0	2.0	2.0	0.0	4.0	S B
PFRA	NW28-04-25-3	8397	15- 3-60	0.	0.0	10.0	5.0	5.0	0.0	10.0	S B
PFRA	SE06-04-25-3	8396	15- 3-60	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B N
PFRA	NW10-01-26-3	8395	15- 3-60	0.	0.0	15.0	5.0	10.0	0.0	15.0	S B
PFRA	SE22-02-27-3	8394	15- 3-60	0.	0.0	7.0	5.0	2.0	0.0	7.0	S B
PFRA	SW31-01-26-3	8393	15- 3-60	0.	0.0	7.0	5.0	2.0	0.0	7.0	S B
PETTYJOHN M.	NW09-05-26-3	8433	22- 4-60	0.	0.0	1.0	1.0	0.0	0.0	1.0	S B
GODICH J.J.	NE22-03-27-3	8498	21- 6-60	2.	8.0	2.0	2.0	0.0	0.0	2.0	S B
RIDGECLIFF GR.	SE35-01-25-3	8521	12- 7-60	0.	0.0	4.0	2.0	2.0	0.0	4.0	S B N
ZEIGLER G.G.	NE12-05-26-3	8560	12- 8-60	0.	0.0	3.0	2.0	1.0	0.0	3.0	S B N
SCHMIDT D.F.	SW31-02-26-3	8559	12- 8-60	73.	8.0	49.0	49.0	0.0	0.0	49.0	S B
SWIFT L.J.	NE15-03-26-3	8564	15- 8-60	5.	8.0	3.0	3.0	0.0	0.0	3.0	S B
SCHMIDT D.F.	NW25-02-27-3	8575	24- 8-60	90.	6.0	46.0	46.0	0.0	0.0	46.0	S B
SCHMIDT D.F.	NE25-02-27-3	8576	24- 8-60	35.	4.0	12.0	12.0	0.0	0.0	12.0	S B N
BEHRMAN R.H.	SE10-04-26-3	8612	26- 9-60	0.	0.0	6.0	5.0	1.0	0.0	6.0	S B
REESOR R.	SE23-04-29-3	8622	30- 9-60	13.	8.0	9.0	9.0	0.0	0.0	9.0	S B N
MADSON M.K.	NE20-03-25-3	8633	6-10-60	0.	0.0	5.0	1.0	4.0	0.0	5.0	S B N
SCHMIDT D.F.	NW32-02-26-3	8649	13-10-60	14.	8.0	10.0	10.0	0.0	0.0	10.0	S B
SCHMIDT D.F.	NW32-02-26-3	8648	13-10-60	10.	8.0	7.0	7.0	0.0	0.0	7.0	S B
SCHMIDT D.F.	NW32-02-26-3	8647	13-10-60	19.	8.0	13.0	13.0	0.0	0.0	13.0	S B
SCHMIDT D.F.	SE32-02-26-3	8646	13-10-60	23.	8.0	16.0	16.0	0.0	0.0	16.0	S B
SMITH C.J.	SW31-01-26-3	8723	24-11-60	0.	0.0	10.0	2.0	8.0	0.0	10.0	S B
ANDERSON A.	NE07-05-25-3	8759	6- 1-61	11.	8.0	8.0	8.0	0.0	0.0	8.0	S B N
KISSELL J.	NW04-03-27-3	8767	16- 1-61	0.	0.0	10.0	2.0	8.0	0.0	10.0	S B
ARENDT F.	NW15-05-23-3	8773	27- 1-61	24.	8.0	16.0	16.0	0.0	0.0	16.0	S B N
PFRA	NW08-04-25-3	8787	30- 1-61	0.	0.0	13.0	5.0	8.0	0.0	13.0	S B N
PFRA	SE09-04-25-3	8786	30- 1-61	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B N
PFRA	NE18-01-26-3	8785	30- 1-61	0.	0.0	5.0	2.0	3.0	0.0	5.0	S B
PFRA	SW02-02-27-3	8784	30- 1-61	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B
PFRA	SW27-01-27-3	8783	30- 1-61	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B
PFRA	SE15-02-26-3	8782	30- 1-61	0.	0.0	5.0	2.0	3.0	0.0	5.0	S B
PFRA	NW28-02-27-3	8781	30- 1-61*	0.	0.0	6.0	2.0	4.0	0.0	6.0	S B
PFRA	NW01-02-26-3	8780	30- 1-61	0.	0.0	10.0	5.0	5.0	0.0	10.0	S B
PFRA	SE09-04-27-3	8791	30- 1-61	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B
PFRA	NW07-04-27-3	8790	30- 1-61	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B
PFRA	SW03-04-25-3	8789	30- 1-61	0.	0.0	19.0	5.0	14.0	0.0	19.0	S B N
PFRA	SE11-04-25-3	8758	30- 1-61	0.	0.0	9.0	5.0	4.0	0.0	9.0	S B N
AMUNDSON E	SE13-03-25-3	8884	10- 5-61	7.	8.0	12.0	5.0	7.0	0.0	12.0	S B N
AMUNDSON E	SE12-03-23-3	8905	23- 5-61	9.	4.0	6.0	3.0	3.0	0.0	6.0	S B N
SWIFT L.J.	SE35-02-26-3	8925	14- 6-61	0.	0.0	11.0	4.0	7.0	0.0	11.0	S B
MEIER WM.	NW20-08-29-3	8929	15- 6-61	20.	4.0	7.0	7.0	0.0	0.0	7.0	S B N
FRAME G.W.	SW03-05-28-3	8973	10- 7-61	8.	8.0	6.0	6.0	0.0	0.0	6.0	S B N
HARMON C.	SE19-02-25-3	8998	25- 7-61	48.	8.0	36.0	36.0	0.0	0.0	36.0	S B
BATTLE CK RANCH	NW24-06-30-3	9020	3- 8-61	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B
BATTLE CK RANCH	SW12-06-30-3	9019	3- 8-61	0.	0.0	9.0	5.0	4.0	0.0	9.0	S B
BATTLE CK RANCH	NE23-06-30-3	9021	3- 8-61	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B
TITTLE A.R.	SE03-04-26-3	9134	29- 9-61	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B N
WORTHY GR COOP	NE31-02-27-3	9146	3-10-61	0.	0.0	5.0	2.0	3.0	0.0	5.0	S B
PFRA	SE35-01-27-3	9169	16-10-61	0.	0.0	3.0	2.0	1.0	0.0	3.0	S B
PARSONAGE A.C.	SW35-06-28-3	9221	2-11-61	0.	0.0	7.0	2.0	5.0	0.0	7.0	S B
PARSONAGE W.	NE33-06-28-3	9252	15-11-61*	0.	0.0	5.0	3.0	2.0	0.0	5.0	S B N
GAFF RANCH LTD	SW27-05-29-3	9260	22-11-61	17.	8.0	12.0	12.0	0.0	0.0	12.0	S B
WAT RES DI ALTA	SE20-08-01-4	10707	21-12-61	0.	0.0	700.0	400.0	300.0	0.0	700.0	A B
DEMCHENKO S.R.	NW08-07-28-3	9321	10- 1-62	40.	8.0	31.0	27.0	4.0	0.0	31.0	S B
BELLAMY P.K.	NE17-02-25-3	9343	6- 2-62	0.	0.0	7.0	2.0	5.0	0.0	7.0	S B
HARMON C.	SE20-02-25-3	9344	6- 2-62	38.	8.0	26.0	26.0	0.0	0.0	26.0	S B
PARSONAGE G.	NW10-07-28-3	9428	9- 5-62	0.	0.0	1.0	1.0	0.0	0.0	1.0	S B
PARSONAGE G.	SW09-07-28-3	9429	9- 5-62	0.	0.0	6.0	5.0	1.0	0.0	6.0	S B
BRAUN A.F.	SW24-04-29-3	9436	10- 5-62*	51.	8.0	46.0	34.0	12.0	0.0	46.0	S B N
BRAUN A.F.	NE24-04-29-3	9437	10- 5-62*	110.	8.0	119.0	74.0	45.0	0.0	119.0	S B N
COCHRANE C.	NE24-06-29-3	9460	25- 5-62	0.	0.0	6.0	3.0	3.0	0.0	6.0	S B
ARENDT M	SW14-05-23-3	9495	11- 6-62	21.	8.0	14.0	14.0	0.0	0.0	14.0	S B N
TENBORG N.H.	SW31-03-27-3	9530	17- 7-62	0.	0.0	7.0	3.0	4.0	0.0	7.0	S B
AMUNDSON E	SE12-03-25-3	9537	18- 7-62	19.	9.0	16.0	14.0	2.0	0.0	16.0	S B N
CURSONS F	SW01-05-23-3	9539	24- 7-62	6.	6.0	3.0	3.0	0.0	0.0	3.0	S B N
CURSONS F	NW27-04-23-3	9547	26- 7-62	8.	4.0	3.0	3.0	0.0	0.0	3.0	S B N
LEWIS H.J.	NW21-03-25-3	9584	9- 8-62	27.	4.0	9.0	9.0	0.0	0.0	9.0	S B N
PETTYJOHN G.P.	SW18-06-28-3	9639	18- 9-62	16.	8.0	11.0	11.0	0.0	0.0	11.0	S B
STOVKA A.	SW14-03-26-3	9679	17-10-62	4.	8.0	3.0	3.0	0.0	0.0	3.0	S B
STIRLING W.	SE10-04-28-3	9700	30-10-62*	0.	0.0	0.0	0.0	0.0	0.0	0.0	S B
WARDBERG A	SE08-05-24-3	9708	1-11-62	16.	8.0	11.0	11.0	0.0	0.0	11.0	S B
MCCONNELL J.E.	SW22-05-26-3	9750	29-11-62	11.	8.0	8.0	8.0	0.0	0.0	8.0	S B N
SMITH C.J.	NE34-04-27-3	9759	7-12-62	45.	8.0	30.0	30.0	0.0	0.0	30.0	S B
SMITH C.J.	NW34-04-27-3	9760	7-12-62	15.	8.0	10.0	10.0	0.0	0.0	10.0	S B
WENZEL K.W.	NW30-05-26-3	9761	11-12-62	0.	0.0	10.0	1.0	9.0	0.0	10.0	S B N
WENZEL M.H.	SW25-05-27-3	9772	20-12-62	18.	8.0	12.0	12.0	0.0	0.0	12.0	S B
SCHMIDT D	NE33-02-26-3	9775	21-12-62	0.	0.0	6.0	3.0	3.0	0.0	6.0	S B
MELUBOWICH A	SE32-04-24-3	9779	4- 1-63	0.	0.0	16.0	9.0	7.0	0.0	16.0	S B N
WARBERG G	NW23-03-25-3	9790	21- 1-63	10.	8.0	7.0	7.0	0.0	0.0	7.0	S B N
DOWNEY LAKE GR	NE06-07-27-3	9796	6- 2-63	0.	0.0	13.0	5.0	8.0	0.0	13.0	S B
PARSONAGE RANCH	SW33-06-29-3	9803	14- 2-63	27.	8.0	18.0	18.0	0.0	0.0	18.0	S B
RADE M.	NW31-04-25-3	9811	1- 3-63	15.	8.0	10.0	10.0	0.0	0.0	10.0	S B
MCCONNELL J.	SW26-05-26-3	9835	22- 3-63	6.	8.0	4.0	4.0	0.0	0.0	4.0	S B N
MCCONNELL J.	SW28-05-26-3	9836	22- 3-63	7.	8.0	5.0	5.0	0.0	0.0	5.0	S B N
AMUNDSON E.	NW35-03-25-3	9848	11- 4-63	0.	0.0	7.0	2.0	5.0	0.0	7.0	S B N
AMUNDSON R.	SW19-05-24-3	9907	5- 6-63	5.	8.0	3.0	3.0	0.0	0.0	3.0	S B N
PARSONAGE G.C.	NW11-07-29-3	9917	13- 6-63	32.	8.0	22.0	22.0	0.0	0.0	22.0	S B
HUERY F.	SW04-03-25-3	9922	20- 6-63	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B
MADSON W.	SW11-03-25-3	9952	26- 7-63	0.	0.0	1.0	1.0	0.0	0.0	1.0	S B

BATTLE CREEK ALLOCATION DATA - SASKATCHEWAN AND ALBERTA
ALLOCATION DATA - ORDERED ACCORDING TO APPLICATION DATE

(acre-feet)

NAME	LOCATION	FILE NUM	DATE	IRRIGATED ACREAGE	DUTY IN	GROSS DIV	CONSUMPTIVE USE	LOSSES	RETURN FLOW	NET DEPLETION	PROVINCE STREAM
HUERY F.	SE04-03-25-3	10006	20- 9-63	0.	0.0	1.0	1.0	0.0	0.0	1.0	S B
HUERY J.	SW33-02-25-3	10015	23- 9-63	16.	8.0	11.0	11.0	0.0	0.0	11.0	S B N
STETAR L.	SE21-03-27-3	10023	26- 9-63	0.	0.0	1.0	1.0	2.0	0.0	3.0	S B
TITTLE A.R.	SE30-02-26-3	10054	25-10-63	0.	0.0	5.0	3.0	2.0	0.0	5.0	S B
SCHMIOT D.E.	NW31-02-26-3	10138	6- 2-64	27.	8.0	27.0	18.0	9.0	0.0	27.0	S B
DOWNEY LAKE GR	NE01-07-28-3	10139	7- 2-64	0.	0.0	15.0	9.0	6.0	0.0	15.0	S B N
SCHAFER J.J.	NW18-05-27-3	10210	2- 6-64	7.	8.0	5.0	5.0	0.0	0.0	5.0	S B N
MEITZ P.	NE04-06-27-3	10340	15- 9-64	6.	8.0	4.0	4.0	0.0	0.0	4.0	S B
GLAGAU O.E.	NW36-03-26-3	10362	28- 9-64	0.	0.0	4.0	1.0	3.0	0.0	4.0	S B
GLAGAU O.E.	NE35-03-26-3	10361	28- 9-64	0.	0.0	10.0	1.0	9.0	0.0	10.0	S B
SMITH C.	SW07-05-26-3	10416	6-11-64	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B N
KISSELL S.F.	NW09-04-26-3	10430	18-11-64	0.	0.0	6.0	4.0	2.0	0.0	6.0	S B
BEHRMAN WM.	SE15-04-26-3	10445	1-12-64	0.	0.0	6.0	3.0	3.0	0.0	6.0	S B
SIX MILE RANCH	SW30-07-28-3	10449	4-12-64	0.	0.0	3.0	2.0	1.0	0.0	3.0	S B
JONES A.J.	SW36-04-29-3	10548	14- 6-65	9.	8.0	6.0	6.0	0.0	0.0	6.0	S B N
BEHRMAN WM.	SE23-04-26-3	10579	28- 7-65	22.	4.0	8.0	8.0	0.0	0.0	8.0	S B N
FRENCH J.B.	SE34-03-27-3	10678	3-12-65	0.	0.0	7.0	1.0	6.0	0.0	7.0	S B
PETTYJOHN A.B.	SE11-06-29-3	10694	24- 1-66	0.	0.0	1.0	1.0	0.0	0.0	1.0	S B N
RIDGECLIFF GR	NW24-03-25-3	10716	8- 3-66	0.	0.0	12.0	3.0	9.0	0.0	12.0	S B N
PALMER H.	NW19-03-25-3	10784	5- 7-66	20.	4.0	7.0	7.0	0.0	0.0	7.0	S B N
DOLGOPOL N.	NW02-05-29-3	10824	2-12-66	0.	0.0	5.0	2.0	3.0	0.0	5.0	S B N
STIRLING S.	SW09-04-28-3	10844	20-12-66	17.	4.0	6.0	6.0	0.0	0.0	6.0	S B N
FRAME G.W.	SE21-04-28-3	10990	10- 1-68	5.	8.0	4.0	4.0	0.0	0.0	4.0	S B N
PARSONAGE RANCH	SE29-06-28-3	10992	11- 1-68	0.	0.0	5.0	4.0	1.0	0.0	5.0	S B
SANDERSON T.L.	SE32-04-28-3	10993	11- 1-68	12.	4.0	4.0	4.0	0.0	0.0	4.0	S B N
BRETON L	NE03-05-21-3	11032	1- 2-68	9.	4.0	3.0	3.0	0.0	0.0	3.0	S B N
MOELLER G.E.	SW28-04-28-3	11145	23- 4-68*	15.	4.0	5.0	5.0	0.0	0.0	5.0	S B N
STIRLING S.	SE09-04-28-3	11167	17- 6-68	13.	8.0	9.0	9.0	0.0	0.0	9.0	S B N
MCCONNELL J.E.	SE36-05-26-3	11192	3- 9-68	14.	8.0	10.0	10.0	0.0	0.0	10.0	S B
MCCONNELL J.W.	NE25-05-26-3	11191	3- 9-68	10.	8.0	7.0	7.0	0.0	0.0	7.0	S B
SANDERSON T.L.	NE32-04-28-3	11207	1-10-68	41.	8.0	28.0	28.0	0.0	0.0	28.0	S B N
PRIDMORE J.E.	SE33-05-27-3	11240	19-12-68	69.	8.0	46.0	46.0	0.0	0.0	46.0	S B
HUERY J.	NE04-03-25-3	11301	31- 1-69	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B N
MCKELVEY H.	NE31-04-27-3	11329	10- 2-69	15.	4.0	5.0	5.0	0.0	0.0	5.0	S B N
REYNOLDS A.E.	NW31-05-29-3	11337	11- 2-69	17.	8.0	12.0	12.0	0.0	0.0	12.0	S B N
REYNOLDS A.E.	NW01-05-29-3	11342	13- 2-69	0.	0.0	4.0	3.0	1.0	0.0	4.0	S B N
DOLGOPOL N.	NE03-05-29-3	11343	13- 2-69	17.	8.0	12.0	12.0	0.0	0.0	12.0	S B N
SANDERSON T.L.	SE29-04-28-3	11358	18- 2-69	14.	4.0	5.0	5.0	0.0	0.0	5.0	S B N
ORMISTON G.	NE05-04-26-3	11362	21- 2-69**	0.	0.0	19.0	5.0	14.0	0.0	19.0	S B
REYNOLDS A.E.	SW36-03-28-3	11361	21- 2-69	0.	0.0	13.0	3.0	10.0	0.0	13.0	S B
WAGNER M.	NW35-04-29-3	11371	25- 2-69	27.	8.0	18.0	18.0	0.0	0.0	18.0	S B N
BROWN C.M.	NW18-05-26-3	11387	18- 3-69	16.	4.0	6.0	6.0	0.0	0.0	6.0	S B N
FRAME G.W.	SW04-05-28-3	11430	30- 6-69	18.	8.0	12.0	12.0	0.0	0.0	12.0	S B N
FRAME G.W.	NW03-05-28-3	11429	30- 6-69	5.	4.0	2.0	2.0	0.0	0.0	2.0	S B N
HUERY J.	NW34-02-25-3	11446	1- 8-69	11.	8.0	12.0	8.0	4.0	0.0	12.0	S B
PALMER H	NW29-03-25-3	11568	6- 2-70	0.	0.0	5.0	3.0	2.0	0.0	5.0	S B N
MCCONNELL J.E.	NE15-05-26-3	11582	25- 2-70	10.	8.0	7.0	7.0	0.0	0.0	7.0	S B N
BRETON L	NW03-05-23-3	11601	26- 3-70	12.	4.0	4.0	4.0	0.0	0.0	4.0	S B N
LUMAN E.W.	SE16-04-28-3	11615	16- 4-70	23.	8.0	16.0	16.0	0.0	0.0	16.0	S B
WORTHY GR. CO-OP	SW32-02-27-3	11650	28- 6-70	0.	0.0	8.0	4.0	4.0	0.0	8.0	S B
REYNOLDS A.E.	NE06-05-28-3	11713	13-10-70	34.	8.0	23.0	23.0	0.0	0.0	23.0	S B N
PARSONAGE RANCH	SE17-06-28-3	11739	30-11-70	0.	0.0	5.0	4.0	1.0	0.0	5.0	S B
PEDERSEN W.L.	NW14-05-26-3	11749	11-12-70	15.	8.0	10.0	10.0	0.0	0.0	10.0	S B N
HALYUNG J.R.	NE21-02-25-3	11790	26- 1-71	0.	0.0	3.0	2.0	1.0	0.0	3.0	S B N
PEDERSEN W.L.	SE25-05-26-3	11805	11- 2-71	5.	8.0	3.0	3.0	0.0	0.0	3.0	S B
PEDERSEN W.L.	NW14-05-26-3	11809	15- 2-71	5.	8.0	3.0	3.0	0.0	0.0	3.0	S B N
WILSON W.L.	NW18-06-29-3	11866	19- 5-71**	39.	8.0	26.0	26.0	0.0	0.0	26.0	S B
HUERY M.N.	SE09-03-25-3	11981	26-11-71	0.	0.0	3.0	1.0	2.0	0.0	3.0	S B
ARENDT B	NW11-05-23-3	12095	5- 5-72	24.	8.0	33.0	16.0	17.0	0.0	33.0	S B N
AGAR R.	SW17-05-26-3	12173	9- 8-72	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B N
KISELL J.	SE16-04-26-3	12266	10- 1-73	0.	0.0	3.0	2.0	1.0	0.0	3.0	S B
BLAKLEY L.	SE23-04-27-3	12455	2- 1-74	0.	0.0	3.0	2.0	1.0	0.0	3.0	S B
PRIDMORE J.E.	NE28-05-27-3	12638	23- 9-74	29.	8.0	20.0	20.0	0.0	0.0	20.0	S B
SANDERSON L.	SE05-05-28-3	12689	10- 2-75	11.	8.0	8.0	8.0	0.0	0.0	8.0	S B N
FORSETH ENTERPR.	NW15-03-25-3	12693	11- 2-75	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B
FORSETH ENTERPR.	SW15-03-25-3	12692	11- 2-75	0.	0.0	1.0	1.0	0.0	0.0	1.0	S B
FORSETH ENTERPR.	NW15-03-25-3	12691	11- 2-75	0.	0.0	4.0	3.0	1.0	0.0	4.0	S B
BERNDTSSON B.	NW29-05-25-3	12885	1- 2-76	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B N
KISELL S.F.	SW09-03-27-3	12933	8- 3-76**	20.	4.0	7.0	7.0	0.0	0.0	7.0	S B N
RAMSAY WM. EST.	SW14-07-30-3	13002	9- 7-76	0.	0.0	3.0	2.0	1.0	0.0	3.0	S B
WARBERG N	SE24-03-29-3	13067	13-12-76	0.	0.0	2.0	2.0	0.0	0.0	2.0	S B N
FORSETH ENTERPR.	NW26-03-25-3	13078	12- 1-77	0.	0.0	3.0	2.0	1.0	0.0	3.0	S B N
LEISMEISTER P	SE06-06-27-3	13107	14- 2-77	5.	7.0	3.0	3.0	0.0	0.0	3.0	S B N
CAN GOVT PFRA	SE02-01-26-3	13251	25- 5-77	0.	0.0	6.0	3.0	3.0	0.0	6.0	S B N
CAN GOVT PFRA	SE35-01-26-3	13250	25- 5-77	0.	0.0	6.0	3.0	3.0	0.0	6.0	S B
CAN GOVT PFRA	SW24-01-26-3	13249	25- 5-77	0.	0.0	6.0	3.0	3.0	0.0	6.0	S B
CAN GOVT PFRA	NW07-02-25-3	13272	27- 6-77	0.	0.0	7.0	3.0	4.0	0.0	7.0	S B
CAN GOVT PFRA	NW12-01-26-3	13288	5- 8-77	0.	0.0	13.0	3.0	10.0	0.0	13.0	S B N
PENNER G	SE01-04-26-3	13376	12-12-77	0.	0.0	4.0	2.0	2.0	0.0	4.0	S B N
LEWIS H	SW21-03-25-3	13384	6- 1-78**	0.	0.0	0.0	0.0	0.0	0.0	0.0	S B N
CHAPMAN	NW23-03-26-3	13389	12- 1-78**	0.	0.0	0.0	0.0	0.0	0.0	0.0	S B
LEISMEISTER A	NW25-04-29-3	13400	23- 1-78	7.	8.0	5.0	5.0	0.0	0.0	5.0	S B N
NOTUKEU G	NE32-03-27-3	13404	25- 1-78	0.	0.0	6.0	3.0	3.0	0.0	6.0	S B
NOTUKEU G	NW30-03-27-3	13403	25- 1-78	0.	0.0	6.0	3.0	3.0	0.0	6.0	S B
BRAUN J	SW18-04-28-3	13415	6- 2-78**	0.	0.0	0.0	0.0	0.0	0.0	0.0	S B
ALEXANDER G	NW08-05-23-3	13535	12- 5-78**	0.	0.0	0.0	0.0	0.0	0.0	0.0	S B N
MCGREGOR DARRYL	NE35-03-27-3	13673	1- 2-79**	0.	0.0	0.0	0.0	0.0	0.0	0.0	S B N
MEITZ P	NW04-06-27-3	13756	29- 3-79**	0.	0.0	0.0	0.0	0.0	0.0	0.0	S B

* - AUTHORITY
** - APPLICATION
N - NON CONTRIBUTING
B - BATTLE CREEK
M - MIDDLE CREEK
L - LODGE CREEK
C - MCRAE CREEK
S - SASKATCHEWAN
A - ALBERTA

The above listing was agreed and exchanged by the COMA Members on August 20, 1980.

TABLE 10. PROJECT INFORMATION FOR LODGE, MIDDLE AND MCRAE CREEK BASINS - ALBERTA AND SASKATCHEWAN

ALLOCATION DATA - ORDERED ACCORDING TO APPLICATION DATE

(acre-feet)

NAME	LOCATION	FILE NUM	DATE	IRRIGATED ACREAGE	DUTY IN	GROSS DIV	CONSUMPTIVE USE	LOSSES	RETURN FLOW	NET DEPLETION	PROVINCE STREAM
KRAUSS J.	NW29-07-03-4	295	30- 5- 5	0.	0.0	5.0	1.0	4.0	0.0	5.0	A L
M BAR RANCH LTD	NW16-06-01-4	303	9- 7- 5	255.	12.0	250.0	250.0	0.0	0.0	250.0	A M
CLARK T.S.	SW21-07-03-4	386	19- 6- 7	0.	0.0	100.0	60.0	0.0	40.0	60.0	A L
YEAST O.	NE01-07-03-4	370	13- 7- 7	390.	13.0	423.0	423.0	0.0	0.0	423.0	A L
SMITH K.H.	SE22-06-03-4	397	28-11- 7	100.	10.0	150.0	80.0	30.0	40.0	110.0	A L
MITCHELL J.	SE15-05-02-4	359	27-11- 7	100.	8.0	100.0	65.0	0.0	35.0	65.0	A L
SPANGLER J.M.	SW35-02-30-3	141	4- 2- 8	1019.	18.0	2036.0	1529.0	100.0	407.0	1629.0	S L
BIERBACH F.	SE25-06-01-4	4654	1- 4- 8	126.	12.0	189.0	126.0	0.0	63.0	126.0	A M
SMITH K.H.	SE09-06-03-4	412	1- 6- 8	42.	11.0	63.0	40.0	13.0	10.0	53.0	A L
SMITH K.H.	NE04-06-03-4	412	1- 6- 8	66.	12.0	99.0	65.0	15.0	19.0	80.0	A L
YEAST P.	NE34-06-03-4	415	25- 1- 9	220.	11.0	330.0	200.0	0.0	130.0	200.0	A L
M BAR RANCH LTD	SW32-05-01-4	365	23- 6- 9	166.	9.0	175.0	125.0	0.0	50.0	125.0	A M
MIDDLEFORK RANCH	NE04-04-29-3	205	6-12-10	43.	17.0	60.0	60.0	0.0	0.0	60.0	S M
SILICH A.	NW23-03-29-3	289	29- 6-16	17.	8.0	17.0	13.0	4.0	0.0	17.0	S M
VOSSLER C.	NE34-06-02-4	920	10- 3-19	192.	6.0	128.0	90.0	0.0	38.0	90.0	A M
HARRIGAN R.E.	SE22-05-01-4	1422	10- 7-22	0.	0.0	28.0	1.0	27.0	0.0	28.0	A M
TRUMPOUR O.H.	NW24-03-29-3	410	27-12-22	36.	8.0	24.0	24.0	0.0	0.0	24.0	S M
SPANGLER C.B.	SW35-02-30-3	416	28- 8-23*	0.	0.0	0.0	0.0	0.0	0.0	0.0	S M
KUSLER H.	SW01-07-02-4	1830	10- 3-26	40.	6.0	27.0	20.0	0.0	7.0	20.0	A M
LUMAN L.W.	NE25-03-29-3	476	3- 3-27	0.	0.0	4.0	2.0	2.0	0.0	4.0	S M
WALBURGER H.G.	NE25-03-01-4	2130	9- 2-31	10.	6.0	7.0	5.0	0.0	2.0	5.0	A L
HALLADAY C.	NW32-02-28-3	582	5- 7-35	5.	8.0	6.0	4.0	2.0	0.0	6.0	S C
BUCHANAN H.L.	SW10-01-29-3	593	13- 7-35	22.	8.0	15.0	15.0	0.0	0.0	15.0	S M
TRUMPOUR O.	NW27-02-29-3	663	22- 8-35	0.	0.0	8.0	3.0	5.0	0.0	8.0	S M
STERLING S.	NE04-04-28-3	735	20- 9-35	0.	0.0	4.0	2.0	2.0	0.0	4.0	S M
PIERCE J.A.	NW18-03-28-3	755	1-10-35	0.	0.0	3.0	2.0	1.0	0.0	3.0	S C
PFRA	NE21-05-30-3	771	9-10-35*	0.	0.0	1240.0	0.0	1240.0	0.0	1240.0	S M
PEDERSON L.	SE22-02-29-3	788	15-10-35	12.	8.0	13.0	8.0	5.0	0.0	13.0	S M
PEDERSEN L.	SW22-02-29-3	787	15-10-35	24.	8.0	16.0	16.0	0.0	0.0	16.0	S M
GRIFFITHS G.	SE29-03-30-3	831	15-11-35	126.	8.0	108.0	84.0	24.0	0.0	108.0	S L
GRIFFITHS G.	SW21-03-30-3	832	15-11-35	0.	0.0	0.0	0.0	0.0	0.0	0.0	S M
MITCHELL RANCH	SW25-05-30-3	835	20-11-35	705.	15.0	1088.0	870.0	0.0	218.0	870.0	S M
LUMAN L.W.	SW25-03-29-3	839	25-11-35	0.	0.0	1.0	1.0	0.0	0.0	1.0	S M
M BAR RANCH LTD	NW16-06-01-4	303	4- 4-36*	0.	0.0	275.0	60.0	200.0	15.0	260.0	A M
HASSARD C.	NE33-07-03-4	2935	25- 4-36*	13.	7.0	13.0	8.0	0.0	5.0	8.0	A L
WAGNER D.D.	SW05-03-28-3	902	15- 5-36	0.	0.0	5.0	2.0	3.0	0.0	5.0	S C
TURNBULL WM.	SE04-04-28-3	1060	8- 8-36	0.	0.0	1.0	1.0	0.0	0.0	1.0	S M
MCINERNEY T.	NE01-02-29-3	1070	11- 8-36	0.	0.0	3.0	3.0	0.0	0.0	3.0	S C
SCHAFER L.S.	SE05-04-28-3	1234	14- 9-36	0.	0.0	4.0	1.0	3.0	0.0	4.0	S M
TRUMPOUR O.H.	NW28-02-29-3	1394	20-10-36	0.	0.0	3.0	3.0	0.0	0.0	3.0	S M
TRUMPOUR O.H.	NW24-03-29-3	1583	9- 2-37	19.	8.0	14.0	13.0	1.0	0.0	14.0	S M
TRUMPOUR O.H.	SW24-03-29-3	1582	9- 2-37	16.	8.0	10.0	10.0	0.0	0.0	10.0	S M
SCHAFER L.S.	SE31-03-28-3	1801	27- 5-37	0.	0.0	2.0	1.0	1.0	0.0	2.0	S M
SHOCK J.J.	NE25-07-03-4	3787	21- 7-37*	43.	8.0	45.0	30.0	0.0	15.0	30.0	A L
DENNIS R.W.	NE06-03-28-3	2455	17-11-37	1.	8.0	1.0	1.0	0.0	0.0	1.0	S C
DENNIS R.W.	NE06-03-28-3	2456	17-11-37	1.	8.0	1.0	1.0	0.0	0.0	1.0	S C
WAGNER M.J.	SW16-03-28-3	2696	12- 3-38	0.	0.0	4.0	2.0	2.0	0.0	4.0	S C
HELLAWELL J.H.	SW22-06-03-4	4566	23- 3-38	0.	0.0	3.0	1.0	2.0	0.0	3.0	A L
SCHAFER M.V.	SW01-04-29-3	2930	30- 6-38	0.	0.0	3.0	2.0	1.0	0.0	3.0	S M
SCHAFER L.S.	SE07-04-28-3	3186	14-11-38	0.	0.0	1.0	1.0	0.0	0.0	1.0	S M
BIERBACH F.	SW25-06-01-4	4654	30-11-38	180.	8.0	180.0	120.0	0.0	60.0	120.0	A M
PFRA	SE29-01-29-3	3433	6- 5-39	0.	0.0	3.0	2.0	1.0	0.0	3.0	S L
PFRA	NW11-01-29-3	3434	6- 5-39	0.	0.0	10.0	5.0	5.0	0.0	10.0	S C
PFRA	SE17-02-28-3	3428	6- 5-39	0.	0.0	12.0	5.0	7.0	0.0	12.0	S C
EREMENKO E.	NE21-01-30-3	3714	4-10-39	0.	0.0	7.0	3.0	4.0	0.0	7.0	S L N
EREMENKO C.	NE33-01-30-3	3713	4-10-39	0.	0.0	6.0	3.0	3.0	0.0	6.0	S L
GRACEY J.	NW25-05-04-4	5908	18- 3-40	0.	0.0	5.0	1.0	4.0	0.0	5.0	A L
HANSCHAR W.	SE31-06-02-4	5959	27- 5-40	0.	0.0	3.0	1.0	2.0	0.0	3.0	A M
DUCKS UNLIMITED	NE21-05-30-3	3983	9-12-40**	0.	0.0	0.0	0.0	0.0	0.0	0.0	S M
TRUMPOUR O.H.	SW28-02-29-3	4185	9-10-41	10.	8.0	7.0	7.0	0.0	0.0	7.0	S M
WAGNER D	NW03-04-28-3	4382	22- 6-42	5.	10.0	4.0	4.0	0.0	0.0	4.0	S M
BUCHANAN H.L.	NE35-02-29-3	4445	1-10-42	0.	0.0	29.0	10.0	19.0	0.0	29.0	S C
ERFMENKO D	SW10-02-29-3	4446	1-10-42	8.	4.0	3.0	3.0	0.0	0.0	3.0	S M
SILICH A	NW23-03-29-3	4517	20- 8-43	0.	0.0	4.0	2.0	2.0	0.0	4.0	S M
WAGNER M.J.	NE17-03-28-3	4604	1- 6-44	0.	0.0	2.0	1.0	1.0	0.0	2.0	S C
FRANZ J.	SW15-07-02-4	7169	23-10-44	0.	0.0	2.0	1.0	1.0	0.0	2.0	A M
KLEINKNECHT C.	SW02-06-04-4	6986	4- 5-45	0.	0.0	9.0	2.0	7.0	0.0	9.0	A L
WALKER M.	NE11-07-02-4	7475	25- 8-45	0.	0.0	3.0	1.0	2.0	0.0	3.0	A M
SMITH K.H.	NE08-06-03-4	412	22-10-45*	0.	0.0	15.0	6.0	5.0	4.0	11.0	A L
MIDDLE RANCH CO.	NE10-04-29-3	4932	30- 9-46	0.	0.0	2.0	1.0	1.0	0.0	2.0	S M
TRUMPOUR E.S.	NW24-03-29-3	4948	11-10-46	0.	0.0	1.0	1.0	0.0	0.0	1.0	S M
STOKE S.	SE20-02-29-3	4965	24-10-46	71.	3.0	48.0	48.0	0.0	0.0	48.0	S M
FLYING R RANCHES	SE23-04-02-4	8001	7- 7-47	0.	0.0	11.0	1.0	10.0	0.0	11.0	A L
BUCHANAN H.L.	NE04-03-29-3	5136	8- 8-47	140.	8.0	109.0	93.0	16.0	0.0	109.0	S M
BLUEFIELD GR	SE11-06-02-4	8027	27-10-47	0.	0.0	10.0	2.0	8.0	0.0	10.0	A M
SMITH K.H.	SE17-06-03-4	8097	31- 3-48	182.	7.0	150.0	105.0	15.0	30.0	120.0	A L
COMELY GRAZING	SW34-04-03-4	8230	29-10-48	0.	0.0	5.0	1.0	4.0	0.0	5.0	A L
COMELY GRAZING	SE15-04-03-4	8228	29-10-48	0.	0.0	6.0	3.0	3.0	0.0	6.0	A L
WALBURGER B.J.	SE26-04-01-4	9492	1-12-49	0.	0.0	16.0	2.0	14.0	0.0	16.0	A L
ALEXAWAN GR CO-OP	SW26-03-30-3	6122	15- 6-50	0.	0.0	11.0	5.0	6.0	0.0	11.0	S L
STERLING S.	NW04-04-28-3	6196	24- 7-50	6.	8.0	4.0	4.0	0.0	0.0	4.0	S M
BIERBACH F.	SW25-06-01-4	8752	28- 8-50	0.	0.0	20.0	5.0	15.0	0.0	20.0	A M
VOSSLER C.	SE03-07-02-4	920	7-11-51	0.	0.0	64.0	34.0	15.0	15.0	49.0	A M
JONES A.L.	NE32-04-29-3	6637	27- 6-52	9.	8.0	6.0	6.0	0.0	0.0	6.0	S M N
PIERCE J.A.	NW29-03-28-3	6645	18- 7-52	0.	0.0	3.0	1.0	2.0	0.0	3.0	S M
HALLADAY J.D.	SE36-02-29-3	6677	29- 9-52	0.	0.0	14.0	3.0	11.0	0.0	14.0	S C
HALLADAY J.D.	NW24-02-29-3	6681	14-10-52	0.	0.0	10.0	1.0	9.0	0.0	10.0	S C
YEAST P.	SW13-06-03-4	9218	5-10-53	0.	0.0	3.0	1.0	2.0	0.0	3.0	A L
YEAST P.	NE25-06-04-4	9217	5-10-53	0.	0.0	12.0	2.0	10.0	0.0	12.0	A L
YEAST P.	NW29-06-03-4	9215	5-10-53	0.	0.0	10.0	4.0	6.0	0.0	10.0	A L
KLEINKNECHT D.	SE14-06-04-4	9257	11-12-53	0.	0.0	4.0	1.0	3.0	0.0	4.0	A L
HASSARD H.	SW13-07-04-4	9302	28- 6-54	0.	0.0	20.0	3.0	17.0	0.0	20.0	A M
BLUEFIELD GR	NE17-06-02-4	8027	31-10-55	0.	0.0	40.0	5.0	35.0	0.0	40.0	A M
SCHAFER L.S.	NE31-03-28-3	7196	3-11-55	0.	0.0	4.0	1.0	3.0	0.0	4.0	S M
KLEINKNECHT D.	NE11-06-04-4	9531	4- 5-56	0.	0.0	9.0	2.0	7.0	0.0	9.0	A L
HAUCK BROS.	NE16-07-03-4	9555	3- 7-56	0.	0.0	5.0	1.0	4.0	0.0	5.0	A L
HAUCK BROS.	SE26-07-03-4	9555	11- 7-56	0.	0.0	3.0	1.0	2.0	0.0	3.0	A L

LODGE + MIDDLE + MCRAE CREEKS ALLOCATION DATA-SASKATCHEWAN AND ALBERTA
ALLOCATION DATA - ORDERED ACCORDING TO APPLICATION DATE

(acre-feet)

NAME	LOCATION	FILE NUM	DATE	IRRIGATED ACREAGE	DUTY IN	GROSS DIV	CONSUMPTIVE USE	LOSSES	RETURN FLOW	NET DEPLETION	PROVINCE STREAM
MUDIE E.	SE35-07-03-4	9560	30- 7-56	0.	0.0	3.0	1.0	2.0	0.0	3.0	A L
HASSARD H.	NE08-07-03-4	1102	23-10-56	0.	0.0	2.0	2.0	0.0	0.0	2.0	A L
HASSARD H.	SE14-07-04-4	9601	23-10-56	0.	0.0	6.0	1.0	5.0	0.0	6.0	A L
BUCHANAN H.L.	SW18-03-29-3	7436	14- 3-57	0.	0.0	2.0	1.0	1.0	0.0	2.0	S L
HASSARD H.	SW14-07-04-4	9654	2- 5-57	34.	10.0	35.0	28.0	0.0	7.0	28.0	A L
STIRLING S.	NE36-03-29-3	7596	18-11-57	0.	0.0	9.0	2.0	7.0	0.0	9.0	S M
ZENTNER J	SW20-03-28-3	7644	5- 3-58	0.	0.0	8.0	3.0	5.0	0.0	8.0	S M
WOOLLEY H.	NW17-07-02-4	9808	2- 5-58	0.	0.0	3.0	1.0	2.0	0.0	3.0	A L
BOHNET A.B.	SW05-07-02-4	9813	8- 5-58	0.	0.0	3.0	1.0	2.0	0.0	3.0	A M
PFRA	SW24-01-29-3	7692	29- 5-58	0.	0.0	8.0	4.0	4.0	0.0	8.0	S L
PFRA	NE05-02-28-3	7694	29- 5-58	0.	0.0	10.0	5.0	5.0	0.0	10.0	S C
WAGNER M.J.	SE23-04-30-3	7775	4- 8-58	0.	0.0	17.0	5.0	12.0	0.0	17.0	S M N
BATTLE CK. RANCH	SE29-04-30-3	7798	14- 8-58	0.	0.0	4.0	1.0	3.0	0.0	4.0	S L
GRACEY J.	NE35-05-04-4	9928	14-10-58*	0.	0.0	20.0	2.0	18.0	0.0	20.0	A L
PFRA	SW35-02-30-3	8059	21- 5-59	0.	0.0	480.0	0.0	480.0	0.0	480.0	S L
EREMENKO E.	NW10-02-29-3	8118	2- 7-59	0.	0.0	6.0	3.0	3.0	0.0	6.0	S M
BATTLE CK RANCH	SE25-04-30-3	8250	24- 9-59	25.	8.0	24.0	17.0	7.0	0.0	24.0	S M
BATTLE CK RANCH	NW19-04-29-3	8249	24- 9-59	0.	0.0	3.0	2.0	1.0	0.0	3.0	S M
M BAR RANCH LTD	SW13-06-01-4	10137	19-10-59	417.	5.0	200.0	160.0	0.0	40.0	160.0	A M N
PIERCE J.A.	NE30-03-28-3	8299	13-11-59*	13.	8.0	10.0	9.0	1.0	0.0	10.0	S M
KLEINKNECHT D.	NW11-06-04-4	10214	24- 2-60	0.	0.0	2.0	1.0	1.0	0.0	2.0	A L
PFRA	NW33-01-28-3	8399	15- 3-60	0.	0.0	10.0	5.0	5.0	0.0	10.0	S C
PFRA	NW16-02-28-3	8398	15- 3-60	0.	0.0	8.0	5.0	3.0	0.0	8.0	S C
HELLAWELL P.	SW10-07-03-4	10245	20- 6-60	0.	0.0	10.0	1.0	9.0	0.0	10.0	A L
REYNOLDS K.	NE06-03-28-3	8531	18- 7-60	39.	8.0	38.0	26.0	12.0	0.0	38.0	S C
REYNOLDS W.	NE26-02-29-3	8555	4- 8-60	0.	0.0	16.0	1.0	15.0	0.0	16.0	S C
PEDERSEN L.	NE21-02-29-3	8743	12-12-60	0.	0.0	2.0	1.0	1.0	0.0	2.0	S M N
BUCHANAN H.L.	NW25-01-30-3	8936	19- 6-61	0.	0.0	13.0	5.0	8.0	0.0	13.0	S M N
BUCHANAN H.L.	NW02-03-29-3	8941	23- 6-61	0.	0.0	4.0	2.0	2.0	0.0	4.0	S M N
WALBURGER B.J.	NW03-04-01-4	10537	8- 8-61	0.	0.0	7.0	1.0	6.0	0.0	7.0	A L
CAFT RANH LTD.	NW21-05-29-3	9455	22- 5-62	0.	0.0	15.0	5.0	10.0	0.0	15.0	S M
MCKINLEY BROS.	SE20-05-03-4	10874	7- 6-62	0.	0.0	2.0	1.0	1.0	0.0	2.0	A L
JANKE C.	NE32-06-01-4	10892	18- 6-62	0.	0.0	2.0	1.0	1.0	0.0	2.0	A M
BATTLE CK. RANCH	NE36-04-30-3	9598	20- 8-62	0.	0.0	17.0	5.0	12.0	0.0	17.0	S M
AGRI CANADA	SE01-03-01-4	9564	5-10-62*	0.	0.0	400.0	275.0	125.0	0.0	400.0	A L
TRUMPOUR D	SW27-02-29-3	9670	11-10-62	0.	0.0	12.0	5.0	7.0	0.0	12.0	S M
BOHNET C.	NE29-07-02-4	11124	11-12-62	0.	0.0	1.0	1.0	0.0	0.0	1.0	A M
FLYING R RANCHES	SE11-04-02-4	11137	18-12-62	0.	0.0	8.0	1.0	7.0	0.0	8.0	A L
FLYING R RANCHES	SW18-04-01-4	11136	18-12-62	0.	0.0	10.0	1.0	9.0	0.0	10.0	A L
COMREY GRAZING	SE02-05-03-4	11140	20-12-62	0.	0.0	3.0	1.0	2.0	0.0	3.0	A L
COMREY GRAZING	SE16-04-03-4	11139	20-12-62	0.	0.0	2.0	1.0	1.0	0.0	2.0	A L
COMREY GRAZING	SW30-04-02-4	11138	20-12-62	0.	0.0	10.0	1.0	9.0	0.0	10.0	A L
YEAST P.	NE31-05-02-4	11159	12- 2-63	0.	0.0	5.0	2.0	3.0	0.0	5.0	A L
J & R JANS	SE19-07-02-4	11246	12- 2-63	0.	0.0	1.0	0.0	1.0	0.0	1.0	A L
YEAST P.	NW31-06-03-4	11166	12- 2-63	0.	0.0	5.0	1.0	4.0	0.0	5.0	A L
YEAST P.	SW31-06-03-4	11165	12- 2-63	0.	0.0	4.0	2.0	2.0	0.0	4.0	A L
YEAST P.	NE04-06-02-4	11163	12- 2-63	0.	0.0	10.0	1.0	9.0	0.0	10.0	A M
YEAST P.	NE32-05-02-4	11160	12- 2-63	0.	0.0	5.0	1.0	4.0	0.0	5.0	A M
YEAST P.	SW08-06-02-4	11164	12- 2-63	0.	0.0	10.0	1.0	9.0	0.0	10.0	A L
YEAST P.	NE16-05-03-4	11161	12- 2-63	0.	0.0	3.0	1.0	2.0	0.0	3.0	A L
KLEINKNECHT D&C	NW14-06-04-4	9763	14- 2-63	3.	8.0	3.0	2.0	1.0	0.0	3.0	A L
FLYING R RANCHES	NW15-04-02-4	11271	19- 2-63	3.	8.0	1.0	1.0	0.0	0.0	1.0	A L
MITCHELL J.	SE29-04-02-4	9805	27- 2-63*	0.	0.0	4.0	1.0	3.0	0.0	4.0	A L
KUSLER H.	SW26-06-02-4	11245	1- 3-63	0.	0.0	1.0	1.0	0.0	0.0	1.0	A M
KUSLER H.	SW26-03-02-4	11270	11- 3-63*	0.	0.0	36.0	1.0	35.0	0.0	36.0	A L
BETCKER R.	SW35-05-01-4	8414	20- 3-63	45.	5.0	30.0	19.0	3.0	8.0	22.0	A M
KUSLER H.	NW25-06-02-4	11400	8- 7-63	0.	0.0	5.0	2.0	3.0	0.0	5.0	A M
BUCHANAN G.A.	SE36-01-30-3	10136	5- 2-64	34.	8.0	23.0	23.0	0.0	0.0	23.0	S L
PFRA	NW35-02-30-3	10169	6- 4-64**	626.	4.0	200.0	200.0	0.0	0.0	200.0	S M
HASSARD H.	SE19-07-03-4	11728	29- 8-64	0.	0.0	2.0	1.0	1.0	0.0	2.0	A L
JONES A.J.	SW29-04-29-3	10372	1-10-64	27.	8.0	18.0	18.0	0.0	0.0	18.0	S M
BUCHANAN H.L.	SE23-01-30-3	10377	7-10-64	0.	0.0	13.0	5.0	8.0	0.0	13.0	S M
TRUMPOUR D.H.	NE13-01-30-3	10382	9-10-64	0.	0.0	7.0	3.0	4.0	0.0	7.0	S L
ALTA WATER RES	SE05-07-03-4	9951	8- 1-65	0.	0.0	400.0	310.0	90.0	0.0	400.0	A L
KRAUSS J.	SE30-07-03-4	11869	15- 6-65*	0.	0.0	2.0	1.0	1.0	0.0	2.0	A L
GRIFFITHS G.	SE20-03-30-3	10600	19- 8-65**	85.	8.0	56.0	56.0	0.0	0.0	56.0	S M
ALTA LANDS	SW19-06-03-4	11966	23- 9-65*	0.	0.0	50.0	12.0	18.0	0.0	30.0	A L
SCHAFER P.A.	SE30-03-28-3	10650	2-11-65	0.	0.0	1.0	1.0	0.0	0.0	1.0	S M
PEDERSEN L.	NW22-02-29-3	10652	3-11-65	0.	0.0	7.0	2.0	5.0	0.0	7.0	S M
PEDERSEN L.	NW22-02-29-3	10654	4-11-65	0.	0.0	2.0	1.0	1.0	0.0	2.0	S M
R.N. OF RENO	NW03-04-28-3	10657	8-11-65	0.	0.0	3.0	2.0	1.0	0.0	3.0	S M N
TRUMPOUR D.H.	NE28-02-29-3	10660	15-11-65	0.	0.0	6.0	1.0	5.0	0.0	6.0	S M
PEDERSEN L.	NE22-02-29-3	10663	18-11-65	12.	8.0	8.0	8.0	0.0	0.0	8.0	S M
TRUMPOUR D.H.	SW27-02-29-3	10671	24-11-65	0.	0.0	3.0	1.0	2.0	0.0	3.0	S M N
MIDDLE RANCH CO.	SE30-03-29-3	10670	24-11-65	0.	0.0	6.0	4.0	2.0	0.0	6.0	S M
PEDERSEN L.	NW15-02-29-3	10667	24-11-65	0.	0.0	4.0	2.0	2.0	0.0	4.0	S M
MIDDLE RANCH CO.	NE25-03-30-3	10668	24-11-65	0.	0.0	2.0	1.0	1.0	0.0	2.0	S L
GILSSDAY GRAZING	SE34-03-02-4	12058	9- 3-66	0.	0.0	2.0	1.0	1.0	0.0	2.0	A L
PEDERSEN G.	NE15-02-29-3	10789	12- 7-66	22.	8.0	15.0	15.0	0.0	0.0	15.0	S M
ALTA WATER RLS	NE31-05-03-4	8632	1-11-66	0.	0.0	800.0	620.0	180.0	0.0	800.0	A L
BLUEFIELD GR	NW18-06-02-4	12183	15-11-66	0.	0.0	5.0	2.0	3.0	0.0	5.0	A L
SMITH K.H.	NE11-06-03-4	12184	12- 1-67	0.	0.0	2.0	1.0	1.0	0.0	2.0	A L
ALTAWAN GR CO-OP	SW25-03-30-3	10877	9- 2-67	13.	8.0	9.0	9.0	0.0	0.0	9.0	S L
ALTA WATER RLS	SE30-03-02-4	12234	5- 5-67	0.	0.0	650.0	450.0	200.0	0.0	650.0	A L
SAVILLE J.	NE29-02-30-3	10989	10- 1-68	0.	0.0	7.0	3.0	4.0	0.0	7.0	S L
STIRLING S.	NW02-04-29-3	11044	5- 2-68	35.	4.0	12.0	12.0	0.0	0.0	12.0	S M N
SAVILLE J	SE07-02-30-3	11069	21- 2-68	0.	0.0	6.0	3.0	3.0	0.0	6.0	S M
WAGNER H.	SW09-03-28-3	11146	23- 4-68	77.	8.0	52.0	52.0	0.0	0.0	52.0	S C
JONES A.J.	SW29-04-29-3	11204	18- 9-68	27.	8.0	18.0	18.0	0.0	0.0	18.0	S M
HEIDINGER C.	NW20-06-03-4	12545	12-11-68	0.	0.0	5.0	1.0	4.0	0.0	5.0	A L
SAVILLE J.M.	NE31-02-30-3	11300	31- 1-69	0.	0.0	6.0	4.0	2.0	0.0	6.0	S L
BUCHANAN H.L.	SE15-03-29-3	11336	11- 2-69	0.	0.0	9.0	5.0	4.0	0.0	9.0	S M
SAVILLE J.M.	SE15-02-30-3	11370	25- 2-69	0.	0.0	2.0	1.0	1.0	0.0	2.0	S L
HEIDINGER E.	NW33-05-03-4	12648	7- 3-69	0.	0.0	8.0	1.0	7.0	0.0	8.0	A L
REYNOLDS K.D.	NW07-03-28-3	11386	18- 3-69	0.	0.0	6.0	2.0	4.0	0.0	6.0	S C
REYNOLDS A.E.	NW08-03-28-3	11385	18- 3-69	0.	0.0	5.0	2.0	3.0	0.0	5.0	S C

LODGE + MIDDLE + MCRAE CREEKS ALLOCATION DATA-SASKATCHEWAN AND ALBERTA
ALLOCATION DATA - ORDERED ACCORDING TO APPLICATION DATE (acre-feet)

NAME	LOCATION	FILE NUM	DATE	IRRIGATED ACREAGE	DUTY IN	GROSS DIV	CONSUMPTIVE USE	LOSSES	RETURN FLOW	NET DEPLETION	PROVINCE STREAM
YEAST P.	SW25-06-03-4	12719	12- 5-69	47.	6.0	30.0	24.0	0.0	6.0	24.0	A L
REESOR R.D.	NE14-04-29-3	11436	10- 7-69	12.	6.0	6.0	6.0	0.0	0.0	6.0	S M N
TRUMPOUR D.H.	SW14-03-29-3	11569	9- 2-70	0.	0.0	7.0	4.0	3.0	0.0	7.0	S M
REYNOLDS W.	NE01-03-29-3	11725	2-11-70	0.	0.0	4.0	2.0	2.0	0.0	4.0	S C
MIDDLE RANCH CO.	SW06-04-29-3	11726	2-11-70	0.	0.0	12.0	7.0	5.0	0.0	12.0	S M
MIDDLE RANCH CO.	SW06-04-29-3	11727	2-11-70	9.	6.0	6.0	6.0	0.0	0.0	6.0	S M
MIDDLE RANCH CO.	NW31-03-29-3	11738	30-11-70	0.	0.0	6.0	4.0	2.0	0.0	6.0	S M
MIDDLE RANCH CO.	NE01-04-30-3	11746	9-12-70	17.	8.0	12.0	12.0	0.0	0.0	12.0	S M
PETTYJOHN T.E.W.	SW32-05-29-3	11768	12- 1-71	29.	8.0	20.0	20.0	0.0	0.0	20.0	S M
ROBINET C.	SW29-07-02-4	13471	22- 4-71*	0.	0.0	1.0	0.0	1.0	0.0	1.0	A L
MIDDLE RANCH CO.	NE04-04-29-3	11862	14- 5-71	34.	8.0	31.0	23.0	8.0	0.0	31.0	S M
JONES A.J.	SW29-04-29-3	11906	20- 7-71	63.	8.0	42.0	42.0	0.0	0.0	42.0	S M
DUCKS UNLIMITED	NE01-05-03-4	14112	25- 8-71*	0.	0.0	150.0	10.0	140.0	0.0	150.0	A L
MEDICINE LOG SEK	SW07-08-02-4	13715	1-12-71	0.	0.0	1.0	1.0	0.0	0.0	1.0	A L
YEAST P.	SE10-06-03-4	13803	4- 1-72	77.	9.0	328.0	60.0	20.0	248.0	80.0	A L
MIDDLE RANCH CO.	NW34-03-29-3	12025	1- 2-72	19.	8.0	13.0	13.0	0.0	0.0	13.0	S M
MIDDLE RANCH CO.	NW20-04-29-3	12352	16- 4-73*	27.	8.0	18.0	18.0	0.0	0.0	18.0	S M
WAGNER M.J.	NE04-03-28-3	12375	30- 5-73	12.	6.0	6.0	6.0	0.0	0.0	6.0	S C
KALLENBURGER W.	NW05-07-02-4	11248	19- 7-73	0.	0.0	1.0	1.0	0.0	0.0	1.0	A M
HASSARD H.	NE14-07-04-4	4964	24- 9-73	0.	0.0	1.0	1.0	0.0	0.0	1.0	A M
WOOLLEY H.	SW17-07-02-4	11249	28- 9-73*	0.	0.0	1.0	0.0	1.0	0.0	1.0	A M
HEIDINGER L&M	NE03-06-03-4	15617	9-10-73*	161.	12.0	161.0	161.0	0.0	0.0	161.0	A L
SAVILLE J.M.	SW21-03-30-3	12482	31- 1-74**	67.	8.0	44.0	44.0	0.0	0.0	44.0	S M
SAVILLE J.M.	SE29-03-30-3	12481	31- 1-74	14.	8.0	10.0	10.0	0.0	0.0	10.0	S L
SAVILLE J.M.	NE21-03-30-3	12480	31- 1-74	4.	8.0	3.0	3.0	0.0	0.0	3.0	S L
SAVILLE J.M.	NE17-03-30-3	12479	31- 1-74	11.	8.0	10.0	8.0	2.0	0.0	10.0	S L
SAVILLE J.M.	NW09-03-30-3	12478	31- 1-74	8.	8.0	7.0	5.0	2.0	0.0	7.0	S L
MESSNER D.	SW15-03-28-3	12518	11- 3-74	0.	0.0	3.0	2.0	1.0	0.0	3.0	S C
WALBURGER B.J.	E 36-03-01-4	16430	2- 5-74**	26.	4.0	38.0	38.0	0.0	0.0	38.0	A L
WALBURGER B.J.	SW13-04-01-4	16430	2- 5-74**	21.	13.0	50.0	23.0	24.0	3.0	47.0	A L
SMITH K.H.	NW08-06-03-4	16417	6- 5-74	0.	0.0	5.0	1.0	4.0	0.0	5.0	A L
SAVILLE J.M.	SE24-03-01-4	16378	29- 1-75	16.	9.0	14.0	12.0	2.0	0.0	14.0	A L
SCHAFER N.V.	SE23-03-29-3	12715	24- 2-75	17.	4.0	6.0	6.0	0.0	0.0	6.0	S M N
SHORT GRASS RNCH	SW36-06-02-4	16710	11- 8-76	0.	0.0	2.0	1.0	1.0	0.0	2.0	A L
FRETTS L.S.	SE31-07-02-4	18497	10- 3-78*	0.	0.0	2.0	1.0	1.0	0.0	2.0	A L
FRETTS L.S.	SE30-07-02-4	18498	10- 3-78*	0.	0.0	1.0	1.0	0.0	0.0	1.0	A L
HARRIGAN & SCOTT	SE15-05-01-4	19066	29- 3-79	0.	0.0	5.0	1.0	4.0	0.0	5.0	A L

* - AUTHORITY
** - APPLICATION
N - NON CONTRIBUTING
B - BATTLE CREEK
M - MIDDLE CREEK
L - LODGE CREEK
C - MCRAE CREEK
S - SASKATCHEWAN
A - ALBERTA

The above listing was agreed and exchanged by the COIAA Members on August 20, 1980.

TABLE 11. PROJECT INFORMATION FOR BATTLE CREEK BASIN - ALBERTA

ALLOCATION DATA - ORDERED ACCORDING TO APPLICATION DATE

(acre-feet)

NAME	LOCATION	FILE NUM	DATE	IRRIGATED ACREAGE	DUTY IN	GROSS DIV	CONSUMPTIVE USE	LOSSES	RETURN FLOW	NET DEPLETION	PROVINCE STREAM
NELSON W.K.	NW13-08-01-4	232	10-10- 4	50.	11.0	75.0	45.0	30.0	0.0	75.0	A B
WAT RES DI ALTA	SE20-08-01-4	10707	21-12-61	0.	0.0	700.0	400.0	300.0	0.0	700.0	A B

* - AUTHORITY
** - APPLICATION
N - NON CONTRIBUTING
B - BATTLE CREEK
M - MIDDLE CREEK
L - LODGE CREEK
C - McRAE CREEK
S - SASKATCHEWAN
A - ALBERTA

The above listing was agreed and exchanged by the COIAA Members on August 20, 1980.

TABLE 12. PROJECT INFORMATION FOR LODGE CREEK BASIN - ALBERTA

ALLOCATION DATA - ORDERED ACCORDING TO APPLICATION DATE (acre-feet)

NAME	LOCATION	FILE NUM	DATE	IRRIGATED ACREAGE	DUTY IN	GROSS DIV	CONSUMPTIVE USE	LOSSES	RETURN FLOW	NET DEPLETION	PROVINCE STREAM
KRAUSS J.	NW29-07-03-4	295	30- 5- 5	0.	0.0	5.0	1.0	4.0	0.0	5.0	A L
CLARK T.S.	SW21-07-03-4	386	19- 6- 7	0.	0.0	100.0	60.0	0.0	40.0	60.0	A L
YEAST D.	NE01-07-03-4	370	13- 7- 7	390.	13.0	423.0	423.0	0.0	0.0	423.0	A L
SMITH K.H.	SE22-06-03-4	397	24-11- 7	100.	10.0	150.0	80.0	30.0	40.0	110.0	A L
MITCHELL J.	SE15-05-02-4	359	27-11- 7	100.	8.0	100.0	65.0	0.0	35.0	65.0	A L
SMITH K.H.	SE09-06-03-4	412	1- 6- 8	42.	11.0	63.0	40.0	13.0	10.0	53.0	A L
SMITH K.H.	NE04-06-03-4	412	1- 6- 8	66.	12.0	99.0	65.0	15.0	19.0	80.0	A L
YEAST P.	NE34-06-03-4	415	25- 1- 9	220.	11.0	330.0	200.0	0.0	130.0	200.0	A L
WALBURGER H.G.	NE25-03-01-4	2130	9- 2-31	10.	6.0	7.0	5.0	0.0	2.0	5.0	A L
HASSARD C.	NE33-07-03-4	2935	25- 4-36*	13.	7.0	13.0	8.0	0.0	5.0	8.0	A L
SHOCK J.J.	NE25-07-03-4	3787	21- 7-37*	43.	8.0	45.0	30.0	0.0	15.0	30.0	A L
HELLAWELL J.H.	SW22-06-03-4	4566	23- 3-38	0.	0.0	3.0	1.0	2.0	0.0	3.0	A L
GRACEY J.	NW25-05-04-4	5908	18- 3-40	0.	0.0	5.0	1.0	4.0	0.0	5.0	A L
KLEINKNECHT C.	SW02-06-04-4	6986	4- 8-45	0.	0.0	9.0	2.0	7.0	0.0	9.0	A L
SMITH K.H.	NE08-06-03-4	412	22-10-45*	0.	0.0	15.0	6.0	5.0	4.0	11.0	A L
FLYING R RANCHES	SE23-04-02-4	8001	7- 7-47	0.	0.0	11.0	1.0	10.0	0.0	11.0	A L
SMITH K.H.	SE17-06-03-4	8097	31- 3-48	182.	7.0	150.0	105.0	15.0	30.0	120.0	A L
COMREY GRAZING	SW34-04-03-4	8230	29-10-48	0.	0.0	5.0	1.0	4.0	0.0	5.0	A L
COMREY GRAZING	SE15-04-03-4	8228	29-10-48	0.	0.0	6.0	3.0	3.0	0.0	6.0	A L
WALBURGER B.J.	SE26-04-01-4	8492	1-12-49	0.	0.0	16.0	2.0	14.0	0.0	16.0	A L
YEAST P.	NW29-06-03-4	9215	5-10-53	0.	0.0	10.0	4.0	6.0	0.0	10.0	A L
YEAST P.	SW13-06-03-4	9218	5-10-53	0.	0.0	3.0	1.0	2.0	0.0	3.0	A L
YEAST P.	NE25-06-04-4	9217	5-10-53	0.	0.0	12.0	2.0	10.0	0.0	12.0	A L
KLEINKNECHT O.	SE14-06-04-4	9257	11-12-53	0.	0.0	4.0	1.0	3.0	0.0	4.0	A L
KLEINKNECHT O.	NE11-06-04-4	9531	4- 5-56	0.	0.0	9.0	2.0	7.0	0.0	9.0	A L
HAUCK BROS.	NE16-07-03-4	9555	1- 7-56	0.	0.0	5.0	1.0	4.0	0.0	5.0	A L
HAUCK BROS.	SE26-07-03-4	9555	11- 7-56	0.	0.0	3.0	1.0	2.0	0.0	3.0	A L
MUDIE E.	SE35-07-03-4	9560	30- 7-56	0.	0.0	3.0	1.0	2.0	0.0	3.0	A L
HASSARD H.	NE08-07-03-4	1102	23-10-56	0.	0.0	2.0	2.0	0.0	0.0	2.0	A L
HASSARD H.	SE14-07-04-4	9601	23-10-56	0.	0.0	6.0	1.0	5.0	0.0	6.0	A L
HASSARD H.	SW14-07-04-4	9654	2- 5-57	34.	10.0	35.0	28.0	0.0	7.0	28.0	A L
WOOLLEY H.	NW17-07-02-4	9808	2- 5-58	0.	0.0	3.0	1.0	2.0	0.0	3.0	A L
GRACEY J.	NE35-05-04-4	9928	14-10-58*	0.	0.0	20.0	2.0	18.0	0.0	20.0	A L
KLEINKNECHT O.	NW11-06-04-4	10214	24- 2-60	0.	0.0	2.0	1.0	1.0	0.0	2.0	A L
HELLAWELL P.	SW10-07-03-4	10245	20- 6-60	0.	0.0	10.0	1.0	9.0	0.0	10.0	A L
WALBURGER B.J.	NW03-04-01-4	10537	8- 8-61	0.	0.0	7.0	1.0	6.0	0.0	7.0	A L
MCKINLEY BROS.	SE20-05-03-4	10874	7- 6-62	0.	0.0	2.0	1.0	1.0	0.0	2.0	A L
AGRI CANADA	SE01-03-01-4	9564	5-10-62*	0.	0.0	400.0	275.0	125.0	0.0	400.0	A L
FLYING R RANCHES	SE11-04-02-4	11137	18-12-62	0.	0.0	8.0	1.0	7.0	0.0	8.0	A L
FLYING R RANCHES	SW18-04-01-4	11136	18-12-62	0.	0.0	10.0	1.0	9.0	0.0	10.0	A L
COMREY GRAZING	SW30-04-02-4	11138	20-12-62	0.	0.0	10.0	1.0	9.0	0.0	10.0	A L
COMREY GRAZING	SE02-05-03-4	11140	20-12-62	0.	0.0	3.0	1.0	2.0	0.0	3.0	A L
COMREY GRAZING	SE14-04-03-4	11139	20-12-62	0.	0.0	2.0	1.0	1.0	0.0	2.0	A L
YEAST P.	NE31-05-02-4	11159	12- 2-63	0.	0.0	5.0	2.0	3.0	0.0	5.0	A L
J & R JANS	SE19-07-02-4	11206	12- 2-63	0.	0.0	1.0	0.0	1.0	0.0	1.0	A L
YEAST P.	NW31-06-03-4	11166	12- 2-63	0.	0.0	5.0	1.0	4.0	0.0	5.0	A L
YEAST P.	SW31-06-03-4	11165	12- 2-63	0.	0.0	4.0	2.0	2.0	0.0	4.0	A L
YEAST P.	SW08-06-02-4	11164	12- 2-63	0.	0.0	10.0	1.0	9.0	0.0	10.0	A L
YEAST P.	NE16-05-03-4	11161	12- 2-63	0.	0.0	3.0	1.0	2.0	0.0	3.0	A L
KLEINKNECHT D&C	NW14-06-04-4	9763	14- 2-63	3.	8.0	3.0	2.0	1.0	0.0	3.0	A L
FLYING R RANCHES	NW15-04-02-4	11271	19- 2-63	0.	0.0	1.0	1.0	0.0	0.0	1.0	A L
MITCHELL J.	SE29-04-02-4	8805	27- 2-63*	0.	0.0	4.0	1.0	3.0	0.0	4.0	A L
KUSLER H.	SW26-03-02-4	11270	11- 3-63*	0.	0.0	36.0	1.0	35.0	0.0	36.0	A L
HASSARD H.	SE19-07-03-4	11728	29- 8-64	0.	0.0	2.0	1.0	1.0	0.0	2.0	A L
ALTA WATER RES	SE05-07-03-4	9951	3- 1-65	0.	0.0	400.0	310.0	90.0	0.0	400.0	A L
KRAUSS J.	SE30-07-03-4	11869	15- 6-65*	0.	0.0	2.0	1.0	1.0	0.0	2.0	A L
ALTA LANDS	SW19-06-03-4	11966	23- 2-65*	0.	0.0	50.0	32.0	18.0	0.0	50.0	A L
CRESSDAY GRAZING	SE34-03-02-4	12058	9- 3-66	0.	0.0	2.0	1.0	1.0	0.0	2.0	A L
ALTA WATER RES	NE31-05-03-4	8632	1-11-66	0.	0.0	800.0	620.0	180.0	0.0	800.0	A L
BLUEFIELD GR	NW18-06-02-4	12143	15-11-66	0.	0.0	5.0	2.0	3.0	0.0	5.0	A L
SMITH K.H.	NE11-06-03-4	12184	12- 1-67	0.	0.0	2.0	1.0	1.0	0.0	2.0	A L
ALTA WATER RES	SE30-03-02-4	12234	5- 5-67	0.	0.0	650.0	450.0	200.0	0.0	650.0	A L
HEIDINGER E.	NW20-06-03-4	12545	12-11-68	0.	0.0	5.0	1.0	4.0	0.0	5.0	A L
HEIDINGER E.	NW33-05-03-4	12648	7- 3-69	0.	0.0	8.0	1.0	7.0	0.0	8.0	A L
YEAST P.	SW25-06-03-4	12719	12- 5-69	47.	6.0	30.0	24.0	0.0	6.0	24.0	A L
BOUNET C.	SW29-07-02-4	13471	22- 4-71*	0.	0.0	1.0	0.0	1.0	0.0	1.0	A L
DUCKS UNLIMITED	NE01-05-03-4	14112	25- 8-71*	0.	0.0	150.0	10.0	140.0	0.0	150.0	A L
MEDICINE LDG STK	SW07-08-02-4	13715	1-12-71	0.	0.0	1.0	1.0	0.0	0.0	1.0	A L
YEAST P.	SE10-06-03-4	13803	4- 1-72	77.	9.0	328.0	60.0	20.0	248.0	80.0	A L
HEIDINGER E&M	NE01-06-03-4	15617	9-10-73*	161.	12.0	161.0	161.0	0.0	0.0	161.0	A L
WALBURGER B.J.	E 36-03-01-4	16430	2- 5-74**	26.	4.0	38.0	38.0	0.0	0.0	38.0	A L
WALBURGER B.J.	SW13-04-01-4	16430	2- 5-74**	21.	13.0	50.0	23.0	24.0	3.0	47.0	A L
SMITH K.H.	NW08-06-03-4	16417	6- 5-74	0.	0.0	5.0	1.0	4.0	0.0	5.0	A L
SAVILLE J.M.	SE24-03-01-4	16378	29- 1-75	16.	9.0	14.0	12.0	2.0	0.0	14.0	A L
SHORT GRASS RNCH	SW36-06-02-4	16710	11- 8-76	0.	0.0	2.0	1.0	1.0	0.0	2.0	A L
FRETTS L.S.	SE31-07-02-4	18497	10- 3-78*	0.	0.0	2.0	1.0	1.0	0.0	2.0	A L
FRETTS L.S.	SE10-07-02-4	18498	10- 3-78*	0.	0.0	1.0	1.0	0.0	0.0	1.0	A L
HARRIGAN & SCOTT	SE15-05-01-4	19066	29- 3-79	0.	0.0	5.0	1.0	4.0	0.0	5.0	A L

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TABLE 13. PROJECT INFORMATION FOR MIDDLE CREEK BASIN - ALBERTA

ALLOCATION DATA - ORDERED ACCORDING TO APPLICATION DATE (acre-feet)

NAME	LOCATION	FILE NUM	DATE	IRRIGATED ACREAGE	DUTY IN	GROSS DIV	CONSUMPTIVE USE	LOSSES	RETURN FLOW	NET DEPLETION	PROVINCE STREAM
M BAR RANCH LTD	NW16-06-01-4	303	9- 7- 5	255.	12.0	250.0	250.0	0.0	0.0	250.0	A M
BIERBACH F.	SE25-06-01-4	4654	1- 4- 8	126.	12.0	189.0	126.0	0.0	63.0	126.0	A M
M BAR RANCH LTD	SW32-05-01-4	365	23- 6- 9	166.	9.0	175.0	125.0	0.0	50.0	125.0	A M
VOSSLER C.	NC34-06-02-4	920	10- 3-19	192.	6.0	128.0	90.0	0.0	38.0	90.0	A M
HARRIGAN R.E.	SE22-05-01-4	1422	10- 7-22	0.	0.0	28.0	1.0	27.0	0.0	28.0	A M
KUSLER H.	SW03-07-02-4	1830	10- 3-26	40.	6.0	27.0	20.0	0.0	7.0	20.0	A M
M BAR RANCH LTD	NW16-06-01-4	303	4- 4-36*	0.	0.0	275.0	60.0	200.0	15.0	260.0	A M
BIERBACH F.	SW25-06-01-4	4654	30-11-38	180.	8.0	180.0	120.0	0.0	60.0	120.0	A M
HANSCHAR W.	SE31-06-02-4	5959	27- 5-40	0.	0.0	3.0	1.0	2.0	0.0	3.0	A M
FRANZ J.	SW15-07-02-4	7169	23-10-44	0.	0.0	2.0	1.0	1.0	0.0	2.0	A M
WALKER M.	NE11-07-02-4	7475	25- 8-45	0.	0.0	3.0	1.0	2.0	0.0	3.0	A M
BLUEFIELD GR	SE11-06-02-4	8027	27-10-47	0.	0.0	10.0	2.0	8.0	0.0	10.0	A M
BIERBACH F.	SW25-06-01-4	8752	28- 8-50	0.	0.0	20.0	5.0	15.0	0.0	20.0	A M
VOSSLER C.	SE03-07-02-4	920	7-11-51	0.	0.0	64.0	34.0	15.0	15.0	49.0	A M
HASSARD H.	SW13-07-04-4	9302	28- 6-54	0.	0.0	20.0	3.0	17.0	0.0	20.0	A M
BLUEFIELD GR	NE17-06-02-4	8027	31-10-55	0.	0.0	40.0	5.0	35.0	0.0	40.0	A M
BONNET A.B.	SW05-07-02-4	9813	8- 5-58	0.	0.0	3.0	1.0	2.0	0.0	3.0	A M
M BAR RANCH LTD	SW13-06-01-4	10137	19-10-59	417.	5.0	200.0	160.0	0.0	40.0	160.0	A M N
JANKE C.	NE32-06-01-4	10892	18- 6-62	0.	0.0	2.0	1.0	1.0	0.0	2.0	A M
BONNET C.	NC29-07-02-4	11124	11-12-62	0.	0.0	1.0	1.0	0.0	0.0	1.0	A M
YEAST P.	NE04-06-02-4	11163	12- 2-63	0.	0.0	10.0	1.0	9.0	0.0	10.0	A M
YEAST P.	NE32-05-02-4	11160	12- 2-63	0.	0.0	5.0	1.0	4.0	0.0	5.0	A M
KUSLER H.	SW26-06-02-4	11245	1- 3-63	0.	0.0	1.0	1.0	0.0	0.0	1.0	A M
BOTCKER R.	SW35-05-01-4	8414	20- 3-63	45.	5.0	30.0	19.0	3.0	8.0	22.0	A M
KUSLER H.	NW25-06-02-4	11400	8- 7-63	0.	0.0	5.0	2.0	3.0	0.0	5.0	A M
KALLENBURGER W.	NW05-07-02-4	11248	19- 7-73	0.	0.0	1.0	1.0	0.0	0.0	1.0	A M
HASSARD H.	NE14-07-04-4	4964	24- 9-73	0.	0.0	1.0	1.0	0.0	0.0	1.0	A M
WOOLLEY H.	SW17-07-02-4	11249	28- 9-73*	0.	0.0	1.0	0.0	1.0	0.0	1.0	A M

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TABLE 14. PROJECT INFORMATION FOR BATTLE CREEK BASIN - SASKATCHEWAN

ALLOCATION DATA - ORDERED ACCORDING TO APPLICATION DATE

NAME	LOCATION	FILE NUM	DATE	IRRIGATED ACREAGE	DUTY IN	GROSS DIV	CONSUMPTIVE USE	(acre-feet) LOSSES	RETURN FLOW	NET DEPLETION	PROVINCE STREAM	
GAFF D.L.	NW34-05-29-3	36	25- 4-99	150.	18.0	347.0	225.0	122.0	0.0	347.0	S B	
GAFF D.L.	NW34-05-29-3	38	20- 5-99	0.	0.0	0.0	0.0	0.0	0.0	0.0	S B	
GAFF J.A.	NW34-05-29-3	37	20- 5-99	457.	18.0	685.0	685.0	0.0	0.0	685.0	S B	
BATTLE CR RANCH	NE09-06-29-3	52	3- 5- 0	128.	18.0	192.0	192.0	0.0	0.0	192.0	S B	
MCKINNON J.	SW31-04-26-3	57	26- 7- 2	0.	0.0	0.0	0.0	0.0	0.0	0.0	S B	
CAN PAC RWY	NE20-04-26-3	56	26- 7- 2	0.	0.0	23.0	4.0	19.0	0.0	23.0	S B	
RICHARDSON S.J.	SW11-05-27-3	58	26- 7- 2	0.	0.0	0.0	0.0	0.0	0.0	0.0	S B	
BLACK J.R.	NE06-07-28-3	59	11-10- 2	138.	15.0	173.0	173.0	0.0	0.0	173.0	S B	
NUTTAL R.F.	SE22-07-29-3	71	11- 6- 3	94.	12.0	94.0	94.0	0.0	0.0	94.0	S B	
WOOD D.	NW23-07-29-3	73	12- 6- 3	13.	6.0	11.0	9.0	2.0	0.0	11.0	S B	
LESLIE J.	SW12-08-29-3	77	4- 1- 4	80.	6.0	54.0	54.0	0.0	0.0	54.0	S B	
RCMP	NW21-07-29-3	81	24- 2- 4	1.	8.0	1.0	1.0	0.0	0.0	1.0	S B	
PARSONAGE RANCH	NE28-05-28-3	86	28- 7- 4	277.	18.0	423.0	423.0	0.0	0.0	423.0	S B	
NELSON N.C.	NE20-05-28-3	98	18- 3- 5	366.	18.0	994.0	549.0	445.0	0.0	994.0	S B	N
SHEPHERD J.C.	SW29-05-28-3	110	19- 3- 6	115.	18.0	175.0	173.0	2.0	0.0	175.0	S B	
CAN GOVT VLA.A.	SW31-04-26-3	117	20- 6- 6	0.	0.0	0.0	0.0	0.0	0.0	0.0	S B	
REESOR D.H.P.	SW31-04-26-3	116	20- 6- 6	0.	0.0	0.0	0.0	0.0	0.0	0.0	S B	
MCKINNON C.	SW31-04-26-3	115	20- 6- 6	0.	0.0	0.0	0.0	0.0	0.0	0.0	S B	
RICHARDSON L.E.	NE33-04-26-3	172	26- 4- 9	0.	0.0	0.0	0.0	0.0	0.0	0.0	S B	
WILKES R.W.	NE08-06-27-3	174	29- 5- 9	0.	0.0	0.0	0.0	0.0	0.0	0.0	S B	
STIRLING I.	SE28-03-27-3	177	28- 8- 9	698.	8.0	466.0	466.0	0.0	0.0	466.0	S B	
STIRLING I.	SE28-03-27-3	178	28- 8- 9	470.	18.0	1036.0	705.0	124.0	207.0	829.0	S B	
SPANGLER C.B.	NE10-07-28-3	182	20-11- 9	50.	18.0	50.0	50.0	0.0	0.0	50.0	S B	
SPANGLER C.B.	NE03-07-28-3	181	20-11- 9	24.	18.0	24.0	24.0	0.0	0.0	24.0	S B	
SPANGLER C.B.	SW12-07-28-3	183	20-11- 9	50.	18.0	50.0	50.0	0.0	0.0	50.0	S B	
RICHARD L.E.	SW11-05-27-3	186	10-12- 9	0.	0.0	0.0	0.0	0.0	0.0	0.0	S B	
PATTERSON W.G.	SE04-06-29-3	190	18- 4-10	260.	17.0	175.0	175.0	0.0	0.0	175.0	S B	
CATON ANNA S	NW19-04-24-3	197	22- 8-10	48.	18.0	87.0	71.0	16.0	0.0	87.0	S B	N
SHEPHERD J.C.	NW34-05-28-3	219	2-10-11	64.	18.0	96.0	96.0	0.0	0.0	96.0	S B	
SPANGLER C.B.	NW03-07-28-3	237	31- 8-12	26.	18.0	26.0	26.0	0.0	0.0	26.0	S B	
CAN PAC RWY	NE20-04-26-3	268	4-11-14	0.	0.0	0.0	0.0	0.0	0.0	0.0	S B	
FUNK B.	NE06-03-26-3	323	27- 5-18	136.	8.0	94.0	91.0	3.0	0.0	94.0	S B	
SCHMIDT D.E.	SE31-02-26-3	338	18- 2-19	18.	12.0	18.0	18.0	0.0	0.0	18.0	S B	
LEWIS H.	SW19-03-25-3	354	12- 9-19	0.	0.0	3.0	1.0	2.0	0.0	3.0	S B	
LEWIS T.J.	SW33-03-25-3	353	22- 9-19	0.	0.0	11.0	6.0	5.0	0.0	11.0	S B	N
NEITZ P.	SW18-06-27-3	358	21-11-19	134.	8.0	90.0	90.0	0.0	0.0	90.0	S B	
SWIHART J.W.	SE24-03-27-3	377	12- 1-21	0.	0.0	2.0	2.0	0.0	0.0	2.0	S B	N
REESOR O.H.P.	SE36-04-27-3	384	18- 7-21	60.	12.0	60.0	60.0	0.0	0.0	60.0	S B	
AMUNDSON E.	NW35-03-25-3	397	17- 2-22	0.	0.0	1.0	1.0	0.0	0.0	1.0	S B	N
SASK GOVT AGR	NE36-01-25-3	399	12- 4-22	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B	N
STEFER L.	NW16-03-27-3	403	24- 7-22	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B	
SCRIVEN J.F.	SE26-01-27-3	409	19-12-22	0.	0.0	3.0	1.0	2.0	0.0	3.0	S B	N
LESLIE R.M.	NW18-08-28-3	462	5-10-25	24.	8.0	16.0	16.0	0.0	0.0	16.0	S B	N
PFRA	SW14-08-29-3	592	12- 7-35*	0.	0.0	96.0	0.0	96.0	0.0	96.0	S B	
BERG G.	NW16-04-25-3	606	25- 7-35	32.	8.0	21.0	21.0	0.0	0.0	21.0	S B	
FRANK J.	NW34-02-27-3	622	6- 8-35	124.	8.0	83.0	83.0	0.0	0.0	83.0	S B	
PARSONAGE RANCH	NE07-06-28-3	625	9- 8-35	0.	0.0	6.0	2.0	4.0	0.0	6.0	S B	N
ROYAL TRUST CO	NE26-01-26-3	645	16- 8-35	0.	0.0	3.0	1.0	2.0	0.0	3.0	S B	N
REYONDS A. E.	NE35-03-28-3	644	16- 8-35	0.	0.0	5.0	1.0	4.0	0.0	5.0	S B	
GAFF V.	NW01-06-29-3	652	21- 8-35	0.	0.0	10.0	5.0	5.0	0.0	10.0	S B	
KRUPP F.M.	SE04-07-28-3	651	21- 8-35	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B	
PFRA	SW24-04-28-3	680	27- 8-35	0.	0.0	4.0	2.0	2.0	0.0	4.0	S B	N
BROWATZKE K.B.	SE23-04-28-3	679	27- 8-35	0.	0.0	4.0	2.0	2.0	0.0	4.0	S B	N
PFRA	SW04-04-25-3	678	27- 8-35	0.	0.0	5.0	3.0	2.0	0.0	5.0	S B	N
SWIHART J.W.	SE17-03-26-3	710	5- 9-35	19.	8.0	13.0	13.0	0.0	0.0	13.0	S B	
ARNESON M.	SW28-03-25-3	716	10- 9-35	0.	0.0	4.0	1.0	3.0	0.0	4.0	S B	
WORTHY CR COOP	NE36-02-28-3	758	1-10-35	25.	6.0	13.0	13.0	0.0	0.0	13.0	S B	N
SVEUND E.	SE09-05-25-3	765	3-10-35	18.	8.0	12.0	12.0	0.0	0.0	12.0	S B	
CHAVTUR J.F.	NE34-03-25-3	803	25-10-35	0.	0.0	3.0	2.0	1.0	0.0	3.0	S B	N
PARSONAGE RANCH	NE31-06-28-3	809	26-10-35	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B	
WAGNER D.D.	NW02-04-28-3	810	28-10-35	0.	0.0	5.0	1.0	4.0	0.0	5.0	S B	
NEITZ PAUL	NE06-06-27-3	829	12-11-35	0.	0.0	14.0	1.0	13.0	0.0	14.0	S B	
WATSON M.O.	SW02-03-26-3	864	27- 1-36	0.	0.0	8.0	2.0	6.0	0.0	8.0	S B	
FRANK J..	NW03-03-27-3	900	1- 5-36	153.	8.0	101.0	101.0	0.0	0.0	101.0	S B	
NOTUKEU GRAZING	SW32-03-27-3	926	22- 6-36	0.	0.0	4.0	1.0	3.0	0.0	4.0	S B	
STIRLING R.	NW23-03-27-3	985	17- 7-36	24.	8.0	16.0	16.0	0.0	0.0	16.0	S B	
FRAME G.W.	SE04-05-28-3	1009	28- 7-36*	34.	8.0	23.0	23.0	0.0	0.0	23.0	S B	N
CHIPMAN R.E.	SE14-03-26-3	1059	8- 8-36	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B	N
GREEN WM.	SW17-04-25-3	1071	11- 8-36*	0.	0.0	80.0	80.0	0.0	0.0	80.0	S B	N
GRAVEN R.R.	NE36-05-23-3	1097	19- 8-36	0.	0.0	1.0	1.0	0.0	0.0	1.0	S B	N
GENERT L.D.	NE30-03-25-3	1107	20- 8-36	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B	N
GENERT L.D.	SW30-03-25-3	1106	20- 8-36	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B	N
GENERT L.D.	NE24-03-26-3	1108	20- 8-36	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B	
REYNOLDS A.E.	NE06-05-28-3	1158	31- 8-36	0.	0.0	4.0	1.0	3.0	0.0	4.0	S B	N
COVLIN M.G.	NW20-06-28-3	1156	31- 8-36	0.	0.0	3.0	1.0	2.0	0.0	3.0	S B	
CAN GOVT PFRA	NW01-06-28-3	1183	3- 9-36*	0.	0.0	0.0	0.0	0.0	0.0	0.0	S B	
PEDERSEN W.L.	NW20-05-25-3	1182	3- 9-36	0.	0.0	5.0	1.0	4.0	0.0	5.0	S B	N
DEMARTIN H.	SW10-03-26-3	1191	4- 9-36	0.	0.0	4.0	1.0	3.0	0.0	4.0	S B	
PETTYJOIN WM.M.	SE11-06-29-3	1199	8- 9-36	0.	0.0	1.0	1.0	0.0	0.0	1.0	S B	
REESOR R.W.	NW30-04-28-3	1223	10- 9-36	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B	N
MCCUAIG D.J.	SE03-04-27-3	1247	15- 9-36	17.	8.0	12.0	12.0	0.0	0.0	12.0	S B	
MCCUAIG D.J.	NE03-04-27-3	1246	15- 9-36	0.	0.0	3.0	1.0	2.0	0.0	3.0	S B	
SWIHART H.E.	SW34-04-26-3	1245	15- 9-36	0.	0.0	0.0	0.0	0.0	0.0	0.0	S B	
PALMER J.	NE35-04-26-3	1248	15- 9-36	0.	0.0	3.0	1.0	2.0	0.0	3.0	S B	
DOLOSKY J.	NW36-02-26-3	1332	1-10-36	0.	0.0	3.0	1.0	2.0	0.0	3.0	S B	
RABE R.	SW11-05-26-3	1350	5-10-36	0.	0.0	4.0	1.0	3.0	0.0	4.0	S B	
WENZEL K.	SE19-05-26-3	1444	9-11-36	0.	0.0	5.0	1.0	4.0	0.0	5.0	S B	N
FUNK B.	NE10-03-26-3	1458	18-11-36	0.	0.0	4.0	3.0	1.0	0.0	4.0	S B	
HOWELL W.	NW36-05-26-3	1479	23-11-36	25.	8.0	17.0	17.0	0.0	0.0	17.0	S B	
REAMER M.	NE21-03-26-3	1499	1-12-36	22.	8.0	15.0	15.0	0.0	0.0	15.0	S B	
CHRISTIANSON M.	SW33-05-25-3	1614	13- 3-37	0.	0.0	3.0	1.0	2.0	0.0	3.0	S B	N
LEISMEISTER A.	NW23-04-29-3	1707	19- 4-37	13.	8.0	9.0	9.0	0.0	0.0	9.0	S B	N
BEHRMAN W.	SW21-04-26-3	1753	13- 5-37	46.	7.0	28.0	28.0	0.0	0.0	28.0	S B	
BEHRMAN W.	SE22-04-26-3	1754	13- 5-37	92.	6.0	75.0	44.0	31.0	0.0	75.0	S B	
WEISGERBER EST	SW33-03-28-3	1774	21- 5-37	0.	0.0	3.0	2.0	1.0	0.0	3.0	S B	N
BACKMAN L.C.	SE16-05-26-3	1786	22- 5-37	21.	8.0	14.0	14.0	0.0	0.0	14.0	S B	N
WAGNER D.	SW35-04-29-3	1855	8- 6-37	18.	8.0	12.0	12.0	0.0	0.0	12.0	S B	N

BATTLE CREEK ALLOCATION DATA - SASKATCHEWAN
ALLOCATION DATA - ORDERED ACCORDING TO APPLICATION DATE

(acre-feet)

NAME	LOCATION	FILE NUM	DATE	IRRIGATED ACREAGE	DUTY IN	GROSS DIV	CONSUMPTIVE USE	LOSSES	RETURN FLOW	NET DEPLETION	PROVINCE STREAM
FRENCH P.A.	SW33-03-27-3	1983	12- 7-37	7.	8.0	4.0	4.0	0.0	0.0	4.0	S B
GENERT G.	SW31-03-25-3	1994	16- 7-37	0.	0.0	3.0	1.0	2.0	0.0	3.0	S B N
REYNOLDS R.H.	SW02-04-28-3	2048	31- 7-37	0.	0.0	7.0	1.0	6.0	0.0	7.0	S B
REYNOLDS A.E.	NW36-04-29-3	2080	11- 8-37	7.	8.0	5.0	5.0	0.0	0.0	5.0	S B N
WAGNER D.D.	SE10-04-28-3	2114	23- 8-37*	45.	8.0	30.0	30.0	0.0	0.0	30.0	S B
SVEUND E.C.	SW09-05-25-3	2124	26- 8-37	17.	8.0	16.0	11.0	5.0	0.0	16.0	S B N
ECCLES R.	SE15-04-27-3	2159	10- 9-37	6.	8.0	4.0	4.0	0.0	0.0	4.0	S B
NOBLE H.I.	SW36-05-23-3	2281	14-10-37	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B N
OLOSON H.C.	NW10-05-25-3	2283	14-10-37	17.	8.0	12.0	12.0	0.0	0.0	12.0	S B N
OLSON H.C.	NW10-05-25-3	2282	14-10-37	7.	8.0	5.0	5.0	0.0	0.0	5.0	S B N
HADFORD L.A.	NW31-05-23-3	2315	23-10-37	0.	0.0	6.0	3.0	3.0	0.0	6.0	S B
SANDERSON L.	NW32-04-28-3	2346	28-10-37	17.	8.0	12.0	12.0	0.0	0.0	12.0	S B N
JOHNSON F.	NE35-04-25-3	2446	13-11-37	18.	8.0	12.0	12.0	0.0	0.0	12.0	S B N
ECCLES R.	SW23-04-27-3	2500	26-11-37	4.	8.0	3.0	3.0	0.0	0.0	3.0	S B
ROCKY VIEW LTD	NE33-05-21-3	2581	14- 1-38	0.	0.0	6.0	3.0	3.0	0.0	6.0	S B
JOHNSON F.	SW35-04-25-3	2611	26- 1-38	52.	8.0	34.0	34.0	0.0	0.0	34.0	S B N
WARDBERG J.	SW23-05-24-3	2612	26- 1-38	0.	0.0	7.0	3.0	4.0	0.0	7.0	S B
NOBLE E.	SE08-04-26-3	2655	19- 2-38*	20.	8.0	14.0	14.0	0.0	0.0	14.0	S B N
MCINNIS A.A.	SE30-05-25-3	2656	19- 2-38	0.	0.0	1.0	1.0	0.0	0.0	1.0	S B
STIRLING S.	NE09-04-28-3	2661	24- 2-38	0.	0.0	2.0	2.0	0.0	0.0	2.0	S B
WEISGERBER D.P.	NE33-03-28-3	2685	8- 3-38	8.	8.0	6.0	6.0	0.0	0.0	6.0	S B N
FORSETH ENTERPR.	NE15-03-25-3	2712	21- 3-38	0.	0.0	1.0	1.0	0.0	0.0	1.0	S B
JOHNSON M.M.	SW05-05-25-3	2755	5- 4-38	67.	7.0	37.0	37.0	0.0	0.0	37.0	S B
MCCUAIG D.J.	SW02-04-27-3	2841	12- 5-38	15.	8.0	10.0	10.0	0.0	0.0	10.0	S B
WEISGERBER H.E.	SW25-03-28-3	2919	23- 6-38	0.	0.0	6.0	3.0	3.0	0.0	6.0	S B N
SCHMIDT O.F.	NW31-02-26-3	2954	18- 7-38	2.	8.0	2.0	2.0	0.0	0.0	2.0	S B
THOMPSON O.	SW04-06-25-3	2963	26- 7-38	0.	0.0	3.0	3.0	0.0	0.0	3.0	S B
WARBERG N.	SW24-03-25-3	2973	1- 8-38	0.	0.0	1.0	1.0	0.0	0.0	1.0	S B
BLACK J.R.	SE01-07-29-3	3062	26- 9-38	0.	0.0	5.0	5.0	0.0	0.0	5.0	S B
PFRA	NE08-06-27-3	3152	31-10-38**	2958.	18.0	5696.0	4437.0	120.0	1139.0	4557.0	S B
MORRISON R.C.	NW24-05-25-3	3182	7-11-38	4.	4.0	2.0	2.0	0.0	0.0	2.0	S B N
PFRA	NE20-02-27-3	3425	6- 5-39	0.	0.0	6.0	4.0	2.0	0.0	6.0	S B N
PFRA	NE07-01-26-3	3423	6- 5-39	0.	0.0	2.0	2.0	0.0	0.0	2.0	S B
PFRA	NW14-02-26-3	3422	6- 5-39	0.	0.0	9.0	5.0	4.0	0.0	9.0	S B
PFRA	SW24-02-27-3	3427	6- 5-39*	0.	0.0	22.0	14.0	8.0	0.0	22.0	S B
PFRA	SW12-01-27-3	3426	6- 5-39	0.	0.0	5.0	3.0	2.0	0.0	5.0	S B N
AMUNDSON R	NE12-03-25-3	3564	27- 6-39	0.	0.0	6.0	3.0	3.0	0.0	6.0	S B N
PEDERSEN W.L.	SW24-05-26-3	3566	10- 7-39	16.	8.0	11.0	11.0	0.0	0.0	11.0	S B
AGAR R.	SW17-05-26-3	3630	8- 8-39	0.	0.0	5.0	1.0	4.0	0.0	5.0	S B N
WILSON J.W.	SE14-06-28-3	3733	23-10-39	44.	8.0	46.0	29.0	17.0	0.0	46.0	S B
SCHMIDT A.J.	NW12-03-27-3	3739	26-10-39	19.	8.0	20.0	12.0	8.0	0.0	20.0	S B N
FRAME G.W.	SW04-05-28-3	3768	29-11-39	48.	6.0	27.0	24.0	3.0	0.0	27.0	S B N
PFRA	NE12-02-26-3	3808	5-12-39	0.	0.0	6.0	4.0	2.0	0.0	6.0	S B
PFRA	SE04-04-27-3	3807	5-12-39	0.	0.0	4.0	2.0	2.0	0.0	4.0	S B
PFRA	NE35-01-27-3	3806	5-12-39	0.	0.0	5.0	4.0	1.0	0.0	5.0	S B
PFRA	NE08-04-27-3	3805	5-12-39	0.	0.0	4.0	2.0	2.0	0.0	4.0	S B
PFRA	SW12-02-27-3	3804	5-12-39*	0.	0.0	3.0	2.0	1.0	0.0	3.0	S B
PFRA	NE02-04-25-3	3803	5-12-39	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B N
PFRA	NW10-04-25-3	3802	5-12-39	0.	0.0	4.0	2.0	2.0	0.0	4.0	S B N
PFRA	SE33-01-27-3	3801	5-12-39	0.	0.0	6.0	4.0	2.0	0.0	6.0	S B
PFRA	SW26-01-26-3	3809	5-12-39	0.	0.0	3.0	2.0	1.0	0.0	3.0	S B
GLAGAU E.	SW20-03-27-3	3855	6- 2-40	15.	8.0	10.0	10.0	0.0	0.0	10.0	S B
FRANK J.	NE07-03-27-3	3863	27- 2-40	0.	0.0	4.0	3.0	1.0	0.0	4.0	S B
GODICH J.	NW22-03-27-3	3930	8- 5-40	2.	8.0	1.0	1.0	0.0	0.0	1.0	S B
GODICH J.	NW22-03-27-3	3931	8- 5-40	4.	8.0	2.0	2.0	0.0	0.0	2.0	S B
SWIFT C.J.	SE22-03-26-3	4071	7- 7-41	0.	0.0	3.0	1.0	2.0	0.0	3.0	S B
LEISMEISTER A.	SE25-04-29-3	4237	13-12-41	0.	0.0	6.0	1.0	5.0	0.0	6.0	S B N
STRYCKER J.E.	NE15-04-27-3	4244	2- 1-42	0.	0.0	3.0	1.0	2.0	0.0	3.0	S B
CHAPMAN R.E.	SW23-03-26-3	4271	14- 3-42	0.	0.0	1.0	0.0	1.0	0.0	1.0	S B
DEMARTIN H.	NW26-03-26-3	4270	14- 3-42	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B N
ANDERSON J.	NE10-05-25-3	4444	26- 9-42	3.	8.0	2.0	2.0	0.0	0.0	2.0	S B N
FUNK D.	NE20-03-26-3	4490	5- 6-43	68.	4.0	23.0	23.0	0.0	0.0	23.0	S B N
TITTLE A.R.	NW30-02-26-3	4492	10- 6-43	40.	8.0	27.0	27.0	0.0	0.0	27.0	S B
WAGNER D.D.	NW03-04-28-3	4562	11- 1-44	0.	0.0	1.0	1.0	0.0	0.0	1.0	S B
PFRA	NE18-04-27-3	4578	18- 3-44	0.	0.0	24.0	5.0	19.0	0.0	24.0	S B
TEIGEN G.	SW17-05-25-3	4622	26- 6-44	0.	0.0	6.0	1.0	5.0	0.0	6.0	S B
MCGREGOR D.	SW26-03-27-3	4630	11- 7-44	0.	0.0	3.0	1.0	2.0	0.0	3.0	S B
CHAPMAN R.	NW22-03-26-3	4631	20- 7-44	0.	0.0	5.0	3.0	2.0	0.0	5.0	S B
GLAGAU E.	NE21-03-27-3	4662	12-10-44	0.	0.0	5.0	3.0	2.0	0.0	5.0	S B
DUCKS UNLIMITED	NW27-04-25-3	4691	9- 1-45*	0.	0.0	749.0	0.0	749.0	0.0	749.0	S B N
CHAPMAN R.F.	SW18-03-25-3	4713	9- 5-45	6.	12.0	21.0	8.0	13.0	0.0	21.0	S B
MCLUHAN J.A.	SW21-05-28-3	4737	2- 8-45	0.	0.0	5.0	3.0	2.0	0.0	5.0	S B N
CAN GOVT PFRA	SW31-04-26-3	4801	14-12-45	0.	0.0	0.0	0.0	0.0	0.0	0.0	S B
HEGLUND L.W.	SW31-04-26-3	4813	14- 2-46**	0.	0.0	0.0	0.0	0.0	0.0	0.0	S B
SCHMIDT O.F.	SE05-03-26-3	4851	15- 6-46	24.	8.0	16.0	16.0	0.0	0.0	16.0	S B
PRIDHOPP J.	NE29-05-27-3	4942	4-10-46	25.	8.0	17.0	17.0	0.0	0.0	17.0	S B
REAMER G.	SE21-03-26-3	4953	17-10-46	0.	0.0	3.0	3.0	0.0	0.0	3.0	S B
WRIGGLESWORTH F.	NW07-05-24-3	4979	15-11-46	24.	8.0	16.0	16.0	0.0	0.0	16.0	S B N
LEISMEISTER A.	SE35-04-29-3	4998	2- 1-47	20.	8.0	14.0	14.0	0.0	0.0	14.0	S B N
SCHMIDT A.J.	NW08-03-26-3	5003	30- 1-47	0.	0.0	8.0	2.0	6.0	0.0	8.0	S B
STIRLING S.	NE08-04-25-3	5046	16- 5-47	7.	8.0	5.0	5.0	0.0	0.0	5.0	S B N
REYNOLDS R.H.	NE36-03-28-3	5055	31- 5-47	10.	8.0	7.0	7.0	0.0	0.0	7.0	S B
MOELLER H.J.	NE17-04-28-3	5056	31- 5-47	16.	8.0	11.0	11.0	0.0	0.0	11.0	S B N
STIRLING S.	SE17-04-28-3	5111	21- 7-47	0.	0.0	4.0	2.0	2.0	0.0	4.0	S B
PIERCE J.D.	NE03-05-28-3	5141	19- 8-47	7.	8.0	5.0	5.0	0.0	0.0	5.0	S B N
WENAAS K.	SE21-05-25-3	5159	5- 9-47	25.	8.0	17.0	17.0	0.0	0.0	17.0	S B N
PARSONAGE R.C.	NW11-07-29-3	5193	20-10-47	35.	8.0	24.0	24.0	0.0	0.0	24.0	S B
REAMER G.S.	NE21-03-26-3	5225	17-12-47	0.	0.0	3.0	2.0	1.0	0.0	3.0	S B
RABE R.	NE36-04-26-3	5263	31- 5-48	60.	8.0	40.0	40.0	0.0	0.0	40.0	S B
PETTYJOHN W.D.	NE34-05-26-3	5275	10- 6-48	14.	8.0	10.0	10.0	0.0	0.0	10.0	S B N
DOLOSKY J.	SW06-03-25-3	5285	28- 6-48	9.	8.0	27.0	7.0	20.0	0.0	27.0	S B
MCCUAIG D.J.	NE01-04-27-3	5292	12- 7-48	28.	8.0	20.0	20.0	0.0	0.0	20.0	S B
GLAGAU E.	SW23-03-27-3	5293	12- 7-48	9.	8.0	6.0	6.0	0.0	0.0	6.0	S B
WAGNER D.A.	SW35-04-29-3	5361	15- 9-48	18.	0.0	12.0	12.0	0.0	0.0	12.0	S B N
SVEUND E.C.	SW09-05-25-3	5422	15-10-48	4.	8.0	3.0	3.0	0.0	0.0	3.0	S B N
SVEUND E.C.	NE09-05-25-3	5421	15-10-48	22.	8.0	15.0	15.0	0.0	0.0	15.0	S B N

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NAME	LOCATION	FILE NUM	DATE	IRRIGATED ACREAGE	DUTY IN	GROSS DIV	CONSUMPTIVE USE	LOSSES	RETURN FLOW	NET DEPLETION	PROVINCE	STREAM	
SVEUND E.G.	SW09-05-25-3	5420	15-10-48	13.	8.0	9.0	9.0	0.0	0.0	9.0	S	B	N
DOLGOPOL M.	SW02-05-29-3	5419	15-10-48	15.	8.0	10.0	10.0	0.0	0.0	10.0	S	B	N
SASK GOVT AGRIC	SW18-03-24-3	5418	15-10-48	0.	0.0	15.0	5.0	10.0	0.0	15.0	S	B	N
WARBERG G	NW23-03-25-3	5438	2-11-48	6.	8.0	8.0	4.0	4.0	0.0	8.0	S	B	N
KISELL J.	SE16-03-27-3	5442	8-11-48	44.	8.0	30.0	30.0	0.0	0.0	30.0	S	B	
KISELL J.	NW15-03-27-3	5441	8-11-48	45.	8.0	30.0	30.0	0.0	0.0	30.0	S	B	
PALMER J.	NE26-04-26-3	5453	18-11-48	38.	8.0	26.0	26.0	0.0	0.0	26.0	S	B	
TEIGEN G.	NW17-05-25-3	5455	22-11-48	37.	8.0	25.0	25.0	0.0	0.0	25.0	S	B	N
WARDBERG A.	SE25-05-25-3	5498	8- 2-49	18.	8.0	12.0	12.0	0.0	0.0	12.0	S	B	N
WARDBERG A.	SW25-05-25-3	5497	8- 2-49	21.	8.0	14.0	14.0	0.0	0.0	14.0	S	B	N
NOTUKEU G.	NE28-03-27-3	5512	3- 3-49	4.	8.0	3.0	3.0	0.0	0.0	3.0	S	B	
STETAR L.	NE16-03-27-3	5529	21- 4-49	13.	8.0	9.0	9.0	0.0	0.0	9.0	S	B	
STETAR L.	NE16-03-27-3	5528	21- 4-49	13.	8.0	9.0	9.0	0.0	0.0	9.0	S	B	
BLACK J.R.	NW01-07-29-3	5527	21- 4-49	138.	8.0	35.0	35.0	0.0	0.0	35.0	S	B	
BACKMAN L.C.	SW15-05-26-3	5540	2- 5-49	35.	8.0	24.0	24.0	0.0	0.0	24.0	S	B	N
BACKMAN L.C.	SE15-05-26-3	5539	2- 5-49	45.	8.0	30.0	30.0	0.0	0.0	30.0	S	B	
GLAGAU O.M.	NE01-05-27-3	5557	18- 5-49	13.	8.0	9.0	9.0	0.0	0.0	9.0	S	B	N
PRIDMORE J.E.	NW28-05-27-3	5609	18- 6-49	24.	8.0	16.0	16.0	0.0	0.0	16.0	S	B	
WATSON M.O.	SE02-03-26-3	5672	29- 7-49	0.	0.0	2.0	1.0	1.0	0.0	2.0	S	B	
REYNOLDS A.E.	NE35-03-28-3	5691	17- 8-49	10.	8.0	7.0	7.0	0.0	0.0	7.0	S	B	
COCHRANE R.C.	SW13-06-29-3	5709	30- 8-49	0.	0.0	7.0	3.0	4.0	0.0	7.0	S	B	
DAHL A.I.	SW27-05-25-3	5740	17- 9-49	11.	8.0	8.0	8.0	0.0	0.0	8.0	S	B	N
MIDDLEFORK R.	SE04-05-29-3	5770	6-10-49	46.	8.0	31.0	31.0	0.0	0.0	31.0	S	B	N
SCHMIDT O.F.	NE31-02-26-3	5784	13-10-49	10.	8.0	7.0	7.0	0.0	0.0	7.0	S	B	
GAFF EVA	SW26-05-29-3	5819	25-10-49**	0.	0.0	0.0	0.0	0.0	0.0	0.0	S	B	
ARENDT R.	SW23-05-23-3	5818	25-10-49	27.	0.0	18.0	18.0	0.0	0.0	18.0	S	B	N
PEDERSON W.L.	SW24-05-26-3	5874	18-11-49	5.	8.0	3.0	3.0	0.0	0.0	3.0	S	B	
STIRLING R.	NW15-03-27-3	5940	14-12-49	68.	8.0	45.0	45.0	0.0	0.0	45.0	S	B	
BRAUN A.F.	NE24-04-29-3	5977	19- 1-50	0.	0.0	12.0	1.0	11.0	0.0	12.0	S	B	N
SAWDEN L.	SE34-02-27-3	6052	27- 4-50	16.	8.0	11.0	11.0	0.0	0.0	11.0	S	B	N
AUSTIN E.	SE33-04-25-3	6053	27- 4-50	11.	8.0	8.0	8.0	0.0	0.0	8.0	S	B	
REAMER G.S.	NE16-03-26-3	6139	29- 6-50	13.	8.0	9.0	9.0	0.0	0.0	9.0	S	B	
KISELL J.	SW16-03-27-3	6150	4- 7-50	12.	8.0	8.0	8.0	0.0	0.0	8.0	S	B	
DOLGOPOL P.	SE16-04-27-3	6243	6- 9-50	0.	0.0	5.0	3.0	2.0	0.0	5.0	S	B	
SKAUGE E.L.K.	SE27-05-25-3	6259	15- 9-50	10.	8.0	7.0	7.0	0.0	0.0	7.0	S	B	N
SVEUND F.C.	SE09-05-25-3	6308	26-10-50	20.	8.0	14.0	14.0	0.0	0.0	14.0	S	B	N
WAGNER O.O.	NW12-04-23-3	6310	30-10-50	0.	0.0	4.0	1.0	3.0	0.0	4.0	S	B	
AGAR R.B.	NW25-05-29-3	6317	3-11-50	62.	8.0	42.0	42.0	0.0	0.0	42.0	S	B	
VIDORA USERS	NE08-06-27-3	6375	12- 4-51*	2484.	12.0	3453.0	2484.0	278.0	691.0	2762.0	S	B	
REYNOLDS R.H.	SE35-03-28-3	6387	20- 4-51	8.	8.0	6.0	6.0	0.0	0.0	6.0	S	B	
MOORE D.L.	NE27-05-23-3	6421	18- 6-51	0.	0.0	2.0	1.0	1.0	0.0	2.0	S	B	N
MADSON M.K.	NE29-03-25-3	6523	19- 9-51	94.	8.0	63.0	63.0	0.0	0.0	63.0	S	B	N
PFRA	SW17-02-25-3	6527	24- 9-51**	0.	0.0	116.0	116.0	0.0	0.0	116.0	S	B	
DUCKS UNLIMITED	SW03-05-23-3	6547	25-10-51	0.	0.0	3.0	0.0	3.0	0.0	3.0	S	B	N
DUCKS UNLIMITED	SE11-04-24-3	6602	25- 3-52	0.	0.0	9.0	0.0	9.0	0.0	9.0	S	B	N
DUCKS UNLIMITED	SW21-04-24-3	6601	25- 3-52	0.	0.0	4.0	0.0	4.0	0.0	4.0	S	B	N
FUNK BEN	SE03-03-26-3	6705	8-12-52	0.	0.0	5.0	2.0	3.0	0.0	5.0	S	B	
GLAGAU E.	SW20-03-27-3	6708	19-12-52	0.	0.0	2.0	1.0	1.0	0.0	2.0	S	B	
FUNK B.	NE04-03-26-3	6714	15- 1-53	22.	8.0	15.0	15.0	0.0	0.0	15.0	S	B	
FUNK BEN	SE04-03-26-3	6719	13- 2-53	50.	8.0	35.0	35.0	0.0	0.0	35.0	S	B	
PETTYJOHN T.E.	NW33-05-29-3	6744	14- 4-53	21.	8.0	14.0	14.0	0.0	0.0	14.0	S	B	
FRANK J.	SW02-03-27-3	6795	23- 7-53	21.	8.0	14.0	14.0	0.0	0.0	14.0	S	B	
ASLIN L.	NW16-05-23-3	6828	10- 9-53	0.	0.0	5.0	1.0	4.0	0.0	5.0	S	B	N
HALYUNG P.	SW27-02-25-3	6840	8-10-53	0.	0.0	4.0	2.0	2.0	0.0	4.0	S	B	
BACKMAN B.	NW16-05-26-3	7055	6- 1-55	0.	0.0	3.0	1.0	2.0	0.0	3.0	S	B	
DUCKS UNLIMITED	NE06-04-24-3	7086	31- 3-55	0.	0.0	197.0	0.0	197.0	0.0	197.0	S	B	N
THOMPSON R.	NE35-05-26-3	7136	1- 8-55	11.	8.0	8.0	8.0	0.0	0.0	8.0	S	B	N
DOLOSKY J.	NE05-03-25-3	7144	16- 8-55	46.	8.0	42.0	31.0	11.0	0.0	42.0	S	B	
MERRYFLAT GR	SE27-06-30-3	7198	3-11-55	0.	0.0	1.0	1.0	0.0	0.0	1.0	S	B	
MERRYFLAT GR	SE21-06-30-3	7197	3-11-55	0.	0.0	2.0	1.0	1.0	0.0	2.0	S	B	
NELUBOWICH A	NE36-04-25-3	7223	19- 1-56	32.	8.0	22.0	22.0	0.0	0.0	22.0	S	B	N
NEGLUND L.W.	NW19-04-26-3	7240	13- 3-56	0.	0.0	3.0	1.0	2.0	0.0	3.0	S	B	
NEGLUND L.W.	NW19-04-26-3	7241	13- 3-56	6.	8.0	4.0	4.0	0.0	0.0	4.0	S	B	
PARSONAGE R.C.	NW34-06-29-3	7319	14- 9-56	0.	0.0	4.0	2.0	2.0	0.0	4.0	S	B	
PARSONAGE R.C.	NE16-06-28-3	7320	14- 9-56	0.	0.0	3.0	2.0	1.0	0.0	3.0	S	B	
PARSONAGE W.	SE36-06-29-3	7344	17-10-56	0.	0.0	7.0	5.0	2.0	0.0	7.0	S	B	N
BATTLE CK RANCH	NW19-06-29-3	7498	2- 7-57	0.	0.0	1.0	1.0	0.0	0.0	1.0	S	B	
BATTLE CK RANCH	NE13-06-30-3	7496	2- 7-57	0.	0.0	2.0	1.0	1.0	0.0	2.0	S	B	
BATTLE CK RANCH	SW14-06-30-3	7499	2- 7-57	0.	0.0	2.0	1.0	1.0	0.0	2.0	S	B	
HADFORD L.A.	SW32-05-23-3	7511	16- 7-57	0.	0.0	3.0	2.0	1.0	0.0	3.0	S	B	N
HUERY J.	NW30-02-25-3	7548	19- 9-57	0.	0.0	3.0	1.0	2.0	0.0	3.0	S	B	
ZENTNER C.	NE22-02-28-3	7585	5-11-57	0.	0.0	5.0	2.0	3.0	0.0	5.0	S	B	
HUERY J.	SW32-02-25-3	7591	8-11-57	0.	0.0	4.0	2.0	2.0	0.0	4.0	S	B	
HUERY M.	NW33-02-25-3	7647	11- 3-58	0.	0.0	4.0	2.0	2.0	0.0	4.0	S	B	N
MADSON WALLACE	SE14-03-25-3	7680	6- 5-58	0.	0.0	14.0	7.0	7.0	0.0	14.0	S	B	N
PFRA	SW13-01-27-3	7698	29- 5-58*	0.	0.0	9.0	5.0	4.0	0.0	9.0	S	B	
PFRA	NE05-04-25-3	7699	29- 5-58	0.	0.0	7.0	5.0	2.0	0.0	7.0	S	B	N
WORTHY G. COOP	NE06-03-27-3	7745	7- 7-58	0.	0.0	4.0	2.0	2.0	0.0	4.0	S	B	
BATTLE CK RANCH	SE11-06-30-3	7776	4- 8-58*	0.	0.0	20.0	5.0	15.0	0.0	20.0	S	B	
NELSON R.J.	SW16-05-26-3	7874	14-10-58	0.	0.0	2.0	1.0	1.0	0.0	2.0	S	B	
NEGLUND L.W.	NW23-04-27-3	8052	13- 5-59	0.	0.0	5.0	3.0	2.0	0.0	5.0	S	B	
STETAR L.	SE21-03-27-3	8056	20- 5-59	26.	8.0	18.0	18.0	0.0	0.0	18.0	S	B	
PEDERSEN W.L.	SW13-05-26-3	8107	17- 6-59	33.	8.0	22.0	22.0	0.0	0.0	22.0	S	B	
THRONBERG A.A.	SW12-05-23-3	8174	6- 8-59	0.	0.0	1.0	1.0	0.0	0.0	1.0	S	B	N
RABE R.	NE16-04-26-3	8192	19- 8-59	27.	8.0	18.0	18.0	0.0	0.0	18.0	S	B	
PEDERSEN W.L.	NW13-05-26-3	8193	21- 8-59	0.	0.0	6.0	2.0	4.0	0.0	6.0	S	B	
SANDOR G.	SE02-06-26-3	8194	21- 8-59	0.	0.0	15.0	1.0	14.0	0.0	15.0	S	B	
BRETON L	SE03-05-23-3	8213	3- 9-59	22.	6.0	11.0	11.0	0.0	0.0	11.0	S	B	N
MADSON W.	NE11-03-25-1	8224	15- 9-59	0.	0.0	5.0	2.0	3.0	0.0	5.0	S	B	N
SWIFT L.J.	SW27-02-26-3	8232	15- 9-59	0.	0.0	4.0	2.0	2.0	0.0	4.0	S	B	
SWANSON E.	NW13-03-26-3	8231	15- 9-59*	0.	0.0	4.0	1.0	3.0	0.0	4.0	S	B	
CHAPMAN R.C.	NE08-03-25-3	8230	15- 9-59	0.	0.0	2.0	1.0	1.0	0.0	2.0	S	B	
STIRLING R.	SW22-03-27-3	8229	15- 9-59**	0.	0.0	0.0	0.0	0.0	0.0	0.0	S	B	
FRANK J.	SE02-03-27-3	8228	15- 9-59	28.	8.0	20.0	18.0	2.0	0.0	20.0	S	B	
FRANK J.	SW18-03-27-3	8227	15- 9-59	0.	0.0	2.0	1.0	1.0	0.0	2.0	S	B	

BATTLE CREEK ALLOCATION DATA - SASKATCHEWAN
ALLOCATION DATA - ORDERED ACCORDING TO APPLICATION DATE

(acre-feet)

NAME	LOCATION	FILE NUM	DATE	IRRIGATED ACREAGE	DUTY IN	GROSS DIV	CONSUMPTIVE USE	LOSSES	RETURN FLOW	NET DEPLETION	PROVINCE STREAM
REAMER G.	SW27-03-26-3	8226	15- 9-59	0.	0.0	4.0	1.0	3.0	0.0	4.0	S B
REAMER G.S.	SE34-03-26-3	8225	15- 9-59	5.	8.0	3.0	3.0	0.0	0.0	3.0	S B
TITTLE A.R.	SW30-02-26-3	8296	9-11-59	3.	8.0	3.0	3.0	0.0	0.0	3.0	S B N
FUNK B.	SE04-03-26-3	8314	26-11-59	32.	8.0	22.0	22.0	0.0	0.0	22.0	S B
HARMON P.	NE19-02-25-3	8336	5- 1-60	25.	8.0	17.0	17.0	0.0	0.0	17.0	S B
PFRA	NE03-02-26-3	8391	15- 3-60	0.	0.0	6.0	3.0	3.0	0.0	6.0	S B
PFRA	SW36-01-26-3	8390	15- 3-60	0.	0.0	4.0	2.0	2.0	0.0	4.0	S B
PFRA	NW28-04-25-3	8397	15- 3-60	0.	0.0	10.0	5.0	5.0	0.0	10.0	S B
PFRA	SE06-04-25-3	8396	15- 3-60	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B N
PFRA	NW10-01-26-3	8395	15- 3-60	0.	0.0	15.0	5.0	10.0	0.0	15.0	S B
PFRA	SE22-02-27-3	8394	15- 3-60	0.	0.0	7.0	5.0	2.0	0.0	7.0	S B
PFRA	SW31-01-26-3	8393	15- 3-60	0.	0.0	7.0	5.0	2.0	0.0	7.0	S B
PFRA	SE07-01-26-3	8392	15- 3-60	0.	0.0	10.0	8.0	2.0	0.0	10.0	S B
PETTYJOHN M.	NW09-05-26-3	8433	22- 4-60	0.	0.0	1.0	1.0	0.0	0.0	1.0	S B
GODICH J.J.	NE22-03-27-3	8498	21- 6-60	2.	8.0	2.0	2.0	0.0	0.0	2.0	S B
RIDGECLIFF GR.	SE35-03-25-3	8523	12- 7-60	0.	0.0	4.0	2.0	2.0	0.0	4.0	S B N
SCHMIDT D.F.	SW31-02-26-3	8559	12- 8-60	73.	8.0	49.0	49.0	0.0	0.0	49.0	S B
ZEIGLER G.G.	NE12-05-26-3	8560	12- 8-60	0.	0.0	3.0	2.0	1.0	0.0	3.0	S B N
SWIFT L.J.	NE15-03-26-3	8564	15- 8-60	5.	8.0	3.0	3.0	0.0	0.0	3.0	S B
SCHMIDT D.F.	NE25-02-27-3	8576	24- 8-60	35.	4.0	12.0	12.0	0.0	0.0	12.0	S B N
SCHMIDT D.F.	NW25-02-27-3	8575	24- 8-60	90.	6.0	46.0	46.0	0.0	0.0	46.0	S B
BEHRMAN R.H.	SE10-04-25-3	8612	26- 9-60	0.	0.0	6.0	5.0	1.0	0.0	6.0	S B
REESOR R.	SE23-04-29-3	8622	30- 9-60	13.	8.0	9.0	9.0	0.0	0.0	9.0	S B N
MADSON M.K.	NE20-03-25-3	8633	6-10-60	0.	0.0	5.0	1.0	4.0	0.0	5.0	S B N
SCHMIDT D.F.	NW32-02-26-3	8648	13-10-60	10.	8.0	7.0	7.0	0.0	0.0	7.0	S B
SCHMIDT D.F.	NW32-02-26-3	8647	13-10-60	19.	8.0	13.0	13.0	0.0	0.0	13.0	S B
SCHMIDT D.F.	SE32-02-26-3	8646	13-10-60	23.	8.0	16.0	16.0	0.0	0.0	16.0	S B
SCHMIDT D.F.	NW32-02-26-3	8649	13-10-60	14.	8.0	10.0	10.0	0.0	0.0	10.0	S B
SMITH C.J.	SW31-03-26-3	8723	24-11-60	0.	0.0	10.0	2.0	8.0	0.0	10.0	S B
ANDERSON A.	NE07-05-25-3	8759	6- 1-61	11.	8.0	8.0	8.0	0.0	0.0	8.0	S B N
KISSELL J.	NW04-03-27-3	8767	16- 1-61	0.	0.0	10.0	2.0	8.0	0.0	10.0	S B
ARENDT F.	NW15-05-21-3	8773	27- 1-61	24.	8.0	16.0	16.0	0.0	0.0	16.0	S B N
PFRA	SE09-04-25-3	8786	30- 1-61	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B N
PFRA	NE18-01-26-3	8785	30- 1-61	0.	0.0	5.0	2.0	3.0	0.0	5.0	S B
PFRA	SW02-02-27-3	8784	30- 1-61	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B
PFRA	SW27-01-27-3	8783	30- 1-61	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B
PFRA	SE15-02-26-1	8782	30- 1-61	0.	0.0	5.0	2.0	3.0	0.0	5.0	S B
PFRA	NW28-02-27-3	8781	30- 1-61*	0.	0.0	6.0	2.0	4.0	0.0	6.0	S B
PFRA	NW01-02-26-3	8780	30- 1-61	0.	0.0	10.0	5.0	5.0	0.0	10.0	S B
PFRA	SE09-04-27-3	8791	30- 1-61	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B
PFRA	NW07-04-27-3	8790	30- 1-61	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B
PFRA	SW03-04-25-3	8789	30- 1-61	0.	0.0	19.0	5.0	14.0	0.0	19.0	S B N
PFRA	SE11-04-25-3	8788	30- 1-61	0.	0.0	9.0	5.0	4.0	0.0	9.0	S B N
PFRA	NW08-04-25-3	8787	30- 1-61	0.	0.0	13.0	5.0	8.0	0.0	13.0	S B N
AMUNDSON E	SE13-03-25-3	8884	10- 5-61	7.	8.0	12.0	5.0	7.0	0.0	12.0	S B N
AMUNDSON E	SE12-03-25-3	8905	23- 5-61	9.	4.0	6.0	3.0	3.0	0.0	6.0	S B N
SWIFT L.J.	SE35-02-26-3	8925	14- 6-61	0.	0.0	11.0	4.0	7.0	0.0	11.0	S B
MEIER WM.	NW20-08-29-3	8929	15- 6-61	20.	4.0	7.0	7.0	0.0	0.0	7.0	S B N
FRAME G.W.	SW03-05-28-3	8973	10- 7-61	8.	8.0	6.0	6.0	0.0	0.0	6.0	S B N
HARMON C.	SE19-02-25-3	8998	25- 7-61	48.	8.0	36.0	36.0	0.0	0.0	36.0	S B
BATTLE CK RANCH	SW12-06-30-3	9019	3- 8-61	0.	0.0	9.0	5.0	4.0	0.0	9.0	S B
BATTLE CK RANCH	NE23-06-30-3	9021	3- 8-61	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B
BATTLE CK RANCH	NW24-06-30-3	9020	3- 8-61	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B
TITTLE A.R.	SE03-04-26-3	9134	29- 9-61	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B
WORTHY GR COOP	NE31-02-27-3	9146	3-10-61	0.	0.0	5.0	2.0	3.0	0.0	5.0	S B N
PFRA	SE35-01-27-3	9169	16-10-61	0.	0.0	3.0	2.0	1.0	0.0	3.0	S B
PARSONAGE A.G.	SW35-06-28-3	9221	2-11-61	0.	0.0	7.0	2.0	5.0	0.0	7.0	S B
PARSONAGE W.	NE33-06-28-3	9252	15-11-61*	0.	0.0	5.0	3.0	2.0	0.0	5.0	S B
GAFF RANCH LTD	SW27-05-29-3	9260	22-11-61	17.	8.0	12.0	12.0	0.0	0.0	12.0	S B N
DEMCHENKO S.R.	NW08-07-28-3	9321	10- 1-62	40.	8.0	31.0	27.0	4.0	0.0	31.0	S B
BELLAMY P.K.	NE17-02-25-3	9343	6- 2-62	0.	0.0	7.0	2.0	5.0	0.0	7.0	S B
HARMON C.	SE20-02-25-3	9344	6- 2-62	38.	8.0	26.0	26.0	0.0	0.0	26.0	S B
PARSONAGE G.	NW10-07-28-3	9428	9- 5-62	0.	0.0	1.0	1.0	0.0	0.0	1.0	S B
PARSONAGE G.	SW09-07-28-3	9429	9- 5-62	0.	0.0	6.0	5.0	1.0	0.0	6.0	S B
BRAUN A.F.	SW24-04-29-3	9436	10- 5-62*	51.	8.0	46.0	34.0	12.0	0.0	46.0	S B N
BRAUN A.F.	NE24-04-29-3	9437	10- 5-62*	110.	8.0	119.0	74.0	45.0	0.0	119.0	S B N
COCHRANE C.	NE24-06-29-3	9460	25- 5-62	0.	0.0	6.0	3.0	3.0	0.0	6.0	S B
ARENDT M	SW14-05-21-3	9495	11- 6-62	21.	8.0	14.0	14.0	0.0	0.0	14.0	S B N
TENBORG N.H.	SW31-01-27-3	9530	17- 7-62	0.	0.0	7.0	3.0	4.0	0.0	7.0	S B
AMUNDSON E	SE12-03-25-3	9537	18- 7-62	19.	9.0	16.0	14.0	2.0	0.0	16.0	S B N
CURSONS F	SW01-06-23-3	9539	24- 7-62	6.	6.0	3.0	3.0	0.0	0.0	3.0	S B N
CURSONS F	NW27-04-23-3	9547	26- 7-62	8.	4.0	3.0	3.0	0.0	0.0	3.0	S B N
LEWIS N.J.	NW21-03-25-3	9586	9- 8-62	27.	4.0	9.0	9.0	0.0	0.0	9.0	S B N
PETTYJOHN G.P.	SW18-06-28-3	9639	18- 9-62	16.	8.0	11.0	11.0	0.0	0.0	11.0	S B
STOVKA A.	SW14-03-26-3	9679	17-10-62	4.	8.0	3.0	3.0	0.0	0.0	3.0	S B
STIRLING W.	SE10-04-20-3	9700	30-10-62*	0.	0.0	0.0	0.0	0.0	0.0	0.0	S B
WARDBERG A	SE08-05-24-3	9708	1-11-62	16.	8.0	11.0	11.0	0.0	0.0	11.0	S B
MCCONNELL J.E.	SW22-05-26-3	9750	29-11-62	11.	8.0	8.0	8.0	0.0	0.0	8.0	S B N
SMITH C.J.	NE34-04-27-3	9759	7-12-62	45.	8.0	30.0	30.0	0.0	0.0	30.0	S B
SMITH C.J.	NW34-04-27-3	9760	7-12-62	15.	8.0	10.0	10.0	0.0	0.0	10.0	S B
WENZEL K.W.	NW36-05-26-3	9763	11-12-62	0.	0.0	10.0	1.0	9.0	0.0	10.0	S B N
WENZEL M.H.	SW25-05-27-3	9772	20-12-62	18.	8.0	12.0	12.0	0.0	0.0	12.0	S B
SCHMIDT D	NE33-02-26-3	9775	21-12-62	0.	0.0	6.0	3.0	3.0	0.0	6.0	S B
NELUBOWICH A	SE32-04-24-3	9779	4- 1-63	0.	0.0	16.0	9.0	7.0	0.0	16.0	S B N
WAHLBERG G	NW23-03-25-3	9790	21- 1-63	10.	8.0	7.0	7.0	0.0	0.0	7.0	S B N
DOWNEY LAKE GR	NE06-07-27-3	9796	6- 2-63	0.	0.0	13.0	5.0	8.0	0.0	13.0	S B
PARSONAGE RANCH	SW33-06-29-3	9803	14- 2-63	27.	8.0	18.0	18.0	0.0	0.0	18.0	S B
RADE M.	NW31-04-25-3	9811	1- 3-63	15.	8.0	10.0	10.0	0.0	0.0	10.0	S B
MCCONNELL J.	SW28-05-26-3	9835	22- 3-63	6.	8.0	4.0	4.0	0.0	0.0	4.0	S B N
MCCONNELL J.	SW23-05-26-3	9836	22- 3-63	7.	8.0	5.0	5.0	0.0	0.0	5.0	S B N
AMUNDSON E.	NW35-03-25-3	9848	11- 4-63	0.	0.0	7.0	2.0	5.0	0.0	7.0	S B N
AMUNDSON R.	SW12-05-24-3	9907	5- 6-63	5.	8.0	3.0	3.0	0.0	0.0	3.0	S B N
PARSONAGE G.C.	NW11-07-29-3	9917	13- 6-63	32.	8.0	22.0	22.0	0.0	0.0	22.0	S B
HUERY F.	SW04-03-25-3	9922	20- 6-63	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B
MADSON W.	SW11-03-25-3	9952	26- 7-63	0.	0.0	1.0	1.0	0.0	0.0	1.0	S B
HUERY F.	SE04-03-25-3	10006	20- 9-63	0.	0.0	1.0	1.0	0.0	0.0	1.0	S B

BATTLE CREEK ALLOCATION DATA - SASKATCHEWAN
ALLOCATION DATA - ORDERED ACCORDING TO APPLICATION DATE

(acre-feet)

NAME	LOCATION	FILE NUM	DATE	IRRIGATED ACREAGE	DUTY IN	GROSS DIV	CONSUMPTIVE USE	LOSSES	RETURN FLOW	NET DEPLETION	PROVINCE STREAM	
HUERY J.	SW33-02-29-3	10015	23- 9-63	16.	8.0	11.0	11.0	0.0	0.0	11.0	S B	N
STETAR L.	SE21-03-27-3	10023	26- 9-63	0.	0.0	3.0	1.0	2.0	0.0	3.0	S B	
TITTLE A.R.	SE30-02-26-3	10054	25-10-63	0.	0.0	5.0	3.0	2.0	0.0	5.0	S B	
SCHMIDT D.E.	NW31-02-26-3	10138	6- 2-64	27.	8.0	27.0	18.0	9.0	0.0	27.0	S B	
DOWNEY LAKE GR	NE01-07-28-3	10139	7- 2-64	0.	0.0	15.0	9.0	6.0	0.0	15.0	S B	N
SCHAFER J.J.	NW18-05-27-3	10210	2- 6-64	7.	8.0	5.0	5.0	0.0	0.0	5.0	S B	N
MEITZ P.	NE04-06-27-3	10340	15- 9-64	6.	8.0	4.0	4.0	0.0	0.0	4.0	S B	
GLAGAU O.E.	NW36-03-26-3	10362	28- 9-64	0.	0.0	4.0	1.0	3.0	0.0	4.0	S B	
GLAGAU O.E.	NE35-03-26-3	10361	28- 9-64	0.	0.0	10.0	1.0	9.0	0.0	10.0	S B	
SMITH C.	SW07-05-26-3	10416	6-11-64	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B	N
KISSELL S.F.	NW09-04-26-3	10430	18-11-64	0.	0.0	6.0	4.0	2.0	0.0	6.0	S B	
BEHRMAN WM.	SE15-04-26-3	10445	1-12-64	0.	0.0	6.0	3.0	3.0	0.0	6.0	S B	
SIX MILE RANCH	SW30-07-28-3	10449	4-12-64	0.	0.0	3.0	2.0	1.0	0.0	3.0	S B	
JONES A.J.	SW36-04-29-3	10548	14- 6-65	9.	8.0	6.0	6.0	0.0	0.0	6.0	S B	N
BEHRMAN WM.	SE23-04-26-3	10579	28- 7-65	22.	4.0	8.0	8.0	0.0	0.0	8.0	S B	N
FRENCH J.B.	SE34-03-27-3	10678	3-12-65	0.	0.0	7.0	1.0	6.0	0.0	7.0	S B	
PETTYJOHN A.B.	SE11-06-29-3	10694	24- 1-66	0.	0.0	1.0	1.0	0.0	0.0	1.0	S B	N
RIDGECLIFF GR	NW24-03-25-3	10716	8- 3-66	0.	0.0	12.0	3.0	9.0	0.0	12.0	S B	N
PALMER H.	NW19-03-25-3	10784	5- 7-66	20.	4.0	7.0	7.0	0.0	0.0	7.0	S B	N
DOLGOPOL N.	NW02-05-29-3	10824	2-12-66	0.	0.0	5.0	2.0	3.0	0.0	5.0	S B	N
STIRLING S.	SW09-04-28-3	10844	20-12-66	17.	4.0	6.0	6.0	0.0	0.0	6.0	S B	N
FRAME G.W.	SE21-04-28-3	10990	10- 1-68	5.	8.0	4.0	4.0	0.0	0.0	4.0	S B	N
PARSONAGE RANCH	SE29-06-28-3	10992	11- 1-68	0.	0.0	5.0	4.0	1.0	0.0	5.0	S B	
SANDERSON T.L.	SE32-04-28-3	10993	11- 1-68	12.	4.0	4.0	4.0	0.0	0.0	4.0	S B	N
BRETON L	NE03-05-23-3	11032	1- 2-68	9.	4.0	3.0	3.0	0.0	0.0	3.0	S B	N
MOELLER G.E.	SW26-04-28-3	11145	23- 4-68*	15.	4.0	5.0	5.0	0.0	0.0	5.0	S B	N
STIRLING S.	SE09-04-28-3	11167	17- 6-68	13.	8.0	9.0	9.0	0.0	0.0	9.0	S B	N
MCCONNELL J.E.	SE36-05-26-3	11192	3- 9-68	14.	8.0	10.0	10.0	0.0	0.0	10.0	S B	
MCCONNELL J.W.	NE25-05-26-3	11191	3- 9-68	10.	8.0	7.0	7.0	0.0	0.0	7.0	S B	
SANDERSON T.L.	NE32-04-28-3	11207	1-10-68	41.	8.0	28.0	28.0	0.0	0.0	28.0	S B	N
PRIDMORE J.E.	SE33-05-27-3	11240	19-12-68	69.	8.0	46.0	46.0	0.0	0.0	46.0	S B	
HUERY J.	NE04-03-25-3	11301	31- 1-69	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B	N
MCKELVEY H.	NE31-04-27-3	11329	10- 2-69	15.	4.0	5.0	5.0	0.0	0.0	5.0	S B	N
REYNOLDS A.E.	NW01-05-29-3	11337	11- 2-69	17.	8.0	12.0	12.0	0.0	0.0	12.0	S B	N
REYNOLDS A.E.	NW01-05-29-3	11342	13- 2-69	0.	0.0	4.0	3.0	1.0	0.0	4.0	S B	N
DOLGOPOL N.	NE03-05-29-3	11343	13- 2-69	17.	8.0	12.0	12.0	0.0	0.0	12.0	S B	N
SANDERSON T.L.	SE29-04-28-3	11358	18- 2-69	14.	4.0	5.0	5.0	0.0	0.0	5.0	S B	N
ORMISTON G.	NE05-04-26-3	11362	21- 2-69**	0.	0.0	19.0	5.0	14.0	0.0	19.0	S B	
REYNOLDS A.E.	SW36-03-28-3	11361	21- 2-69	0.	0.0	13.0	3.0	10.0	0.0	13.0	S B	
WAGNER M.	NW35-04-29-3	11371	25- 2-69	27.	8.0	18.0	18.0	0.0	0.0	18.0	S B	N
BROWN C.M.	NW18-05-26-3	11387	18- 3-69	16.	4.0	6.0	6.0	0.0	0.0	6.0	S B	N
FRAME G.W.	SW04-05-28-3	11430	30- 6-69	18.	8.0	12.0	12.0	0.0	0.0	12.0	S B	N
FRAME G.W.	NW03-05-28-3	11429	30- 6-69	5.	4.0	2.0	2.0	0.0	0.0	2.0	S B	N
HUERY J.	NW34-02-25-3	11446	1- 8-69	11.	8.0	12.0	8.0	4.0	0.0	12.0	S B	
PALMER H	NW29-03-25-3	11568	6- 2-70	0.	0.0	5.0	3.0	2.0	0.0	5.0	S B	N
MCCONNELL J.E.	NE15-05-26-3	11582	25- 2-70	10.	8.0	7.0	7.0	0.0	0.0	7.0	S B	N
BRETON L	NW03-05-23-3	11601	26- 3-70	12.	4.0	4.0	4.0	0.0	0.0	4.0	S B	N
LUMAN L.W.	SE15-04-28-3	11615	16- 4-70	23.	8.0	16.0	16.0	0.0	0.0	16.0	S B	
WORTHY GR. CO-OP	SW32-02-27-3	11650	24- 6-70	0.	0.0	8.0	4.0	4.0	0.0	8.0	S B	
REYNOLDS A.E.	NE06-05-28-3	11713	13-10-70	34.	8.0	23.0	23.0	0.0	0.0	23.0	S B	N
PARSONAGE RANCH	SC17-06-28-1	11739	30-11-70	0.	0.0	5.0	4.0	1.0	0.0	5.0	S B	
PEDERSEN W.L.	NW14-05-26-3	11749	11-12-70	15.	8.0	10.0	10.0	0.0	0.0	10.0	S B	N
HALYUNG J.R.	NE21-02-25-3	11790	26- 1-71	0.	0.0	3.0	2.0	1.0	0.0	3.0	S B	N
PEDERSEN W.L.	SE25-05-26-3	11805	11- 2-71	5.	8.0	3.0	3.0	0.0	0.0	3.0	S B	
PEDERSEN W.L.	NW14-05-26-3	11809	15- 2-71	5.	8.0	3.0	3.0	0.0	0.0	3.0	S B	N
WILSON W.L.	NW14-06-28-3	11866	19- 5-71**	39.	8.0	26.0	26.0	0.0	0.0	26.0	S B	N
HUERY M.N.	SE09-03-25-3	11981	26-11-71	0.	0.0	3.0	1.0	2.0	0.0	3.0	S B	
ARENDT B	NW11-05-23-3	12095	5- 5-72	24.	8.0	33.0	16.0	17.0	0.0	33.0	S B	N
AGAR R.	SW17-05-26-3	12173	9- 8-72	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B	N
KISELL J.	SE16-04-26-3	12266	10- 1-73	0.	0.0	3.0	2.0	1.0	0.0	3.0	S B	
BLAKLEY L.	SE23-04-27-3	12455	2- 1-74	0.	0.0	3.0	2.0	1.0	0.0	3.0	S B	
PRIDMORE J.E.	NE28-05-27-3	12638	23- 9-74	29.	8.0	20.0	20.0	0.0	0.0	20.0	S B	
SANDERSON L.	SE05-05-28-3	12689	10- 2-75	11.	8.0	8.0	8.0	0.0	0.0	8.0	S B	N
FORSETH ENTERPR.	NW15-03-25-3	12693	11- 2-75	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B	
FORSETH ENTERPR.	SW15-03-25-3	12692	11- 2-75	0.	0.0	1.0	1.0	0.0	0.0	1.0	S B	
FORSETH ENTERPR.	NW15-03-25-3	12691	11- 2-75	0.	0.0	4.0	3.0	1.0	0.0	4.0	S B	
DERNDTSSON B.	NW29-05-25-3	12885	3- 2-76	0.	0.0	2.0	1.0	1.0	0.0	2.0	S B	N
KISELL S.F.	SW09-03-27-3	12933	8- 3-76**	20.	4.0	7.0	7.0	0.0	0.0	7.0	S B	N
RAMSAY WM. EST.	SW14-07-30-3	13002	9- 7-76	0.	0.0	3.0	2.0	1.0	0.0	3.0	S B	
WARBERG N	SE24-03-25-3	13067	13-12-76	0.	0.0	2.0	2.0	0.0	0.0	2.0	S B	N
FORSETH ENTERPR.	NW26-03-25-3	13078	12- 1-77	0.	0.0	3.0	2.0	1.0	0.0	3.0	S B	N
LEISMEISTER P	SE06-06-27-3	13107	14- 2-77	5.	7.0	3.0	3.0	0.0	0.0	3.0	S B	N
CAN GOVT PFRA	SE02-01-26-3	13251	25- 5-77	0.	0.0	6.0	3.0	3.0	0.0	6.0	S B	N
CAN GOVT PFRA	SC35-01-26-3	13250	25- 5-77	0.	0.0	6.0	3.0	3.0	0.0	6.0	S B	
CAN GOVT PFRA	SW24-01-26-3	13249	25- 5-77	0.	0.0	6.0	3.0	3.0	0.0	6.0	S B	
CAN GOVT PFRA	NW07-02-25-3	13272	27- 6-77	0.	0.0	7.0	3.0	4.0	0.0	7.0	S B	
CAN GOVT PFRA	NW12-01-26-3	13288	5- 8-77	0.	0.0	13.0	3.0	10.0	0.0	13.0	S B	N
PENNER G	SE01-04-26-3	13374	12-12-77	0.	0.0	4.0	2.0	2.0	0.0	4.0	S B	N
LEWIS H	SW21-03-25-3	13384	6- 1-78**	0.	0.0	0.0	0.0	0.0	0.0	0.0	S B	N
CHAPMAN	NW23-03-26-3	13389	12- 1-78**	0.	0.0	0.0	0.0	0.0	0.0	0.0	S B	
LEISMEISTER A	NW25-06-29-3	13400	23- 1-78	7.	8.0	5.0	5.0	0.0	0.0	5.0	S B	N
NOTUKEU G	NE32-03-27-3	13404	25- 1-78	0.	0.0	6.0	3.0	3.0	0.0	6.0	S B	
NOTUKEU G	NW30-03-27-3	13403	25- 1-78	0.	0.0	6.0	3.0	3.0	0.0	6.0	S B	
BRAUN J	SW18-04-28-3	13415	6- 2-78**	0.	0.0	0.0	0.0	0.0	0.0	0.0	S B	N
ALEXANDER G	NW08-05-23-3	13535	12- 5-78**	0.	0.0	0.0	0.0	0.0	0.0	0.0	S B	N
MCGREGOR DARRYL	NE35-03-27-3	13673	1- 2-79**	0.	0.0	0.0	0.0	0.0	0.0	0.0	S B	N
MEITZ P	NW04-06-27-3	13756	29- 3-79**	0.	0.0	0.0	0.0	0.0	0.0	0.0	S B	

* - AUTHORITY
** - APPLICATION
N - NON CONTRIBUTING
B - BATTLE CREEK
M - MIDDLE CREEK
L - LODGE CREEK
G - MCRAE CREEK
S - SASKATCHEWAN
A - ALBERTA

The above listing was agreed and exchanged by the COIAA Members on August 20, 1980.

TABLE 15. PROJECT INFORMATION FOR LODGE CREEK BASIN - SASKATCHEWAN

ALLOCATION DATA - ORDERED ACCORDING TO APPLICATION DATE

NAME	LOCATION	FILE NUM	DATE	IRRIGATED ACREAGE	DUTY IN	GROSS DIV (acre-feet)	CONSUMPTIVE USE (acre-feet)	LOSSES (acre-feet)	RETURN FLOW (acre-feet)	NET DEPLETION (acre-feet)	PROVINCE STREAM
SPANGLER J.M.	SW35-02-30-3	141	4- 2- 8	1019.	18.0	2036.0	1529.0	100.0	407.0	1629.0	S L
GRIFFITHS G.	SE29-03-30-3	831	15-11-35	126.	8.0	108.0	84.0	24.0	0.0	108.0	S L
PFRA	NW11-01-29-3	3434	6- 5-39	0.	0.0	10.0	5.0	5.0	0.0	10.0	S L
PFRA	SE29-01-29-3	3433	6- 5-39	0.	0.0	3.0	2.0	1.0	0.0	3.0	S L
EREMENKO E.	NE21-01-30-3	3714	4-10-39	0.	0.0	7.0	3.0	4.0	0.0	7.0	S L N
EREMENKO E.	NE33-01-30-3	3713	4-10-39	0.	0.0	6.0	3.0	3.0	0.0	6.0	S L
ALTAWAN GR CO-OP	SW26-03-30-3	6122	15- 6-50	0.	0.0	11.0	5.0	6.0	0.0	11.0	S L
BUCHANAN R.L.	SW18-03-29-3	7436	14- 3-57	0.	0.0	2.0	1.0	1.0	0.0	2.0	S L
PFRA	SW24-01-29-3	7692	29- 5-58	0.	0.0	8.0	4.0	4.0	0.0	8.0	S L
BATTLE CK. RANCH	SE29-04-30-3	7798	14- 8-58	0.	0.0	4.0	1.0	3.0	0.0	4.0	S L
PFRA	SW35-02-30-3	8059	21- 5-59	0.	0.0	480.0	0.0	480.0	0.0	480.0	S L
BUCHANAN G.A.	SE36-01-30-3	10136	5- 2-64	38.	8.0	23.0	23.0	0.0	0.0	23.0	S L
TRUMPOUR D.H.	NE13-01-30-3	10382	9-10-64	0.	0.0	7.0	3.0	4.0	0.0	7.0	S L
MIDDLE RANCH CO.	NE25-03-30-3	10668	24-11-65	0.	0.0	2.0	1.0	1.0	0.0	2.0	S L
ALTAWAN GR CO-OP	SW25-03-30-3	10877	9- 2-67	13.	8.0	9.0	9.0	0.0	0.0	9.0	S L
SAVILLE J.	NE29-02-30-3	10989	10- 1-68	0.	0.0	7.0	3.0	4.0	0.0	7.0	S L
SAVILLE J.M.	NE31-02-30-3	11300	31- 1-69	0.	0.0	6.0	4.0	2.0	0.0	6.0	S L
SAVILLE J.M.	SE15-02-30-3	11370	25- 2-69	0.	0.0	2.0	1.0	1.0	0.0	2.0	S L
SAVILLE J.M.	SE29-03-30-3	12481	31- 1-74	14.	8.0	10.0	10.0	0.0	0.0	10.0	S L
SAVILLE J.M.	NE21-03-30-3	12480	31- 1-74	4.	8.0	3.0	3.0	0.0	0.0	3.0	S L
SAVILLE J.M.	NE17-03-30-3	12479	31- 1-74	11.	8.0	10.0	8.0	2.0	0.0	10.0	S L
SAVILLE J.M.	NW09-03-30-3	12478	31- 1-74	8.	8.0	7.0	5.0	2.0	0.0	7.0	S L

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L - LODGE CREEK
C - McRAE CREEK
S - SASKATCHEWAN
A - ALBERTA

The above listing was agreed and exchanged by the COIAA Members on August 20, 1980.

TABLE 16. PROJECT INFORMATION FOR MIDDLE CREEK BASIN - SASKATCHEWAN

ALLOCATION DATA - ORDERED ACCORDING TO APPLICATION DATE

NAME	LOCATION	FILE NUM	DATE	IRRIGATED ACREAGE	DUTY IN	GROSS DIV (acre-feet)	CONSUMPTIVE USE (acre-feet)	LOSSES (acre-feet)	RETURN FLOW (acre-feet)	NET DEPLETION (acre-feet)	PROVINCE STREAM
MIDDLEFORK RANCH	NE04-04-29-3	205	6-12-10	43.	17.0	60.0	60.0	0.0	0.0	60.0	S M
SILICH A.	NW23-03-29-3	289	29- 6-16	17.	8.0	17.0	13.0	4.0	0.0	17.0	S M
TRUMPOUR D.H.	NW24-03-29-3	410	27-12-22	36.	8.0	24.0	24.0	0.0	0.0	24.0	S M
SPANGLER C.B.	SW35-02-30-3	416	28- 8-23*	0.	0.0	0.0	0.0	0.0	0.0	0.0	S M
LUMAN L.W.	NE25-03-29-3	476	3- 3-27	0.	0.0	4.0	2.0	2.0	0.0	4.0	S M
BUCHANAN H.L.	SW10-03-29-3	593	13- 7-35	22.	8.0	15.0	15.0	0.0	0.0	15.0	S M
TRUMPOUR D.	NW27-02-29-3	663	22- 8-35	0.	0.0	8.0	3.0	5.0	0.0	8.0	S M
STERLING S.	NE04-04-28-3	735	20- 9-35	0.	0.0	4.0	2.0	2.0	0.0	4.0	S M
PERA	NE21-05-30-3	771	9-10-35*	0.	0.0	1240.0	0.0	1240.0	0.0	1240.0	S M
PEDERSON L.	SE22-02-29-3	788	15-10-35	12.	8.0	13.0	8.0	5.0	0.0	13.0	S M
PEDERSEN L.	SW22-02-29-3	787	15-10-35	24.	8.0	16.0	16.0	0.0	0.0	16.0	S M
GRIFFITHS G.	SW21-03-30-3	832	15-11-35	0.	0.0	0.0	0.0	0.0	0.0	0.0	S M
MITCHELL RANCH	SW25-05-30-3	835	20-11-35	705.	15.0	1088.0	870.0	0.0	218.0	870.0	S M
LUMAN L.W.	SW25-03-29-3	839	25-11-35	0.	0.0	1.0	1.0	0.0	0.0	1.0	S M
TURNBULL WM.	SE04-04-28-3	1060	8- 8-36	0.	0.0	1.0	1.0	0.0	0.0	1.0	S M
SCHAFER L.S.	SE05-04-28-3	1234	14- 9-36	0.	0.0	4.0	1.0	3.0	0.0	4.0	S M
TRUMPOUR D.H.	NW28-02-29-3	1394	20-10-36	0.	0.0	3.0	3.0	0.0	0.0	3.0	S M
TRUMPOUR D.H.	NW24-03-29-3	1583	9- 2-37	19.	8.0	14.0	13.0	1.0	0.0	14.0	S M
TRUMPOUR D.H.	SW24-03-29-3	1582	9- 2-37	16.	8.0	10.0	10.0	0.0	0.0	10.0	S M
SCHAFER L.S.	SE31-03-28-3	1801	27- 5-37	0.	0.0	2.0	1.0	1.0	0.0	2.0	S M
SCHAFER M.V.	SW01-04-29-3	2930	30- 6-38	0.	0.0	3.0	2.0	1.0	0.0	3.0	S M
SCHAFER L.S.	SE07-04-28-3	3186	14-11-38	0.	0.0	1.0	1.0	0.0	0.0	1.0	S M
DUCKS UNLIMITED	NE21-05-30-3	3983	9-12-40**	0.	0.0	0.0	0.0	0.0	0.0	0.0	S M
TRUMPOUR D.H.	SW28-02-29-3	4185	9-10-41	10.	8.0	7.0	7.0	0.0	0.0	7.0	S M
WAGNER D	NW01-04-28-3	4382	22- 6-42	5.	10.0	4.0	4.0	0.0	0.0	4.0	S M
EREMENKO D	SW19-02-29-3	4446	1-10-42	8.	4.0	3.0	3.0	0.0	0.0	3.0	S M
SILICH A	NW23-03-29-3	4517	20- 8-43	0.	0.0	4.0	2.0	2.0	0.0	4.0	S M
MIDDLE RANCH CO.	NE10-04-29-3	4932	30- 9-46	0.	0.0	2.0	1.0	1.0	0.0	2.0	S M
TRUMPOUR E.S.	NW24-03-29-3	4948	11-10-46	0.	0.0	1.0	1.0	0.0	0.0	1.0	S M
STOKE S.	SE20-02-29-3	4965	24-10-46	71.	8.0	48.0	48.0	0.0	0.0	48.0	S M
BUCHANAN H.L.	NE04-03-29-3	5136	3- 8-47	140.	8.0	109.0	93.0	16.0	0.0	109.0	S M
STIRLING S.	NW04-04-28-3	6196	24- 7-50	6.	8.0	4.0	4.0	0.0	0.0	4.0	S M
JONES A.L.	NE32-04-29-3	6637	27- 6-52	9.	8.0	6.0	6.0	0.0	0.0	6.0	S M N
PIERCE J.A.	NW29-03-28-3	6645	18- 7-52	0.	0.0	3.0	1.0	2.0	0.0	3.0	S M N
SCHAFER L.S.	NE31-03-28-3	7196	3-11-55	0.	0.0	4.0	1.0	3.0	0.0	4.0	S M
STIRLING S.	NE36-03-29-3	7596	18-11-57	0.	0.0	9.0	2.0	7.0	0.0	9.0	S M
ZENINER J	SW20-03-28-3	7644	5- 3-58	0.	0.0	8.0	3.0	5.0	0.0	8.0	S M
WAGNER M.J.	SE23-04-30-3	7775	4- 8-58	0.	0.0	17.0	5.0	12.0	0.0	17.0	S M N
EREMENKO E.	NW10-02-29-3	8118	2- 7-59	0.	0.0	6.0	3.0	3.0	0.0	6.0	S M N
BATTLE CK RANCH	SE25-04-30-3	8250	24- 9-59	25.	8.0	24.0	17.0	7.0	0.0	24.0	S M
BATTLE CK RANCH	NW19-04-29-3	8249	24- 9-59	0.	0.0	3.0	2.0	1.0	0.0	3.0	S M
PIERCE J.A.	NE30-03-28-3	8299	13-11-59*	13.	8.0	10.0	9.0	1.0	0.0	10.0	S M
PEDERSEN L.	NE21-02-29-3	8743	12-12-60	0.	0.0	2.0	1.0	1.0	0.0	2.0	S M N
BUCHANAN H.L.	NW25-01-30-3	8936	19- 6-61	0.	0.0	13.0	5.0	8.0	0.0	13.0	S M
BUCHANAN H.L.	NW02-03-29-3	8941	23- 6-61	0.	0.0	4.0	2.0	2.0	0.0	4.0	S M N
GAFF RANH LTD.	NW21-05-29-3	9455	22- 5-62	0.	0.0	15.0	5.0	10.0	0.0	15.0	S M N
BATTLE CK. RANCH	NE36-04-30-3	9598	20- 8-62	0.	0.0	17.0	5.0	12.0	0.0	17.0	S M
TRUMPOUR D	SW27-02-29-3	9670	11-10-62	0.	0.0	12.0	5.0	7.0	0.0	12.0	S M
PERA	NW35-02-30-3	10169	6- 4-64**	626.	4.0	200.0	200.0	0.0	0.0	200.0	S M
JONES A.J.	SW29-04-29-3	10372	1-10-64	27.	8.0	18.0	18.0	0.0	0.0	18.0	S M
BUCHANAN H.L.	SE23-01-30-3	10377	7-10-64	0.	0.0	13.0	5.0	8.0	0.0	13.0	S M
GRIFFITHS G.	SE20-03-30-3	10600	19- 8-65**	85.	8.0	56.0	56.0	0.0	0.0	56.0	S M
SCHAFER P.A.	SE30-03-28-3	10650	2-11-65	0.	0.0	1.0	1.0	0.0	0.0	1.0	S M
PEDERSEN L.	NW22-02-29-3	10652	3-11-65	0.	0.0	7.0	2.0	5.0	0.0	7.0	S M
PEDERSEN L.	NW22-02-29-3	10654	4-11-65	0.	0.0	2.0	1.0	1.0	0.0	2.0	S M
R.M. OF RENO	NW01-04-28-3	10657	8-11-65	0.	0.0	3.0	2.0	1.0	0.0	3.0	S M N
TRUMPOUR D.H.	NE28-02-29-3	10660	15-11-65	0.	0.0	6.0	1.0	5.0	0.0	6.0	S M
PEDERSEN L.	NE22-02-29-3	10663	18-11-65	12.	8.0	8.0	8.0	0.0	0.0	8.0	S M
TRUMPOUR D.H.	SW27-02-29-3	10671	24-11-65	0.	0.0	3.0	1.0	2.0	0.0	3.0	S M N
MIDDLE RANCH CO.	SE30-03-29-3	10670	24-11-65	0.	0.0	6.0	4.0	2.0	0.0	6.0	S M
PEDERSEN L.	NW15-02-29-3	10667	24-11-65	0.	0.0	4.0	2.0	2.0	0.0	4.0	S M
PEDERSEN C.	NE15-02-29-3	10789	12- 7-66	22.	8.0	15.0	15.0	0.0	0.0	15.0	S M
STIRLING S.	NW02-04-29-3	11044	5- 2-68	35.	4.0	12.0	12.0	0.0	0.0	12.0	S M N
SAVILLE J	SE07-02-30-3	11069	21- 2-68	0.	0.0	6.0	3.0	3.0	0.0	6.0	S M N
JONES A.J.	SW29-04-29-3	11204	18- 9-68	27.	8.0	18.0	18.0	0.0	0.0	18.0	S M
BUCHANAN H.L.	SE15-03-29-3	11336	11- 2-69	0.	0.0	9.0	5.0	4.0	0.0	9.0	S M
REESOR R.D.	NE14-04-29-3	11436	10- 7-69	12.	6.0	6.0	6.0	0.0	0.0	6.0	S M N
TRUMPOUR D.H.	SW14-03-29-3	11569	9- 2-70	0.	0.0	7.0	4.0	3.0	0.0	7.0	S M
MIDDLE RANCH CO.	SW06-04-29-3	11726	2-11-70	0.	0.0	12.0	7.0	5.0	0.0	12.0	S M
MIDDLE RANCH CO.	SW06-04-29-3	11727	2-11-70	9.	8.0	6.0	6.0	0.0	0.0	6.0	S M
MIDDLE RANCH CO.	NW31-03-29-3	11738	30-11-70	0.	0.0	6.0	4.0	2.0	0.0	6.0	S M
MIDDLE RANCH CO.	NE01-04-30-3	11746	9-12-70	17.	8.0	12.0	12.0	0.0	0.0	12.0	S M
PETTYJOHN T.E.W.	SW32-05-29-3	11768	12- 1-71	29.	8.0	20.0	20.0	0.0	0.0	20.0	S M
MIDDLE RANCH CO.	NE04-04-29-3	11862	14- 5-71	34.	8.0	31.0	23.0	8.0	0.0	31.0	S M
JONES A.J.	SW29-04-29-3	11906	20- 7-71	63.	8.0	42.0	42.0	0.0	0.0	42.0	S M
MIDDLE RANCH CO.	NW34-03-29-3	12025	1- 2-72	19.	8.0	13.0	13.0	0.0	0.0	13.0	S M
MIDDLE RANCH CO.	NW20-04-29-3	12352	16- 4-73*	27.	8.0	18.0	18.0	0.0	0.0	18.0	S M
SAVILLE J.M.	SW21-03-30-3	12482	31- 1-74**	67.	8.0	44.0	44.0	0.0	0.0	44.0	S M
SCHAFER N.V.	SE23-03-29-3	12715	24- 2-75	17.	4.0	6.0	6.0	0.0	0.0	6.0	S M N

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C - MCRAE CREEK
S - SASKATCHEWAN
A - ALBERTA

The above listing was agreed and exchanged by the COIAA Members on August 20, 1980.

TABLE 17. PROJECT INFORMATION FOR MCRAE CREEK BASIN - SASKATCHEWAN

ALLOCATION DATA - ORDERED ACCORDING TO APPLICATION DATE

NAME	LOCATION	FILE NUM	DATE	IRRIGATED ACREAGE	DUTY IN	GROSS DIV	CONSUMPTIVE USE	(acre-feet) LOSSES	RETURN FLOW	NET DEPLETION	PROVINCE STREAM
HALLADAY C.	NW32-02-28-3	582	5- 7-35	5.	8.0	6.0	4.0	2.0	0.0	6.0	S C
PIERCE J.A.	NW18-03-28-3	755	1-10-35	0.	0.0	3.0	2.0	1.0	0.0	3.0	S C
WAGNER O.D.	SW05-03-28-3	902	15- 5-36	0.	0.0	5.0	2.0	3.0	0.0	5.0	S C
MCINERNEY T.	NE01-02-29-3	1070	11- 8-36	0.	0.0	3.0	3.0	0.0	0.0	3.0	S C
DENNIS R.W.	NE06-03-28-3	2455	17-11-37	1.	8.0	1.0	1.0	0.0	0.0	1.0	S C
DENNIS R.W.	NE06-03-28-3	2456	17-11-37	1.	8.0	1.0	1.0	0.0	0.0	1.0	S C
WAGNER M.J.	SW16-03-28-3	2696	12- 3-38	0.	0.0	4.0	2.0	2.0	0.0	4.0	S C
PERA	SE17-02-28-3	3428	6- 5-39	0.	0.0	12.0	5.0	7.0	0.0	12.0	S C
BUCHANAN H.L.	NE35-02-29-3	4445	1-10-42	0.	0.0	29.0	10.0	19.0	0.0	29.0	S C
WAGNER M.J.	NE17-03-28-3	4604	1- 6-44	0.	0.0	2.0	1.0	1.0	0.0	2.0	S C
HALLADAY J.O.	SE36-02-29-3	6677	29- 9-52	0.	0.0	14.0	3.0	11.0	0.0	14.0	S C
HALLADAY J.O.	NW24-02-29-3	6681	14-10-52	0.	0.0	10.0	1.0	9.0	0.0	10.0	S C
PERA	NE05-02-28-3	7694	29- 5-58	0.	0.0	10.0	5.0	5.0	0.0	10.0	S C
PERA	NW33-01-28-3	8199	15- 3-60	0.	0.0	10.0	5.0	5.0	0.0	10.0	S C
PERA	NW16-02-28-3	8398	15- 3-60	0.	0.0	8.0	5.0	3.0	0.0	8.0	S C
REYNOLDS K.	NE06-03-28-3	8531	18- 7-60	39.	8.0	38.0	26.0	12.0	0.0	38.0	S C
REYNOLDS W.	NE26-02-29-3	8555	4- 8-60	0.	0.0	16.0	1.0	15.0	0.0	16.0	S C
WAGNER M.	SW09-03-28-3	11186	23- 4-68	77.	8.0	52.0	52.0	0.0	0.0	52.0	S C
REYNOLDS A.E.	NW08-03-28-3	11385	18- 3-69	0.	0.0	5.0	2.0	3.0	0.0	5.0	S C
REYNOLDS K.D.	NW07-03-28-3	11386	18- 3-69	0.	0.0	6.0	2.0	4.0	0.0	6.0	S C
REYNOLDS W.	NE01-03-29-3	11725	2-11-70	0.	0.0	4.0	2.0	2.0	0.0	4.0	S C
WAGNER M.J.	NE04-03-28-3	12375	30- 5-73	12.	6.0	6.0	6.0	0.0	0.0	6.0	S C
MESSMER D.	SW15-03-28-3	12518	11- 3-74	0.	0.0	3.0	2.0	1.0	0.0	3.0	S C

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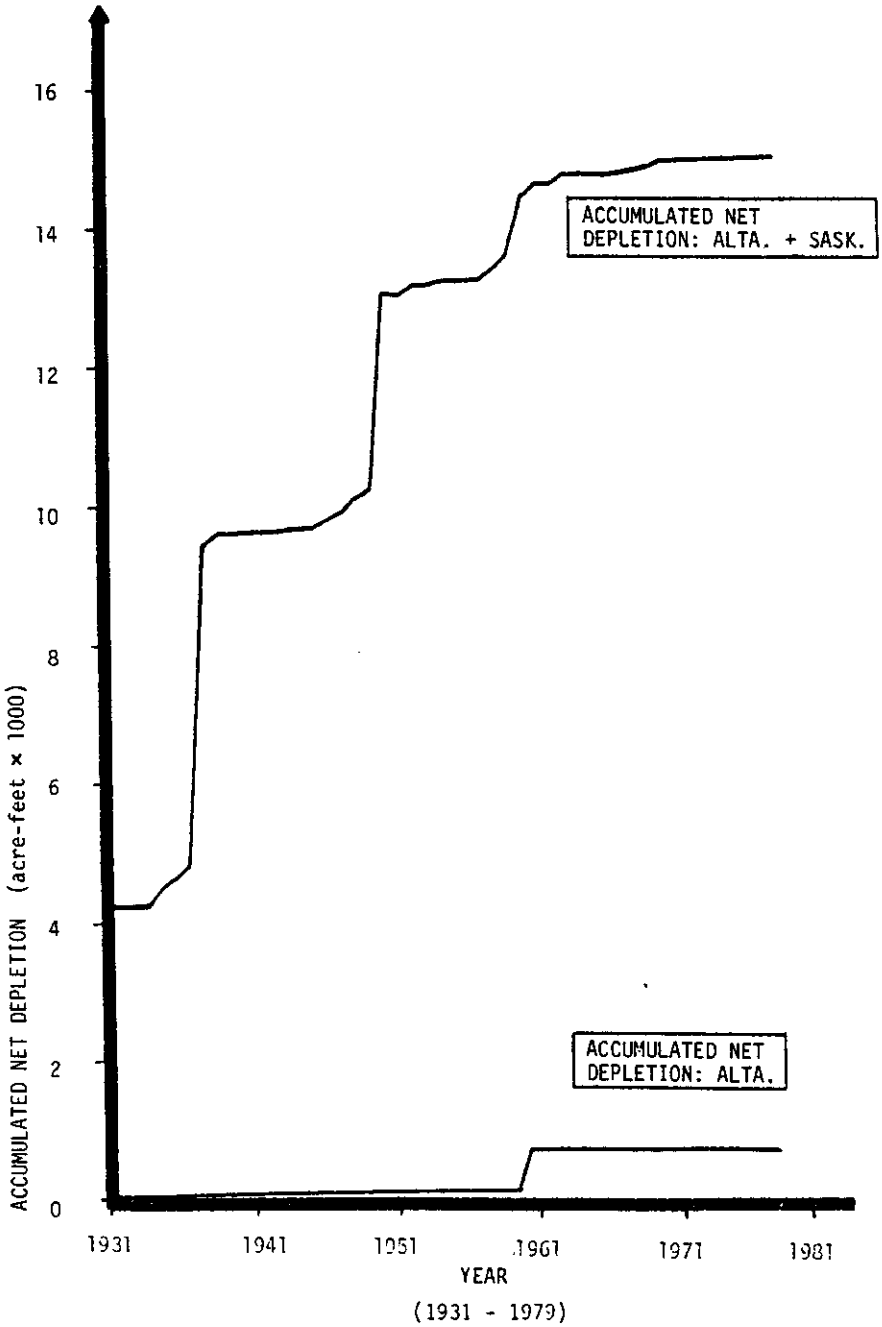
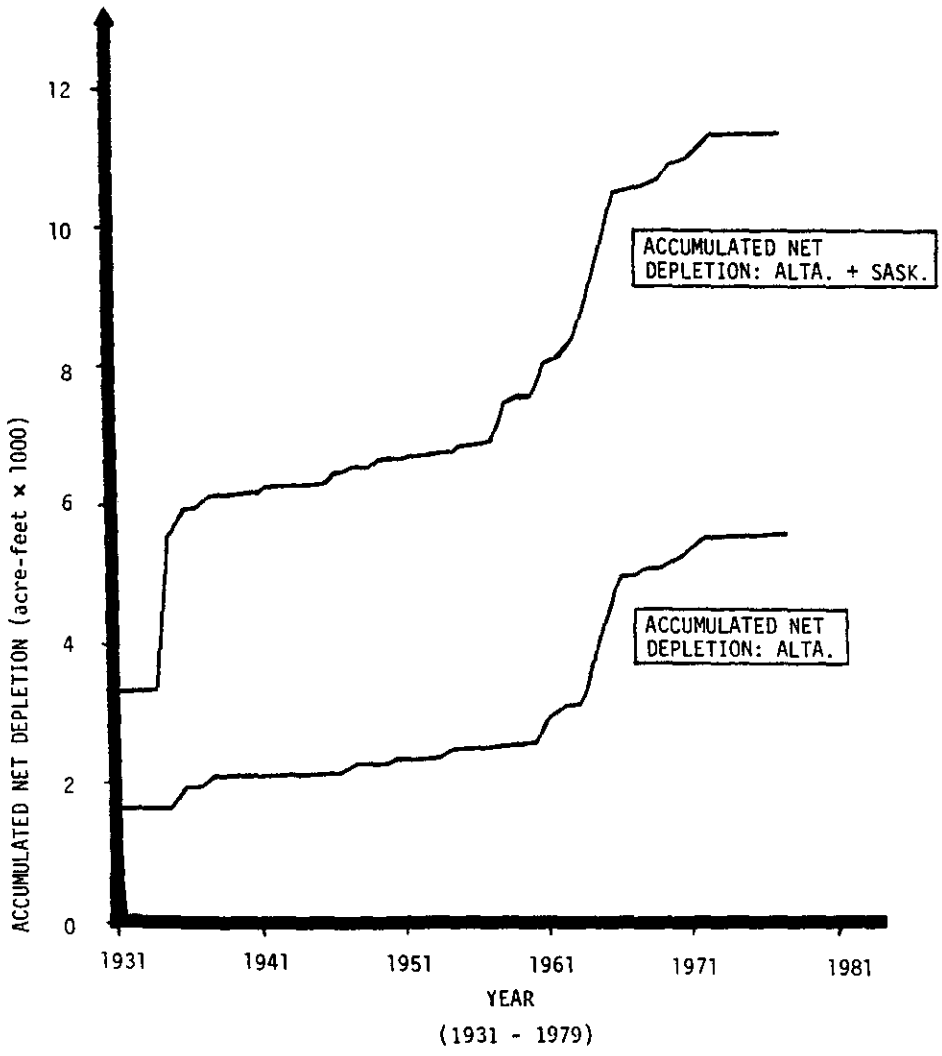
The above listing was agreed and exchanged by the COIAA Members on August 20, 1980.

FIGURE 7. ACCUMULATED NET DEPLETION FOR BATTLE CREEK DURING PERIOD 1931-1979



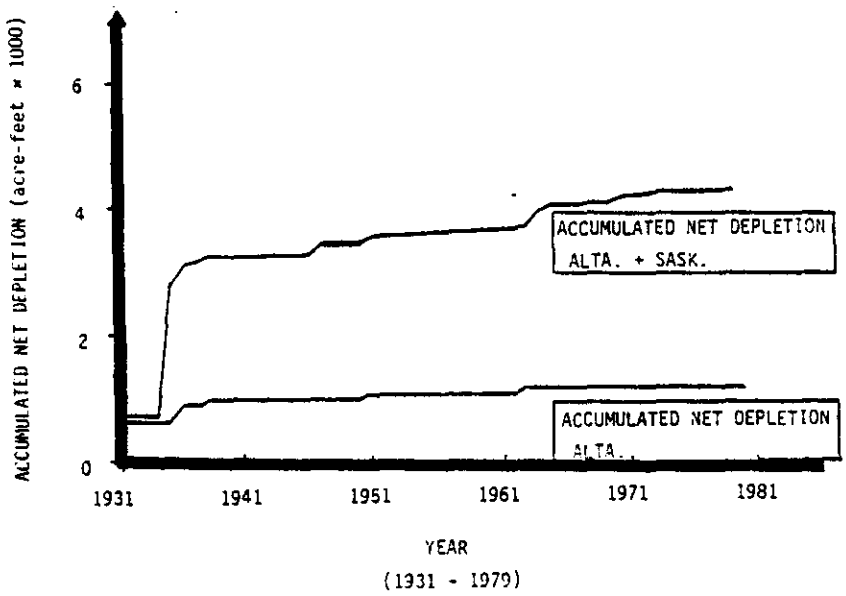
Note: Net depletion figures shown above are for projects located in the effective drainage area of the basin.

FIGURE 8. ACCUMULATED NET DEPLETION FOR LODGE, MIDDLE, AND McRAE CREEKS DURING THE PERIOD 1931- 1979



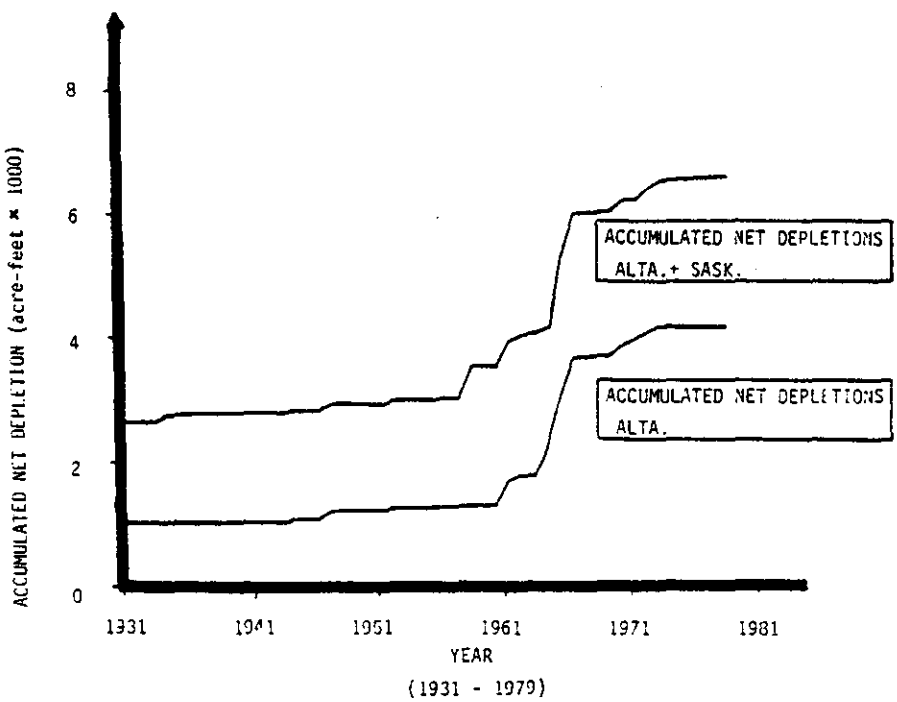
Note: Net depletion figures shown above are for projects located in the effective drainage area of the basin.

FIGURE 9: ACCUMULATED NET DEPLETION FOR MIDDLE CREEK DURING THE PERIOD 1931-1979.



Note: Net depletion figures shown above are for projects located in the effective drainage area of the basin.

FIGURE 10: ACCUMULATED NET DEPLETION FOR LODGE CREEK DURING THE PERIOD 1931-1979.



Note: 1. Net depletion figures shown above are for projects located in the effective drainage area of the basin.

2. Do not include Middle Creek or McRae Creek.

PRAIRIE PROVINCES WATER BOARD

Appendix IV

COMPARISON OF THE FIVE METHODS

This Appendix discusses in more detail, the five methods considered by the Committee on Interjurisdictional Agreements Administration in recommending the natural flow available to Canada in the two basins should be apportioned between Alberta and Saskatchewan.

METHOD 1 - SUBSISTING WATER RIGHTS

The right to use water in both provinces is based on the project's application date. Theoretically, water in the basins may be distributed based on that application date (priority) and the project with the earliest application date would have the right to use water before any other water user in the basin.

If this method was used there would be no need to apportion flow at the provincial boundary because flow would be distributed according to the overall priority number. Monitoring diversions to ensure that higher priority projects would be considered would require an intensive personnel commitment during each Spring period. The apportionment points might be increased, using this approach, to equal the total number of projects in the basin.

The quantity of natural flow is a function of the basin's drainage area, usually runoff quantities at downstream points are greater than that at upstream areas. If most of the higher priority projects are located in the upstream part of the basin, the water will be insufficient to satisfy the demand but the downstream users should not be restricted because the higher priority users have not been completely satisfied.

To make this method more practical, two new systems would have to be implemented. Both are expensive. They would involve considerable man-hours and equipment to function. They are:

1. A flow forecasts system to provide runoff information at major points of the basin.

2. An improved communication system to enable all water users to communicate to an administration centre and to report their water use situation.

The total number of projects in the Battle and Lodge basins is about 470 and 230 respectively. It is not practical to organize that many users to ensure that they will receive their allocation in accordance with their individual priority allocations.

METHOD 2 - LUMP-SUM ALLOCATIONS

This method would allow Alberta to withdraw a certain quantity of water each year and to release the remainder of the flow to Saskatchewan. Saskatchewan would then balance the flow and would ensure that 50% of natural flow is released to the United States to fulfill the 1909 Boundary Waters Treaty.

A lump sum diversion of 500 acre-feet would satisfy current Alberta needs in the Battle Creek basin. This amount is based on a 75 acre-feet use and the maximum evaporative losses that occur on Reesor lake. The area of Reesor Lake is approximately 130 acres, with a natural drainage area of 1,300 acres. Annual gross evaporation and precipitation in the area are estimated as follows:

	Annual Gross Evaporation (inches)	Annual Precipitation (inches)
Average	35	13
Maximum	45	25
Minimum	23	7

*Note: The above data was estimated using annual gross evaporation and precipitation data at Medicine Hat (8).

If we match a maximum evaporation of 45 inches to the minimum precipitation figure of 7 inches, we may assume that the maximum annual net evaporation loss would be 38 inches a year. This would give an evaporative loss of 410 acre-feet (38/12 x 130). Thus the total estimated net depletion for the Alberta portion of Battle Creek basin would be 485 acre-feet a year. For discussion purposes this amount has been rounded to 500 acre-feet.

In the Battle Creek basin, in any one year, Alberta would withdraw a quantity of flow up to 500 acre-feet (or the annual natural flow at Alberta-Saskatchewan boundary, whichever is less). Saskatchewan could use the rest of the annual flow and would be responsible for ensuring that 50% of natural flow was passed to the United States at international boundary.

Annual natural flow quantity, in Battle Creek, at Alberta-Saskatchewan boundary has always exceeded 500 acre-feet so Alberta would be able to withdraw 500 acre-feet in every year. In a below normal year, however, it might be difficult for Saskatchewan to balance the flow at international boundary without experiencing some shortages in use.

For Lodge Creek basin, quantity of flow which could be allocated to Alberta may be determined by considering:

1. Net depletion in Alberta at October 30, 1969 level (5,024 acre-feet).

2. Mean natural flow for the Lodge and Middle Creeks at Alberta-Saskatchewan boundary (22,273 acre-feet).

For the purpose of this study, it is assumed that 5,000 acre-feet a year could be allocated to Alberta. 5,000 acre-feet is about 22 percent of average natural flow for the Lodge and Middle Creeks at Alberta-Saskatchewan boundary, and is 99.5 percent of net depletion in Alberta. With this method, Alberta would have 5,000 acre-feet a year in most of the years, except in some years when natural flow at Alberta-Saskatchewan boundary is below 5,000 acre-feet. In most years, this method gives a higher share of the flow to Saskatchewan but, in some dry years, Saskatchewan would be forced to withdraw water from storage to balance the flow at international boundary.

A constant net depletion to be assigned to one province would tend to freeze future development in the upstream province and would give no flexibility for the upstream province to deal with her share of flow. In below normal years it would inhibit any future development in Saskatchewan because of the lump-sum retained upstream. Alberta and Saskatchewan would prefer to manage their own share of available flow based on existing water management policies, and would rather not create any new interprovincial water agreement that might possibly interfer with future water resources administration.

More monitoring would be required particularly in the spring runoff period. WSC would have to provide Alberta with net depletion figures more frequently, and as soon as Alberta reached their allowable net depletion Alberta water users would have to be instructed to use no more water from that basin for that calendar year. Saskatchewan, on the other hand, would be required to ensure that 50% of natural flow originating in the basin is passed to the United States without being guaranteed a continuing share of water in below normal years.

METHOD 3 - OCTOBER 30, 1969 LEVEL OF NET DEPLETION

Method 3 assumes that when Canada's share of flow is less than the October 30, 1969 level of depletion, the share of the flow allocated to each province will be made on the basis of a ratio to total basin use after the United States share has been satisfied. When Canada's share of flow is above the October 30, 1969 level, excess flow would be divided on a 50-50 basis between the two provinces.

An example of this method is as follows:

(All Units in acre-feet)

Battle Creek

Pre October 30, 1969 net depletion in Alberta	=	775 (5%)
Pre October 30, 1969 net depletion in Sask.	=	14,187 (95%)
Total		14,962 (100%)

(i) When Q is less than 14,962
- Alberta's share = Q x .05
- Saskatchewan's share = Q x .95

(ii) When Q is greater than 14,962
- Alberta's share = 775 + 0.5 (Q-14,962)
- Saskatchewan's share = 14,187 + 0.5 (Q-14,962)

where Q = one half of annual natural flow for Battle Creek at the international boundary.

Lodge Creek

Pre October 30, 1969 net depletion in Alberta	=	5,024 (48%)
Pre October 30, 1969 net depletion in Sask.	=	5,537 (52%)
Total		10,561 (100%)

(i) When A is less than 10,561
- Alberta's share = A x 0.48
- Saskatchewan's share = A x 0.52

(ii) When A is greater than 10,561
- Alberta's share = 5,024 + 0.5 (A-10,561)
- Saskatchewan's share = 5,537 + 0.5 (A-10,561)

where A = one half of annual natural flow for Lodge Creek at the international boundary.

As mentioned previously, the method employs two different equations to calculate the Alberta and Saskatchewan share of flow. It would be both tedious and time consuming to carry out the calculations each year. Furthermore, the

apportionment ratios are different than any other basins and more monitoring works would be required by Alberta, Saskatchewan and WSC to ensure that flow is divided in accordance with these apportionment ratios.

METHOD 4 - OCTOBER 30, 1969 LEVEL OF NET DEPLETION CONSIDERING MAIN STEM PROJECTS IN SASKATCHEWAN

A release of flow from the upstream province will not directly benefit downstream tributary uses. Therefore, a set of apportionment ratios based on pre-October 30, 1969 net depletions, as described in Method 3, may not properly reflect the basins situation related to available water for downstream use.

Method 4 was developed to eliminate the above disadvantage. The method is similar to Method 3 in that Canada's share of flow allocated to each province will be made on the basis of a set percentage. The main difference between these two methods is that Method 3 considers all projects having application date prior to October 30, 1969; while Method 4 considers only Main stem projects in Saskatchewan and projects in Alberta having a pre-October 30, 1969 application date.

The pre October 1969 net depletion figures for projects in Alberta and main stem projects in Saskatchewan of each of the three creeks being studied are as shown in Table 18.

TABLE 18 SUMMARY OF PRE OCTOBER 1969 NET DEPLETION FOR PROJECTS IN ALBERTA AND MAIN STEM PROJECTS IN SASKATCHEWAN

	Alberta		Saskatchewan		Total
	acre-feet	%	acre-feet	%	acre-feet
Battle	775	6.6	10,994	93.4	11,769
Lodge & Middle	5,024	50.9	4,853	49.1	9,877
Lodge	3,809	63.2	2,217	36.8	6,026
Middle	1,215	31.6	2,636	68.4	3,851

An example of this method is as follows:
(All Units in acre-feet).

Battle Creek

Total net depletion for projects in Alberta having pre-October 30, 1969 application date = 775 (7%)
Total net depletion for Main Stem projects in Saskatchewan having pre-October 30, 1969 application date = 10,994 (93%)
Total 11,769 (100%)

(i) When Q is less than 11,769
Alberta's share = Q x 0.07
Saskatchewan's share = Q x 0.93

(ii) When Q is greater than 11,769
Alberta's share = 775 + 0.5 (Q-11,769)
Saskatchewan's share = 10,994 + 0.5 (Q - 11,769)

Where Q = one-half of annual natural flow for Battle Creek at the international boundary.

Lodge Creek

Total net depletion for projects in Alberta having pre-October 30, 1969 applicate date = 5,024 (51%)
Total net depletion for Main Stem projects in Saskatchewan having pre-October 30, 1969 application date = 4,853 (49%)
Total 9,877 (100%)

(i) When A is less than 9,877
Alberta's share = A x 0.51
Saskatchewan's share = A x 0.49

(ii) When A is greater than 9,877
Alberta's share = 5,024 + 0.5 (A - 9,877)
Saskatchewan's share = 4,853 + 0.5 (A - 9,877)

Where A = one-half of annual natural flow for Lodge Creek at the international boundary.

Apportionment of flow based on Method 4 would be more acceptable than Method 3, but Method 4 still has some of the same disadvantages as does Method 3.

METHOD 5 - ARTICLE 3 OF SCHEDULE A

This method would require that 50% of the natural flow originating in Alberta be released to the United States via Saskatchewan, and that Alberta share the remaining flow on a 50-50 basis with Saskatchewan. In any given year, Alberta would be entitled to use 25% of the flow originating in Alberta and to

release 75% of all natural flow to Saskatchewan. Saskatchewan would then be required to balance the flow at the international boundary.

This method is the simplest way to apportion the flow at the Alberta-Saskatchewan boundary. The apportionment ratio between Alberta and Saskatchewan will be fixed on a 50-50 basis. Natural flow can be easily balanced at both the Alberta-Saskatchewan and the international boundaries without additional monitoring works. Because the apportionment ratio is not a function of the net depletion, both Alberta and Saskatchewan could manage their share of flow based on their current water resources policies with a minimum of additional operational costs and manpower commitments.

GENERAL COMPARISON

It is evident that, of the five methods under consideration, Method 1 is the most impractical, physically, the most difficult to implement. Consequently, the discussion will only be concerned with Methods 2, 3, 4 and 5.

Alberta and Saskatchewan's share of natural flow have been calculated using Methods 2, 3, 4 and 5 with details of the calculation shown in Table 20 to 27 inclusive and with a summary of the median, mean and standard deviations shown in Table 19.

The annual share of flow for Alberta and Saskatchewan using Methods 2, 3, 4 and 5 were plotted in Figure 11 to 14, which are discussed as follows.

BATTLE BASIN - Alberta

With Method 2, Alberta would have a constant flow of 500 acre-feet a year for all of the years (see Figure 11). This means that a guaranteed supply of 500 acre-feet a year can be made available with this method. Alberta's share of flow calculated by Methods 3, 4 and 5 would have more variations than that in method 2.

With Method 5, Alberta's share of flow in a median year is 1013 acre-feet, which is greater than that in Methods 2, 3 and 4 (see Table 19). This means that, with Method 5, in a median year, Alberta would have more water than that in the other methods.

BATTLE BASIN - Saskatchewan

In an average year, as shown in Figure 12, Saskatchewan's share of flows calculated by Methods 2, 3, 4 and

5 tend to give at the same level. There is no significant difference in Saskatchewan's share of flow calculated by these methods, particularly in a dry year.

As shown in Table 19, the median values of Saskatchewan's share of flow calculated by Methods 2, 3, 4 and 5 are fairly close and, as far as Saskatchewan is concerned, there would be not much difference in the method selected.

LODGE BASIN - Alberta

The share of flows for Alberta based on Method 2 tends to be at 5,000 acre-feet a year as (shown in Figure 13) except for some years when natural flow at the Alberta-Saskatchewan boundary is less than 5,000 acre-feet.

In wet years the share of flow for Methods 3 or 4 tend to have a higher flow than that for Methods 2 and 5.

In an average year, there is not too much difference in Alberta's share of flow calculated by Methods 3, 4, or 5.

LODGE BASIN - Saskatchewan

The share of flow calculated by Method 2 allocate too much flow to Saskatchewan in a wet year, and no flow will be released to Saskatchewan in some dry years making an international balance of flow unattainable. As shown in Figure 14, there are 11 out of 59 years that Saskatchewan's share of flow is negative, indicating that in these eleven years Saskatchewan would have to release water from its own storage facilities to meet the 1909 Boundary Waters Treaty.

Therefore, from the Saskatchewan point of view, Method 2 is not acceptable because it does not apportion the flow equitably in dry years.

In an average year, there is no significant difference in the share of flow for Saskatchewan calculated by Methods 3, 4 or 5. In a drier than average year, however, Method 5 will ensure Saskatchewan that it will have one half of the natural flow from Alberta to pass to the United States. Thus Saskatchewan will not have to meet Canada's commitment by using other water stored for irrigation use.

Based on this discussion, Method 5 is the most practical and the fairest method to divide the water of Battle and Lodge Creek basins fairly between Alberta, Saskatchewan and the United States.

TABLE 19 A COMPARISON ON THE SHARE OF FLOW CALCULATED BY METHODS 2, 3, 4 and 5

(acre-feet)

BATTLE CREEK - Alberta

	Mean	Standard Deviation	Median
Method 2	500	0	500
Method 3	1,758	3,188	517
Method 4	2,311	3,413	724
Method 5	1,249	976	1,013

BATTLE CREEK - Saskatchewan

	Mean	Standard Deviation	Median
Method 2	12,539	11,007	9,837
Method 3	11,280	8,163	9,820
Method 4	10,728	7,921	9,613
Method 5	11,790	10,279	9,236

LODGE CREEK - Alberta

	Mean	Standard Deviation	Median
Method 2	4,630	1,107	5,000
Method 3	6,505	5,964	5,075
Method 4	6,760	6,034	5,416
Method 5	5,568	4,874	4,536

LODGE CREEK - Saskatchewan

	Mean	Standard Deviation	Median
Method 2	8,749	11,689	5,660
Method 3	6,875	6,075	5,586
Method 4	6,620	6,005	5,245
Method 5	7,810	7,256	6,114

TABLE 20. COMPUTED SHARE OF FLOW FOR ALBERTA AND SASKATCHEWAN USING METHOD 2 - BATTLE CREEK BASIN

Unit acre-feet

Year	1 Natural Flow Alta - Sask Boundary	2 Alberta's Share of Flow	3 Flow Passed to Saskatchewan ③=①-②	4 Saskatchewan's Share of Flow ④=⑥-②	5 Natural Flow at International Boundary	6 Canada's Share of Flow ⑥=⑤ x ½
1920	4,732	500	4,232	13,305	27,611	13,805
1921	4,799	500	4,299	9,837	20,674	10.337
1922	7,127	500	6,627	26,523	54,046	27,023
1923	3,378	500	2,878	8,107	17,215	8,607
1924	2,379	500	1,879	4,664	10,328	5,164
1925	5,298	500	4,798	21,620	44,241	22,120
1926	2,885	500	2,385	2,066	5,132	2,566
1927	12,062	500	11,562	48,680	98,360	49,180
1928	6,086	500	5,586	18,070	37,140	18,570
1929	5,385	500	4,885	11,498	23,997	11,998
1930	3,655	500	3,155	15,776	32,552	16,276
1931	1,621	500	1,121	919	2,838	1,419
1932	2,220	500	1,720	5,403	11,807	5,903
1933	1,883	500	1,383	6,743	14,486	7,243
1934	1,577	500	1,077	5,563	12,127	6,063
1935	2,542	500	2,042	9,275	19,551	9,775
1936	1,578	500	1,078	7,226	15,453	7,726
1937	651	500	151	2,000	5,001	2,500
1938	1,221	500	721	4,193	9,387	4,693
1939	1,896	500	1,396	6,975	14,950	7,475
1940	3,606	500	3,106	17,755	36,510	18,255
1941	1,985	500	1,485	12,180	25,360	12,680
1942	3,530	500	3,030	10,650	22,300	11,150
1943	3,317	500	2,817	16,000	33,000	16,500
1944	1,039	500	539	4,770	10,540	5,270
1945	894	500	394	3,960	8.920	4,460
1946	1,299	500	799	4,695	10,390	5,195
1947	1,817	500	1,317	5,130	11,260	5,630
1948	3,131	500	2,631	8,865	18,730	9,365
1949	544	500	44	170	1,340	670
1950	1,638	500	1,138	9,145	19,290	9,645
1951	7,430	500	6,930	14,055	29,110	14,555
1952	10,540	500	10,040	55,620	112,240	56,120
1953	14,540	500	14,040	18,380	37,760	18.880
1954	7,040	500	6,540	16,090	33,180	16,590
1955	20,440	500	19,940	44,365	89,730	44,865
1956	6,760	500	6,260	12,305	25,610	12,805
1957	9,390	500	8,890	13,245	27,490	13,745
1958	4,190	500	3,690	13,400	27,800	13,900
1959	5,530	500	5,030	8,560	18,120	9,060
1960	5,340	500	4,840	13,495	27,990	13,995
1961	1,560	500	1,060	2,325	5.650	2,825
1962	2,860	500	2,360	3,185	7,370	3,685
1963	4,054	500	3,554	3,520	8,040	4,020
1964	4,646	500	4,146	4,810	10.620	5,310
1965	7,779	500	7,279	26,805	54,610	27,305
1966	3,274	500	2,774	18,090	37,180	18,590
1967	13,336	500	12,836	32,115	65,230	32,615
1968	6,041	500	5,541	7,645	16,290	8,145
1969	5,371	500	4,871	13,870	28,740	14,370
1970	10,739	500	10,239	15,015	31,030	15,515
1971	7,847	500	7,347	9,140	19,280	9,640
1972	5,100	500	4,600	10,625	22,250	11,125
1973	3,081	500	2,581	4,285	9,570	4,785
1974	5,225	500	4,726	9,115	19,230	9,615
1975	12,811	500	12,311	21,570	44,140	22,070
1976	6,484	500	5,984	13,490	27,980	13,990
1977	2,952	500	2,452	1,870	4,740	2,370
1978	4,643	500	4,143	11,060	23,120	11,560

TABLE 21. COMPUTED SHARE OF FLOW FOR ALBERTA AND SASKATCHEWAN USING METHOD 3 - BATTLE CREEK BASIN

Unit acre-feet

Year	1 Natural Flow Alta - Sask Boundary	2 Alberta's Share of Flow	3 Flow Passed to Saskatchewan ③=①-②	4 Saskatchewan's Share of Flow ④=⑥-②	5 Natural Flow at International Boundary	6 Canada's Share of Flow ⑥=⑤x ½
1920	4,732	690	4,042	13,115	27,611	13,805
1921	4,799	517	4,282	9,820	20,674	10,337
1922	7,127	6,806	322	20,217	54,046	27,023
1923	3,378	430	2,948	8,177	17,215	8,607
1924	2,379	258	2,120	4,906	10,328	5,164
1925	5,298	4,354	944	17,766	44,241	22,120
1926	2,885	128	2,757	2,438	5,132	2,566
1927	12,062	12,062	0	37,118	98,360	49,180
1928	6,086	2,579	3,507	15,991	37,140	18,570
1929	5,385	600	4,785	11,399	23,997	11,998
1930	3,655	1,432	2,223	14,844	32,552	16,276
1931	1,621	71	1,550	1,348	2,838	1,419
1932	2,220	295	1,925	5,609	11,807	5,903
1933	1,883	362	1,521	6,881	14,486	7,243
1934	1,577	303	1,274	5,760	12,127	6,063
1935	2,542	489	2,053	9,287	19,551	9,775
1936	1,578	386	1,192	7,340	15,453	7,726
1937	651	125	526	2,376	5,001	2,500
1938	1,221	235	986	4,459	9,387	4,693
1939	1,896	374	1,522	7,101	14,950	7,475
1940	3,606	2,422	1,185	15,833	36,510	18,255
1941	1,985	634	1,351	12,046	25,360	12,680
1942	3,530	558	2,973	10,592	22,300	11,150
1943	3,317	1,544	1,773	14,956	33,000	16,500
1944	1,039	263	776	5,006	10,540	5,270
1945	894	223	671	4,237	8,920	4,460
1946	1,299	260	1,039	4,935	10,390	5,195
1947	1,817	282	1,535	5,348	11,260	5,630
1948	3,131	468	2,663	8,897	18,730	9,365
1949	544	34	510	636	1,340	670
1950	1,638	482	1,156	9,163	19,290	9,645
1951	7,430	728	6,702	13,827	29,110	14,555
1952	10,540	10,540	0	45,580	112,240	56,120
1953	14,540	2,734	11,806	16,146	37,760	18,880
1954	7,040	1,589	5,451	15,001	33,180	16,590
1955	20,440	15,727	4,713	29,138	89,730	44,865
1956	6,760	640	6,120	12,165	25,610	12,805
1957	9,390	687	8,703	13,058	27,490	13,745
1958	4,190	695	3,495	13,205	27,800	13,900
1959	5,530	453	5,077	8,607	18,120	9,060
1960	5,340	700	4,640	13,295	27,990	13,995
1961	1,560	141	1,419	2,684	5,650	2,825
1962	2,860	184	2,676	3,501	7,370	3,685
1963	4,054	201	3,853	3,819	8,040	4,020
1964	4,646	266	4,380	5,044	10.620	5,310
1965	7,779	6,947	832	20,358	54,610	27,305
1966	3,274	2,589	685	16,001	37,180	18,590
1967	13,336	9,602	3,734	23,014	65,230	32,615
1968	6,041	407	5,634	7,738	16,290	8,145
1969	5,371	719	4,652	13,652	28,740	14,370
1970	10,739	1,052	9,936	14,463	31,030	15,515
1971	7,847	482	7,365	9,158	19,280	9,640
1972	5,100	556	4,544	10,569	22,250	11,125
1973	3,081	239	2,842	4,546	9,570	4,785
1974	5,226	481	4,745	9,134	19,230	9,615
1975	12,811	4,329	11,681	17,741	44,140	22,070
1976	6,484	700	5,785	13,290	27,980	13,990
1977	2,952	119	2,833	2,251	4,740	2,370
1978	4,643	578	4,065	10,982	23,120	11,560

TABLE 22. COMPUTED SHARE OF FLOW FOR ALBERTA AND SASKATCHEWAN USING METHOD 4 - BATTLE CREEK BASIN

Unit acre-feet

Year	1 Natural Flow Alta - Sask Boundary	2 Alberta's Share of Flow	3 Flow Passed to Saskat-chewan 3 = 1-2	4 Saskat-chewan's Share of Flow 4 = 6-2	5 Natural Flow at Interna-tional Boundary	6 Canada's Share of Flow
1920	4,732	1,793	2,939	12,012	27,611	13,805
1921	4,799	724	4,075	9,613	20,674	10,337
1922	7,127	7,127	0	19,896	54,046	27,023
1923	3,378	603	2,775	8,005	17,215	8,607
1924	2,379	361	2,018	4,803	10,328	5,164
1925	5,298	5,298	0	16,323	44,241	22,120
1926	2,885	180	2,705	2,386	5,132	2,566
1927	12,062	12,062	-	37,118	98,360	49,180
1928	6,086	4,176	1,910	14,395	37,140	18,570
1929	5,385	890	4,495	11,109	23,997	11,998
1930	3,655	3,029	626	13,248	32,552	16,276
1931	1,621	99	1,522	1,320	2,838	1,419
1932	2,220	413	1,807	5,490	11,807	5,903
1933	1,883	507	1,376	6,736	14,486	7,243
1934	1,577	424	1,153	5,639	12,127	6,063
1935	2,542	684	1,858	9,091	19,551	9,775
1936	1,578	541	1,037	7,186	15,453	7,726
1937	651	175	476	2,325	5,001	2,500
1938	1,221	329	892	4,365	9,387	4,693
1939	1,896	523	1,373	6,952	14,950	7,475
1940	3,606	3,606	0	14,649	36,510	18,255
1941	1,985	1,231	754	11,450	25,360	12,680
1942	3,530	780	2,750	10,370	22,300	11,150
1943	3,317	3,141	176	13,360	33,000	16,500
1944	1,039	369	670	4,901	10,540	5,270
1945	894	312	582	4,148	8,920	4,460
1946	1,299	364	935	4,331	10,390	5,195
1947	1,817	394	1,423	5,236	11,260	5,630
1948	3,131	656	2,475	8,709	18,730	9,365
1949	544	47	497	623	1,340	670
1950	1,638	675	963	8,970	19,290	9,645
1951	7,430	2,168	5,262	12,387	29,110	14,555
1952	10,540	10,540	0	45,580	112,240	56,120
1953	14,540	4,331	10,209	14,550	37,760	18,880
1954	7,040	3,186	3,854	13,405	33,180	16,590
1955	20,440	17,343	3,117	27,542	89,730	44,865
1956	6,760	1,293	5,467	11,512	25,610	12,805
1957	9,390	1,763	7,627	11,982	27,490	13,745
1958	4,190	1,841	2,349	12,060	27,800	13,900
1959	5,530	634	4,896	8,426	18,120	9,060
1960	5,340	1,888	3,452	12,107	27,990	13,995
1961	1,560	198	1,362	2,627	5,650	2,825
1962	2,860	258	3,602	3,427	7,370	3,685
1963	4,054	281	3,773	3,739	8,040	4,020
1964	4,646	372	4,274	4,938	10,620	5,310
1965	7,779	7,779	0	19,526	54,610	27,305
1966	3,274	3,274	0	15,316	37,180	18,590
1967	13,336	11,198	2,138	21,417	65,230	32,615
1968	6,041	570	5,501	7,575	16,290	8,145
1969	5,371	2,076	3,295	12,295	28,740	14,370
1970	10,739	2,648	8,091	12,867	31,030	15,515
1971	7,847	675	7,172	8,965	19,280	9,640
1972	5,100	776	4,324	10,346	22,250	11,125
1973	3,081	335	2,746	4,450	9,570	4,785
1974	5,226	673	4,553	8,942	19,230	9,615
1975	12,811	5,926	6,885	16,145	44,140	22,070
1976	6,484	1,886	4,598	12,105	27,980	13,990
1977	2,952	166	2,786	2,204	4,740	2,370
1978	4,643	809	3,834	10,751	23,120	11,560

TABLE 23. COMPUTED SHARE OF FLOW FOR ALBERTA AND SASKATCHEWAN USING METHOD 5 - BATTLE CREEK BASIN

Unit acre-feet

Year	1 Natural Flow Alta - Sask Boundary	2 Alberta's Share of Flow ②=①x ½	3 Flow Passed to Saskat-chewan ③=①-②	4 Saskat-chewan's Share of Flow ④=⑥-②	5 Natural Flow at Interna-tional Boundary	6 Canada's Share of Flow ⑥=⑤x ½
1920	4,732	1,183	3,549	12,622	27,611	13,805
1921	4,799	1,200	3,599	9,137	20,674	10,337
1922	7,127	1,782	5,345	25,241	54,046	27,023
1923	3,378	844	2,534	7,763	17,215	8,607
1924	2,379	595	1,784	4,569	10,328	5,164
1925	5,298	1,324	3,974	20,796	44,241	22,120
1926	2,885	721	2,164	1,845	5,132	2,566
1927	12,062	3,015	9,047	46,165	98,360	49,180
1928	6,086	1,521	4,565	17,049	37,140	18,570
1929	5,385	1,346	4,039	10,652	23,997	11,998
1930	3,655	914	2,741	15,362	32,552	16,276
1931	1,621	405	1,216	1,014	2,838	1,419
1932	2,220	555	1,665	5,348	11,807	5,903
1933	1,883	471	1,412	6,772	14,486	7,243
1934	1,577	394	1,183	5,669	12,127	6,063
1935	2,542	635	1,907	9,140	19,551	9,775
1936	1,578	394	1,184	7,332	15,453	7,726
1937	651	163	488	2,337	5,001	2,500
1938	1,221	305	916	4,388	9,387	4,693
1939	1,896	474	1,422	7,001	14,950	7,475
1940	3,606	901	2,705	17,354	36,510	18,255
1941	1,985	496	1,489	12,184	25,360	12,680
1942	3,530	882	2,648	10,268	22,300	11,150
1943	3,317	829	2,489	15,671	33,000	16,500
1944	1,039	260	779	5,010	10,540	5,270
1945	894	223	671	4,237	8,920	4,460
1946	1,299	325	974	4,870	10,390	5,195
1947	1,817	454	1,363	5,176	11,260	5,630
1948	3,131	783	2,348	8,582	18,730	9,365
1949	544	136	408	534	1,340	670
1950	1,638	409	1,229	9,236	19,290	9,645
1951	7,430	1,858	5,572	12,697	29,110	14,555
1952	10,540	2,635	7,905	53,485	112,240	56,120
1953	14,540	3,635	10,905	15,245	37,760	18,880
1954	7,040	1,760	5,280	14,830	33,180	16,590
1955	20,440	5,110	15,330	39,755	89,730	44,865
1956	6,760	1,690	5,070	11,115	25,610	12,805
1957	9,390	2,347	7,043	11,398	27,490	13,745
1958	4,190	1,047	3,143	12,853	27,800	13,900
1959	5,530	1,382	4,148	7,678	18,120	9,060
1960	5,340	1,335	4,005	12,660	27,990	13,995
1961	1,560	390	1,170	2,435	5,650	2,825
1962	2,860	715	2,145	2,970	7,370	3,685
1963	4,054	1,013	3,041	3,007	8,040	4,020
1964	4,646	1,161	3,485	4,149	10,620	5,310
1965	7,779	1,945	5,834	25,360	54,610	27,305
1966	3,274	818	2,456	17,772	37,180	18,590
1967	13,336	3,334	10,002	29,281	65,230	32,615
1968	6,041	1,510	4,531	6,635	16,290	8,145
1969	5,371	1,343	4,028	13,027	28,740	14,370
1970	10,739	2,685	8,054	12,830	31,030	15,515
1971	7,847	1,962	5,885	7,678	19,280	9,640
1972	5,100	1,275	3,825	9,850	22,250	11,125
1973	3,081	770	2,311	4,015	9,570	4,785
1974	5,226	1,306	3,920	8,309	19,230	9,615
1975	12,811	3,203	9,608	18,867	44,140	22,070
1976	6,484	1,621	4,863	12,369	27,980	13,990
1977	2,952	738	2,214	1,632	4,740	2,370
1978	4,643	1,161	3,482	10,399	23,120	11,560

TABLE 24. COMPUTED SHARE OF FLOW FOR ALBERTA AND SASKATCHEWAN USING METHOD 2 - LODGE CREEK BASIN

Unit acre-feet

Year	1 Natural Flow Alta - Sask Boundary	2 Alberta's Share of Flow	3 Flow Passed to Saskat-chewan ③=①-②	4 Saskat-chewan's Share of Flow ④=⑥-②	5 Natural Flow at Interna-tional Boundary	6 Canada's Share of Flow ⑥=⑤x ½
1920	19,547	5,000	14,547	7,016	24,032	12,016
1921	20,021	5,000	15,021	7,902	25,805	12,902
1922	42,621	5,000	37,621	20,947	51,894	25,947
1923	15,398	5,000	10,398	5,496	20,992	10,496
1924	4,106	4,106	0	(-1,618)	4,977	2,488
1925	36,298	5,000	31,298	18,453	46,906	23,453
1926	8,895	5,000	3,895	525	11,049	5,524
1927	79,833	5,000	74,833	40,137	90,274	45,137
1928	34,363	5,000	29,363	15,026	40,052	20,026
1929	14,704	5,000	9,704	3,442	16,884	8,442
1930	18,198	5,000	13,198	6,568	23,135	11,567
1931	554	554	0	(-267)	574	287
1932	9,161	5,000	4,161	569	11,137	5,568
1933	10,276	5,000	5,276	1,283	12,565	6,282
1934	13,484	5,000	8,484	3,316	16,631	8,315
1935	14,421	5,000	9,421	3,842	17,683	8,841
1936	10,323	5,000	5,323	1,919	13,837	6,918
1937	14,223	5,000	9,223	3,378	16,756	8,378
1938	19,173	5,000	14,173	6,549	23,097	11,548
1939	25,582	5,000	20,582	9,898	29,797	14,898
1940	41,467	5,000	36,467	19,028	48,055	24,027
1941	22,191	5,000	17,191	6,993	23,985	11,992
1942	9,164	5,000	4,164	358	10,716	5,358
1943	32,925	5,000	27,925	15,130	40,260	20,130
1944	2,477	2,477	0	(-761)	3,433	1,716
1945	10,570	5,000	5,570	(-828)	8,344	4,172
1946	8,607	5,000	3,607	(-199)	9,602	4,801
1947	18,144	5,000	13,144	5,406	20,811	10,405
1948	18,442	5,000	13,442	4,671	19,341	9,670
1949	319	319	0	(-139)	360	180
1950	12,118	5,000	7,118	2,255	14,510	7,255
1951	47,111	5,000	42,111	20,520	51,040	25,520
1952	103,928	5,000	98,928	60,400	130,800	65,400
1953	33,912	5,000	28,912	10,500	31,000	15,500
1954	9,818	5,000	4,818	290	10,580	5,290
1955	64,078	5,000	59,078	34,350	78,700	39,350
1956	17,053	5,000	12,053	3,585	17,170	8,585
1957	28,664	5,000	23,664	8,280	26,560	13,280
1958	30,315	5,000	25,315	14,530	39,060	19,530
1959	15,335	5,000	10,335	3,600	17,200	8,600
1960	22,573	5,000	17,573	11,050	32,100	16,050
1961	4,075	4,075	0	(-3,180)	1,790	895
1962	6,945	5,000	1,945	5,390	20,780	10,390
1963	11,471	5,000	6,471	780	11,560	5,780
1964	9,450	5,000	4,450	(-1,030)	7,940	3,970
1965	59,007	5,000	54,007	33,675	77,350	38,675
1966	26,289	5,000	21,289	12,930	35,860	17,930
1967	55,519	5,000	50,519	31,635	73,270	36,635
1968	3,887	3,887	0	(-1,897)	3,980	1,990
1969	22,383	5,000	17,383	9,965	29,930	14,965
1970	26,866	5,000	21,866	6,780	23,560	11,780
1971	19,574	5,000	14,594	5,660	21,320	10,660
1972	16,703	5,000	11,703	6,100	22,200	11,100
1973	2,410	2,410	0	(-1,565)	1,690	845
1974	16,876	5,000	11,876	5,935	21,870	10,935
1975	30,176	5,000	25,176	14,455	38,910	19,455
1976	19,694	5,000	14,694	6,950	23,900	11,950
1977	355	355	0	145	1,000	500
1978	22,006	5,000	17,006	10,090	30,180	15,090

TABLE 25. COMPUTED SHARE OF FLOW FOR ALBERTA AND SASKATCHEWAN USING METHOD 3 - LODGE CREEK BASIN

Unit acre-feet

Year	1 Natural Flow Alta - Sask Boundary	2 Alberta's Share of Flow	3 Flow Passed to Saskat-chewan ③=①-②	4 Saskat-chewan's Share of Flow ④=⑥-②	5 Natural Flow at Interna-tional Boundary	6 Canada's Share of Flow ⑥=⑤ x ½
1920	19,647	5,752	13,795	6,264	24,032	12,016
1921	20,021	6,195	13,826	6,708	25,805	12,902
1922	42,621	12,717	29,904	13,230	51,894	25,947
1923	15,398	5,038	10,360	5,458	20,992	10,496
1924	4,106	1,195	2,911	1,294	4,977	2,488
1925	36,298	11,470	24,828	11,983	46,906	23,453
1926	8,895	2,652	6,243	2,873	11,049	5,524
1927	79,833	22,312	57,521	22,825	90,274	45,137
1928	34,363	9,757	24,607	10,270	40,052	20,026
1929	14,704	4,052	10,652	4,390	16,884	8,442
1930	18,198	5,527	12,671	6,040	23,135	11,567
1931	554	138	416	149	574	287
1932	9,161	2,673	6,488	2,896	11,137	5,568
1933	10,276	3,016	7,260	3,267	12,565	6,282
1934	13,484	3,991	9,493	4,324	16,631	8,315
1935	14,421	4,244	10,177	4,598	17,683	8,841
1936	10,323	3,321	7,002	3,598	13,837	6,918
1937	14,223	4,021	10,202	4,357	16,756	8,378
1938	19,173	5,518	13,655	6,031	23,097	11,548
1939	25,582	7,193	18,389	7,706	29,797	14,898
1940	41,467	11,757	29,710	12,270	48,055	24,027
1941	22,191	5,740	16,451	6,253	23,985	11,992
1942	9,164	2,572	6,592	2,786	10,716	5,358
1943	32,925	9,809	23,116	10,321	40,260	20,130
1944	2,477	824	1,653	892	3,433	1,716
1945	10,570	2,003	8,567	2,169	8,344	4,172
1946	8,607	2,305	6,302	2,496	9,602	4,801
1947	18,144	4,995	13,149	5,411	20,811	10,405
1948	18,442	4,642	13,800	5,029	19,341	9,670
1949	319	86	232	94	360	180
1950	12,118	3,482	8,635	3,773	14,510	7,255
1951	47,111	12,504	34,607	13,016	51,040	25,520
1952	103,928	32,444	71,484	32,956	130,800	65,400
1953	33,912	7,494	26,418	8,006	31,000	15,500
1954	9,818	2,539	7,278	2,751	10,580	5,290
1955	64,078	19,419	44,659	19,931	78,700	39,350
1956	17,053	4,121	12,932	4,464	17,170	8,585
1957	28,664	6,384	22,280	6,896	26,560	13,280
1958	30,315	9,509	20,806	10,021	39,060	19,530
1959	15,335	4,128	11,207	4,472	17,200	8,600
1960	22,573	7,769	14,804	8,281	32,100	16,050
1961	4,075	430	3,645	465	1,790	895
1962	6,945	4,987	1,957	5,403	20,780	10,390
1963	11,471	2,774	8,696	3,006	11,560	5,780
1964	9,450	1,906	7,544	2,064	7,940	3,970
1965	59,007	19,081	39,926	19,594	77,350	38,675
1966	26,289	8,709	17,580	9,221	35,860	17,930
1967	55,519	18,061	37,458	18,574	73,270	36,635
1968	3,887	955	2,931	1,035	3,980	1,990
1969	22,383	7,226	15,157	7,739	29,930	14,965
1970	26,866	5,634	21,232	6,146	23,560	11,780
1971	19,574	5,074	14,500	5,586	21,320	10,660
1972	16,703	5,294	11,409	5,806	22,200	11,100
1973	2,410	406	2,004	439	1,690	845
1974	16,376	5,211	11,665	5,724	21,870	10,935
1975	30,176	9,471	20,705	9,984	38,910	19,455
1976	19,694	5,719	13,975	6,231	23,900	11,950
1977	355	240	115	260	1,000	500
1978	22,006	7,289	14,717	7,801	30,180	15,090

TABLE 26. COMPUTED SHARE OF FLOW FOR ALBERTA AND SASKATCHEWAN USING METHOD 4 - LODGE CREEK BASIN

Unit acre-feet

Year	1 Natural Flow Alta - Sask Boundary	2 Alberta's Share of Flow	3 Flow Passed to Saskat-chewan 3 = 1-2	4 Saskat-chewan's Share of Flow 4 = 6-2	5 Natural Flow at Interna-tional Boundary	6 Canada's Share of Flow
1920	19,547	6,098	13,453	5,923	24,032	12,016
1921	20,021	6,537	13,484	6,366	25,805	12,902
1922	42,621	13,059	29,562	12,888	51,894	25,947
1923	15,398	5,334	10,064	5,163	20,992	10,496
1924	4,106	1,269	2,837	1,219	4,977	2,488
1925	36,298	11,812	24,486	11,641	46,906	23,453
1926	8,895	2,817	6,078	2,707	11,049	5,524
1927	79,833	22,654	57,179	22,483	90,274	45,137
1928	34,363	10,099	24,264	9,928	40,052	20,026
1929	14,704	4,305	10,399	4,137	16,884	8,442
1930	18,198	5,869	12,329	5,693	23,135	11,567
1931	554	146	408	141	574	287
1932	9,161	2,840	6,321	2,729	11,137	5,568
1933	10,276	3,204	7,072	3,078	12,565	6,282
1934	13,484	4,241	9,243	4,075	16,631	8,315
1935	14,421	4,509	9,912	4,332	17,683	8,841
1936	10,323	3,528	6,795	3,390	13,837	6,918
1937	14,223	4,273	9,950	4,105	16,756	8,378
1938	19,173	5,860	13,313	4,689	23,097	11,548
1939	25,582	7,535	18,047	7,364	29,797	14,898
1940	41,467	12,099	29,368	11,928	48,055	24,027
1941	22,191	6,082	16,109	5,911	23,985	11,992
1942	9,164	2,733	6,431	3,625	10,716	5,358
1943	32,925	10,151	22,774	9,980	40,260	20,130
1944	2,477	875	1,602	841	3,433	1,716
1945	10,570	2,128	8,442	2,044	8,344	4,172
1946	8,607	2,449	6,158	2,352	9,602	4,801
1947	18,144	5,288	12,856	5,117	20,811	10,405
1948	18,442	4,932	13,510	4,739	19,341	9,670
1949	319	92	227	88	360	180
1950	12,118	3,700	8,418	3,555	14,510	7,255
1951	47,111	12,846	34,265	12,675	51,040	25,520
1952	103,928	32,786	71,142	32,615	130,800	65,400
1953	33,912	7,836	26,076	7,665	31,000	15,500
1954	9,818	2,698	7,120	2,592	10,580	5,290
1955	64,078	19,761	44,317	19,590	78,700	39,350
1956	17,053	4,378	12,675	4,207	17,170	8,585
1957	28,664	6,726	21,938	6,555	26,560	13,280
1958	30,315	9,851	20,464	9,680	39,060	19,530
1959	15,335	4,386	10,949	4,214	17,200	8,600
1960	22,573	8,111	14,462	7,940	32,100	16,050
1961	4,075	456	3,619	439	1,790	895
1962	6,945	5,281	1,664	5,110	20,780	10,390
1963	11,471	2,948	8,523	2,832	11,560	5,780
1964	9,450	2,025	7,425	1,945	7,940	3,970
1965	59,007	19,423	39,584	19,252	77,350	38,675
1966	26,289	9,051	17,238	8,880	35,860	17,930
1967	55,519	18,403	37,116	18,232	73,270	36,635
1968	3,887	1,015	2,872	975	3,980	1,990
1969	22,383	7,568	14,815	7,397	29,930	14,965
1970	26,366	5,976	20,890	5,805	23,560	11,780
1971	19,574	5,416	14,158	5,245	21,320	10,660
1972	16,703	5,636	11,067	5,465	22,200	11,100
1973	2,410	431	1,979	414	1,690	845
1974	16,876	5,553	11,323	5,382	21,870	10,935
1975	30,176	9,813	20,363	9,642	38,910	19,455
1976	19,694	6,061	13,633	5,390	23,900	11,950
1977	355	255	100	245	1,000	500
1978	22,006	7,631	14,375	7,460	30,180	15,090

TABLE 27. COMPUTED SHARE OF FLOW FOR ALBERTA AND SASKATCHEWAN USING METHOD 5 - LODGE CREEK BASIN

Unit acre-feet

Year	1 Natural Flow Alta - Sask Boundary	2 Alberta's Share of Flow ②=①x ½	3 Flow Passed to Saskat-chewan ③=①-②	4 Saskat-chewan's Share of Flow ④=⑥-②	5 Natural Flow at Interna-tional Boundary	6 Canada's Share of Flow ⑥=⑤x ½
1920	19,547	4,887	14,660	7,129	24,032	12,016
1921	20,021	5,005	15,016	7,897	25,805	12,902
1922	42,621	10,655	31,966	15,292	51,894	25,947
1923	15,398	3,850	11,549	6,646	20,992	10,496
1924	4,106	1,027	3,080	1,462	4,977	2,488
1925	36,298	9,075	27,224	14,379	46,906	23,453
1926	8,895	2,224	6,671	3,301	11,049	5,524
1927	79,833	19,958	59,875	25,179	90,274	45,137
1928	34,363	8,591	25,772	11,435	40,052	20,026
1929	14,704	3,676	11,028	4,766	16,884	8,442
1930	18,198	4,550	13,648	7,018	23,135	11,567
1931	554	139	415	149	574	287
1932	9,161	2,290	6,871	3,278	11,137	5,568
1933	10,276	2,569	7,707	3,714	12,565	6,282
1934	13,484	3,371	10,113	4,944	16,631	8,315
1935	14,421	3,605	10,812	5,236	17,683	8,841
1936	10,323	2,581	7,742	4,338	13,837	6,918
1937	14,223	3,556	10,667	4,822	16,756	8,378
1938	19,173	4,793	14,380	6,755	23,097	11,548
1939	25,582	6,396	19,186	8,503	29,797	14,898
1940	41,467	10,367	31,100	13,661	48,055	24,027
1941	22,191	5,548	16,643	6,445	23,985	11,992
1942	9,164	2,291	6,873	3,067	10,716	5,358
1943	32,925	8,231	24,694	11,898	40,260	20,130
1944	2,477	619	1,858	1,097	3,433	1,716
1945	10,570	2,643	7,926	1,529	8,344	4,172
1946	8,607	2,152	6,455	2,649	9,602	4,801
1947	18,144	4,536	13,608	5,869	20,811	10,405
1948	18,442	4,611	13,831	5,060	19,341	9,670
1949	319	80	239	100	360	180
1950	12,118	3,030	9,088	4,225	14,510	7,255
1951	47,111	11,778	35,333	13,742	51,040	25,520
1952	103,928	25,982	77,946	39,418	130,800	65,400
1953	33,912	8,478	25,434	7,022	31,000	15,500
1954	9,818	2,455	7,363	2,835	10,580	5,290
1955	64,078	16,020	48,058	23,330	78,700	39,350
1956	17,053	4,263	12,790	4,322	17,170	8,585
1957	28,664	7,166	21,498	6,114	26,560	13,280
1958	30,315	7,579	22,736	11,951	39,060	19,530
1959	15,315	3,829	11,486	4,771	17,200	8,600
1960	22,573	5,643	16,930	10,407	32,100	16,050
1961	4,075	1,019	3,056	(-124)	1,790	895
1962	6,945	1,736	5,209	865	20,780	10,390
1963	11,471	2,868	8,603	2,912	11,560	5,780
1964	9,450	2,363	7,087	1,607	7,940	3,970
1965	59,007	14,752	44,255	23,923	77,350	38,675
1966	26,289	6,572	19,717	11,358	35,860	17,930
1967	55,519	13,880	41,639	22,755	73,270	36,635
1968	3,887	972	2,915	1,018	3,980	1,990
1969	22,383	5,596	16,787	9,369	29,930	14,965
1970	26,366	6,717	20,149	5,063	23,560	11,780
1971	19,574	4,894	14,680	5,766	21,320	10,660
1972	16,703	4,176	12,527	6,924	22,200	11,100
1973	2,410	603	1,807	242	1,690	845
1974	16,876	4,219	12,657	6,716	21,870	10,935
1975	30,176	7,544	22,632	11,911	38,910	19,455
1976	19,694	4,924	14,770	7,026	23,900	11,950
1977	355	89	266	411	1,000	500
1978	22,006	5,502	16,504	9,588	30,180	15,090

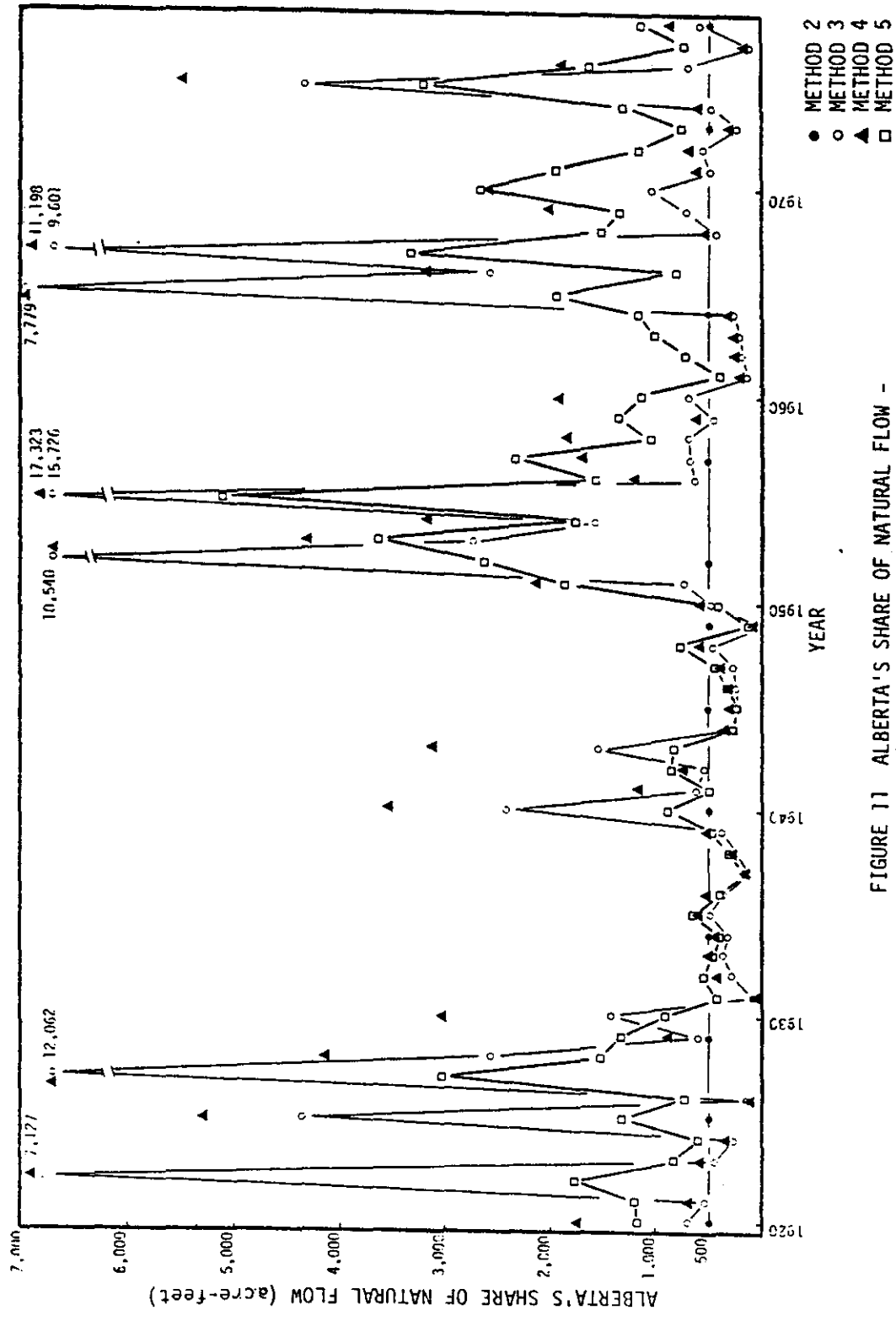


FIGURE 11 ALBERTA'S SHARE OF NATURAL FLOW - BATTLE CREEK BASIN

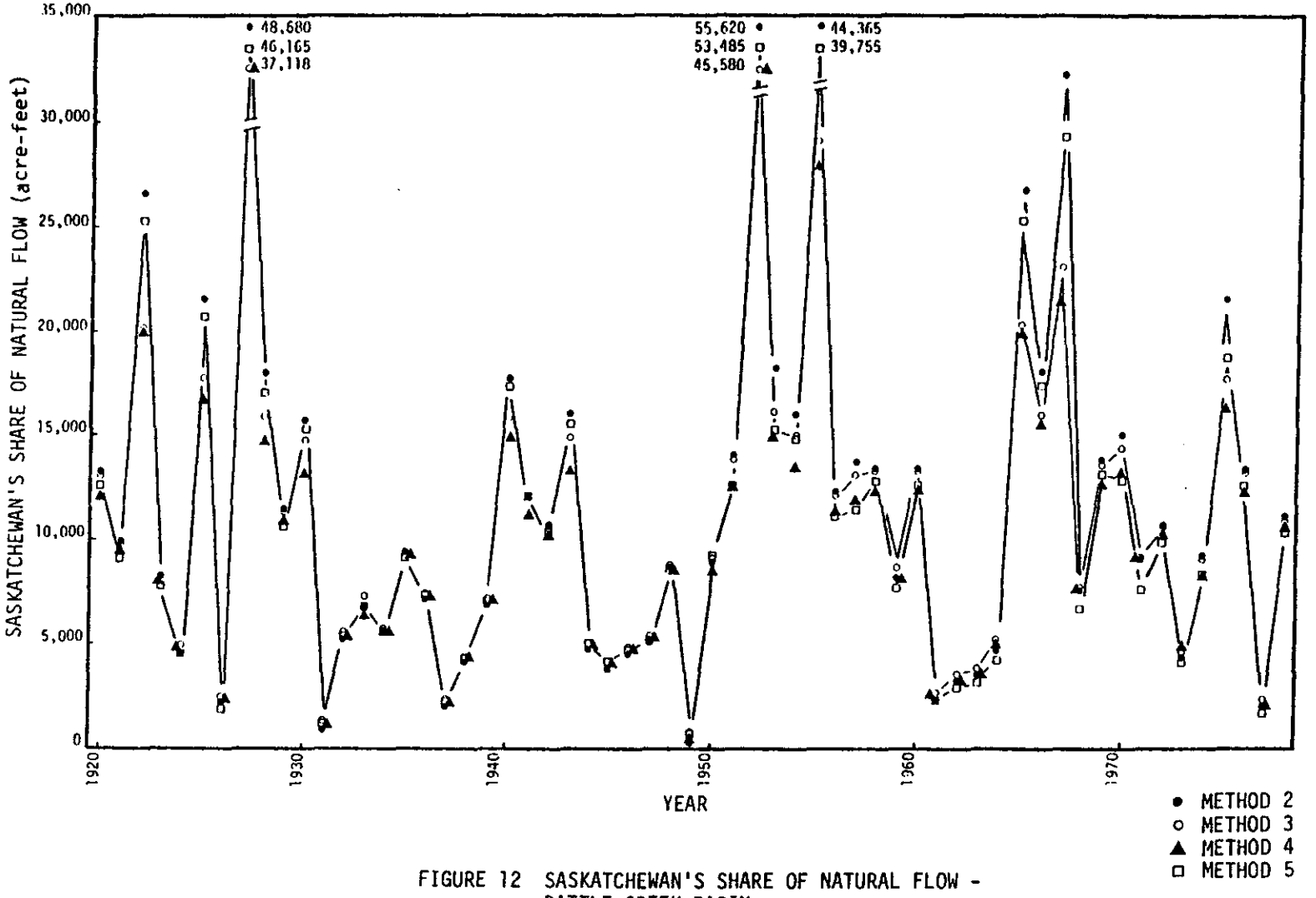


FIGURE 12 SASKATCHEWAN'S SHARE OF NATURAL FLOW - BATTLE CREEK BASIN

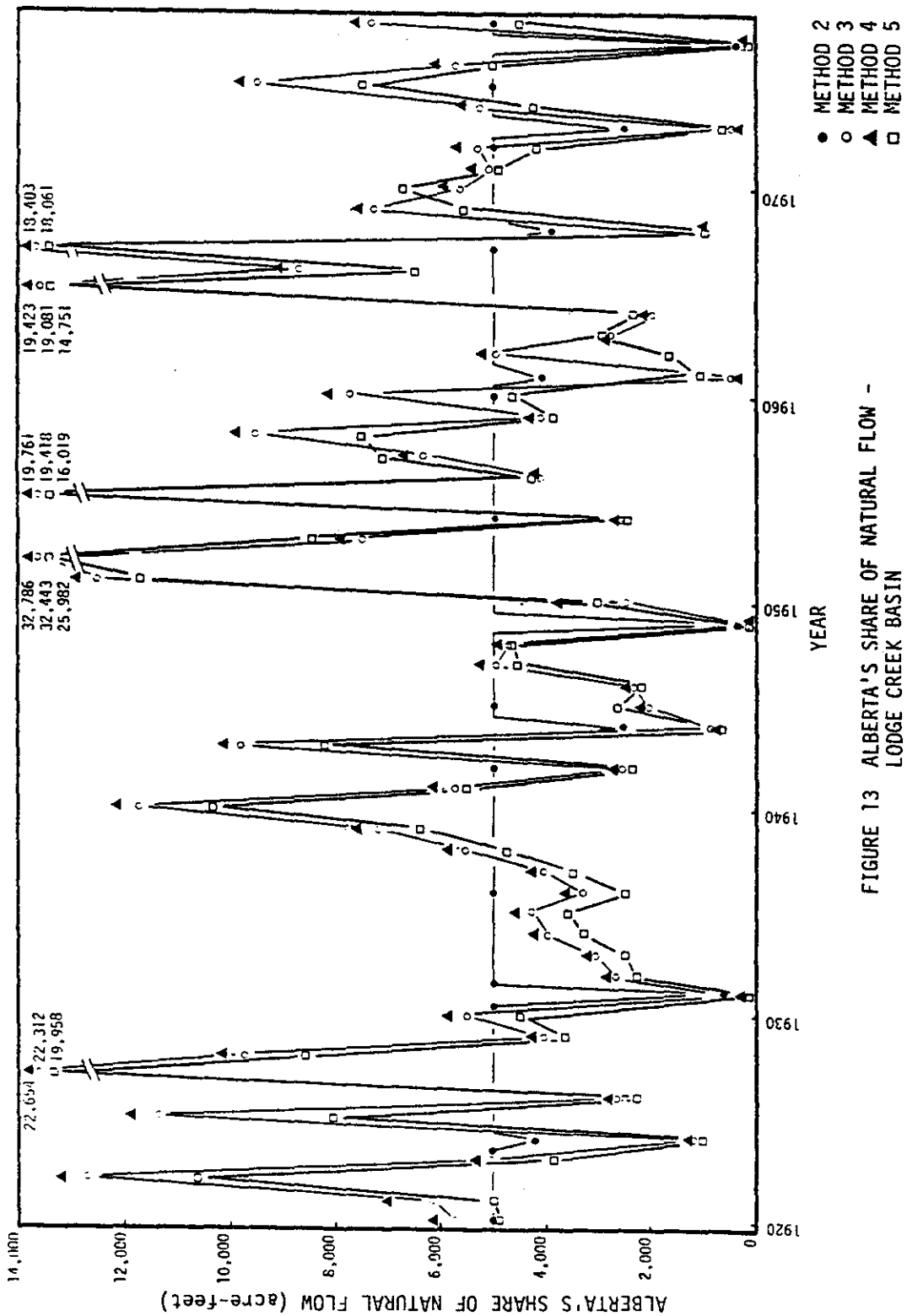


FIGURE 13 ALBERTA'S SHARE OF NATURAL FLOW - LODGE CREEK BASIN

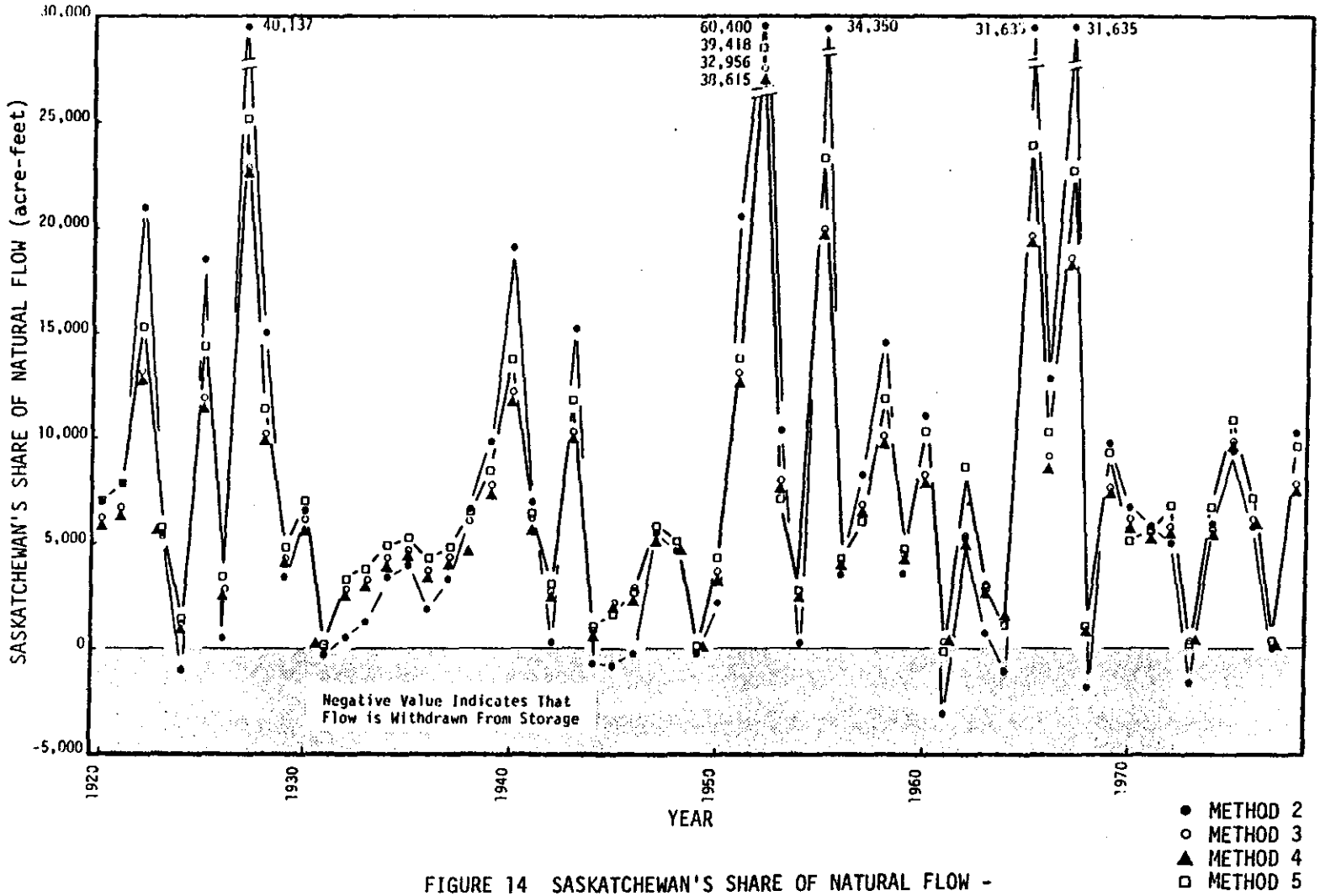
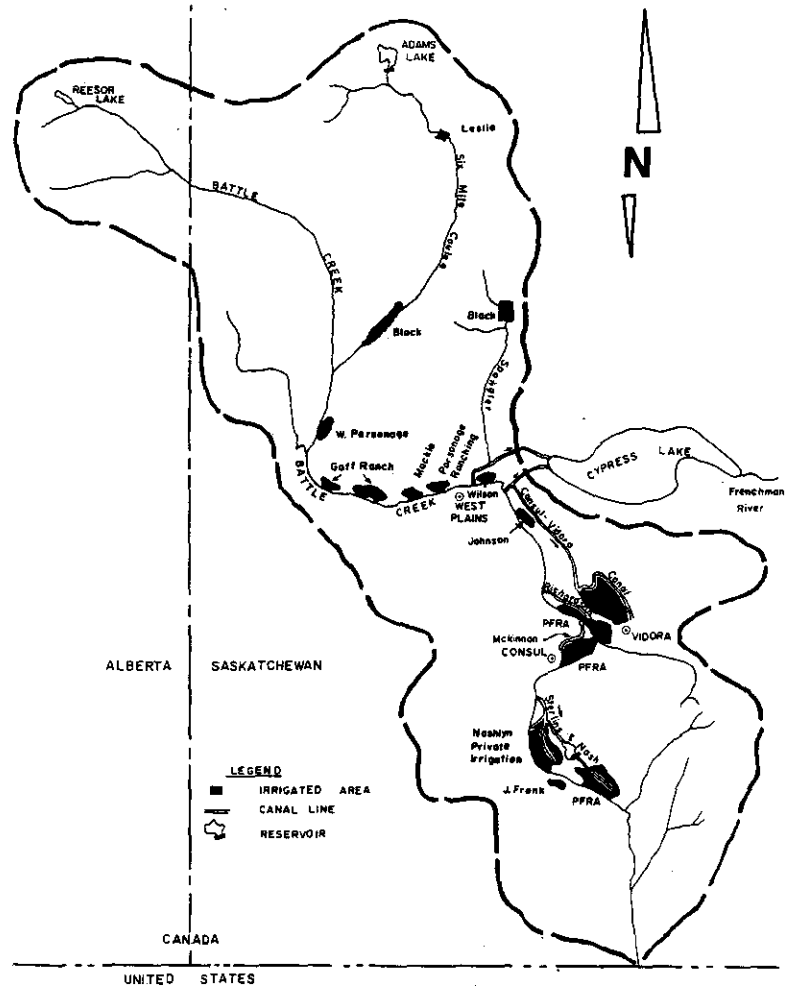
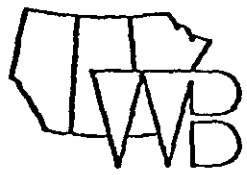


FIGURE 14 SASKATCHEWAN'S SHARE OF NATURAL FLOW - LODGE CREEK BASIN

FIGURE 15. BATTLE CREEK BASIN - GENERAL PLAN





PRAIRIE PROVINCES WATER BOARD

Appendix V

LETTERS CONCERNING THE EXCHANGE OF WATER RIGHTS DATA

When the administration of water resources was turned over to the provinces in 1931, Alberta and Saskatchewan were jointly concerned with streams that crossed these provincial boundaries. They identified Battle and Lodge Creeks as two problem basins in this category and initiated an exchange correspondence to formalize a methodology to maintain a consistent priority system between the two provinces.

A selection of this correspondence is included in Appendix V to indicate the magnitude of the problems involved and the methods selected to deal with these problems. Some portions of the original text of these letters has been underlined in this appendix to point out the decisions made.

COPY

TO: C.J. McGavin September 29, 1931

FROM: Major Barnett

- Priorities in Drainage Basins affecting other Provinces -

It would seem desirable to inform other Provinces of filings of Interprovincial streams to avoid future confusion, and to keep records up to date until some decision is arrived at by the Provincial Commission as to policy.

This would be essential before granting final licenses in order to keep the consecutive number of priority on a stream.

I believe this is agreeable to the Province of Alberta, and it would be advisable to have official correspondence on the subject.

COPY

WATER RESOURCES OFFICE File 732

ALBERTA

EDMONTON, ALTA.

Dec. 15, 1931

Department of Natural Resources,
Regina, Saskatchewan.

Gentlemen: Attention Mr. C.J. McGavin

With reference to my letter of even date in connection with the entry in the application schedule of the J.C. Bedford application, it would appear that some sort of policy should be immediately adopted to deal with the priorities which will have to be assigned to future applications affecting all interprovincial streams.

The drainage basins which are affected are as follows:

North Saskatchewan River
South Saskatchewan River
Churchill River
Manitou Lake
Great Sandhills Group
Many Island Lake
Battle Creek
Lodge Creek

The following procedure is suggested as a suitable arrangement between the two Provinces:

1. Upon receipt of an application in any of the above-mentioned drainage basins, the province securing same will notify the other province as soon as possible and submit sufficient information to enable it to make a corresponding entry. This information would need to contain the:

(a) Drainage basin
(b) Name of applicant
(c) Date of filing
(d) Stream

(e) Point of diversion
(f) Licence number in drainage basin
(g) Licence number on stream
(h) Purpose

2. The Province to which this information has been submitted will acknowledge same and state whether or not there is any confliction with the priorities already assigned.

3. Information as to the progress of the scheme to be submitted viz: when it is authorized or interim license issued; when it is licensed; or when it is cancelled.

4. The quantity of water granted, the irrigable area, if any, and the rates of diversion.

The foregoing is only a suggestion, and I should be pleased to have your views on the matter.

It is quite evident that, in order to avoid possible complications, some sort of an arrangement as this is necessary. It should not entail a great deal of extra work as the number of cases affected will be small. Since the transfer of the resources, this Province has only received sixteen such cases. You have a record of most of these as duplicate schedules were handed to the representatives of both provinces on the 31st of March last. Applications received in this Department since then have been assigned the next numbers in order of filing and it is possible that your Department has also received applications in the same drainage basin, in which case there will be a duplication of numbers. However, there would not be much difficulty in straightening this out, once we have agreed upon a policy.

Trusting to hear from you at your earliest convenience,

Yours truly,

L.C. Charlesworth
DIRECTOR WATER RESOURCES

EJS:EHM

COPY

1235

DFH/AI

Regina, September 16th, 1936.

Dear Sir:

Your letter of September 12th containing a corrected list within certain Interprovincial Drainage Basins has been recieved. The register of this Department has been altered to correspond with these corrections in order that the records of the two departments may be similar up to this point.

Due to the rapid increase of applications that is being experienced by both departments it would appear to be next to impossible to keep numbers in drainage basins from becoming appropriated by both while correspondence is travelling from one department to another.

We both realize the inconvenience and dissatisfaction in altering registers, detail sheets and maps as notice of applications having similar drainage basin numbers are received.

Would it not be possible to divide the Interprovincial Drainage Basins evenly, supposing that Alberta receives the majority of applications in one group and Saskatchewan in the other. The supposed division might be in this manner. For Alberta: - Manito Lake, Many Island Lake, Lodge Creek and the North Saskatchewan River. For Saskatchewan: - the division might be Kindersley Lake, Great Sandhills Group, Battle Creek and the South Saskatchewan River.

When notice of an application having been filed is received by this department, from your department, or vice-versa; and it is found that the drainage basin number adopted has already been entered through the register it shall be agreeable to both that the Alberta application shall take the half number following the last number entered with the same date of filing. This procedure to be followed only in those drainage basins listed above, after Saskatchewan, namely: Kindersley Lake, Great Sandhills Group, Battle Creek and South Saskatchewan River. On the other hand, when the Alberta department or this department shall receive notice that similar drainage basin numbers have been filed in those Interprovincial Basins, after Alberta, namely: Manito Lake, Many Island Lake, Dodge Creek and North Saskatchewan River, then the Saskatchewan application shall adopt the half number succeeding the last whole number of the same date of filing.

L.C. Charlesworth, Esq.,
Director,
Water Resources,
EDMONTON, Alberta.

COPY

WATER RESOURCES OFFICE

File No. 732 G

ALBERTA

EDMONTON, ALBERTA

Sept. 19, 1936.

C.J. McGavin, Esq.,
Chief Engineer,
Water Rights Branch,
501 Leader Post Building,
Regina, Sask.

Dear Sir: Your File No. 1235

I beg to thank you for your letter of the 16th instant offering a suggestion in connection with the matter of duplication of appropriations in the Interprovincial Drainage Basins. I am quite aware that it is impossible in some cases to avoid the duplication of these numbers due to the unavoidable delay of two or three days for correspondence to travel between our two offices, and some such arrangement as you suggest is necessary, in order to keep the records in some sort of decent order. I will give some study to the suggestion you have offered and in the meantime all applications for Interprovincial Drainage Basins are being entered in pencil so that it will be easier to make any changes that become necessary.

Yours truly,

L.C. Charlesworth,
Director of Water Resources.

EJS/ES

COPY

EJS/ZK 1235

Regina, December 18, 1937.

L.C. Charlesworth, Esq.,
Director,
Water Resources Office,
EDMONTON, Alberta.

Dear Sir:

We beg to thank you for your letter of the 14th instant with reference to change in entries in the North Saskatchewan River Drainage Basin, and note that you have had your register altered to agree with ours. Your co-operation in this regard is very much appreciated.

It is regretted that you should have been put to this trouble at such an inopportune time, and is also unfortunate that so much correspondence has been necessary in order to clear up this matter. Usually it is a case of changing only one or two entries, which it is impossible to avoid when applications are filed in the different offices on the same date, but in this particular instance we received the exceptionally large number of 400 applications in two days, many of which were on Interprovincial streams and hence the reason for more than the usual number of duplicate entries in our register. It is not likely that this confusion will happen again.

With reference to your attitude toward the use of half numbers we quite agree with you that this practice can be carried too far and it is our intention to refrain from doing this in future unless absolutely necessary. It has been done previously of course in order to avoid too much alteration of the records where duplicate entries have been made in both offices and should the action of either office be criticized in connection with any of these entries it will be only necessary to produce the fill to show the reason for doing so. The Dominion Government, when the waters were under their jurisdiction, used the half numbers quite freely and in fact at the time a large number of fur farming applications were filed they had to resort to the use of decimals.

As both offices will still continue to be faced with the problem of according priority numbers to applications filed on the same date in the same drainage basins and a certain amount of alteration to records will be unavoidable the following procedure is suggested as a means to prevent needless correspondence in the future:-

That each office alternately take the preference to the prior numbers of any applications filed on the same date. For example the next occasion that numbers clash let Alberta take the numbers as they have entered them regardless of how many, and we will alter ours here. The next time it occurs Saskatchewan will have the preference of retaining the numbers as entered and Alberta will do the changing. Each office should then know what the other is doing and only one letter from the office that has made the changes would be sufficient. There may be a little confusion in starting this but it should be quite simple once it is in operation. If this arrangement meets with your approval we would suggest that it be adopted immediately and that Alberta take the preference to begin with. Perhaps you have a better solution of this problem and we shall be only too pleased to co-operate with you in any suggestion you might make.

With respect to dugouts, where the inspecting engineer reports that they are not on any defined water course we do not make a separate detail sheet. All dugouts of this nature are entered on one balance sheet on for each drainage basin and for our convenience the sheets were given a number, of which you have already been advised. It is not necessary and of course is incorrect to give these dugouts any stream number but we do find it necessary owing to the large number being constructed in Saskatchewan to record them and given them a drainage basin number.

Yours faithfully,

WATER RIGHTS BRANCH.

C.J. McGavin,
Chief Engineer.

COPY

WATER RESOURCES OFFICE

File No. 732 G

ALBERTA

EDMONTON, ALBERTA

Dec. 29th, 1937

C.J. McGavin, Esq.,
Chief Engineer,
Water Rights Branch,
501 Leader-Post Bldg.,
Regina, Saskatchewan.

Dear Sir:

I have been giving consideration to your letter of the 18th instant regarding the allocation of drainage basin numbers on interprovincial streams. Your suggestion regarding the correction of priority numbers for applications filed on the same day seems a good one and likely to obviate some confusion. I believe, however, that it could be improved upon by according the Alberta Office the priority in certain drainage basins and the Saskatchewan in others. For instance, if you would undertake in future to alter your numbers in the Red Deer and Manito Lake Basins (in which you have very few applications) and such others as you consider fair, I would undertake to do the same in the remaining basins.

I should, however, like to have your views on abandoning the system of correlated D.B. numbers entirely. Suppose we called our drainage basins North Saskatchewan (Alberta), Red Deer (Alberta) etc. Would any conflict arise which could not be straightened out by reference to the dates of filing? You have no record of our filings in the Bow, Old Man, and Seven Persons Drainage Basins, and yet they have the same effect on the flow of the South Saskatchewan River in Saskatchewan as diversions from what we call the South Saskatchewan Drainage Basin itself. The present system worked smoothly when applications came in at intervals of days, but with several occurring on the same day it is much more difficult to opperate. I should like to have your views on this aspect of the matter.

Yours truly,

L.C. Charlesworth,
Director

FRB/NP

COPY

EJS/ZK 1235

Regina, January 4th, 1938.

L.C. Charlesworth, Esq.,
Director,
Water Resources Office,
EDMONTON, Alberta.

Dear Sir:

We have your letter of the 29th ultimo with further reference to the allocation of drainage basin numbers on interprovincial streams.

You ask for our views on abandoning the system of correlated drainage basin numbers entirely. We have gone into this carefully and cannot see why such a system could not be adopted, and, as you pointed out should any conflict arise it could quite easily be straightened out by reference to the dates of filing.

As we are at the commencement of a new year, this would seem a convenient time to start the new system. It is therefore, our intention to follow your suggestion as from the 1st of January 1938, and all our interprovincial drainage basins will have added these after (Saskatchewan) and only those applications whose diversions are in Saskatchewan will be entered in our register. The question arises as to whether it will still be necessary to notify each other of applications as they are filed and keep a record of these on a separate schedule. As far as this office is concerned we do not see the need of this, but until receiving your opinion we will continue to notify you as usual.

Whether or not we continue in the usual manner to send out advices on each application, it would seem that some definite arrangement is necessary whereby each office will submit information as to the appropriations at the various stages in these drainage basins. You remind us in your letter that we have no record of filings in the Bow, Oldman and Sevenpersons Drainage Basin. Although we have a general idea of what these appropriations amount to, we are somewhat handicapped at times in not having this information more up to-date. It is suggested therefore, that every six months, say the 30th of June and 31st of December, or oftener as the occasion arises, each

L.C. Charlesworth, Esq.,

office forward to the other copies of the number one balance sheets showing all the appropriations at the various stages in each interprovincial drainage basin. In order to have our records complete in the South Saskatchewan River Drainage Basin we would of course require balance sheets for the Bow, Oldman and Sevenpersons Drainage Basins.

In the course of the next week or ten days we will be forwarding you copies of No. 1 balance sheets for all interprovincial drainage basins. These will be complete as far as possible up to December 31, 1937, and of course, will include both Alberta and Saskatchewan appropriations. Henceforth, if you agree with our suggestion of submitting them every six months, we will forward you balance sheets which will include only those applications filed with this office since January 1, 1938, together with any information, if it is available, to bring the old balance sheets up to-date.

I believe this arrangement should work satisfactorily for both offices and eliminate a great deal of work and correspondence which was necessary under the old system in order to keep the records of both offices straight.

Your kind co-operation and suggestion in this matter is very much appreciated.

Yours faithfully,

WATER RIGHTS BRANCH.

C.J. McGavin,
Chief Engineer.