INTERNATIONAL JOINT COMMISSION

IN THE MATTER OF ARTICLE VI OF THE TREATY BETWEEN GREAT BRITAIN AND THE UNITED STATES, SIGNED ON 11TH JANUARY, 1909, DEALING WITH THE WATERS OF THE ST. MARY AND MILK RIVERS AND THEIR TRIBUTARIES, AND THE MEASUREMENT AND APPORTIONMENT THEREOF TO BE MADE UNDER THE DIRECTION OF THE INTERNATIONAL JOINT COMMISSION.

ARGUMENT AND MEMORANDUM

SUBMITTED ON BEHALF OF THE GOVERNMENT OF THE DOMINION OF CANADA, SUPPLEMENTING THE ARGUMENT SUBMITTED AT ST. PAUL, MINNESOTA, MAY 24TH TO 28TH, 1915. SUBMITTED SEPTEMBER 2ND, 1915.

OTTAWA
GOVERNMENT PRINTING BUREAU
1915

84318—1

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INTERNATIONAL JOINT COMMISSION

IN THE MATTER OF ARTICLE VI OF THE TREATY BETWEEN GREAT BRITAIN AND THE UNITED STATES SIGNED ON ELEVENTH JANUARY, 1909, DEALING WITH THE WATERS OF THE ST. MARY AND MILK RIVERS AND THEIR TRIBUTARIES, AND OF THE MEASUREMENT AND APPORTIONMENT THEREOF TO BE MADE UNDER THE DIRECTION OF THE INTERNATIONAL JOINT COMMISSION.

INTERNATIONAL JOINT COMMISSION

To the Honourable

The International Joint Commission,

Washington, D.C., and Ottawa, Canada.

The undersigned, as Counsel for the Government of the Dominion of Canada, respectfully submits:—

A notice was sent out by your Honourable Commission in February last, stating that, before entering upon the discharge of its duty, under Article VI, the Commission deemed it necessary to hear all parties interested upon various questions involved in respect thereof, and would meet in St. Paul, Minnesota, on May 24, 1915, "for the purpose of hearing representatives of the United States and Canada, the State of Montana, the Provinces of Alberta and Saskatchewan, and any others on either or both sides of the boundary, in respect to the equal apportionment of these waters, the prior appropriation by the respective countries, their beneficial use, and any and all other questions involved in the interpretation of said Article of said Treaty, as affecting the rights and interests of all concerned in both countries."

The foregoing quotation is from the notice sent out by the Secretary of the United States Section from Washington. The notice sent out by the Secretary of the Canadian Section is to the same effect.

The hearing at St. Paul lasted from Monday morning, May 24, to Friday evening, May 28, 1915, in the presence of representatives of the United States and Canada, the State of Montana, the Provinces of Alberta and Saskatchewan, and of other parties interested, as set forth in the Record of the Proceedings. This Record contains the evidence which was given as to the physical and geographical features; the history of the controversy; the irrigation projects of the Reclamation Service and of the Alberta Railway and Irrigation Company and others; the irrigable areas in each country; stream flow measurements; gauging stations; reservoir sites; the irrigation laws of Canada and Montana; possibilities of water-power development, etc.; and also the arguments on behalf of the respective Governments and other parties interested.

A Memorandum with regard to the above evidence, with comments thereon, is filed herewith, and will be found to contain a discussion of the salient points. The oral argument on behalf of the Government of the Dominion of Canada will be found on *page 537,* and subsequent pages of the Record. It is, therefore, considered undesirable to again go over all the details of evidence or argument, which have already been presented to your Honourable Commission, but only to direct attention to some outstanding considerations.

It cannot be too emphatically pointed out that the measurement of the waters in question, to be made under the direction of the Commission, is required for more than one purpose.

MEASUREMENT OF TOTAL.

1. For the purpose of ascertaining *the total* quantity of the waters to be apportioned between the two countries.

MEASUREMENT OF DISTRIBUTIVE SHARES.

2. For the purpose of ascertaining the amount of the waters to be received by and debited to each country at different points, as forming part of the share of each country in the said total to be apportioned.

3. Other measurements may be necessary in connection with the prior appropriations.

Confusion of thought is likely to arise, unless the difference between the measurement required for each of the first two purposes is clearly borne in mind. The share which each country receives will naturally be received at points *within its own territory*, and measurement for such purpose will be at such points or at the boundary. On the other hand, the measurement for the purpose of ascertaining *the total* which governs the amount of such share so to be received does not involve any question of territoriality, and must be made at all points necessary for arriving at such total.

The language of Article VI is: "The High Contracting Parties agree that the St. Mary and Milk rivers and their tributaries (in the State of Montana and the Provinces of Alberta and Saskatchewan) are to be *treated as one stream* for the purposes of irrigation and power, and the waters thereof shall be apportioned equally between the two countries."

What is the meaning of the above language in connection with the measurement of the total amount to be apportioned between the two countries? Ascertain this total by measurement of all the waters involved, and it will be found that there is no substantial difficulty in apportioning to each country its share of such total at suitable points, and in the measurement of the constituent parts of such share at the places where the same are received.

The language is both general and clear. There is no exception of, or limitation to, any part of either river. There is no exception of, or limitation to, any tributary of either river.

Why, therefore, should there be any difficulty? The difficulty arises from the fact that a contention has been raised on behalf of the United States that the only waters to be measured, for this or any other purpose, are the waters in the two rivers and in the tributaries thereof which flow across the International Boundary, to the exclusion of the waters in the other portions of the rivers and their tributaries, and to the exclusion of the waters in any other tributaries thereof.

The result of such a contention would largely decrease the amount of Canada's share, because it would decrease the amount of the total to be apportioned; and on the other hand, the United States would have a claim to such a share of the waters of the St. Mary river as would seriously affect valid Canadian rights on that river and the development of the irrigable areas in Canada, and would be contrary to the express terms of the Treaty and to the governing idea of "beneficial use." No support of this contention on behalf of the United States can be found within the four corners of the Article itself, upon which the direction to be given by your Honourable Commission must be based. The contention is, therefore, self-answered. Certain arguments based on extraneous circumstances were, however, advanced and will again be dealt with briefly.

It has been intimated, rather than argued, on behalf of the United States that, inasmuch as a large proportion of the waters of the two rivers have their origin in the United States, and inasmuch as the Treaty provides for apportionment on an equal basis, and not in accordance with such proportion, a construction should therefore be adopted which will limit the amount of the total waters to be apportioned on this equal basis. The suggestion is, in effect, that if the measurement is applied to even a portion of the waters, the Treaty

arrangement gives Canada more than she would otherwise have obtained, and that, if the Treaty be construed according to its actual terms, it will increase this beneficial arrangement to too great an extent. This suggestion seeks its strength in plausibility rather than logic. The plausibility, however, disappears when the matter is considered either in the light of general principles or of the facts relating to the rivers in question.

Without a Treaty, the United States would not be entitled to the free use of the channel of the Milk river in Canada more than one hundred miles in length in a direct line. Without a Treaty the United States would be without the only practicable method of taking any of the water of the St. Mary river to the Lower Milk river valley. Assuming each country to adopt a reciprocally piratical policy, which is, in effect, the alternative which has been suggested, the United States might doubtless deprive Canada of a larger volume of water in connection with these two rivers, ~~and~~ than vice versa, but the damage which each country could do to the other would probably be equally great. Further, any greater "hold" which one country might have over the other at one particular point in such a conflict of malignity would be fully counterbalanced at another, e.g., the Columbia river or elsewhere.

Similar difficulties have arisen between individuals and between different states and other component parts of the same country. The solution has always been reached on the basis of mutual benefit, not of reciprocal injury. A similar situation produced the decision of the Supreme Court of the United States in Kansas vs. Colorado. The same argument was there advanced that rights should be based on the origin of the water but was rejected. The waters were treated as the waters of "one stream"; and "beneficial use" was recognized. The language of Article VI is to the same effect.

If the total to be divided is to be ascertained at the boundary, the two rivers will not be treated as "one stream"; and "beneficial use" will be an anomaly.

From the outset, moreover, it was contemplated that the matter would be dealt with, not on the basis of the amount of water which might be said to originate in either country, but as stated by Mr. John Hay in his letter to the British Ambassador, dated 19th February, 1903:—

"It is proposed to deal with this matter in strict conformity with the laws concerning the rights to the use of water as recognized by

the courts of the arid region, both on this side of the International Boundary and on the other. The principle may be stated in the language of Section 8 of the Reclamation Act of June 17, 1902 (32 Stat., 388):—

> "'That the right to use of water shall be appurtenant to the lands irrigated, and beneficial use shall be the basis, the measure, and limit of the right.'"

The waters which the United States seeks to exclude from consideration are waters which are to be applied to the same lands, and for the same purpose, as the waters which it is admitted should be divided. But to determine beneficial use it is obvious that all waters must be taken into consideration. The waters in both countries, whether crossing the boundary or not, can be utilized in irrigating land in the respective countries. Article VI expressly directs that the apportionment is to be made "so as to afford a more beneficial use to each." To exclude, therefore, from consideration waters arising in one country, capable of irrigating lands in that country, and thus enable that country to waste those waters and claim from the other country waters required there, is such a manifest contradiction of the idea of beneficial use as to need no further comment.

A point as to treaty-making power was suggested at the hearing, not on behalf of the United States but by Mr. Sands, of Chinook. An examination of the facts shows, however, that the point while interesting academically is not and cannot be involved in this case. Under no interpretation does the treaty give to Canada water of the Milk river or its tributaries not flowing across the boundary, but all of such water will remain the property and in the possession of the state of Montana, and of the persons in such state entitled thereto.

Nobody has denied, or claimed to deny, the treaty-making power of the President and Senate in respect of a division of waters which flow across the boundary, or that such a division might be founded on any basis which the High Contracting Parties might adopt.

The measurement of the total waters applicable to beneficial use, and the division thereof in equal shares, forms a very natural and suitable basis of division, since each country will thereby receive an equal share of the total beneficial waters of which the waters flowing across the boundary form a part but not the whole.

Each country will retain the waters which do not flow across the boundary and will obtain an additional amount from the so-called international waters to make up its share of the total.

The principles of Canadian irrigation law were clearly explained to the Commission. Under such law, the Alberta Railway and Irrigation Company was, and is, entitled on the St. Mary river to the total *low* water flow, and up to 2,000 second feet of high or flood water. No material question of conflict of appropriation in the United States on this river could arise because there are no lands of any substantial amount within the St. Mary's valley in Montana that could be benefited by irrigation.

In the same way the irrigation law and practice of Montana was placed before the Commission, and it is clear that the rights claimed by the Alberta Railway and Irrigation Company would be entitled to full recognition in Montana, and that Canadian legislation and practice is in accord with the principles recognized and adopted in the United States.

It was argued by Counsel for the United States that the Commission can deal only with the waters being actually used.

But the intention of the treaty was to establish certainty as to the rights of the respective countries in the waters in question, and the language accords with such intention. In Canada, irrigation development is dependent upon private capital and is not undertaken by a Governmental Reclamation Service as in the United States. Also, development must be conducted on a large scale, involving large capital expenditure, and not as small individual enterprises. Certainty as to legal rights is therefore essential. The Commission is now dealing with the matter in accordance with the Treaty. To Canadian interests it will be seriously detrimental if the direction which is to be given by the Commission does not cover the whole situation.

A suggestion has been made that the waters of the southern tributaries of the Milk river in Montana should not be measured in any event because they are not being used and could not be used for the purpose of irrigation.

But the evidence which was given at the hearing established that the southern tributaries are both actually and potentially as valuable as the northern or eastern tributaries; that the question whether the waters of a tributary can or cannot be utilized for irrigation depends

not merely upon natural conditions but upon whether it is commercially possible to retain such waters by storage reservoirs. No evidence was given as to the extent or locality of the waters, if any, that are not valuable for irrigation, with the exception of the waters below the lowest point of intake (Vandalia) on the Milk river in Montana, and below the lowest point of intake on the St. Mary river in Canada, the amount being practically identical (i.e., about 72,000 acre feet) in each case.

Counsel for the United States contended that from the treaty negotiations and drafts arises a limitation, admittedly unexpressed, to what are termed "international waters," i.e., waters that flow across the boundary, and insisted upon introducing into the Record certain preliminary drafts of Article VI. These drafts even if properly part of the Record do not assist his contention.

The question to be solved was not limited to waters that flow across the boundary.

The United States insisted upon the provision as to prior appropriations.

Such provision per se involves the inclusion of waters beyond the boundary. The points of intake of such prior appropriations are not at the boundary.

Of the *total* to be apportioned, the boundary could not be the place of measurement, although certain portions of the distributive shares of such total might, as already stated, naturally be measured at the boundary because each country will receive its share of the total within its own territory and not in the territory of the other country.

The arrangement contained in Article VI is based on a national, not on an international, basis.

Both rivers are to be treated as one stream, and prior appropriation recognized as therein stated. Further, the right to use the channel of the Milk river in Canada was granted to the United States, a right to which no claim could be made on any international basis.

The only draft by Canada suggesting measurement at the boundary excludes the prior appropriations and provides for the division of each river separately. This was not adopted. The draft by the United States providing for measurement at the boundary, but also for the prior appropriations, was likewise rejected.

The actual agreement is to be found in the Article itself.

Reference must be made to the fact that Canada had done all in its power to assist towards the direction to be given by the Commission under Article VI, both at the conference at Washington preliminary to the hearing at St. Paul, and at such hearing.

A tentative suggestion ~~submitted by Canada~~ (reprinted at the end of the memorandum attached hereto) was submitted by Canada. No objections have yet been stated by the United States to the suggestions therein, which contain a solution wholly in accord with Article VI and under which the United States, in addition to the use of the channel of the Milk river in Canada—

Milk River—

(*a*) Will continue to enjoy all the waters of the Milk river in Montana.

(*b*) Can also obtain practically all the waters of the Milk river in Canada.

(*c*) Will obtain all the water that appears to be required from the eastern tributaries of the Milk river in Canada for the irrigable area involved.

St. Mary River—

(*d*) Will be able to get a larger average number of acre feet from the waters of the St. Mary river than has been stated to be required for the Reclamation Service project.

In conclusion it is respectfully requested that the direction should be given by the Commission at an early date and in accordance with the clear and unambiguous language of Article VI as to which no question of interpretation has or can be raised which calls for determination otherwise than by your Honourable Commission in giving your direction herein.

Respectfully submitted,

C. S. MacINNES,

Counsel for the Government of the Dominion of Canada.

September 2, 1915.

MEMORANDUM

MEMORANDUM respecting the evidence given before the International Joint Commission, at St. Paul, Minnesota, May 24, 1915, and following days.

STATEMENT BY MR. NEWELL AND COMMENTS THEREON.

EARLY ACTION BY COMMISSION DESIRABLE.

Page 20.

The total cost of works in Milk river valley, including the St. Mary diversion works, was stated by Mr. Newell at about $8,000,000, about one half of which has already been expended. Some water may be turned into St. Mary canal during 1915 or 1916 and therefore early action is desirable by the Commission.

Prompt action by the Commission is equally desirable, in so far as Canada is concerned, to set at rest the uncertainty as to the quantity of water which may be available from these streams for the future development of southern Alberta and southwestern Saskatchewan. (See page 309.)

STORAGE AND RESERVOIR FACILITIES.

Page 23.

There is little, if any, irrigation directly from St. Mary river in the United States. . . . . Excellent storage facilities exist on the headwaters of St. Mary river in the United States, while in Canada the only storage possible is in a number of depressions or basins which may be filled by canals diverting water from the river.

The statement respecting storage facilities in Canada is not quite correct. It is possible to construct a storage reservoir in the valley of St. Mary river in Canada, although the cost would be high.

Page 25.

The suddenness with which the occasional floods (in Milk river) occur, prevents the economical use of water.

This statement does not seem to be quite borne out by the facts. The natural flow of the stream is undoubtedly such as to prevent use of all the water without storage, but, as Mr. Newell has stated elsewhere in his evidence, ample reservoir facilities exist in the valley of Milk river in Montana, and if these were utilized to their fullest possible extent economical use of the water would be possible. In fact, it seems probable that if the cost of the St. Mary lakes dam,

reservoir, canal, etc., had been expended in the construction of storage works on Milk river equally good results could have been obtained without international complications.

Page 26.

No part of the river (St. Mary) in the United States received water draining off the Canadian soil, and the diversion of this water for beneficial uses in Montana rightfully belongs to the United States.

This statement does not represent the policy followed by the several states of the Union, or by the United States itself, in dealing with water rights within its own territory. It is recognized as unfair for one state to fully appropriate or use the waters of an interstate stream to the injury of the lower riparian state. Many instances may be quoted in support of this, notably the Kansas-Colorado case, dealt with by the Supreme Court of the United States, in which the opinion was clearly expressed that one state has not any such right. If, therefore, this be the recognized law and practice within the United States it would seem unfair to apply any other law to streams which flow across the international boundary.

RIGHTS OF ALBERTA RAILWAY AND IRRIGATION COMPANY.

Page 27.

In order to provide necessary water, the company (A. R. and I. Company) was allowed to take from St. Mary river 500 second-feet of low water discharge and 2,000 second-feet of flood discharge.

The Canadian records show that the company was permitted to take the *total low water flow* and a quantity up to 2,000 second-feet at high water and flood. Mr. Newell's statements respecting the Alberta Railway and Irrigation Company are not strictly accurate. His evidence gives the impression that the company which made the first application for water in connection with this irrigation project subsequently transferred its interests in the matter to another company, which, in turn, transferred its interests to the Canadian Pacific Railway Company. The fact is that the Alberta Irrigation Company was the pioneer company in the development of the project. Its name was subsequently changed to the Canadian Northwest Irrigation Company and subsequently to the Alberta Railway and Irrigation Company, the capital stock of which was acquired later by the Canadian Pacific Railway Company. There was no transfer from one company to another. The rights of this company are definitely defined and are entitled to full protection under Canadian law.

Canadian law, in this respect, is similar to the law of the state of Montana, as will be found by referring to the evidence of Mr. Gunn on pages 204-205.

ORIGIN AND OBJECTS OF TREATY.

Page 27.

It was quickly appreciated that, as before stated, the best results for both countries could come, not from strife over the water supply, but by a broad, mutually beneficial and constructive policy, by which both countries might obtain the largest possible use of the water.

This was the Canadian view. Hence the Canadian Government, as early as 1896, requested the United States Government to consider the making of a satisfactory agreement for the use of the waters of St. Mary and Milk rivers, but it was not until 1907 that the United States took any active steps towards making such an agreement as had been suggested by Canada as early as 1896.

Page 27.

On the Canadian side a canal was built in 1904 from Milk river, which, in the opinion of the people in the Lower Milk River valley, threatened their water supply, and an urgent request was made upon the United States Government and its departments to take steps to prevent what the people of the Lower Milk River valley regarded as an invasion of their vested rights.

This is a fair statement of the position taken by the people in the Lower Milk River valley in Montana with respect to their rights to water from Milk river, which they considered were threatened by the construction of the Canadian canal taking water from that stream. It is precisely the position which is taken by Canada with respect to the threatened diversion of water from the Upper St. Mary river to the injury of vested rights in Canada along the lower course of that stream in Alberta.

Page 28.

The idea discussed in framing the treaty was that all of the waters which cross the international boundary in the drainage basin of the Milk river and St. Mary river shall be apportioned equally for use between the two countries.

Exception is taken to this statement. The draft which Mr. Wyvell put in as the original draft by Mr. Anderson refers to measurement at the points of intake, thereby admittedly including waters other than those which cross the boundary, and the actual treaty (Article VI) clearly includes all the waters of both streams.

Page 29.

It would not be possible to apportion the water equally between the two countries unless more than half should be taken from one river and less than half from the other river by either country.

It is submitted that the real reason was "so as to afford a more beneficial use," it being recognized that the chief United States interest was in the waters of Milk river, while the chief Canadian interest was in the waters of St. Mary river, and this was so stated by Mr. Newell himself on pages 29 and 30 of his evidence. In order to carry out the intention of beneficial use it is manifest that *all* the waters must be taken into consideration.

Page 30.

It was recognized that because of the use of water in Canada from St. Mary river there had grown up under western conditions a certain priority which entitled the lands then irrigated to first call on the available water supply.

The priority was not limited to lands that had then been irrigated but extended to the full amount of the applications of the Alberta Railway and Irrigation Company, which had the right to protection to the full extent of its applications until the period allowed for construction had expired.

METHOD OF APPORTIONMENT.

Page 34.

Mr. Newell suggests that the most important step to be taken in the near future is for the International Joint Commission to assume the direction of the measurement and apportionment of the waters to be used.

There is, of course, no objection to this on the part of Canada, as the point is entirely covered by treaty provisions.

WATER WASTED.

Page 35.

Mr. Newell stated that during past years, had the division been carried out in accordance with the provisions of the treaty, neither country could have used all the water; that during high floods it is not practicable to hold all the water in storage reservoirs nor to divert all of it; that some must go to waste; that the object of the treaty is to deal not with the water which must necessarily be wasted, but rather with the water which can be used. Therefore, in making the apportionment the operation is simplified by being confined to a consideration of the water which may be used either by direct diversion or storage.

Neither country is at present in a position to utilize all the water to which it is entitled, but as settlement increases and the land and

water become more valuable, it may confidently be anticipated that both countries can use all of their respective shares. Canada certainly can do so and her development would be retarded very materially by a decision of the Commission which left uncertain the quantity of water which Canada is entitled to use. No money could be obtained for storage reservoirs, large new irrigation systems, or the material extension of existing systems, in the event of such uncertainty.

Page 36.

On the other hand, it should not be assumed that because one country is not prepared to use one-half of the water, therefore the other country must be deprived of the use of any portion which otherwise would be wasted.

Canada cannot approve of this principle. If carried on to any considerable extent, or for any considerable time, it would assuredly lead to claims that capital has been invested and rights created, and that it would be unfair to deprive either country of the water used during the period of slower development in the other country. It cannot be too strongly emphasized that each country is clearly and permanently entitled to its share of the water in accordance with treaty provisions; that it must be charged with its share, whether used or not, and that failure to use in the present shall not impair or in any way affect its right when further development places it in a position to use all or more of the water.

WATERS NOT CROSSING BOUNDARY LINE.

Page 36.

Mr. Newell stated that it was obviously not the intention of the treaty to consider the waters of tributaries of St. Mary and Milk rivers which do not cross the international boundary, nor to consider the waters of the two main streams below the point where they for the last time cross the international boundary.

Canada wholly dissents from the view expressed by Mr. Newell and relies upon the plain language of the treaty.

Page 39.

Our understanding of the treaty as a whole is that it relates to the boundary waters and the questions which have arisen concerning the boundary waters.

The term "boundary waters" as used in the treaty does not apply to the St. Mary or Milk rivers or to any of their tributaries; therefore, "boundary waters" were not in the minds of the treaty-makers.

SUGGESTIONS TO THE COMMISSION.

Pages 36-38.

On pages 36 to 38, inclusive, Mr. Newell suggests certain action to be taken by the Commission.

No objection is taken by Canada to these suggestions.

Pages 42 and 43.

The theory of an Executive Board of two men, or possibly more, was worked out because it was known that the division or apportionment must be made from day to day . . . . . and we saw no way of meeting that condition except by having an impartial Board appointed under your direction to administer daily, according to the best knowledge, the distribution of that water.

The "properly constituted officials" are those duly appointed by the respective governments to administer the Reclamation Service and the Irrigation Branch of the Department of the Interior, respectively. If an Executive Board is required or desired, and is appointed by the Commission, such action should not be allowed to conflict with the duties of these officials.

Page 64.

Mr. Newell stated, in substance, that the additional gauging stations on the international boundary should be jointly maintained by the United States and Canada; that those not on the boundary need not be joint stations, and that either side would probably accept the measurements made by the other side, subject, of course, to verification.

Page 65.

Mr. Newell explained that his recommendation that the Commission appoint representatives of the respective countries to act as its agents would not imply that such agents should duplicate work already done, but that they should collate information, each from his own country, and then, if it were deemed necessary to supplement that information, to prepare a budget for that expenditure, and the International Joint Commission would then see to it that the work was done if they considered it necessary.

Page 68.

Mr. Newell defined his idea of the actual method of apportioning the water from St. Mary and Milk rivers and their tributaries under the provisions of Article VI by representatives of the Commission who would be actually on the ground.

Pages 70 and 71.

Q. by Mr. Wyvell: As I understand it, the only suggestion that the Reclamation Service has to offer the Commission at this time with regard to international gauging stations is that they be established on three of the important tributaries that flow from Saskachewan to the St. Mary.

A. by Mr. Newell: That is my theory.

Mr. Wyvell clearly referred to the Saskatchewan tributaries of the Milk river, and not the St. Mary river, viz.: Lodge, Battle and Frenchman creeks.

RECLAMATION SERVICE PROJECT.

Pages 47-48.

Mr. Newell described the work in the Milk river project in Montana briefly, as follows:

The Dodson dam and North and South Canals. Vandalis dam and North and South Canals. Chinook dams (3) and North and South Canals.

THE ST. MARY DAM AND STORAGE IN SHERBOURNE RESERVOIR.

Diversion canal from St. Mary to headwaters of Milk river for carriage through Canada to Lower Milk river in Montana. Plan capacity of the diversion is 850 second-feet, but the structures are now being built with a capacity of 425 second feet only.

The plan of storage in Sherbourne lake is 75,000 acre-feet and 124,000 acre-feet in St. Mary lake.

AMOUNT OF WATER REQUIRED FOR RECLAMATION SERVICE PROJECT.

Page 49.

The diversion from St. Mary to Milk river would be 50,000 acre feet per month for four months, or about 200,000 acre-feet per annum.

Pages 325, 326, and 327.

Mr. Newell: "The theory I have had, and I have presented it in the paper, is that the effect of the reservoirs would be to smooth out and take off the top of the peak flood of June on the St. Mary. My theory is that during the winter and the spring when the Canadian canal would not wish the water, we would fill up the reservoir above, and during late summer, when the Canadian canal might need all the water in the St. Mary river, there probably would be no question raised but that it should have all the water. The spring floods could supply all the storage we contemplate, and leave a considerable excess. That will be sent down to supply the lands which the government proposes to irrigate and will not help directly or indirectly the lands which are not within the government project and which aggregate many times those which we propose to irrigate."

Mr. Mignault: "Has it not been stated on behalf of the Reclamation Service of the United States that the St. Mary reservoir would merely suffice to store the United States' share in the waters of the St. Mary river."

Mr. Newell: "That is what I have contended, and as a matter of history in negotiating the treaty there were many propositions made that we should store more water than Canada, and I think we consistently claimed that that would be impracticable. Of course, we do not know now what is the practical limit of storage; it is largely dependent on the condition of the foundations for the dams."

* * * * * * * * * *

Mr. Newell: "After we have filled the storage reservoirs, the amount that would be left would be ample for six months. In other words, our divergence for storage would not interfere with the needs of the Canadian canal at that time of the year."

Mr. Wyvell: "In other words, we would only store water that would necessarily run to waste."

Mr. Newell: "That is the effect of it."

Mr. Powell: "What, if any, is the amount that you have in contemplation as the maximum user for all your developments in Montana, give it in acre-feet?

Mr. Newell: "We have published the fact that we plan to irrigate 220,000 acres, and that is both by the annual flow of Milk river and supplemented by storage in St. Mary river."

Mr. Powell: "That is the total consumption?"

Mr. Newell: "Yes, and we have figured that in ordinary years that should be covered to a depth of one foot. That was simply based on our present knowledge."

Page 53.

Mr. Newell declined to express a decided opinion as to the quantity of water required to irrigate an acre of land in Milk River valley. He said that the people of the valley have asserted that if they can be sure of one acre-foot during a season they can raise a crop. His experience, however, showed that when water was plentiful there was an insistent demand for double that quantity, but to give more than was actually required was bad practice and often injurious.

Page 56.

The present plan of the Reclamation Service was stated to contemplate the irrigation of 220,000 acres of land in the Milk River valley.

Page 57.

Q. by Mr. MacInnes: "But in your reports up to date it is not suggested that there will be a larger amount than 219,000 acres?"

A. by Mr. Newell: "That is limited by the economical conditions and the water."

Under Canada's suggested division of waters the United States would receive 235,162 acre-feet from St. Mary river under practically the conditions suggested by Mr. Newell. (See Evidence, page 579.)

RESERVOIRS.

Page 50.

The capacity of Nelson reservoir is to be 25,000 acre-feet and it can possibly be enlarged to hold 125,000 acre-feet. If completed it will obviate the necessity for constructing the Bowdoin reservoir.

There is to be no storage at Dodson or Vandalia. These are merely diversion dams.

Page 51.

Chain of Lakes reservoir is a valley parallel with Milk river near the Eastern Crossing. The capacity is from 150,000 to 250,000 acre-feet, but construction of this reservoir is said to be doubtful because of the sandy nature of the soil.

Page 52.

Mr. Newell stated that the Reclamation Service would attempt to fill the St. Mary storage reservoir before the irrigation season and possibly would not release any water to Milk river before August or September, depending upon the nature of the season in the Lower Milk River valley. They would endeavour to fill the Nelson reservoir and Chain of Lakes reservoir, if built, during autumn, winter or spring floods from Milk river.

IRRIGABLE AREA, OTHER THAN RECLAMATION SERVICE PROJECT.

Pages 328-348.

Mr. Newell described an attempt made by officers of the Department of the Interior of the United States to informally or tentatively adjudicate the appropriations of water on tributary streams of Milk river in Montana. This tentative adjudication included a careful examination of all claims for water recorded in Montana against these streams and a record of the stream flow data so far as procurable.

Page 349.

Mr. MacInnes: "And I understood in that connection that while there are a large number of irrigation rights recorded, that the amount put to practical use or beneficial use does not, in any way, correspond to that?"

Mr. Newell: "Correct."

Mr. MacInnes: "Can an estimate be made as to the irrigable lands?"

Mr. Newell: "Yes, an estimate can be made."

Mr. MacInnes: "And you have put that irrigable area at 220,000 acres?"

Mr. Newell: "That is the portion the Reclamation Service proposes to deal with."

Page 350.

Mr. MacInnes: "Is it not possible to show to the Commission where these lands are?" (Irrigable lands on Milk River tributaries in Montana.)

Mr. Newell: "I should think so, perhaps."

Mr. MacInnes: "So that the Commission has on record your estimate as to the land which could be irrigated under your system, and also these ten volumes which have been referred to?"

Mr. Newell: "Yes."

Page 328.

Mr. Magrath: "The statement you made in the early part of the proceedings was to the effect that your expenditure would be eight million dollars in irrigating 220,000 acres, which would amount to between thirty and forty dollars per acre. That is the limit of your expenditure per acre at present?"

Mr. Newell: "That is what we have placed before Congress."

The Board of Consulting Engineers of the United States Reclamation Service, in reporting upon the Milk River project, expressly state that it is impracticable to irrigate the bench lands, and it has always been clearly understood that their irrigation project comprises all the available irrigable lands in the valley. The following extracts are taken from the United States Reclamation Service Reports.

EXTRACTS FROM UNITED STATES RECLAMATION SERVICE REPORTS.

1st Annual Report, 1902.

"The Milk river is bounded by high cliffs on either side, 200 feet more or less in elevation, from where it crosses the international line and enters the United States for the last time down to Yantic, ten

miles east of Havre. At the latter point the valley broadens, and the relative heights of the bluffs decrease, and there is to be found here opportunity for diversion to the agricultural lands of the Lower Milk River valley. A map of this vicinity is being made, and a study of this will show the extent of land that can be reclaimed, and the general locations, grades and sizes of the diversion canals."

2nd Annual Report, 1903.

"Surveys in Lower Milk River Valley.—The greatest amount of field work during 1903 has been done in the section that it is proposed to reclaim. Two divisions are here noted also, based on two separate diversion schemes from Milk river. This stream, after crossing the international line into the United States for the last time, continues in a deep valley for sixty miles or more to a point a short distance below Havre. Here the relative heights of the hills decrease, and the valley broadens.

"Ten miles below Havre, or near Yantic, a survey for a diversion canal was made on the north side of the river. A line was first run on a grade of one-half foot to the mile to see if the benches lower down the river could be reached. This was found to be impossible owing to the slight fall of the river. The location is along side-hill most of the way and construction would be expensive. From this survey it was found that only the bottom lands of the valley could be served and another lower line was therefore run and contoured on a scale of 500 feet to the inch. From this survey estimates of the cost of construction can be made."

10th Annual Report, 1910-11.

"Irrigable area in project is 207,600 acres."

No definite information of irrigable areas, apart from the 220,000 acres included in the Reclamation project, was given by Mr. Newell, or by Mr. Connor, or otherwise on behalf of the United States. Everything beyond that area is purely conjectural and not based upon actual surveys.

WATER APPROPRIATIONS OTHERWISE THAN BY RECLAMATION SERVICE.

Pages 57 and 58.

Q. by Mr. MacInnes: "What other claimants are there on the Milk river proper, outside of the Reclamation Service, that have to be considered in this matter?"

A. by Mr. Newell: "There are, first, any claimants who may have built shorter canals and who have never put the matter on record that these canals have been built. They would claim under Montana laws as having completed and put the water to use. There are others who have filed under Montana laws and of whom we have no record. The United States has claimed any additional water which is not already claimed by these prior appropriators. . . . We have endeavoured, so far as we can, to ascertain the aggregate of these claims and we have them in ten large volumes and it is almost impossible to tell where these claims begin or end . . . . We have endeavoured to ascertain and consolidate the larger claims and let the smaller ones take care of themselves."

Page 59.

Mr. Newell: "I am informed that the amount of these claims is about "15 second-feet" outside the large canals.

Page 62.

The following extract from the 7th Annual Report of the Reclamation Service gives details as to the large canals on the Milk river and its southern tributaries:—

"At the time authority was given, in March, 1908, for construction work on this project, it was understood that a general adjudication of the rights of all private canals would be necessary in order to determine the order of their priorities, but more especially to establish the amount of water to which each ditch was entitled. In order to avoid the expense and delay that would necessarily result from an adjudication of these rights by suits at law, as well as to expedite the construction of the Dodson system, certain articles of agreement were drawn under date of May 28, 1908, between various private canal companies in the vicinity of Chinook and Harlem, parties of the first part, the Upper and Lower Milk river water users' associations, parties of the second part, and the United States, party of the third part. This agreement provides in effect that as soon as an adequate supply of water shall be provided in the channel of Milk river from St. Mary river, or elsewhere, the owners of the various private canals will execute and deliver to the United States conveyance of their present water rights, dams, ditches, reservoirs and structures covering lands in the Milk River valley susceptible of irrigation from the proposed government irrigation systems . . . . . The agreement further provides that the present appropriations of the ditch owners shall be measured by maximum capacities of their ditches as estimated in the following table, and that the acreage hitherto irrigated shall be considered those shown on the table.

Company.	Canal Capacity.	Acres Irrigated.
	Sec.-Feet.	
Fort Belknap Canal and Irrigation Co	130	10,900
Winters, Anderson Ditch Co	12	440
Paradise Valley Ditch and Irrigation Co	19	1,400
New Harlem Irrigation Co	73	7,820
Cooks Irrigation Company (tributary)	50	2,700
Matthewson Ditch Co. (tributary)	28	1,715
West Fork Ditch Co. (tributary)	13	800
Fort Belknap Indian Canal*	125	
Total	450	25,755

* Only about 15 second-feet are or can be used. See evidence, page 301).

"Of that total quantity of 450 second-feet, the first four and the last named ditch, only, draw water directly from Milk river; the others, in a total quantity of 91 second-feet, draw from tributaries, leaving 359 second-feet only, as prior appropriations from Milk river."

The claims on the Milk river therefore aggregate 359, and on the southern tributaries (91 + 15) 106, viz., a total of only 465 second-feet.

USE OF MILK RIVER CHANNEL.

Page 33.

No valid objection has been raised to such use, as the channel is capable of carrying a considerable volume of water, and, in fact, does carry during the floods 1,000 or more second-feet.

No obligation rested upon Canada to show cause why it should not grant the use of Milk river channel to the United States for the carriage of water through Canada; therefore, the statement "no valid objection" is somewhat misleading. The cash value to the United States of this concession on the part of Canada is many millions of dollars. According to the figures given in the first annual report of the Reclamation Service for 1902 the cost of the St. Mary diversion work was estimated at $924,000 and the cost of the "All-Montana" canal at $4,600,000, or five times as much. The first estimate has been exceeded to such an extent that the cost of the alternative would be clearly prohibitive. The difference between the two represents the value of this concession by Canada to the United States. What does Canada get for this concession, according to the United States' interpretation of the treaty?

This concession constitutes a very important part of the agreement reached between the two countries and has a very real and tangible value to the U. S. Reclamation Service.

Surveys were made by the United States authorities beginning in 1900 to determine the feasibility of augmenting the erratic flow of Milk river upon which the Milk river reclamation project is dependent for water supply. These surveys indicated that the only additional water supply must be obtained from St. Mary lakes and river in Western Montana, unless resort were had to extensive storage works on the upper and middle courses of Milk river. This latter alternative does not appear to have been given full consideration.

A reservoir site was located and partly surveyed at Lower St. Mary lake and surveys were made to determine the most feasible and economical method of diverting water from this reservoir to Milk river in Montana. The various possibilities are described in the published reports of the Reclamation Service as follows:—

1. DIVERSION FROM ST. MARY LAKE TO THE NORTH OR SOUTH FORK OF MILK RIVER AND ALLOWING IT TO RUN THROUGH CANADA TO THE LOWER MILK RIVER VALLEY IN MONTANA.

1st Annual Report, U.S. Reclamation Service, 1902.

(a) "A reconnaissance was made down Milk river in Canada to ascertain whether water could be taken out of that river on this course. It was evidently impracticable to do this, except at or near the gap through which the Great Falls and Canada railroad passes. It is probable that such a diversion cannot be made, but this can be determined only through a careful survey in that part of Canada.

"From the dam (at or near the outlet of St. Mary lake) the canal line will continue down the east bank of the river a distance of 7 miles, then turn eastward and pass through a gap known as Spider Lake Gap. Thence it will continue in a general northeasterly direction for a distance of 27.4 miles, or to the North Fork of Milk river. The last step in the construction of the canal to reach the North Fork will be the dropping of the water 180 feet to the level of the creek.

"The following table gives the estimated cost of construction of this portion of the line, dropping the water to the North Fork, as described:—

ESTIMATED COST OF ST. MARY DAM AND CANAL TO NORTH FORK OF MILK RIVER.

Dam and head gates	$250,000
Head to Spider lake	245,100
Spider lake to drop at North Fork	288,400
Drop at North Fork	16,040
Two sets of waste gates on line	4,000
	$803,540
Engineering and contingencies	120,530
Total	$924,070

1. Or, alternatively,

(b) "Instead of dropping the water into the North Fork, it could be carried across that stream by means of a pressure pipe or inverted siphon. The invert of the siphon would be 181 feet and the horizontal distance from the intake to the outlet 2,638 feet. It is proposed to carry the water across through three pipes each 7 feet in diameter. The fall from the intake to the outlet will be 6.2 feet, the inverted siphon to be of wooden stave pipe, as siphons of that character have been found very successful for engineering purposes in the West. The cost of this inverted siphon will be about $67,000.

"Seven miles beyond the North Fork the canal would pass through what is known as McLeod Gap, where occurs the greatest depth of excavation on the entire line, amounting to 167 feet. A few miles beyond, the water could be turned into the South Fork of Milk river, making the total length of the canal and siphon from the head on St. Mary river 43.8 miles. The following table shows the estimated cost of this line:—

ESTIMATED COST OF ST. MARY DAM AND CANAL TO SOUTH FORK OF MILK RIVER.

Dam and head gates	$ 250,000
Head to Spider lake	245,100
Spider lake to North Fork of Milk river	288,400
Two sets of waste gates	4,000
Siphon, North Fork	67,000
North Fork to South Fork of Milk river	360,800
	$1,215,300
Contingencies	121,530
Engineering	60,770
Total	$1,397,600

" If the waters are permitted to enter the North Fork or the South Fork, they will find their way into Canada before they can be used in the lower valley of Milk river, but it is believed that they cannot be diverted in Canada before they return to the United States."

2. ALL-MONTANA CANAL.

(a) " If it is desired to keep the water in the United States, the canal would have to be extended farther east. For this extension several routes are available. After crossing the South Fork the canal would continue in a general north-easterly direction for 1913 miles, until the ridge separating the Milk river and Marias river drainages is passed. At that point two routes are offered:

" (1) Continue the line in a general easterly direction, approximately paralleling the international line, for a distance of 200 miles, until Sage creek, a tributary of Lower Milk river, is reached; (2) bend the line southward and continue it for 25.9 miles, until Cutbank creek is reached, the water to continue down that stream for 100 miles, more or less, being diverted again near the mouth of Willow creek and carried in an artificial channel for a distance of about 75 miles, until it is turned into Big Sandy creek, a tributary of Sage creek.

" During 1901, a line was surveyed on the first-mentioned plan, that is, with a general easterly direction. Sixty-four miles from the head of the canal the line came to the top of a bluff, over which it would be necessary to make a drop of 205 feet. Twenty-three miles beyond that point another bluff was reached, and a second drop of 136 feet would be required. It was found that throughout the remainder of the length it would be necessary to make similar drops, varying from 15 feet to more than 300 feet, due to the great fall of the country through which the line passed.

Sage creek was not reached during the survey of the last season, but sufficient work was executed to show that a canal more than 250 miles in length would be necessary and that the cost of construction would be prohibitive; also, on account of its great length, a very large percentage of the water taken in at the head would be lost by seepage and evaporation before the lower country was reached. The following is a rough estimate of the cost of this line from the head on St. Mary river to Sage creek:

ESTIMATED COST OF ST. MARYS DAM AND CANAL FROM THE HEAD TO SAGE CREEK.

Dam and head gates	$ 250,000
Head to North Fork of Milk river	533,500
Two sets of waste gates	4,000
Inverted siphon	67,000
North Fork to South Fork of Milk river	360,800
Regulating gates at South Fork	5,200
South Fork to first drop, 20 miles, at $12,000	240,000
First drop	20,000
First drop to second drop, 22.7 miles, at $10,000	227,000
Second drop	20,000
Second drop to reservation boundary, 22.7 miles, at $15,000	340,500
Reservation line to Great Falls and Canada Railroad, 35 miles, at $12,000	420,000
Drops No. 3 to 8 (six) at $5,000	30,000
Siphon railway coulee	280,000
Great Falls and Canada Railroad to Sage creek, 100 miles, at $12,000	1,200,000
	3,996,000
Contingencies and engineering	604,000
Total	4,600,000

"The line just described is not considered feasible on account of its length and the great cost of construction."

2. MARIAS RIVER DIVERSION CANAL.

(b) "From a study of last season's work, taken in conjunction with topographic and general maps, a more feasible route may have been found. It is to turn the water into Cutbank creek and redivert it from Marias river, 100 miles or more below, and thence carry it to Big Sandy creek, a tributary of Milk river.

"During 1902 parties were investigating the possibility of storage in the upper basin of the Marias, while other parties were making surveys of the lower Marias, in order to find, if possible, a point where a feasible diversion could be made for a canal to Big Sandy creek."

The "All-Montana" canal was abandoned on account of its excessive cost, the estimate of which was $4,600,000, and the probable actual cost far in excess of that amount.

The "Marias Route" was also abandoned on account of its high cost—never actually estimated so far as the published reports show—and the great distance the water would require to be carried before reaching the lands to be served.

There remained as the only really practical scheme the possibility of diverting the water stored in St. Mary lakes, or taken directly from St. Mary river, to the North or South Branches of Milk river in Montana and conveying it in the channel of Milk river for a dis-

tance of some 215 miles through Canada and a further distance of about 100 miles in the channel of the same stream in Montana to the point of use. The North Branch route was apparently selected as the more satisfactory. This was estimated to cost some $924,000, representing a diversion dam at or near Lower St. Mary lake, some 26 miles of canal, structure, etc.

It was of course, recognized that the consent of Canada would be required for the use of Milk river channel in Canada and it is only reasonable to assume that the United States authorities also realized that Canada would expect to receive and would be entitled to compensation of some kind, in view of the fact that the water to be diverted from St. Mary river would, if undiverted, flow into Canada and be available for use through the Alberta Railway and Irrigation Company's canal system or extensions of that system.

The officers of the Reclamation Service seem to have assumed that Canada's consent would be given, as they appear to have completed their surveys, located their dam and canal and actually to have commenced construction as early as 1906, although no agreement with Canada was made until 1909, and the negotiations leading to the present treaty were not actually begun until 1907.

Throughout the treaty negotiations in 1908 and 1909 the Canadian officials clearly realized the value of this privilege to the United States, and it was repeatedly referred to in the correspondence and in the discussions with the United States Officials.

STATEMENT BY THE ATTORNEY GENERAL FOR MONTANA.

Page 74.

Mr. Kelly: " It is not my view that purely local water rights have any bearing on this hearing. . . . . After the water crosses the line into Canada or into Montana, it then becomes a local question as to its distribution in the states."

This is correct, but all facts have to be considered in order to enable the Commission to pass on " beneficial use."

EVIDENCE OF MR. CONNOR.

APPROPRIATIONS IN MONTANA ON TRIBUTARIES OF MILK RIVER RISING IN CANADA.

Page 95.

Mr. Connor: " On Frenchman river we found that we would consider a valid right of 37½ cubic feet per second. . . . . One second-foot to 80 acres was our duty of water.

Page 96.

"That would equal 3,000 acre-feet. . . . . The North Fork of Milk river, which you call Battle creek, 13½ second-feet; the West Fork, which is called Lodge creek, 18½ second-feet; Whitewater creek, 25 second-feet; Rock creek 110½ second-feet. The total is 203 second-feet, or 24,360 acre-feet, applicable to 16,240 acres."

APPROPRIATIONS IN THE UNITED STATES ON THE CANADIAN (EASTERN) TRIBUTARIES OF THE MILK RIVER.

Page 296.

Mr. McInnes: "Mr. Connor, who is one of your engineers, I understand, went through that report (6th Annual Report of the State Engineer of Montana) and gave us a summary of the records relating to the tributaries of Milk river which head in Canada, namely, Lodge creek, Battle creek, Whitewater creek, Rock creek, and Frenchman river. Have you got that summary there?"

Mr. Connor: "The list included the total tributaries to the main tributary of the river, like, say, Rock creek. It also included the coulees and tributaries to Rock creek which formed one branch and basin to the Milk river, and the appropriation examined was the total appropriation within Rock creek basin tributary to the Milk river in the United States and not in Canada."

Mr. MacInnes: "It covers each of these creeks and its basin:

	Acre-feet per annum.
Rock creek	13,300
Frenchman river	4,500 in U.S.
Whitewater creek	3,000
Battle creek	1,600
Lodge creek	2,200
Total	24,600

acre feet recorded on the tributaries of the Milk river which head in Canada."

Page 298.

Mr. Connor: "My report was based upon investigations by the Reclamation Service engineers in the field, who made a careful table. It is a summary of the ten large volumes of which we have been speaking."

Mr. Connor: "The object of this investigation was to form a basis for adjudication of the water rights on the tributaries of Milk river in the United States. . . . . During the seasons of 1911 and 1912 and the spring of 1913 two or three assistant engineers in the Reclamation Service made this careful survey, first taking the record of the appropriations from the county record and then going into the field and examining on the ground, taking photographs of the improvements and making maps of the irrigable area and canals and ditches as constructed, to determine upon the amount of water put to beneficial use in these various tributaries."

EVIDENCE OF MR. BIEN.

Page 292.

Mr. Bien was asked by Mr. MacInnes to define the rights the Reclamation Service have acquired on the St. Mary and Milk rivers and their tributaries in the state of Montana.

Mr. Bien: "I cannot give you the exact amounts . . . . but I can put in evidence the dates of the notices of appropriation and the amounts . . . . . Our first claim of appropriation on the Milk river was in November, 1903, ... under the usual law relating to water rights in Montana, which required the posting of a notice at the point of diversion, the filing in the county records within twenty days, and the beginning of work within forty days thereafter. The work really had begun before the notice was posted, because we had done a great deal in the way of surveying and making investigations . . . . . In 1905 the state (Montana) passed a law giving special privileges, or you might say making special arrangements for appropriations by the United States, recognizing the fact that its work was very large in extent and in quantity, and that it would not be feasible to do very much in the way of construction in the first forty or sixty days, so that a law was passed providing that the United States could hold the waters so claimed for three years. . . . . That is Section 4846 of the Montana Code. . . . . After this law was passed further claims were filed, and the right has been carefully kept alive all the time by filing in accordance with the law after the three years had expired."

Mr. MacInnes: "You simply go on making further filings even though the work is not done?"

Mr. Bien: "Yes, that is quite a common practice."

The "right has been kept alive, although the water, or the most of it, has not even yet been applied to beneficial use; in other words, the Reclamation Service claims rights to water under Montana laws which it, in effect, was indisposed to recognize, in so far as the Canadian Canal Company was concerned, prior to the making of the treaty. The attitude of the Reclamation Service at that time was that the Canadian canal was only entitled to protection to the extent to which it had actually applied water to beneficial use.

Page 294.

Mr. Bien: "Under the law of Montana the right acquired by such a notice as I speak of, relates back to the date of posting of the law is complied with; that is, if reasonable diligence is followed in putting the water to beneficial use. The law expressly makes that statement, and, as far as the Reclamation Service work is concerned, there cannot be any question about the intelligent prosecution of the work. . . . Our filings cover all the waters of the Milk river and its tributaries with diversions at these points where we are building our diversion canals.

Mr. Sands subsequently (page 228 of Evidence) criticized the use of the term "grant" as applied to the Canadian canals, but Canadian water rights are entitled to precisely the same consideration as is claimed by the Reclamation Service under Montana law, the provisions of Canadian law as to filing, etc., having been complied with.

Page 295.

Mr. Bien was asked to express an opinion as to the comparative values for irrigation purposes of the northern and southern tributaries of Milk river.

Mr. Bien: "It is a very difficult thing to say what are the comparative irrigable values of two or three streams, unless they vary greatly in their regimen, but I should say from such knowledge as I have of those streams that they are approximately the same. They both depend upon rainfall and much less upon snow."

Re FORT BELKNAP INDIAN AGENCY CANAL.

Pages 300-1.

Mr. Bien: "The Supreme Court of the United States recognized the right of that Indian canal to the full extent claimed, and based the decision upon their riparian rights. Just what will be the result when the matter is finally worked out no one can tell, because if that decree were enforced precisely as it is drawn most of the private ditches that have been in use there for thirty years, or thereabouts, would lose all their water. . . . . The Indian canal takes a very small proportion of what is recognized in the decree, and probably will never increase as long as that is Indian land, because the Indians are not using the waters for irrigation. The canal does not cover nearly as much land as would be irrigated by that amount of water, 125 second-feet. Of the small area that could be reached from the canal the Indians are using but a very small proportion, only 1,200 or 1,500 acres, if I am not mistaken. . . . . This 125 second-feet should irrigate something in the neighbourhood of 10,000 acres."

Page 301.

Mr. MacInnes inquired whether the 125 second-feet for the Indian canal was included in the statement in the Seventh Annual Report of the Reclamation Service, making up a total of 450 second-feet of appropriations on the Milk river and its tributaries said to be in existence prior to the treaty.

Mr. Bien thought not, but upon consulting the record it was found that the Indian canal was included. (See page 302.)

In calculating the amount of priorities on Milk river and its tributaries in Montana prior to the treaty, this canal was given a value of 125 second-feet, forming part of the total amount of 450 second-feet of priorities. The United States made provision in the treaty for a recognition of 500 second-feet to cover prior appropriations. It now appears that this canal actually irrigated only 1,200 to 1,500 acres, or, in other words, used only from 10 to 15 second-feet, viz.: a difference of more than 100 second-feet.

QUOTATION FROM LETTER FROM MR. C. D. WALCOTT, DATED JANUARY 25, 1902. (INTRODUCED BY MR. WYVELL).

Page 357.

"In relation to the first claim, the situation should be clearly borne in mind that the Canadian Canal (St. Mary) can utilize only the summerflow of the river. Moreover, the canal has sustained extensive injuries by the flood of 1902, the headworks being destroyed so that the canal has not recently been in use.

. . . . . .

"The only objection apparently made to the construction of storage works on the St. Mary lake is the fear that in some way these

works may in the remote future prevent the enlargement and extension of a now useless canal in Canada. This canal, although it claims a capacity of 400 cubic feet per second, has only carried about 125 cubic feet per second, and when measured in 1901 before it was rendered useless was conveying only 66 cubic feet per second.

"The full capacity of this canal as constructed is supplied by rivers entering below St. Mary lake, the two largest of these being Kennedy creek and Boundary creek. In July, 1902, the former was discharging 1,000 cubic feet per second, with an average for the month of 600 cubic feet per second. Boundary creek discharges about one-half the amount of Kennedy creek. During May, June and July great quantities of water passed down St. Mary river from these lower streams, far more than the capacity of the Canadian canal."

While these statements made by Mr. Walcott early in 1902 have no bearing on the case now before the Commission, it is considered necessary to draw attention to their inaccuracy.

1. The Canadian undertaking can utilize, either by direct diversion or by storage, all of the rights to which it is entitled under Canadian Irrigation Law, viz.: the total low water flow up to a maximum of 2,000 second feet.

2. The dam and intake of the Alberta Railway and Irrigation Company's canal on St. Mary river were injured by floods at about the date mentioned by Mr. Walcott, but the damage was immediately repaired and the canal was only out of commission for a brief period. It has never since been out of commission.

3. The capacity of this canal was never limited to 400 second-feet except during the earlier days of construction.

4. The time of measurement referred to by Mr. Walcott was obviously in 1901, or earlier; the canal was then being constructed; it was not completed, and the measured flow referred to was probably only being used for test purposes.

5. Kennedy creek and Boundary creek do not provide enough water for the Alberta Railway and Irrigation canal. No such claim is now made by the Reclamation Service. The measurements referred to by Mr. Walcott were obviously made during an unusually high flood which can have continued only for a few days.

STATEMENT BY MR. SANDS.

WATER RIGHTS OF RECLAMATION SERVICE.

Page 429.

Mr. Sands: "I know of my knowledge, from examination of the records, that the Reclamation Service filed upon a large quantity, practically all the stream would carry, of the waters of the Milk river, as early as 1903. I know that they commenced their work of surveys

immediately afterwards and continued it diligently. I know that they made later filings in 1905, and even later they made other filings, and they have made recent filings, for that matter. I can see no purpose in it, although it costs but two dollars. I do not know what their purpose might be."

FLOW OF SOUTHERN TRIBUTARIES OF MILK RIVER IN MONTANA.

Pages 430-431.

Mr. Sands: "It is suggested by one witness, I do not know but that even one of our own witnesses said, that the streams from the north and south are practically the same. Well, gentlemen, from my own knowledge, I know that they are not. The streams from the south flow from the Bear Paw mountains, which is quite a distinct chain of mountains, north into the Milk river. The Little Rockies are also a very pronounced and rugged mountain chain, but they are not so long as the Bear Paws. The Sweet Grass hills compare well with the Cypress hills in Canada, but the waters from the Bear Paw mountains constitute a very large portion of the water that flows into the Milk river, much larger than anything that comes in from the north, and the streams are very much steadier as the mountains have snow upon them until quite late in the season. The rainfall seems to be much heavier, especially in the Bear Paw mountains, and there are many living streams from that source, whereas, the streams from the north are nearly all intermittent and usually dry up when the weather gets dry late in the summer.

"I call attention to that especially because a contrary statement was made here, but I believe the physical facts and the data will bear me out in that fully. The streams that come from the south are far more important than those which come from the north."

Mr. Sands' statement agrees with the Canadian contention, and it is quite as possible to measure such flow as it has been for Canada to measure the flow of the northern tributaries of Battle and Lodge creeks and Frenchman river.

Page 431.

Mr. Sands outlined a method of measurement and apportionment of the waters, to be carried out under the direction of the Commission by two practical men, who might, perhaps, be stationed at Chinook, Montana, for that purpose.

Mr. Sands: "The Frenchman is used very largely by the Canadians; we use it very little. Battle creek is used very largely by the Canadians, and we use it very little, except upon the land in the lower end of the stream, which can be reached from the St. Mary's canal system. On the other hand, Lodge creek, as it is called now, is used extensively by the Americans, while not nearly as good a stream; the Canadians have no ditches there of any consequence, only one small one."

Exhibits ('K-1 to 5'), filed by Canada, show water applications on these streams. Mr. Sands' statement is not correct as to Lodge creek.

Page 435.

Mr. Sands: " My knowledge of irrigation is that if land is irrigated early in the season, when we nearly always have water in the Milk River valley from the running off of snow, for the irrigation of grain crops, and then save the later water for the irrigation of alfalfa fields, and use a little intelligence in that way, we need not suffer. As development increases and more land is brought in, greater care will have to be used in the distribution of the water, but at present it does not seem to me that there should be very much trouble, if people will only try to be fair."

Pages 437-8.

Mr. Sands read from vol. 122 of the Pacific Reports, page 275:—

> " A right obtained under the statute providing for the appropriation of water may be lost by abandonment or non-user for an unreasonable time."

Mr. Sands proceeded to refer to the case of the Alberta Railway and Irrigation canal taking water from Milk river, and stated that water was taken out through the canal in 1904, over 10 years ago, but not since, and that the right should have been declared lost according to the decision of the Supreme Court of Montana.

The proper analogy in this case is the record of the Reclamation Service water filings from Milk river and its tributaries in Montana. Those rights have been kept alive for years although the water has not been applied to beneficial use. The Milk river canal in Canada is only one part of an extensive canal system under construction by the Alberta Railway and Irrigation Company. That company was granted a period of 15 years within which to complete its system. The company's rights cannot in any event be declared forfeited for non-use before the expiration of that period.

Page 439.

Mr. Sands: " Our constitution provides that there must be a beneficial use. I suggest this in order to give the record of that canal out of Milk river which has been referred to so frequently. If they ever made a beneficial use, the Constitution provides that it must be shown. No beneficial use was ever made from the canal, and, therefore, for this reason I claim no right was acquired."

Reference may again be made to Section 4846 of the Montana Code, under which the Reclamation Service has kept and is keeping alive a valid application for water without making beneficial use thereof because of the incomplete state of its works. The period allowed to the Canadian Canal Company for construction has not yet expired.

Pages 440-447.

On these pages Mr. Sands presents a record of a so-called investigation made by a Mr. Jones of Montana, presumably at the instance of water users in the Milk River valley, of the irrigation projects on

Battle and Lodge creeks and the Frenchman river in Canada. Much of the evidence is admittedly second-hand, although in some cases Mr. Jones personally saw the ditches. In all cases the record is incomplete. Correct and reliable evidence has been furnished by Canada in Exhibits " K-1 to 5.," put in by Mr. Drake. This evidence is reliable and is not based upon information furnished by others.

See also Mr. Peter's statement of the areas actually irrigated and the areas irrigable on these streams (page 253 of Evidence).

Page 447.

Mr. Sands: " The Canadian ditches, as a rule, are new; most of them having been constructed in the last four years. They are well built, with plenty of fall, and as a rule will carry much more water than is necessary to irrigate the land under them."

The large size of the ditches is essential for the utilization of large irrigating heads during the brief period when water is available. This is universally regarded as good practice.

IRRIGABLE AREA ON FRENCHMAN RIVER IN CANADA.

Page 448.

Mr. Sands: " Frenchman creek. The banks of this stream are high and diversions are so difficult that it will be some time before the land is sufficiently valuable to justify the expense of any more diversion."

This statement is not correct. There are comparatively large areas of irrigable land along the valley of Frenchman creek, as may be ascertained by reference to the evidence of Mr. Peters.

CANADIAN CASE—EVIDENCE IN REPLY TO POINTS RAISED BY MR. NEWELL AND OTHERS ON BEHALF OF THE UNITED STATES.

EVIDENCE OF MR. BURLEY.

GEOGRAPHICAL DESCRIPTION.

Pages 138-147.

Pages 138 to 147 contain a description of the St. Mary and Milk river drainage basins.

THE POSSIBILITY OF IRRIGATING BENCH LANDS ADJACENT TO MILK RIVER VALLEY.

Page 170.

Mr. Burley: " It is a possibility, but I do not think it is an economic possibility, to take it out above Havre on those large flats that lie to the north of Havre. . . . . I do not consider that pumping is a very feasible proposition for some years to come. In our country we do not consider it so, and I think Montana is comparable, so far

as the value of land and water rights is concerned. . . . . There is a slight increase (of irrigable area) possible, if they care to go to the expense of extending large canals along the river valley over a long distance for comparatively small areas of land which are scattered."

THE LIMITS OF THE MILK RIVER VALLEY.

Page 149.

Mr. Burley: " They are defined by steep valley banks rising up to the bench land. They lie as perfectly level pieces of land and the valley banks pitch up from these to the bench lands on the river banks."

Page 150.

Mr. Burley: " I personally think that the United States Reclamation Service have covered all the irrigable land; that is, irrigable from the economic standpoint. (i. e., 220,000 acres included in the Milk river project).

" I would not say that the absolute limit is that (220,000 acres) but the rest of the land is so divided into small areas and scattered over such a large basin that it is not economically possible to bring it under an irrigation system."

Page 175.

Q. by Mr. Bien: " Have you any idea what the private irrigation area is in Milk river in Montana? "

A. by Mr. Burley: " I have an idea from a statement that was made in the United States Geological Water Supply papers for 1906 on the Missouri river drainage basin. It was not thought that there were over 50,000 acres at the outside that could be depended upon to any extent."

Q. by Mr. Bien: " Do you understand that that is included in the 220,000 acres of the project? "

A. by Mr. Burley: " I should say it was exclusive of that."

Q. by Mr. Bien: " Do you know how much of that is in Milk river valley itself, the old canal? "

A. by Mr. Burley: " I estimate that about 30,000 acres in round numbers."

Mr. Bien: " I believe that is correct."

THE CONDITION OF THE ALBERTA RAILWAY AND IRRIGATION RIVER CANAL IN CANADA.

Page 177.

Mr. Burley: " It will not carry water now, but it could be prepared to carry water at a small expense."

Q. by Mr. Sands: " You think it would be practicable to carry water in there? "

A. by Mr. Burley: " I think so, yes."

Page 178.

Mr. Sands, in cross-examining Mr. Burley, stated that the United States furnishes nearly all the water for St. Mary and Milk rivers at points where those streams cross the international boundary, and on pages 178, 179 and 180 he brought out the following:—

Practically all the flow of St. Mary river rises in the United States;

About 80 per cent of the flow of Milk river at the international boundary (Eastern Crossing) rises in the United States;

About 35 per cent of the total flow of Milk river, including the eastern tributaries, rises in the United States;

That the United States furnishes between 75 and 80 per cent of the water of all these streams crossing the international boundary.

Page 181.

Q. by Mr. Sands: "Then I may understand you that of the waters in controversy eighty per cent are furnished by the United States and twenty per cent by Canada?"

A. by Mr. Burley: "According to our best estimate; yes."

While it is true that a large proportion, although probably not 80 per cent, of the water referred to rises in the United States, it is unfair to assume from this that an equal division of these waters is fair, or more than fair, to Canadian interests.

The assumption that water is the property of the state or province in which it falls in the form of rain, and that no servitude rests upon such state in favour of a lower riparian state, does not seem to have any sound foundation. The contrary doctrine is clearly established, in so far as the United States is concerned, by the decision of the United States Supreme Court in the case of Kansas *vs.* Colorado. While this decision has, naturally, no effect beyond the limits of the United States itself, and while it was intended to deal only with interstate streams, it seems but fair in this connection to call attention to the statement of Mr. John Hay, Secretary of State for the United States, in his letter of 19th February, 1903, to the British Ambassador, the following paragraph of which seems peculiarly appropriate. (See page 117 of the Evidence).

"It is proposed to deal with this matter in strict conformity with the laws concerning the rights to the use of water as recognized by the courts of the arid region, both on this side of the international boundary and on the other. The principle may be stated in the language of Section 8 of the Reclamation Act of June 17, 1902, (32 Stat. 388):—

"That the right to use of water shall be appurtenant to the lands irrigated and beneficial use shall be the basis, the measure, and limit of the right."

It was evidently the intention of Mr. Secretary Hay that this case should be dealt with as if no international boundary existed, and in conformity with the laws governing the use of water in the semi-arid districts of the United States and Canada. These laws are practically the same in principle in both countries and clearly recognize the validity of prior appropriations.

It seems to be established beyond question that:—

(a) The claims for rights to water from Milk river in Montana were of earlier date than most, if not all of the similar claims to water from that stream in Canada.

(b) On the other hand, the Canadian claims to water from St. Mary river are of earlier date than any recorded in the United States, the claim of the Alberta Railway and Irrigation Company having been properly recorded under Canadian laws in 1899, whereas the claim of the United States Reclamation Service, which is the only other claim of any considerable moment, was not recorded in the state of Montana until 1903.

It would therefore appear that a settlement of the case along the lines suggested by Mr. Secretary Hay, and in accordance with the decision of the United States Supreme Court in the case of Kansas *vs.* Colorado, would result in full and complete recognition of the claim of the Alberta Railway and Irrigation Company to the total unappropriated low water flow of St. Mary river and to a quantity not exceeding 2,000 second feet at highwater and flood stages of that stream. Similarly, the United States could probably establish a claim to practically all of the unappropriated low water flow of Milk river (main stream).

The claims of the United States and Canada, respectively, to water from the Eastern (Canadian) tributaries of Milk river, viz.: Lodge and Battle creeks and the Frenchman river, can doubtless be adjusted to the entire satisfaction of the respective claimants as there seems to be sufficient water to satisfy all existing claims.

It is submitted that no country can afford to disregard the claims or rights of its neighbours, especially in cases where such claims, if made by its own citizens, would be recognized and protected by its own laws. Attention may be called to the fact that there are many other points along the boundary between the United States and Canada where the failure to recognize the force of these principles would work serious hardship on the one side or the other. The Columbia river in British Columbia and the state of Washington may be cited as a case in point.

IRRIGABLE AREA IN CANADA ON EASTERN (CANADIAN) TRIBUTARIES OF MILK RIVER.

Pages 186-189.

Lodge creek	7,433 acres.
Battle creek	9,359 "
Frenchman river	11,594 "

Page 190.

Mr. Sands asked Mr. Burley if, in his opinion, it would be more feasible to assign a larger proportion of the Frenchman and Battle creek to Canada, and a larger portion of Milk river where it crosses the Canadian line, and of Lodge creek, to the United States.

Mr. Burley's reply was that, speaking off-hand, he thought the statement was probably correct.

Page 196.

Mr. Sands in cross-examination of Mr. Burley inquired whether the same use could be made of a given quantity of water in acre feet in a stream as variable as Milk river, as could be made on a stream with a fairly constant flow such as the St. Mary.

A. by Mr. Burley: " It could by the construction of reservoirs, by which you could flatten out the stream flow and average it up over the year."

Q. by Mr. Sands: " But without these reservoirs it would not be as serviceable? "

A. by Mr. Burley: " Certainly not."

POSSIBLE FURTHER DEVELOPMENT IN MONTANA ON EASTERN (CANADIAN) TRIBUTARIES OF MILK RIVER.

Page 151.

Mr. Burley: " Put it at the outside figure, I should say from 10,000 to 15,000 acres would be possible. . . . . That would be from 20,000 to 30,000 acre-feet additional to what Mr. Connor gave this afternoon as having been beneficially used. Mr. Connor's figures were 24,360 acre-feet. . . . Between 45,000 and 55,000 acre-feet possible extension. That would be the extreme limit for the irrigable area, including what Mr. Connor gave."

Page 198.

The waters of Rock creek could be more advantageously applied in the United States than in Canada; the waters of Frenchman creek could be more advantageously applied in Canada than in the United States; the waters of Battle creek could be more advantageously applied in Canada.

Mr. Burley undertook to hand in a written statement if Mr. Wyvell would ask definite questions in writing. Such questions were not, however, submitted to Mr. Burley by Mr. Wyvell.

DISCHARGE OF ALBERTA RAILWAY AND IRRIGATION COMPANY'S CANAL.

Page 161.

1910	146,999	acre-feet.
1911	117,950	"
1912	103,295	"
1913	118,468	"
1914	170,500	"

(See page 249 of evidence.)

Mr. Wyvell endeavoured in his cross-examination of Mr. Burley and Mr. Peters to show that the Alberta Railway and Irrigation Company's canal from St. Mary river had carried water for the irrigation of a small acreage in comparison with the total quantity of water claimed for it. (See Mr. Burley's evidence, pages 155-6, 160-1, 167-8, and Mr. Peters' evidence, pages 287 to 289.)

The carrying capacity of the canal during the irrigation season of 153 days is about 300,000 acre-feet, based upon a present maximum capacity of 1,000 second-feet flow. Therefore, the canal has been utilized to about one half its capacity. It is being extended during 1915 to serve an additional 17,000 acres, requiring 34,000 acre-feet of water, and other large areas adjacent to the canal will probably execute water agreements in the near future.

An interesting comparison is furnished by the following extract from the 13th Annual Report of the Reclamation Service 1913-14, pages 158 and 159, showing the development of the Milk River project in Montana which has been under construction since 27th July, 1906, under somewhat similar conditions.

OPERATION AND MAINTENANCE.

"The system operated during 1913 consisted of the upper ends of both Dodson North and South canals (about 10 miles of the North and 18 miles of the South). The North Canal heads with a capacity of 200 second feet and the South Canal with a capacity of 900 second feet, but was limited during the season of 1913 by a temporary flume across the break at Dodson Bridge to about 50 second feet, which, by using the Point of Rocks equalizing reservoir for storage, was ample to supply the demands. During April, May, and June, 1913, the rainfall was sufficient, and came at suitable intervals to keep the crops growing in good shape. The months following were dry and crops which were not irrigated suffered considerable damage, their yield being reduced by about 50 per cent. No hailstorms or damaging winds struck the project. The last killing frost occurred on April 10 and the first on September 25, 1913. The season of 1914 was very dry until the latter part of May, and the run-off of the river dropped to 2 second feet, which was far from being ample to meet the demands of irrigators. By June 30 thirty applications had been received for water, to be applied to 2,200 acres.

HISTORICAL REVIEW, MILK RIVER PROJECT.

Item.	1911.	1912.	1913.	1914.*
Acreage for which service was prepared to supply water	7,800	7,800	12,800	14,000
Acreage irrigated	2,074	353	2,545	3,500
Number of farms irrigated	29	9	41	50
Miles of canal operated	30	30	50	55
Water diverted (acre-feet)	11,160	2,885	4,267	7,000
Water delivered to land (acre-feet)	2,853	293	2,349	4,000
Per acre of land irrigated (acre-feet)	1.28	0.82	0.92	1.00

* Estimated.

The Milk River Project has been under construction for nine years and is now in a position to supply water for the irrigation of 14,000 acres, but only 3,500 acres have actually been irrigated out of 220,000 irrigable acres comprised in the project.

The Alberta Railway and Irrigation Company's canal has been under construction for fifteen years and is now in a position to supply water for the irrigation of 156,000 acres, of which some 75,000 have actually been irrigated.

EVIDENCE OF MR. GUNN.

IRRIGATION LAWS OF MONTANA.

Pages 204-205.

Q. by Mr. MacInnes: "Can you refer the Commission to any decision of weight which will elucidate the irrigation laws (of Montana) both as based on common law and on the provisions of the legislation?"

A. by Mr. Gunn: "I would respectfully refer the Commission to the case of Bailey vs. Tintinger, 45 Montana, 155, and also published in the Pacific Reporter, Volume 122, at page 575. In that decision is a construction and interpretation of the statute law of the state relating to the water rights, and also an historical review of the water rights law of Montana. This decision has never been reversed. The Supreme Court, in this decision, recognizes that there are two methods of acquiring a water right; one is the statutory method, and the other is the method which was followed before the adoption of the statute. The method followed before the adoption of the statute was merely the diversion and use of the water, and the right dated from the commencement of the work for the purpose of making the diversion. The statute authorizes a notice of appropriation to be filed with the county clerk and recorder of the county in which the water right is situated and provides that work must be commenced within forty days and that when the work is commenced within that period it shall be prosecuted diligently. The right dates from the date of the notice instead of the date of the commencement of the work. There is the further distinction, that where the appropriation is made in accordance with the statute, the right obtained before the possession is taken of the water. That is, the right to the use of the water is completed, when the method of appropriation has been completed, whereas, under the other method, the right is not completed until there has been actual diversion of the water and the application to a beneficial use. The Supreme Court has said that the statutory method is cumulative and that the other method of acquiring a right will obtain. The constitution of the state declares that the use of water in Montana is a public use, and we recognize a right to the use of the water as distinguished from ownership of the corpus of the water."

Page ~~207.~~

Q. by Mr. Mignault: "What is exactly, according to your law, prior appropriation as applied to water?"

A. by Mr. Gunn: "It is really what the words signify. It is the one first in time is first in right, and the one first in time has the prior appropriation."

Q. by Mr. Tawney: " He is protected in the exercise of that right as against any one else, either above or below on the same stream?"

A. by Mr. Gunn: " Yes, subsequent appropriators, that is, later in date."

Q. by Mr. Mignault: " The question is, must he have applied the water to beneficial use in order to have title in the water which he has appropriated? "

A. by Mr. Gunn: " This is discussed in 45 Montana, Bailey vs. Tintinger. In that case the Supreme Court decides that unless the appropriation is made in the method provided by the statute that the appropriation is not complete until it is applied to beneficial use, but where the statutory method is followed that then the right to the use of the water is complete before possession of the water is taken, or before it is applied to beneficial use, recognizing the right of appropriation for sale as well as for irrigation and other purposes. I might also add that the statute declares that this notice of appropriation provided for by the statute shall be prima facie evidence of the facts stated, so that where there is notice of appropriation and that notice is produced in evidence it is prima facie evidence of the facts required to be stated in the notice. But we have no record title of a water right in Montana; it all depends on oral testimony even though the appropriation is what we term a statutory appropriation, except, as I say, that the notice is prima facie evidence."

If, according to the opinions expressed by the United States Secretary of State, the waters of St. Mary and Milk rivers were to be dealt with in accordance with the laws recognized in the semi-arid regions of both countries, we have here a clear definition by the Supreme Court of Montana, that where the statutory method of acquiring water rights is followed, the right to use water is complete before possession is taken or before the water is applied to beneficial use.

Page 211.

Q. by Mr. Powell: " Suppose there are two states occupying relatively the position of upper and lower riparian owners. How would it be in that case? Would the granting or the acquisition of the title to water in the superior state be recognized in the inferior state?"

A. by Mr. Gunn: " That very question was before the Supreme Court of the United States in the case of Kansas vs. Colorado, 206 U.S., and there is a very interesting discussion on the doctrine. In that case the Federal Court assumed jurisdiction and proceeded upon the principle that there should be equality of rights in the water as between two neighbouring states."

Page 212.

Q. by Mr. Powell: " Has the inferior state, being a riparian proprietor, the right to compel the superior state, being a riparian proprietor, to pass the water down to it?"

A. by Mr. Gunn: " Yes, subject to a reasonable use, and the Supreme Court of the United States declared that there should be equality, as nearly as possible, in the use of the water between two states."

Q. by Mr. Powell: " That, then, is the law of the whole republic?"

A. by Mr. Gunn: "As I understand it, as declared in that case."

Q. by Mr. MacInnes: "Regardless of the amount of water which may take its rise in the upper state as compared with the lower state?"

A. by Mr. Gunn: "Yes, as I understand it."

EVIDENCE OF MR. DRAKE.

IRRIGATION LAWS OF CANADA.

Pages 214, 215, 216.

The evidence of Mr. Drake contains a brief synopsis of the Canadian Irrigation Law.

ALBERTA RAILWAY AND IRRIGATION COMPANY.

Pages 216-219.

A historical sketch of the Alberta Railway and Irrigation Company, including a statement on page 218 of the quantity of water assigned to that company under its several applications, was given by Mr. Drake.

Pages 220-224 and page 227.

Copies of the several authorizations issued by the Canadian Government to the Alberta Railway and Irrigation Company for the construction of works in connection with their applications for water were filed. Date of first grant, 3rd May, 1899.

THE ESTABLISHMENT OF INTERNATIONAL GAUGING STATIONS.

Pages 225-226.

Mr. Drake: "Before 1912, the Irrigation Branch maintained a number of stream measurement stations in the St. Mary river and Milk River watersheds and elsewhere throughout Canada, as part of the system for determining the quantities of water available for disposal under the Irrigation Act. We had a station on the St. Mary river, a short distance north of the international boundary, and the United States Reclamation Service or the Geological Survey, I am not sure which, had a station just south of the international boundary. They were only separated by a few miles. Then we had stations which had been erected about 1908 or 1909 on both the South Branch and the North Branch of Milk river and another at the Eastern Crossing. I think the question of the establishment of joint stations came up in the form of a letter from the head of the United States Geological Survey, suggesting that these two stations then maintained on the St. Mary river be discontinued, and that one joint station be established, the records of which would be available to both countries. We agreed to do that and in turn suggested to the United States authorities the advisability of extending them to include the Milk river and its branches. They agreed with us and in turn went a little further and suggested that it would be a good idea to establish similar stations on all international streams; that is as far as the matter has gone. It was agreed between us that these four stations should be erected at points mutually agreed upon, and that suitable gauges, approved by both Governments, should be established, and that the cost should be borne equally by the two Governments and the records should be available equally to both of them. We carried out that arrangement. We constructed the stations, shared the cost, and both Governments are operating them.

Page 228.

Mr. Sands: "We object to the use of the word "grant" there, because we think it carries a wrong impression. Mr. Drake used the term "grant" in 1899. It is only an application which is equivalent to a notice in our territory and the term "grant" ought not to be used."

Mr. Drake: "Perhaps I may be permitted to explain that. I do not know that the word "grant" is the proper word, and yet it does seem to me to convey the idea. The applicant for water rights has rights from the day on which that application is first recognized by the Government and from the date that the applicant is authorized to construct his works. Granting authorization to a company or to an individual to construct irrigation works implies that the Government has satisfied itself that its plans are reasonable and that he can apply water to beneficial use, and it specified the period of time within which he must complete his work. If he complies with that one condition and displays reasonable diligence in the construction of his works, his right exists. Our law recognizes his right as existing from the date on which authorization was given to him to construct his work."

Page 230.

Q. by Mr. Tawney: "Can you give us the number of cubic second-feet of water that was actually applied prior to January 11, 1909, the date of this treaty, or the date it was promulgated? I want to get out the actual appropriation of water at the time when the prior appropriation was recognized by both Governments of both countries to be fixed at 500 second-feet?"

A. by Mr. Drake: "No sir, I cannot give you that information, and so far as I am aware it cannot be obtained. The appropriator whose interests were to be protected in this case was a company which had very elaborate plans for the development of a very large district and which required a very considerable period of time within which to develop its plans and to construct its works. As I said a moment ago, the Company was granted 15 years from October, 1902, within which to construct its works, and under our law it was entitled to protection during the whole of that time, and it has also been granted permission to divert and use water through its uncompleted works at any period during construction, in order that it might develop the country as rapidly as possible. But the time has not yet arrived when it becomes the duty of the Government to determine just what the capacity of the canal system is, and what are the lands that should be irrigated from it. That must be done before the license is given to the Company, but the period for granting the license has not yet arrived, and therefore we have not done that."

Page 231.

Mr. Drake: "The capacity of the Milk river canal was, I believe, either 340 or 350 second-feet. . . . . I know officially that water was run through that canal (A. R. and I. and Milk river canal) in one year, and that it was carried over the divide. That was a point that was questioned this morning—that it was carried over the divide to the end of the canal."

Q. by Mr. MacInnes: "How far over the divide?"

A. by Mr. Drake: "I think approximately twenty miles from the point of intake."

Some misapprehension seems to exist as to the status of the Alberta Railway and Irrigation Company and the important part it

has borne and must continue to bear in the agricultural development of southern Alberta.

The original Company, known as the Alberta Irrigation Company, was formed in 1896, and on the 31st January, 1899, it applied for a right to divert water from St. Mary river and for permission to construct an extensive system of canals and works for the irrigation of a large, although not accurately defined, tract of land contiguous to that stream.

Surveys made by officers of the Canadian Government during 1894 and subsequent years had demonstrated the feasibility of diverting water from St. Mary river for irrigation and it was a matter of common knowledge that the district required irrigation for its fullest development. The stream was believed to contain sufficient water for the purpose, although no accurate and extended measurements of its flow had at that time been made. Furthermore, the physical conditions in the stream valley in the state of Montana were such as to preclude irrigation to any considerable extent. This was carefully investigated by a Denver consulting engineer in the employ of the Alberta Railway and Irrigation Company—one of the leading irrigation engineers in the United States—who reached the conclusion that the United States could not divert water *as a commercial undertaking* from the St. Mary's river in Montana, for carriage and use entirely within its own territory. Subsequent events have confirmed this opinion. It was therefore naturally assumed that the water supply then available and unappropriated would be permanently available for the company's use in Canada.

It may be said, however, that when the attention of the Canadian Government was first directed to the possibility of irrigating this large area of land from a stream having its source in the United States, steps were taken to secure an agreement with the United States Government relative to the use of the waters. The first overtures of this kind were made by Canada on the 8th January, 1896, but the United States Government, while expressing interest in the important subject, was not prepared to express its views upon it at that time.

The situation at that time—1899—may be summed up in this way:—

1. Canadian Government surveys had demonstrated the feasibility of constructing a large irrigation project in southern Alberta(1894).

2. The Northwest Irrigation Act—the first government irrigation law enacted in Canada—had been passed in 1894.

3. To obviate the possibility of dispute, an ineffectual effort had been made by Canada in 1896 to secure an agreement with the United States relative to the use of the waters of St. Mary river. The Reclamation Service did not appear as a possible claimant for water until 1902, when the first act was passed by Congress, and Mr. Bien, Counsel for the Reclamation Service, stated (page 292 of Evidence) that the first claim was filed in November, 1903.

4. The Canadian Government in 1897 reserved and set apart 500 second-feet of the low water and 1,000 second-feet of the high water flow of St. Mary river in Alberta for a period of 10 years from the 21st September, 1897, to assist in the future development of that region.

5. In January, 1899, the Alberta Irrigation Company applied for a right to divert the *entire low water flow* and up to 2,000 second-feet of the high water flow of St. Mary river for the purpose of irrigating a portion of a tract of some 500,000 acres of land in southern Alberta.

6. On the 3rd May, 1899, the company was authorized by the Canadian Government to construct the works as shown by its application and plans and a period of ten years from that date was granted for the completion of the works.

The company immediately undertook the work of construction and pushed the work so rapidly that it was actually delivering water at Lethbridge in 1902. It has continued to deliver water ever since that date and has from time to time extended and improved its works as the demand for water increased with the advance of settlement. The company has expended about $1,500,000 in round numbers in the construction of irrigation works and has a thoroughly efficient system in actual operation.

The name of the company was subsequently changed to "The Canadian Northwest Irrigation Company" and later, to "The Alberta Railway and Irrigation Company." The company is now controlled by the Canadian Pacific Railway Company, which secured a controlling interest in its stock in 1911 and it is now operated by the latter company, although retaining the name of "The Alberta Railway and Irrigation Company."

As its development work progressed the company found that the works constructed or then under construction could be linked up with

certain small stream systems in the region that was being developed and on the 13th March, 1900, it applied for permission to utilize the total available flow of these streams, viz:—

Kip coulee,
Pothole creek,
Nine Mile coulee.
Middle coulee,
Pinepound creek,

and in June, 1900, authorization to use such additional water was granted.

During the period of construction both the company and the Government had made more or less regular measurements of the flow of St. Mary river and it had become apparent that the quantity of water available was likely to prove insufficient for the development of the entire tract susceptible of irrigation from the company's works. In order, therefore, to protect its own interests, i.e., its invested capital, and with a view to the further development of the district, the company on the 9th September, 1902, applied for additional water rights including the following:—

Milk river, 500 s. f. low water; 1,500 s. f. high water and flood.
Small streams flowing from Milk river ridge, total flow.
Certain proposed reservoirs, total impounding capacity.

The Government realized the necessity of protecting the company's water supply in the interest of the further development of that region and therefore on the 23rd October, 1902, consolidated the company's several applications for water and authorizations for the construction of works and granted a new authorization stipulating that the works necessary for the utilization of all the water applied for should be completed within a period of 15 years from that date, viz: by the 23rd October, 1917.

The Canadian irrigation law requires applicants for water rights to file applications for water, to give public notice of such applications, to secure authority for the construction of works and to complete the works in accordance with the approved plans and within the allotted period. The Minister of the Interior may permit any applicant to use his partially completed works and to supply water through them prior to the issuance of a water license and he has done so in this case as it was manifestly in the public interest that water should be supplied and used at the earliest possible date. The company has complied in all respects with the requirements of the law

and its several applications for water are all in good standing and are entitled to full protection against all subsequent applicants.

The ratification of the treaty respecting the St. Mary and Milk rivers may be a very serious matter to the Alberta Railway and Irrigation Company if its rights to water from St. Mary river, viz: the total natural flow up to a maximum of 2,000 s.f., are materially reduced in order to provide the quantity to which the United States is entitled. The company was, however, anxious to have an end put to the uncertainty as to water supply which had existed from 1902 to 1910 and therefore did not protest against the ratification of the treaty, believing that the equal division included all the waters of both streams and their tributaries and that an adequate proportion of the flow of St. Mary river would be assured to it under treaty provisions.

It is therefore a matter of surprise to the company to learn at this late date that a different construction is placed upon the treaty by the United States which would, if entertained, seriously affect its rights on the St. Mary river.

Repeated reference was made in the earlier diplomatic correspondence, and since in the evidence given before the Commission, to the capacity of the company's canals on certain dates and to the areas of land that were actually irrigated during certain years. These references were apparently made for the purpose of supporting a claim that, under any interpretation of the treaty, there will be assigned to Canada quite as much water as has at any time in the past been actually required. Reference has also been made to the fact—which is not disputed—that the Milk river canal has not been used for irrigation, although constructed and tested as early as 1904, and the claim has even been made that this portion of the company's application should be cancelled for non-use.

It is submitted that both of these statements are based upon a misapprehension of the Canadian water law and of the conditions under which the Alberta Railway and Irrigation Company is operating. The company is the pioneer of irrigation development in Canada. In 1899, when the first water application was filed and when the construction of works was authorized, little was known in Southern Alberta of the value of irrigated farming or of the methods necessary to successfully practise it. It was difficult to secure sufficient capital for construction purposes and even more difficult to

secure settlers with a sufficient knowledge of irrigation. Progress was necessarily slow. Nevertheless, it was necessary to construct expensive works and an extensive canal system in order to bring the water to the region where settlement could best be encouraged. Within three years the company had expended in works alone more than $600,000. This severely taxed the company's financial resources. It was not possible, nor indeed was it good business policy—to push the development of its canal system beyond the requirements of the day. This was the reason the Government granted so long a period for the completion of the works and it is but fair to the company to say that there is no obligation resting upon it to have the works completed before the 23rd October, 1917, and all the company's water rights are entitled to full protection under the law.

The Milk river canal was not built merely for the purpose of demonstrating the feasibility of diverting from Milk river any water which the United States might attempt to carry through the channel of that stream. The real purpose was this: Surveys had demonstrated the feasibility of coupling St. Mary and Milk rivers together by a system of canals and storage reservoirs so that more effective use could be made of the somewhat erratic flow of both. The Milk river canal was but a link in the chain, and a most effective link, quite apart from any use which the United States might make of either stream. It is probable that this canal would have been extended and used shortly after its construction if it had not been for the controversy with the United States and the resultant uncertainty as to future water supply.

Reference has also been made to the use by the company of water from St. Mary river on lands contiguous to the valley of that stream in Canada. The map filed as Exhibit "L" indicates clearly the fact that the irrigable tract is contiguous to St. Mary river and easily and naturally irrigable from it.

EVIDENCE OF MR. J. S. DENNIS.

Page 240.

Mr. Dennis: "Preliminary surveys were made in that district in 1894 to indicate the possibility of getting water from the St. Mary river out onto a large area of land south and east of Lethbridge, because it was felt that without water which could be applied to the land through the principle of irrigation, there was little or no possibility of colonizing that area. At that time the Department of the Interior was carrying on a series of general surveys throughout southern Alberta, or as it then was, a portion of the northwest territory, to indicate what the available water supply was for irrigation and where it

could be used. This was one of the canals that was located as a result of those preliminary surveys. The construction of the canal was subsequently taken up by the Alberta Railway and Irrigation Company and carried to completion. Subsequently, and within a comparatively recent time, the railway lines and the coal mines and this irrigation project belonging to the Alberta Railway and Irrigation Company were all acquired by the Canadian Pacific Railway Company."

Q. by Mr. Wycell: "Is the year that they were acquired in the record?"

A. by Mr. Dennis: "Yes, it is in the record. It was 1911. Since that date the actual administration of this system has been under the Irrigation Branch of the Department of Natural Resources, of which I am the head. The primary object was to get the water from the available source out onto the land to permit of that district being colonized. That was the primary object that the Government had in making the preliminary surveys and was, no doubt, the object that the Alberta Railway and Irrigation Company had in constructing the system. It is the object that we now have in view in maintaining and operating the system and in possibly extending its colonization."

Page 241.

"In that portion of southern Alberta the same condition exists as exists in many other portions of the semi-arid West. There is, of course, a very much larger area of land suitable for colonization and cultivation, if there was an available water supply to irrigate it. The extension of irrigation in that portion of Alberta is limited by the available water supply. We have under contemplation at the present time an extension of the A. R. and I. system as it is called, for taking water from the St. Mary river to irrigate an additional 18,000 acres of land in a district called the Taber district, which lies to the east of the area served by the present canal system. That district has been settled for many years by farmers who took up their land as homesteaders, but after a series of years of effort they have not had very much success in raising crops by dry-farming, and passing backward and forward to Lethbridge through the irrigated district they see large areas of alfalfa and other successful crops, and have desired to have the A. R. and I. system extended to irrigate their district. They petitioned us to extend it, and we have been considering the matter of providing that extension. The difficulty that arose was that we had at the time no provisional enactment under which these people could constitute themselves a district or municipality so that they could issue bonds to pay for the system or charge all the farms with the cost, but that difficulty was overcome at the session of our provincial legislature this spring, when an irrigation district act was passed. Under the provisions of that Act these people have now petitioned to be organized into a district, and are asking us to extend the A. R. and I. system to supply this 18,000 acres within their district. We are disposed to do so, providing there is no question of there being water available.

"There are other large districts south of there also lying to the east of the district which is served by the A. R. and I system that are very suitable for colonization, provided there was water available for irrigation. The only way of obtaining water for those districts is from St. Mary river, the Milk river, or from the tributaries of the St. Mary river to the west, or the Belly river. The question of providing an additional supply from the Belly river has been given some consideration by the Government and has, I think, been already referred to in the evidence given here. That portion of southern

Alberta is in much the same shape from the standpoint of the climate or soil that the Lower Milk river valley is in Montana, and its ultimate development, intensive development, will be very largely dependent upon what amount of water can be supplied for irrigation of the land. The matter of the supply of water from the Milk river to this district served by the A. R. and I. canal from the St. Mary river to this district served by the A. R. and I. canal from the St. Mary river was dealt with at the time that I was also a government official and administering the Northwest Irrigation Act, and that canal was originally located, not by me personally, but by engineers working under my instructions, for the purpose of proving that it was possible to divert water from the Milk river on the south side of the Milk river ridge and bring it around the eastern end of that ridge and serve the portion of the same area of country that is served by the A. R. and I. canal from the St. Mary river. (For tabulated statement of irrigable areas see Mr. Peters' evidence—page 278.)

EVIDENCE OF MR. F. H. PETERS.

IRRIGABLE AREA FROM THE ST. MARY RIVER.

Pages 246, 247.

Mr. Peters: This is a statement with reference to the areas of land which can be irrigated from the St. Mary and Milk rivers in Canada. . . . . The block of land lying under the Alberta Railway and Irrigation Company's canal system and comprising some 242,000 acres, of which about 156,600 can be watered from the works already constructed. In addition to this area there are 37,000 acres, of which 17,000 are irrigable, in the tract under the Taber extension, ... making a total of almost 174,000 acres of irrigable land under the present system. . . . . The lands for which they are constructed to irrigate are peculiarly smooth on the surface, and the canals are in existence. . . . . The lands have also been levelled over so that there is no question about where the water can be run. . . . . This area is defined absolutely and very accurately. . . . . Climatic conditions are favourable for the use of water and the growing season is long enough to ensure the maturing of most cereals, sugar beets, and garden stuff, while it has been demonstrated that three cuttings of alfalfa can be secured per season. The rainfall is comparatively light, the average at Lethbridge for twelve years being sixteen inches, while in years of minimum precipitation very light yields are the rule where irrigation is not practised. . . . . A further area of 87,000 acres can be irrigated within the boundary of the Blood Indian Reserve. Preliminary levels have been taken and the estimated irrigable area is 40 per cent of the commanded area, which agrees with the conditions on large areas under other Canadian canals where accurate detail surveys have been made."

Page 249.

Mr. Peters: "About 75,000 acres are now actually irrigated by the water from the St. Mary river. . . . . That is about 150,000 acre-feet."

Mr. MacInnes: "There were 170,500 acre-feet (run through the canal) last year"

Mr. Peters: That would be an average of nearly 600 second-feet for the irrigation season of five months.

Pages 250-251.

Mr. Peters: "East of the Alberta Railway and Irrigation Company's present canal system lies a large tract of land suitable for irrigation. Surveys made during 1914 have demonstrated it to be practi-

cable to irrigate at reasonable cost some 364,000 acres of this area, of which over 1,000,000 acres will be commanded by the canals as projected. Surveys have been conducted and levels have been run over the whole of this tract, which is shown on the map filed as Exhibit "L" as tracts 5, 6, 7 and 8. Main supply canals have been located on the ground and this has allowed us to measure accurately the areas of land that can be commanded by the water. The proportion of the commanded area which is actually irrigable is 36 per cent."

Page 252.

Tract No. 1, shown on Exhibit "L" comprises 33,300 acres near Pinepound creek, of which 14,700 acres are irrigable and can be watered from the high level canals located during the season of 1914. Accurate surveys have been made over this tract also.

The greater part of these lands is irrigable from either the St. Mary or the Milk river through the canal systems constructed or located.

The private schemes in the St. Mary basin in Montana are negligible, so far as is known, but on the Canadian side there are several, in addition to those of the Alberta Railway and Irrigation Company.

The Alberta Railway and Irrigation Company's old works to divert water from Milk river are in poor shape and have not been used for a number of years, but a comparatively small expenditure would put them in order when they could be used for the irrigation of lands lying to the north and east of the Milk river ridge. In fact, practically all the lands irrigable from the St. Mary canal can be watered from this system.

IRRIGABLE AREAS ON CANADIAN (EASTERN) TRIBUTARIES OF MILK RIVER.

Page 253.

The following table gives a conservative estimate of the irrigable areas along the tributaries of Milk river in Canada, (called the eastern tributaries), including the lands already under private schemes, which could be watered at a low cost per acre.

Frenchman river watershed: 35,594 acres, of which 11,594 acres are already irrigated.

Battle creek watershed: 17,359 acres, of which 9,359 acres are already irrigated.

Lodge creek watershed: 15,433 acres, of which 7,433 acres are already irrigated.

A much larger area from Battle and Lodge creeks can be watered by building systems to cover the bench lands lying in the townships immediately north of the boundary but these have not been included because it is considered that there is not enough water available to justify the large expenditures necessary to construct adequate works and only the easily irrigable lands are, therefore, estimated on.

In the 19,000 acres stated as irrigable in the Frenchman river, there is included a tract of 13,157 irrigable acres which is shown on the application of Elmore and McIntosh put in by Mr. Drake.

It has been the policy of the Canadian Government, since the ratification of the treaty, to refuse practically all applications for water for irrigation purposes upon all of the Canadian streams covered by the treaty. The largest single application that has been rejected solely on this ground is that of Elmore & McIntosh, but a great many other applications have also been refused. Canada's

position is that it would be unwise to continue to grant water rights until the Commission decides just what proportion of the water of each stream is to be assigned to each of the countries. Development is being retarded by the existing uncertainty.

STREAM FLOW MEASUREMENTS.

Page 256.

Mr. Peters: " Our estimate of the average flow of the St. Mary river at the boundary is 735,000 acre-feet."

Page 257.

Mr. Peters: " The accretion to the flow (St. Mary river) is about 72,000 acre-feet from Kimball to the mouth of the river."

Page 258.

Mr. Peters: " The accretion is 72,000 acre-feet, but I am not prepared to say that it is available for irrigation. It is in the river but it may not be possible to take it out of the river and place it on the land, because the river is cut down very deep in the prairie from below Kimball."

" The average annual flow of the Milk river at the A. R. and I. Company's intake is about 104,000 acre-feet. The average annual flow of the Milk river at the Eastern Crossing, is between 120,000 and 140,000 acre-feet.

Pages 258-259.

The water available in the tributaries of Milk river in Canada, is:

	Acre-Feet.
Lodge creek watershed, approximately..	39,000
Battle creek " "	47,000
Frenchman river " "	76,000
Whitewater creek " "	8,000
Rock creek " "	19,000

Page 259.

Mr. Peters: " The totals for the St. Mary river are 735,000 acre-feet at Kimball; the total at the mouth would be 807,000 acre-feet. The total flow of the Milk river at its Eastern Crossing, plus the flow of the northern tributaries at their respective crossings (of the international boundary) is from 310,000 acre feet to 330,000 acre-feet. In giving the flow of the Milk river I gave it as from 120,000 to 140,000 acre-feet"

Page 260.

Mr. Peters: " The total average flow of the Milk river at Havre, Montana, is 210,000 acre-feet. The total average flow of the Milk river at Hinsdale in Montana is 622,000 acre-feet.

" Between Hinsdale and the mouth (of Milk river) our estimate of the accretion to the flow is 72,000 acre-feet.

" The total flow of Milk river at its mouth is 704,000 acre-feet.

Page 261.

Mr. Peters: " That is simply the natural flow of the stream as measured, and to get the total, if certain waters had not been diverted by canals a certain amount should be added to that.

" In the case of St. Mary river the figure given was a gross amount, including everything. As to the Milk river that is not the case. It is the total less certain diversions."

Page 264.

Mr. Tawney: "The only tributaries of the Milk river that the Reclamation Service has given to the Commission are the tributaries on the west near the source of the Milk river and the tributaries of the Milk river south of the Eastern Crossing in Montana."

This question was based upon a misunderstanding. See Mr. Newell's reply.

Page 264.

Mr. Newell: "These are the only rivers we have measured on behalf of the Reclamation Service, the main Milk river, east of the Eastern Crossing. We have not measured the tributaries to the south because of their erratic character. We have only measured a few of the tributaries in the north. . . . . There has been an estimate of the amount of water that flows from the drainage area, but not the amount of water available, and we are distinguishing simply between these two. Of the amount of water that escapes at the mouth of the Milk river, only a very small proportion of that would be available for irrigation, because it occurs at times and in such manner as not to be either susceptible to storage or diversion to the land."

Mr. Magrath: "Why not susceptible to storage?"

Mr. Newell: "Because we do not have the storage points below the points where the water crosses.

Page 266.

The Commission, through a series of questions, had attempted to get from Mr. Newell more accurate information as to the flow of Milk river and its tributaries in Montana, but without success.

Mr. Mignault: "It seems to me you have everything required to make the calculation which the Commission desires to have made."

Mr. Newell: "We have submitted all the figures we have, but as to the value of these they have far less value than similar figures for the St. Mary, because the St. Mary has a steady flow."

Mr. Powell: "That is true, but it is for us to make the deductions to base our judgment on."

Page 268.

Mr. Peters: "I would like to complete the estimates I was giving of the stream flow, by adding, that to get our estimate of the annual flow of Milk river at its mouth there should be added the canal diversions estimated at 38,000 acre-feet, making the total average, annual flow of the Milk river at its mouth 732,000 acre-feet. . . . . Our estimate of the amount of water available for irrigation in St. Mary river has been based on estimates at Kimball and amounts to 735,000 acre-feet. . . . . Our estimate of the amount of water available for irrigation on the Milk river has been based on the measurements made at Hinsdale and amounts to 660,000 acre-feet."

RESERVOIR SITES.

Pages 269-276.

On pages 269 to 276 Mr. Peters gave detailed descriptions of certain reservoir sites tributary to St. Mary and Milk rivers in Canada. These are shown in the following schedule with the essential particulars of the various reservoir sites, including the St. Mary river reservoir site above Kimball, which has not yet been accurately surveyed.

Name.	Location.			Flooded area in acres.	Capacity in acre-feet.	Cost per acre-foot.	Remarks.
	Tp.	Rge.	Mer.			$ cts.	
Mary lakes.....	1	24–25	4	975	20,000	5 94	
Taylorville	1	24	4	3,722	42,836	3 62	
St. Mary river..	1	25	4	....	37,000		
Lumpy Butte...	3	24	4	1,151	12,473	6 41	
Chin lake..... .	8	18	4	.. . .	80,000	0 68	Used by A. R. & I. Co., additional development.
Shanks lake.....	1	20–21	4	4,455	95,958	3 20	
Verdigris lake ..	3–4	15–16	4	2,700	100,000	2 66	
Milk river	5	19-20	4	2,123	47,364	2 74	
Raymond.....	5	20–21	4	782	13,346	13 05	
Brunton.....	4–5	17–18	4	.....	67,000	3 00	
Fifty-Mile.....	5	16	3	3,500	80,000	$4 to $5	Surveyed.
Cypress lake...	6	26–27	3	5,525	126,625	3 80	
Middle creek . {	5	30	3	} 1,325	21,826	3 04	
	5	1	4				
Total area ..	.....			.....	744,428		

IRRIGABLE AREAS IN CANADA AND COST OF IRRIGATING SAME.

Page 278.

Mr. Peters also presented the following table of estimated cost of irrigating certain areas in Canada:—

Acres.		Per Acre.
167,456	A. R. I. tract..	$ 13 00
20,000	Milk and St. Mary river project..	19 00
29,146	" "	21 00
123,000	" "	22 00
35,232	" "	25 00
84,000	" "	27 00
89,622	" "	31 00
87,000	Blood Indian reserve..	18 00
11,594	Frenchman river..	5 00
24,000	"	10 00
9,359	Battle creek..	5 00
8,000	"	12 00
7,433	Lodge creek..	5 00
8,000	"	15 00
871	Milk river small schemes..	4 00
204	St. Mary small schemes..	5 00
704,917		
3,840	add to get old total used in memo prepared on irrigation areas.	
708,757		

ADDITIONAL GAUGING STATIONS.

Page 283.

STATEMENT BY MR. MACINNES, WITH REFERENCE TO EXHIBIT "M" SHOWING SUGGESTED ADDITIONAL GAUGING STATIONS BOTH IN CANADA AND THE UNITED STATES.

"Under the language 'measurement and apportionment' it is, of course, quite clear that there has to be measurement for two purposes; first to ascertain the total quantity of that which is to be dealt with under Article VI, and secondly, to ascertain the different parts which are going to be delivered to each country to make up the total share to which each country is entitled. . . . . The Commission can measure all the waters involved and also provide sufficient stations for the delivery of the share of each country after the total amount involved has been ascertained. . . . . The water should be delivered, as I understand it, at such places as each country may desire so as to obtain the most beneficial use. . . . . It may be delivered in a number of places. . . . . There seems to have been an assumption that everything must be divided simply by a rule of actual division at each particular place, but, of course, there must be borne in mind also the provision of the treaty that more than half may be taken from one river, etc. . . . . It will facilitate both getting their respective shares at the place where it is of the most beneficial use. It is possible that after the quantity has been ascertained it may be made as much by geographical divisions and by a division of time as by a division of quantity. . . . . That is, it may give the beneficial use to both countries of all the water of one river during not merely a particular day, but during a particular set of months, during, for instance, the winter season on the one side and during the season specified in the Treaty of April to October.

Page 287.

Mr. Wyvell: "Mr. Newell and I went over the map (Gauging Sta. Ex. 'N') and it is perfectly agreeable to us to establish additional international stations at the three most important tributaries which flow through Saskatchewan down to the Milk river at the international boundary, viz.: those stations on Frenchman river, Lodge creek and Battle creek. Whitewater creek and Rock creek being less important, I do not think we have decided that the necessity of expense for maintaining those stations is apparent. We are likewise willing to maintain national stations wherever else on the Milk river we think such stations would serve any useful purpose. We are already maintaining stations at Hinsdale and Havre.

STREAM FLOW RECORDS.

Page 289.

The abstract of stream flow records filed by Canada as Exhibit 'N' cover all the St. Mary river in Canada, Milk river from its source to the Eastern Crossing, the northern tributaries of Milk river from their sources to the international crossing.

EVIDENCE OF MR. WM. PEARCE.

Pages 306-307.

Mr. Pearce: " If the waters of the St. Mary river were available to the extent to which they could be profitably used in Canada, we could utilize the whole of them to advantage. That is, it would be possible to take the water out of the St. Mary river and profitably apply it to land. The uncertainty as to how much water we are going to have out of the St. Mary river is acting as a handicap or detriment on any further extension of irrigation, not only from the St. Mary river but also in the Cypress Hills district."

Page 309.

Mr. MacInnes: " The suggestion was thrown out here by Counsel for the United States that any determination of the rights of the respective countries to this water might stand until the water could be actually applied to the land by either country. What would you say as to that? "

Mr. Pearce: " So far as we are concerned in Alberta, we could not get anybody to put any money into the venture unless he was sure of his title to the water. I refer now to any irrigation venture. The title to the water is the vital part to any irrigation scheme, and without that title you could not raise any money at all."

Mr. Glen: " And I suppose the sooner they know how we are going to divide it the better it will be? "

Mr. Pearce: "Yes. . . . . There is no government irrigation at all with us. . . . . Every bit of irrigation has been attributable to private enterprise."

Page 310.

Q. by Mr. Magrath: " I would like to get some idea as to the values brought about by irrigation. I mean the increased value to land through irrigation."

A. by Mr. Pearce: " You could place it easily at ten to one; I would place it personally at twenty to one. In the case of land that is used for farming purposes, one acre is equivalent to ten acres of the non-irrigated area, and that applies to a very large percentage of southern Alberta.

DIVISION SUGGESTED BY CANADA.

The following division was suggested by Canada and it is submitted that the same answers the requirements of the treaty and should be adopted by the Commission with such minor changes as may be found necessary:

It is suggested by Canada (see Pages 578 579 of Evidence) that the division of the waters of St. Mary and Milk rivers and their tributaries may be made by the International Joint Commission, in accordance with the provisions of the Treaty, in several ways. A division which appears to fulfil these requirements is appended hereto for the consideration of the Commission.

While such division would be acceptable to Canada it is not put forward as the only method of division that would be acceptable.

This method of division recognizes the greater interest of the United States in the waters of Milk river, or in waters that can be diverted into Milk river, and the similarly greater interest of Canada in the waters of St. Mary river. It also recognizes the interests of both countries in the waters of the Saskatchewan tributaries of Milk river and, it is believed, adequately fulfils all requirements on these tributaries.

SUGGESTED DIVISION OF THE WATERS IN ACCORDANCE WITH THE TREATY.

Canada.	——	United States.
Acre-Feet.		Acre-Feet.
500,290....	St. Mary river up to a maximum flow of 2,000 second-feet, May to October inclusive.	
72,000....	(b) St. Mary river below A. R. & I. intake.	
	St. Mary river from November to April, inclusive..	131,662
	St. Mary river—peaks of over 2,000 second-feet, flood flow in summer.....	103,500
	Milk river at Eastern Crossing.....	100,000
		335,162
	Less delivered at A. R. & I., intake on Milk river.....	76,400
	Equals ....(c)	258,762
20,000....	(a) Milk river at A. R. & I. Co.'s intake—during floods.	
76,400....	(a) Milk river at A. R. & I. Co.'s intake—St. Mary or Milk river waters.	
136,000....	Northern tributaries of Milk river—stored or diverted by Canada.	
	Ditto passed by Canada.....	54,000
	Milk river and tributaries below Eastern Crossing up to Hinsdale or Vandalia.....	350,000
	Ditto below Vandalia ....(b)	72,000
804,690		734,762

NOTE.—The difference between the total quantities is a low estimate of the value of the Canadian prior appropriation on St. Mary river as compared with the United States prior appropriation on the Milk river.

(*a*) Estimated capacity of A. R. and I. Milk River Canal.

(*b*) These amounts are not at present considered available for irrigation but possibly for power.

(c) Mr. Newell has stated that about 200,000 acre-feet will be required by the United States.

(See Exhibit 'Q.')

LIST OF EXHIBITS.

A. Large watershed map.

A 1. Similar map with stream-flow data.

B. Diagram sketch map showing the existing gauging stations.

C. Printed book showing Progress of Stream Measurements in Canada for the year 1909.

D. Printed book showing Progress of Stream Measurements in Canada for the year 1910.

E. Printed book showing Progress of Stream Measurements in Canada for the year 1911.

F. Printed book showing Progress of Stream Measurements in Canada for the year 1912.

G. Printed book showing progress of Stream Measurements in Canada for the year 1913.

H. Blue prints of Canadian Stream Measurements for 1914.

I. Hydrograph of St. Mary and Milk rivers, 1909-14 (filed by Mr. Newell).

J. Book on "Mining Laws" (put in by Mr. Gunn).

K to K-7. Blue print schedules of water rights in Canada; particulars, application and plan submitted by Messrs. Elmore and MacIntosh (put in by Mr. Drake).

L. Large map prepared at Calgary to show irrigable areas in Canada.

L 1. Small map showing irrigable areas, canals and reservoirs; prepared at Ottawa.

M. Diagram showing suggested gauging stations as proposed by Canada.

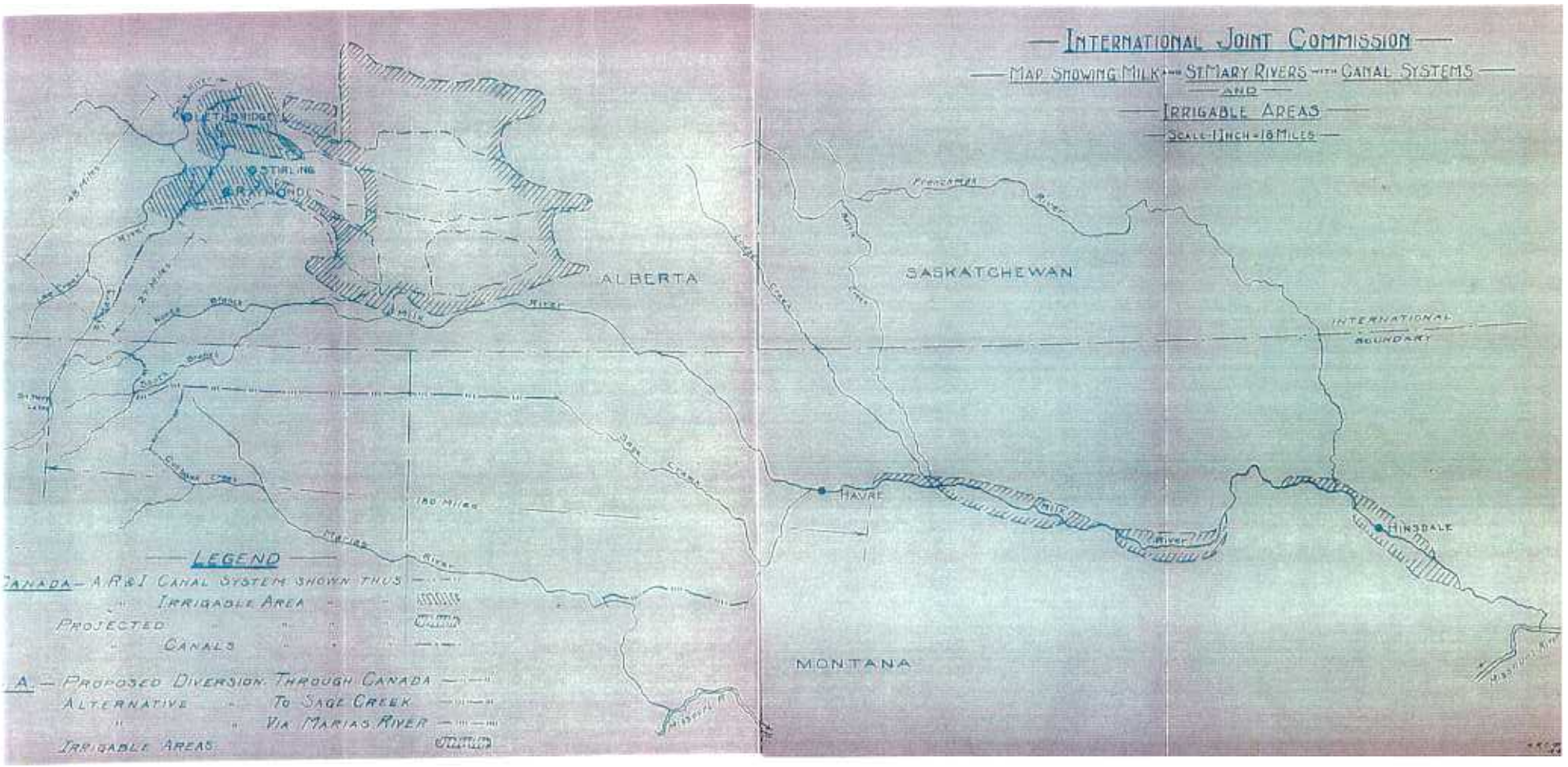
N. Abstracts of stream-flow.

O. Extracts from Reclamation Service Reports.

P. Mr. Newell's statement embodied in record.

Q. Diagram to illustrate Canadian proposals, showing irrigable areas with acre-feet and depth of water.

R. Diagrams prepared at Calgary to show the effect of cutting off streams at the boundary and excluding tributaries wholly in either country.


INTERNATIONAL JOINT COMMISSION
MAP SHOWING MILK AND ST MARY RIVERS WITH CANAL SYSTEMS
AND
IRRIGABLE AREAS
SCALE-1 INCH-18 MILES
LETHBRIDGE
STIRLING
RAYMOND
ALBERTA
SASKATCHEWAN
MONTANA
INTERNATIONAL BOUNDARY
HAVRE
HINSDALE
LEGEND
CANADA- A.R.&I. CANAL SYSTEM SHOWN THUS
IRRIGABLE AREA
PROJECTED
CANALS
A.- PROPOSED DIVERSION THROUGH CANADA
ALTERNATIVE - TO SAGE CREEK
" " VIA MARIAS RIVER
IRRIGABLE AREAS