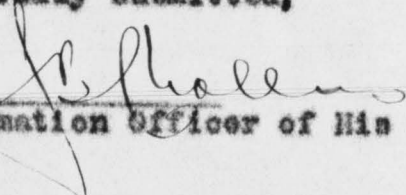


The Honourable, the International Joint Commission,
Washington, D.C. and Ottawa, Canada.

Gentlemen,-

In compliance with the provisions of
Clause 10 of your order of the 4th day of October,
1921, directing the division of the waters of St. Mary
and Milk rivers between the United States and Canada,
we are transmitting herewith a report on the operations
during the irrigation season of 1923.

Respectfully submitted,


Accredited Reclamation Officer of His Majesty.

April -1, 1924.


Accredited Reclamation Officer of the United States.

C.B.

Date: 28th February, 1924.

Copy to Denver - 4/1/24.

REPORT TO THE INTERNATIONAL JOINT COMMISSION

on

DIVISION AND USE MADE OF WATER OF ST. MARY AND MILK RIVERS

by

J. B. Challies

representing Canada

and

D. W. Davis

representing the United States

INTRODUCTION

The field work in the division and administration of the waters of St. Mary and Milk rivers in Alberta, Saskatchewan, and Montana during the irrigation season of 1923 was conducted by the same engineers as last year. Mr. A. P. Davis, succeeded in June 1923 by Mr. D. W. Davis, the accredited officers for the United States, were represented in the field by their officers of the Bureau of Reclamation. Mr. J. B. Challies, accredited officer for His Majesty was represented by Mr. S. G. Dawson.

The hydrometric data were obtained in Montana by the United States Geological Survey under the personal supervision of Mr. W. A. Lamb, District Chief Engineer, while those from the Canadian streams and ditches were collected under the supervision of Mr. A. L. Ford, District Chief Engineer, Dominion Water Power Branch. International gauging stations were visited by representatives of both services.

A table showing the use made of the waters of the St. Mary river was submitted weekly to the Project Manager of the U. S. R. S. St. Mary canal, the Project Manager of the Alberta Railway and Irrigation Company, and to the Director of the Canadian Reclamation Service.

This table showed a computed natural flow of the St. Mary river at the boundary, the share of this flow to which each country was entitled and the amount diverted, stored, and released from storage by each country. The information contained in this table was based on data obtained in the previous year and as it was known that there were slight shifting conditions in the stage discharge relation of the stream, this table was considered but an estimate.

An intensified study of the flow of the northern tributaries in Canada was made to determine the loss due to seepage and evaporation.

DIVISION OF WATER

St. Mary Canal was operated from May 11 to Sept. 10, 1923, diverting 82,500 acre-feet at the St. Mary Crossing and delivering into the North Fork of the Milk River 82,700 acre-feet. The canal was opened at the earliest possible date in the spring, but prior to St. Mary water becoming available for the irrigable lands of the Milk River Valley a shortage existed. However, subsequent to the St. Mary supplemental water reaching the irrigable lands, namely, about June 1st, there was an ample supply for both countries. The total diversions from the Milk River to canals in the United States was 101,200 acre-feet, and from the northern tributaries of the Milk River 9,750 acre-feet

The total natural flow of Milk river during the irrigation season, estimated to be 90,000 acre-feet,

crossed the boundary at Eastern Crossing as there was no appreciable diversion from Milk river in Canada. 18,073 acre-feet of the flow of Lodge creek, 16,243 acre-feet of the flow of Battle creek, and 91,931 acre-feet of the flow of the Frenchman river crossed the boundary into Montana.

The Alberta Railway and Irrigation Company's canal diverted 190,995 acre-feet from the St. Mary river during the period of operation from 25th April to 1st November. In the Lodge creek basin the total recorded diversion by Canadian irrigators was 124 acre-feet, in the Battle creek area, 2,306 acre feet, and from the Frenchman river 952 acre-feet.

No diversions were made in Canada from Rock or Whitewater creeks.

The natural flow of the St. Mary river at the boundary was determined by making current meter measurements of the discharge of the headwaters in the Swiftcurrent creek valley, computing the inflow to and measuring the flow from the Sherburne reservoir, the amount diverted by the U.S.R.S. St. Mary canal and the amount delivered to Canada at the boundary.

From these measurements and calculations the share to which each country was entitled was determined

on the following basis:-

- (1) When the natural flow of St. Mary river was less than 666 second-feet, Canada was entitled to three-quarters of this flow and the United States one-quarter.
- (2) When the natural flow was greater than 666 second-feet Canada was entitled to 500 second-feet plus one-half of the increase over 666 second-feet, and the United States entitled to the remainder.

As the natural flow of the St. Mary river continued over 1,000 cubic feet per second until 2nd of August, which was after the peak demand for water, the irrigation requirements of both countries were supplied without any great difficulty.

The minimum computed natural flow of 177 second-feet at the boundary on September 25th seriously handicapped the usual dredging and maintenance work of the A. R. & I. Co.'s canal.

WATER SUPPLY

In the St. Mary river basin, the run-off of 582,128 acre-feet during the irrigation season was slightly below the average of the nineteen years on record.

Lodge creek went dry on 1st September, but the flow was very small during August. Battle creek and Frenchman river maintained a flow at the international boundary all season, although a minimum flow of 1.8

second-feet was recorded in Battle creek on the 26th September, and a minimum of 4 second-feet in the Frenchman river on 27th September.

The flow of Swiftcurrent, Canyon, and other creeks above Sherburne was impounded in Sherburne reservoir between 12th June and 10th July, and between 20th July and 1st August, and used to augment the share of the United States during the later part of the season. 45,000 acre-feet were stored during 1923.

All international gauging stations previously used in determining the daily flow of the streams in the St. Mary and Milk river basins were maintained and operated under the joint supervision of the field engineers.

Canada maintained and operated the same stations on international waters and canals diverting therefrom as in previous years, with the addition of a number of gauges in the Battle creek area.

An appendix to this report gives the results of current meter measurements, the daily gauge heights, and the discharge at all the gauging stations operated in the two drainage basins during the season 1923.

DESCRIPTION OF TABLES

The tables following have been prepared summarizing the data on the division and use of the waters of the two basins.

Table 1 shows the method of determining the natural flow of the St. Mary river during the irrigation season, the water available for use and diverted by the United States, and the water available for use and diverted by Canada.

Sheet No.1 of each month shows the daily inflow and outflow of Sherburne reservoir. The difference gives the amount of water stored or released from storage. On this sheet the inflow from streams other than those recorded is estimated by comparison with the recorded streams, Swiftcurrent and Canyon creeks, and with the use of the storage curve of Sherburne reservoir. This estimate is put in the column headed "other streams". This sheet is omitted from the table for the months April, May, and October, months in which there was no interference with the flow of Swiftcurrent creek.

Sheet No.2 shows the amount of water diverted, stored or released from storage by the United States and the total natural flow of the St. Mary river which would cross the boundary if undisturbed. Two days has been estimated as the time for stored water to reach the boundary from Sherburne reservoir.

Sheet No.3 shows the water available for use by the United States, the water used and the excess or deficiency of this quantity over the amount available.

Sheet No.4 shows the natural flow of St.Mary river at Kimball near the boundary, Canada's share, and the actual discharge of the river at Kimball which is the amount received by Canada, the amount diverted by Canada, and the excess or deficiency of the quantity received by Canada as compared with her share.

An examination of Table 1 shows that except during a few short periods, each country received the proper share to which it is entitled.

Table 2 is the statement showing the quantity of water taken in each month by each country and the amount thereof applied to the land; the quantity of water diverted from St.Mary river to Milk river and stored or held back by either country. This table also shows the water available, diverted, stored, wasted, and the loss in canals and reservoirs.

Table 3 gives the available data on diversions from the principal northern tributaries of Milk river and the amount which crossed the boundary into Montana.

1/2 a

TABLE SHOWING DIVISION OF

ST. MARY RIVER

1923

Table No. 1

DETERMINATION OF NATURAL FLOW OF ST. MARY RIVER
APRIL - 1923

Day	St. Mary River at Kimball	Diverted by U.S.R.S.	Stored by U.S.R.S.	Total in Sec.-ft.	Stored Water Released	Natural Flow St. Mary River
1	219	0	0	219	0	219
2	241			241		241
3	231			231		231
4	228			228		228
5	223			223		223
6	219			219		219
7	219			219		219
8	231			231		231
9	241			241		241
10	250			250		250
11	259			259		259
12	272			272		272
13	286			286		286
14	473			473		473
15	410			410		410
16	366			366		366
17	375			375		375
18	461			461		461
19	508			508		508
20	513			513		513
21	555			555		555
22	567			567		567
23	561			561		561
24	555			555		555
25	549			549		549
26	567			567		567
27	631			631		631
28	720			720		720
29	810			810		810
30	915			915		915
Total	Sec.-ft. 12655	0	0	12655	0	12655
Mean	422	0	0	422	0	422
Total	Ac.-ft. 25111	0	0	45111	0	45111

DIVISION OF WATER OF ST. MARY RIVER
 WATER USED BY UNITED STATES
 APRIL - 1923

Day:	Natural Flow:	AVAILABLE FOR USE BY U.S.A.:	USED BY U.S.A.:	Excess:	Deficiency:
: St. Mary R. :	U.S.:	Stored Water: Total :	Diverted: Stored: Total:	Of Share	Used
: at Kimball :	Share:	Released :	:	:	:
1	219	55	55		55
2	241	60	60		60
3	231	58	58		58
4	228	57	57		57
5	223	56	56		56
6	219	55	55		55
7	219	55	55		55
8	231	58	58		58
9	241	60	60		60
10	250	62	62		62
11	259	65	65		65
12	272	68	68		68
13	286	71	71		71
14	473	118	118		118
15	410	102	102		102
16	366	92	92		92
17	375	94	94		94
18	461	115	115		115
19	508	127	127		127
20	513	128	128		128
21	555	139	139		139
22	567	142	142		142
23	561	140	140		140
24	555	139	139		139
25	549	137	137		137
26	567	142	142		142
27	631	158	158		158
28	720	194	194		194
29	810	239	239		239
30	915	291	291		291
no stored water released during April					
no water diverted during April					
no water stored during April					
no water used during April					
Total Sec.-ft.	12655	3277	3277		3277
Mean	422	109	109		109
Total Ac.-ft.	25111	6486	6486		6486

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DIVISION OF WATER OF ST. MARY RIVER
WATER AVAILABLE FOR USE AND USED BY CANADA
APRIL - 1923

Day	: Natural flow: : St. Mary River: : at Kimball :	Canada's share :	St. Mary R. : at Kimball :	Diverted by : Canada :	Excess: Of Share Delivered	Deficiency
1	219	164	219	-	55	
2	241	181	241	-	60	
3	231	173	231	-	58	
4	228	171	228	-	57	
5	223	167	223	-	56	
6	219	164	219	-	55	
7	219	164	219	-	55	
8	231	173	231	-	58	
9	241	181	241	-	60	
10	250	188	250	-	62	
11	259	194	259	-	65	
12	272	204	272	-	68	
13	286	215	286	-	71	
14	473	355	473	-	118	
15	410	308	410	-	102	
16	366	274	366	-	92	
17	375	281	375	-	94	
18	461	346	461	-	115	
19	508	381	508	-	127	
20	513	385	513	-	128	
21	555	416	555	-	139	
22	567	425	567	-	142	
23	561	421	561	-	140	
24	555	416	555	-	139	
25	549	412	549	65	137	
26	567	425	567	123	142	
27	631	473	631	180	158	
28	720	526	720	167	194	
29	810	571	810	164	239	
30	915	624	915	175	291	
Total Sec.-ft.	12655	9378	12655	874	3277	
Mean	422	313	422	146	109	
Total Ac.-ft.	25111	18625	25111	1738	6486	

no deficiency during April

K. C.

DETERMINATION OF NATURAL FLOW OF ST. MARY RIVER
MAY - 1923

Day	St. Mary River at Kimball	Diverted by U.S.R.S.	Stored by U.S.R.S.	Total	Stored Water Released	Natural Flow St. Mary River
1	1000	-	-----	1000	-----	1000
2	1050	-	-----	1050	-----	1050
3	1040	-	-----	1040	-----	1040
4	1040	-	-----	1040	-----	1040
5	1050	2.8	-----	1053	-----	1053
6	1120	0.4	-----	1120	-----	1120
7	1200	3.6	-----	1204	-----	1204
8	1280	10.2	-----	1290	-----	1290
9	1450	19.0	-----	1469	-----	1469
10	1720	23.0	-----	1743	-----	1743
11	2150	85.0	-----	2235	-----	2235
12	2190	137.0	-----	2327	-----	2327
13	2360	149.0	-----	2509	-----	2509
14	2370	165.0	-----	2535	-----	2535
15	2360	167.0	-----	2527	-----	2527
16	2300	186.0	-----	2486	-----	2486
17	2180	230.0	-----	2410	-----	2410
18	2100	265.0	-----	2365	-----	2365
19	2000	308.0	-----	2308	-----	2308
20	1960	340.0	-----	2300	-----	2300
21	2010	358.0	-----	2368	-----	2368
22	2120	382.0	-----	2502	-----	2502
23	2400	401.0	-----	2801	-----	2801
24	2640	409.0	-----	3049	-----	3049
25	2870	403.0	-----	3273	-----	3273
26	3090	404.0	-----	3494	-----	3494
27	3250	414.0	-----	3664	-----	3664
28	3200	428.0	-----	3628	-----	3628
29	3000	427.0	-----	3427	-----	3427
30	2810	422.0	-----	3232	-----	3232
31	2990	417.0	-----	3407	-----	3407
TOTAL SEC. FT.	64300	6556	-----	70856	-----	70856
MEAN	2074	243	-----	2286	-----	2286
TOTAL AC. FT.	127525	13013	-----	140538	-----	140538

-----No Water Stored during May-----

-----No Stored Water Released during May-----

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DIVISION OF WATER OF ST. MARY RIVER
WATER USED BY UNITED STATES
MAY - 1923

Day	: Natural Flow : St. Mary River : at : Kimball	: AVAILABLE FOR USE BY U.S. ::			: USED BY U.S. :			: Excess : of Share Used	: Defi- : ciency
		: U.S. : Share	: Stored : Water : Released	: Total	: Diverted	: Stored	: Total		
1	1000	333	-----	333	-	-----	-	333	
2	1050	358	-----	358	-	-----	-	358	
3	1040	353	-----	353	-	-----	-	353	
4	1040	353	-----	353	-	-----	-	353	
5	1053	360	-----	360	2.8	-----	2.8	357	
6	1120	393	-----	393	0.4	-----	0.4	393	
7	1204	435	-----	435	3.6	-----	3.6	431	
8	1290	478	-----	478	10.2	-----	10.2	468	
9	1469	568	-----	568	19.0	-----	19.0	549	
10	1743	704	-----	704	23.0	-----	23.0	681	
11	2235	950	-----	950	85.0	-----	85.0	865	
12	2327	996	-----	996	137.0	-----	137.0	859	
13	2509	1088	-----	1088	149.0	-----	149.0	939	
14	2535	1100	-----	1100	165.0	-----	165.0	935	
15	2527	1096	-----	1096	167.0	-----	167.0	929	
16	2486	1076	-----	1076	186.0	-----	186.0	890	
17	2410	1038	-----	1038	230.0	-----	230.0	808	
18	2365	1016	-----	1016	265.0	-----	265.0	751	
19	2308	987	-----	987	308.0	-----	308.0	679	
20	2300	983	-----	983	340.0	-----	340.0	643	
21	2368	1017	-----	1017	358.0	-----	358.0	659	
22	2502	1084	-----	1084	382.0	-----	382.0	702	
23	2801	1234	-----	1234	401.0	-----	401.0	833	
24	3049	1358	-----	1358	409.0	-----	409.0	949	
25	3273	1470	-----	1470	403.0	-----	403.0	1067	
26	3494	1580	-----	1580	404.0	-----	404.0	1176	
27	3664	1665	-----	1665	414.0	-----	414.0	1251	
28	3628	1647	-----	1647	428.0	-----	428.0	1219	
29	3427	1546	-----	1546	427.0	-----	427.0	1119	
30	3232	1449	-----	1449	422.0	-----	422.0	1027	
31	3407	1536	-----	1536	417.0	-----	417.0	1119	
TOTAL SEC. FT.	70856	30251		30251	6556		6556	23695	
MEAN	2286	976		976	243		243	764	
TOTAL AC. FT.	140538	60000		60000	13013		13013	46987	

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DIVISION OF WATER OF ST. MARY RIVER
WATER AVAILABLE FOR USE AND USED BY CANADA
MAY - 1923

Day	: Natural Flow of : St. Mary River at : Kimball	: Canada's : Share	: St. Mary River : at : Kimball	: Diverted : by : Canada	: Excess : : -of share delivered -	: Deficiency
1	1000	667	1000	178	333	
2	1050	692	1050	192	358	
3	1040	687	1040	216	353	
4	1040	687	1040	233	353	
5	1053	693	1050	251	357	
6	1120	727	1120	257	393	
7	1204	769	1200	280	431	
8	1290	812	1280	292	468	
9	1469	901	1450	298	549	
10	1743	1039	1720	340	681	
11	2235	1285	2150	324	865	
12	2327	1331	2190	311	859	
13	2509	1421	2360	324	939	
14	2535	1435	2370	329	935	
15	2527	1431	2360	339	929	
16	2486	1410	2300	394	890	
17	2410	1372	2180	409	808	
18	2365	1349	2100	418	751	
19	2308	1321	2000	418	679	
20	2300	1317	1960	418	643	
21	2368	1351	2010	455	659	
22	2502	1418	2120	504	702	
23	2801	1567	2400	550	833	
24	3049	1691	2640	565	949	
25	3273	1803	2870	671	1067	
26	3494	1914	3090	630	1176	
27	3664	1999	3250	645	1251	
28	3628	1981	3200	684	1219	
29	3427	1881	3000	690	1119	
30	3232	1783	2810	661	1027	
31	3407	1871	2990	731	1119	
TOTAL SEC. FT.	70856	40605	64300	13007	23695	
MEAN	2286	1310	2074	420	764	
TOTAL AC. FT.	140538	80538	127525	25825	46987	

-----No deficiency in May-----

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DETERMINATION OF NATURAL FLOW OF ST. MARY RIVER
WATER STORED OR RELEASED FROM SHERBURNE RESERVOIR
JUNE - 1923

Day	INFLOW INTO SHERBURNE RESERVOIR				Swiftcurrent:	Stored:	Released
	Swiftcurrent Cr.:	Ganyon	Other Creeks:	Total	Creek below :		
	at Kany Glacier	Creek			Sherburne		
1	660	142	237	1039	682.0	357	-
2	748	114	250	1112	773.0	339	-
3	582	81	203	866	800.0	66	-
4	511	71	183	765	787.0	-	22
5	511	69	178	758	770.0	-	8
6	576	82	201	859	756.0	103	
7	620	88	215	923	776.0	147	
8	635	94	219	948	790.0	158	
9	703	98	237	1038	807.0	231	
10	747	105	227	1079	838.0	241	
11	771	110	190	1071	335.0	736	
12	759	110	188	1057	3.3	1054	
13	745	101	180	1026	1.2	1025	
14	612	80	173	865	1.1	864	
15	480	64	165	709	1.0	708	
16	409	57	155	621	1.0	620	
17	427	62	140	629	1.0	628	
18	402	54	130	586	0.3	586	
19	402	55	112	569	0.3	569	
20	356	52	104	512	0.3	513	
21	353	63	100	516	-	516	
22	415	80	95	590	2.0	588	
23	393	69	90	552	1.8	550	
24	368	62	78	508	1.2	507	
25	341	57	65	463	1.0	462	
26	353	56	60	469	1.0	468	
27	338	57	50	445	-	445	
28	368	66	45	479	-	479	
29	409	74	45	528	-	528	
30	440	74	45	559	-	559	
TOTAL SEC. FT.	15434	2347	4360	22141	8130.5	14047	30
MEAN	514	78	145	738	271	468	1
TOTAL AC. FT.	30585	4641	8688	43914	16126	27848	60

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DETERMINATION OF NATURAL FLOW OF ST. MARY RIVER

JUNE---1923.

Day	St. Mary River Kimball	Diverted by U.S.R.S.	Stored by U.S.R.S.	Total in Sec.Ft.	Stored water released	Natural flow St. Mary riv. Kimball
1	3300	390	-	3690	-	3690
2	3320	408	-	3728	-	3728
3	3240	408	357	4005	-	4005
4	3200	401	339	3940	-	3940
5	3220	403	66	3689	-	3689
6	3320	403	-	3723	22	3701
7	3290	414	-	3704	8	3696
8	3170	412	103	3685	-	3685
9	3150	416	147	3713	-	3713
10	3320	417	158	3895	-	3895
11	3440	419	231	4090	-	4090
12	3200	417	241	3858	-	3858
13	2960	424	736	4120	-	4120
14	2630	428	1054	4112	-	4112
15	2500	424	1025	3949	-	3949
16	2330	424	864	3618	-	3618
17	2080	424	708	3212	-	3212
18	1900	424	620	2944	-	2944
19	1740	425	628	2793	-	2793
20	1600	428	586	2614	-	2614
21	1730	436	569	2735	-	2735
22	2480	412	513	3405	-	3405
23	2220	334	516	3070	-	3070
24	2140	328	588	3056	-	3056
25	2020	329	550	2899	-	2899
26	1830	352	507	2689	-	2689
27	1700	382	462	2544	-	2544
28	1630	382	468	2480	-	2480
29	1530	417	445	2392	-	2392
30	1530	433	479	2442	-	2442
TOTAL SEC. FT.	75720	12114	12960	100794	30	100764
MEAN	2524	404	432	3360	1	3359
TOTAL AC. FT.	150188	24040	25706	199934	60	199874

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Division of Water of St. Mary River
Water Used by United States
June.....1923.

Day	Natural flow St. Mary river at Kimball	Available for use by U.S.A.		Used by U.S.A.			Excess: Deficiency of share used		
		U.S. Share released	Stored water	Total	Diverted:	Stored: Total			
1	3690	1678	-	1678	390	-	390	-	1288
2	3728	1697	-	1697	408	-	408	-	1289
3	4005	1836	-	1836	408	357	765	-	1071
4	3940	1803	-	1803	401	339	740	-	1063
5	3639	1678	-	1678	403	66	469	-	1209
6	3701	1684	22	1706	403	-	403	-	1303
7	3696	1681	8	1689	414	-	414	-	1275
8	3685	1676	-	1676	412	103	515	-	1151
9	3713	1690	-	1690	416	147	563	-	1127
10	3895	1780	-	1780	417	158	575	-	1205
11	4090	1878	-	1878	419	231	650	-	1228
12	3858	1762	-	1762	417	241	658	-	1104
13	4120	1893	-	1893	424	736	1160	-	733
14	4112	1889	-	1889	428	1054	1482	-	407
15	3949	1808	-	1808	424	1025	1449	-	359
16	3618	1642	-	1642	424	864	1288	-	354
17	3212	1439	-	1439	424	708	1132	-	307
18	2944	1305	-	1305	424	620	1044	-	261
19	2793	1230	-	1230	425	628	1053	-	177
20	2614	1140	-	1140	428	586	1014	-	126
21	2735	1200	-	1200	436	569	1005	-	195
22	3405	1536	-	1536	412	513	925	-	611
23	3070	1368	-	1368	334	516	850	-	518
24	3056	1361	-	1361	328	588	916	-	445
25	2899	1282	-	1282	329	550	879	-	403
26	2689	1178	-	1178	352	507	859	-	319
27	2544	1105	-	1105	382	462	844	-	261
28	2480	1073	-	1073	382	468	850	-	223
29	2392	1029	-	1029	417	445	862	-	167
30	2442	1054	-	1054	433	479	912	-	142
Total Sec.Ft.	100764	45375	30	45405	12114	12960	25074	-	20331
Mean	3359	1513	2	1514	404	432	836	-	678
Total Ac.Ft.	199874	90030	60	90090	24040	25706	49746	-	40344

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Division of Water of St. Mary River
Water Available for Use and used in Canada

June, 1923

Day	Natural flow of St. Mary R. at Kimball	Canada's share	St. Mary River Kimball	Divorted by Canada	Excess of share	Deficiency delivered
1	3690	2012	3300	724	1288	
2	3728	2031	3320	696	1289	
3	4005	2169	3240	700	1071	
4	3940	2137	3200	712	1063	
5	3689	2011	3220	702	1209	
6	3701	2017	3320	686	1303	
7	3696	2015	3290	666	1275	
8	3685	2009	3170	668	1161	
9	3713	2023	3150	670	1127	
10	3895	2115	3320	682	1205	
11	4090	2212	3440	684	1228	
12	3858	2096	3200	655	1104	
13	4120	2227	2960	648	733	
14	4112	2223	2630	675	407	
15	3949	2141	2500	661	359	
16	3618	1976	2330	643	354	
17	3212	1773	2080	632	307	
18	2944	1639	1900	682	261	
19	2793	1563	1740	664	177	
20	2614	1474	1600	664	126	
21	2735	1535	1730	684	195	
22	3405	1869	2480	691	611	
23	3070	1702	2220	655	518	
24	3056	1695	2140	637	445	
25	2899	1617	2020	677	403	
26	2689	1511	1830	673	319	
27	2544	1439	1700	661	261	
28	2480	1407	1630	673	223	
29	2392	1363	1530	666	167	
30	2442	1388	1530	673	142	
Total Sec. ft.	100764	55389	75720	20204	20331	
Mean	3359	1846	2524	673	678	
Total Ac. Ft.	199874	109844	150188	40046	40344	

No deficiency in June

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DETERMINATION OF NATURAL FLOW OF ST. MARY RIVER
WATER STORED OR RELEASED FROM SHERBURNE RESERVOIR
JULY---1923.

Day	INFLOW TO SHERBURNE RESERVOIR				Switcurrent at Sherburne	Stored	Released
	Switcurrent	Cr. Canyon Cr.	Other Cr.	Total			
1	418	71.0	40	529	0.3	529	
2	409	68.0	40	517	-	517	
3	337	66.0	40	493	-	493	
4	353	60.0	40	453	0.7	452	
5	308	50.0	40	398	1.0	397	
6	257	43.3	40	340	1.0	339	
7	239	41.4	39	319	0.7	318	
8	242	43.3	43	328	21.0	307	
9	263	46.2	50	359	79.0	280	
10	290	46.2	54	390	79.0	311	
11	296	45.3	56	397	105.0	292	
12	317	44.3	58	419	144.0	275	
13	296	43.3	50	389	200.0	189	
14	287	42.4	47	376	200.0	176	
15	287	42.4	40	369	203.0	166	
16	296	43.3	30	369	203.0	166	
17	275	41.4	24	340	217.0	123	
18	248	41.4	22	311	207.0	104	
19	236	40.4	21	297	190.0	107	
20	236	38.5	19	294	88.0	206	
21	236	38.5	17	291	30.0	261	
22	239	39.4	17	295	30.5	264	
23	239	38.5	16	294	24.8	269	
24	239	36.7	16	292	20.4	272	
25	224	34.4	16	274	21.2	253	
26	209	33.6	15	258	21.2	237	
27	200	32.0	15	247	21.2	226	
28	194	30.5	14	239	21.2	218	
29	191	31.3	14	236	21.6	214	
30	185	30.5	14	230	21.6	208	
31	185	28.4	13	226	21.2	205	
Total Sec.Ft.	8281	1331.9	960	10569	2194.6	8374	
Mean	267	43.0	31	341	71	270	
Total Ac.Ft.	16417	2644	1906	20967	4366	16601	

No stored water released in July.

Determination of natural flow of St. Mary River

July 1923.

Day	St. Mary River Diverted by at Kimball	U.S.R.S.	Stored by U.S.R.S.	Total	Stored water released	Natural flow of St. Mary River at Kimball
1	1560	438	528	2526		2526
2	1590	440	559	2589		2589
3	1630	440	529	2599		2599
4	1570	441	517	2528		2528
5	1490	440	493	2423		2423
6	1380	438	452	2270		2270
7	1280	438	397	2115		2115
8	1140	438	339	1917		1917
9	1090	441	318	1849		1849
10	1020	441	307	1768		1768
11	932	466	280	1678		1678
12	864	500	311	1675		1675
13	841	510	292	1643		1643
14	826	519	275	1620		1620
15	788	529	189	1506		1506
16	834	546	176	1556		1556
17	1260	347	166	1773		1773
18	1260	275	166	1701		1701
19	1240	276	123	1639		1639
20	1210	270	104	1584		1584
21	1140	236	107	1483		1483
22	1070	229	206	1505		1505
23	1020	223	261	1504		1504
24	958	217	264	1439		1439
25	898	214	269	1381		1381
26	857	210	272	1339		1339
27	795	207	253	1255		1255
28	772	204	237	1213		1213
29	742	204	226	1172		1172
30	713	206	218	1137		1137
31	692	206	214	1112		1112
TOTAL	SEC.FT. 33462	10989	9048	53499	0	53499
MEAN	1079	354	293	1726	0	1726
TOTAL	AC.FT. 66345	21767	18016	106128	0	106128

no stored water released.

Division of water of St. Mary River
Water available for use and used by United States
July 1923.

Day	Natural flow St. Mary R. at Kimball	Available for use by U.S.A.		Used by U.S.S.		Excess of Share	Deficiency used.		
		U.S.Share	Stored water released.	Total	diverted			Stored	Total
1	2526	1096		1096	438	528	966	-	130
2	2589	1128		1128	440	559	999	-	129
3	2599	1132		1132	440	529	969	-	163
4	2528	1097		1097	441	517	958	-	139
5	2423	1044		1044	440	493	933	-	111
6	2270	968		968	438	452	890	-	78
7	2115	890		890	438	397	835	-	55
8	1917	792		792	438	339	777	-	15
9	1849	758		758	441	318	759	1	-
10	1768	717		717	441	307	748	31	-
11	1678	672		672	466	280	746	74	-
12	1675	670		670	500	311	811	141	-
13	1643	654		654	510	292	802	148	-
14	1620	643		643	519	275	794	151	-
15	1506	586		586	529	189	718	132	-
16	1556	611		611	546	176	722	111	-
17	1773	720		720	347	166	513	-	207
18	1701	683		683	275	166	441	-	242
19	1639	652		652	276	123	399	-	253
20	1584	625		625	270	104	394	-	251
21	1483	574		574	236	107	343	-	231
22	1505	586		586	229	206	435	-	151
23	1504	585		585	223	261	484	-	101
24	1439	552		552	217	264	481	-	71
25	1381	524		524	214	269	483	-	41
26	1339	502		502	210	272	482	-	20
27	1255	460		460	207	253	460	-	-
28	1213	440		440	204	237	441	1	-
29	1172	419		419	204	226	430	11	-
30	1137	402		402	206	218	424	22	-
31	1112	389		389	206	214	420	31	-
TOTAL SEC.FT.	53499	21571	0	21571	10989	9048	20037	854	2388
GAN	1726	696	0	696	354	292	646	27.4	77
TOTAL AC.FT.	106128	42795	0	42795	21767	17954	39721	1661	4735

No stored water released

Division of Water of St. Mary River
Water available for use and used by Canada
July 1923

Day	Natural flow of St. Mary R.-Kimball	Canada's Share	St. Mary R. Kimball	Diverted Canada	Excess of share	Deficiency delivered
1	2526	1430	1560	682	130	-
2	2589	1461	1590	684	129	-
3	2599	1467	1630	682	163	-
4	2528	1431	1570	661	139	-
5	2423	1379	1490	659	111	-
6	2270	1302	1380	650	78	-
7	2115	1225	1280	637	55	-
8	1917	1125	1140	616	15	-
9	1849	1091	1090	618	-	1
10	1768	1051	1020	611	-	31
11	1678	1006	932	590	-	74
12	1675	1005	864	592	-	141
13	1643	989	841	615	-	148
14	1620	977	826	624	-	151
15	1506	920	788	614	-	132
16	1556	945	834	620	-	111
17	1773	1053	1260	686	207	-
18	1701	1018	1260	653	242	-
19	1639	987	1240	641	253	-
20	1584	959	1210	641	251	-
21	1483	909	1140	630	231	-
22	1505	919	1070	622	151	-
23	1504	919	1020	620	101	-
24	1439	887	958	607	71	-
25	1381	857	898	607	41	-
26	1339	837	857	588	20	-
27	1255	795	795	567	-	-
28	1213	773	772	548	-	1
29	1172	753	742	526	-	11
30	1137	735	713	504	-	22
31	1112	723	692	478	-	31
TOTAL SEC.FT.	53499	31928	33462	19073	2388	854
MEAN	1726	1030	1079	615	77	27.4
TOTAL AC.FT.	106128	63333	66345	37815	4735	1661

Determination of natural flow St. Mary River
 Water stored or released from Sherburne Reservoir
 August 1923

Day:	Inflow to Sherburne Reservoir	Swiftcurrent Cr:	Many Glacier	Canyon Cr:	Other Cr:	Total:	Swiftcurrent Cr: below	Stored:	Released
1	156	23.3	13	192	21.6	170	-	-	-
2	128	20.8	13	162	90.0	72	-	-	-
3	102	18.8	13	134	182.0	-	-	48	-
4	80	17.9	13	111	182.0	-	-	71	-
5	82	17.9	14	114	182.0	-	-	68	-
6	87	18.8	14	120	182.0	-	-	62	-
7	84	17.1	14	115	182.0	-	-	67	-
8	89	17.1	14	120	181.0	-	-	61	-
9	91	16.7	14	122	277.0	-	-	155	-
10	95	16.7	14	126	380.0	-	-	254	-
11	102	16.7	15	134	421.0	-	-	287	-
12	110	17.1	15	142	443.0	-	-	301	-
13	118	17.9	15	151	443.0	-	-	292	-
14	123	18.3	16	157	440.0	-	-	283	-
15	120	18.8	17	156	440.0	-	-	284	-
16	120	17.9	21	159	437.0	-	-	278	-
17	120	17.9	22	160	446.0	-	-	286	-
18	123	18.3	30	171	456.0	-	-	285	-
19	123	18.3	30	171	454.0	-	-	283	-
20	134	39.6	35	209	487.0	-	-	278	-
21	215	97.0	45	357	511.0	-	-	154	-
22	245	56.0	41	342	511.0	-	-	169	-
23	185	39.4	10	234	508.0	-	-	274	-
24	156	31.3	5	192	508.0	-	-	316	-
25	142	27.1	5	174	506.0	-	-	332	-
26	136	25.9	5	167	503.0	-	-	336	-
27	131	23.3	3	157	528.0	-	-	371	-
28	125	22.8	2	150	559.0	-	-	409	-
29	120	21.8	2	144	559.0	-	-	415	-
30	115	21.3	2	138	554.0	-	-	416	-
31	118	19.3	2	139	554.0	-	-	415	-
TOTAL SEC. FT.	3870	771.1	474	5120	12127.6	242	7250		
MEAN	125	24.9	15.3	165	391	7.8	234		
TOTAL AC. FT.	7686	1531	940	10157	24042	480	14365		

Determination of Natural Flow of St. Mary River

August - 1923

Day	St. Mary River at Kimball	Diverted by U.S.R.S.	Stored by U.S.R.S.	Total	Stored Water Released	Natural flow St. Mary River at Kimball
1	657	206	208	1071	-	1071
2	604	206	205	1015	-	1015
3	585	204	170	959	-	959
4	592	204	72	868	-	868
5	585	201	-	786	48	738
6	585	201	-	786	71	715
7	543	200	-	743	68	675
8	525	200	-	725	62	663
9	513	200	-	713	67	646
10	467	274	-	741	61	680
11	366	388	-	754	155	599
12	416	394	-	810	254	556
13	456	394	-	850	287	563
14	490	392	-	882	301	581
15	525	390	-	915	292	623
16	531	390	-	921	283	638
17	508	388	-	896	284	612
18	502	386	-	888	278	610
19	508	386	-	894	286	608
20	549	386	-	935	285	650
21	898	390	-	1288	283	1005
22	949	396	-	1345	278	1067
23	906	398	-	1304	154	1150
24	872	386	-	1258	169	1089
25	881	382	-	1263	274	989
26	881	382	-	1263	316	947
27	841	380	-	1221	332	889
28	841	382	-	1223	336	887
29	826	380	-	1206	371	835
30	841	345	-	1186	409	777
31	810	334	-	1144	415	729
TOTAL SEC. FT.	20053	10145	655	30853	6419	24434
MEAN	647	327	21	995	207	788
TOTAL AC. FT.	39782	20106	1291	61179	12728	48451

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Division of Water of St. Mary River
Water used by United States

August - 1923.

Day	: AVAILABLE FOR USE BY U.S.A. :				: USED BY U.S.A. :			: Excess : Defi-	: of : ciency
	: Natural Flow :	U.S. :	Stored :	Total :	: Diverted :	Stored :	Total :		
	: St. Mary River :	Share :	Water :						
	: at Kimball :		: Released :						
1	1071	368	-	368	206	208	414	46	-
2	1015	340	-	340	206	205	411	71	-
3	959	312	-	312	204	170	374	62	-
4	868	267	-	267	204	72	276	9	-
5	738	202	48	250	201	-	201	-	49
6	715	191	71	262	201	-	201	-	61
7	675	170	68	238	200	-	200	-	38
8	663	166	62	228	200	-	200	-	28
9	646	162	67	229	200	-	200	-	29
10	680	173	61	234	274	-	274	40	-
11	599	150	155	305	388	-	388	83	-
12	576	139	254	393	394	-	394	1	-
13	563	141	287	428	394	-	394	-	34
14	581	145	301	446	392	-	392	-	54
15	623	156	292	448	390	-	390	-	58
16	638	159	283	442	390	-	390	-	52
17	612	153	284	437	388	-	388	-	49
18	610	152	278	430	386	-	386	-	44
19	608	152	286	438	386	-	386	-	52
20	650	162	285	447	386	-	386	-	61
21	1005	336	283	619	390	-	390	-	229
22	1067	366	278	644	396	-	396	-	248
23	1150	408	154	562	398	-	398	-	164
24	1089	378	169	547	386	-	386	-	161
25	989	328	274	602	382	-	382	-	220
26	947	306	316	622	382	-	382	-	240
27	889	277	332	609	380	-	380	-	229
28	887	277	336	613	382	-	382	-	231
29	835	250	371	621	380	-	380	-	241
30	777	222	409	631	345	-	345	-	286
31	729	198	415	613	334	-	334	-	279
TOTAL REC. FT.	24434	7206	6419	13625	10145	655	10800	312	3137
MEAN	788	232	207	439	327	21	348	10	101
TOTAL AG. FT.	48451	14265	12728	26993	20106	1291	21397	619	6212

Division of Water of St. Mary River
Water available for use and used by Canada

August - 1923.

Day	Natural Flow of St. Mary R. at Kimball	Canada's Share	St. Mary River at Kimball	Diverted by Canada	Excess of state	Deficiency delivered
1	1071	703	657	472	-	46
2	1015	675	604	453	-	71
3	959	647	585	471	-	62
4	868	601	592	490	-	9
5	738	536	585	452	49	-
6	715	524	535	476	61	-
7	675	505	543	459	38	-
8	663	497	525	446	28	-
9	646	484	513	404	29	-
10	680	507	467	408	-	40
11	599	449	366	340	-	83
12	556	417	416	373	-	1
13	563	422	456	396	34	-
14	581	436	490	410	54	-
15	623	467	525	440	58	-
16	638	479	531	436	52	-
17	612	459	508	432	49	-
18	610	458	502	432	44	-
19	708	456	508	438	52	-
20	650	488	549	472	61	-
21	1005	669	898	598	229	-
22	1067	701	949	578	248	-
23	1150	742	906	565	164	-
24	1089	711	872	557	161	-
25	989	661	881	542	220	-
26	947	641	881	540	240	-
27	889	612	841	516	229	-
28	887	610	841	557	231	-
29	835	585	826	571	241	-
30	777	555	841	588	286	-
31	729	531	810	582	279	-
TOTAL SEC. FT.	24434	17228	20053	14894	3137	312
MEAN	788	556	647	480	101	10
TOTAL AG. FT.	48451	34186	39782	29514	6212	619

Determination of Natural Flow of St. Mary River
Water stored or released from Sherburne Reservoir

September - 1923.

Day	INFLOW INTO SHERBURNE RESERVOIR				Swiftcurrent Cr. below Sherburne	Stored	Released
	Swiftcurrent Cr.	Canyon Cr.	Other Crs.	Total			
1	115	18.3	2	135	545	-----	410
2	108	17.5	2	128	548	-----	420
3	98	16.7	2	117	602	-----	485
4	84	15.8	2	102	703	-----	601
5	82	14.6	2	99	773	-----	674
6	80	14.2	2	96	766	-----	670
7	76	13.2	2	91	763	-----	672
8	78	12.9	2	93	753	-----	680
9	80	12.9	2	95	736	-----	641
10	74	12.6	2	89	723	-----	634
11	61	11.3	2	78	707	-----	629
12	66	10.8	2	69	697	-----	628
13	74	10.5	2	66	682	-----	616
14	81	10.5	2	65	669	-----	604
15	82	10.5	1	60	671	-----	601
16	81	11.3	2	78	828	-----	750
17	86	10.5	1	68	800	-----	732
18	86	10.5	2	58	773	-----	715
19	88	9.9	2	60	821	-----	761
20	88	9.9	2	61	821	-----	760
21	88	9.9	1	63	770	-----	707
22	88	10.0	1	64	691	-----	627
23	84	9.9	1	65	660	-----	595
24	88	9.9	1	68	544	-----	476
25	80	9.9	1	70	268	-----	198
26	86	9.9	1	66	132	-----	66
27	82	9.9	1	62	87	-----	25
28	86	9.9	1	56	68	-----	12
29	88	9.5	-	49	58	-----	9
30	36	8.5	-	45	53	-----	8
TOTAL SEC. FT.	1933	344.9	46	2316	17712	0	15386
MEAN	64	11.5	1.5	77	590	0	513
TOTAL AC. FT.	3808	684	91	4583	35107	0	30524

-----No water stored in September-----

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DETERMINATION OF NATURAL FLOW OF ST. MARY RIVER
SEPTEMBER - 1923.

Day	St. Mary River at Kimball.	Diverted by :U.S.R.S.	Stored by : U.S.R.S. :	Total	Stored water : Released.	Natural flow : St. Mary River : at Kimball.
1	795	336.0		1131	416	715
2	742	374.0		1116	415	701
3	750	358.0		1108	410	698
4	889	216.0		1105	420	685
5	1000	183.0		1183	485	698
6	1080	172.0		1252	601	651
7	1230	86.0		1316	674	642
8	1240	35.0		1275	670	605
9	1210	45.1		1255	672	583
10	1260	5.6		1266	660	606
11	1240	1.2		1241	641	600
12	1180	0.1		1180	634	546
13	1140	-		1140	629	511
14	1090	-		1090	628	462
15	1070	-		1070	616	454
16	1110	-		1110	604	506
17	1180	-		1180	601	579
18	1190	-		1190	750	440
19	1100	-		1100	732	368
20	1090	-		1090	715	375
21	1060	-		1060	761	299
22	1030	-		1030	760	270
23	924	-		924	707	217
24	872	-		872	627	245
25	772	-		772	595	177
26	685	-		685	476	209
27	585	-		585	198	387
28	496	-		496	66	430
29	444	-		444	25	419
30	401	-		401	12	389
----- No water stored in September -----						
TOTAL SQ. FT.	28855	1812		30667	16200	14467
MEAN	962	60.4		1022	540	482
TOTAL AC. FT.	57243	3584		60827	32132	28695

DIVISION OF WATER OF ST. MARY RIVER
WATER USED BY UNITED STATES.
SEPTEMBER - 1923.

Day	:Natural flow :St. Mary River :at Kimball.	:AVAILABLE FOR USE BY U.S.:			:USED BY U.S.A.:			:Excess :of share used.	:Deficiency
		:U.S. Share	:Stored Water :Released:	:Total	:Diverted	:Stored	:Total		
1	715	191	416	607	336.0	-	336.0	-	271
2	701	184	415	599	374.0	-	374.0	-	225
3	698	182	410	592	358.0	-	358.0	-	234
4	685	176	420	596	216.0	-	216.0	-	380
5	698	182	485	667	183.0	-	183.0	-	484
6	651	163	601	764	172.0	-	172.0	-	592
7	642	161	674	835	86.0	-	86.0	-	749
8	605	151	670	821	35.0	-	35.0	-	786
9	583	146	672	818	45.1	-	45.1	-	773
10	606	152	660	812	5.6	-	5.6	-	806
11	600	150	641	791	1.2	-	1.2	-	790
12	546	136	634	770	0.1	-	0.1	-	770
13	511	128	629	757	-	-	-	-	757
14	462	115	628	743	-	-	-	-	743
15	454	114	616	730	-	-	-	-	730
16	506	126	604	730	-	-	-	-	730
17	579	145	601	746	-	-	-	-	746
18	440	110	750	860	-	-	-	-	860
19	368	92	732	824	-	-	-	-	824
20	375	94	715	809	-	-	-	-	809
21	299	75	761	836	-	-	-	-	836
22	270	68	760	828	-	-	-	-	828
23	217	54	707	761	-	-	-	-	761
24	245	61	627	688	-	-	-	-	688
25	177	44	595	639	-	-	-	-	639
26	209	52	476	528	-	-	-	-	528
27	387	97	198	295	-	-	-	-	295
28	430	108	66	174	-	-	-	-	174
29	419	105	25	130	-	-	-	-	130
30	389	97	12	109	-	-	-	-	109
TOTAL SEC. FT.	14467	3659	16200	19859	1812	0	1812	-	18047
MEAN	482	122	540	662	60.4	0	60.4	-	602
TOTAL AC. FT.	28695	7620	32132	39392	3584	0	3584	-	35822

(No water stored in September)
 (No water stored in September)

(No water stored in September)
 (No water stored in September)

DIVISION OF WATER OF ST. MARY RIVER
WATER AVAILABLE FOR USE AND USED BY CANADA.
SEPTEMBER - 1923.

Day	Natural Flow : St. Mary River : at Kimball.	Canada's share	St. Mary River : at Kimball	Diverted by : Canada	Excess : of share delivered	Deficiency
1	715	524	795	559	271	
2	701	517	742	520	225	
3	698	516	750	545	234	
4	685	509	889	698	380	
5	698	516	1000	728	484	
6	651	488	1080	645	592	
7	642	481	1230	541	749	
8	605	454	1240	609	786	
9	583	437	1210	601	773	
10	606	454	1260	616	806	
11	600	450	1240	616	790	
12	546	410	1180	614	770	
13	511	383	1140	620	757	
14	462	347	1090	626	743	
15	454	340	1070	624	730	
16	506	380	1110	639	730	
17	579	434	1180	657	746	
18	440	330	1190	653	860	
19	368	276	1100	648	824	
20	375	281	1090	659	809	
21	299	224	1060	648	836	
22	270	202	1030	650	828	
23	217	163	924	634	761	
24	245	184	872	620	688	
25	177	133	772	592	639	
26	209	157	685	542	528	
27	387	290	585	498	295	
28	430	322	496	442	174	
29	419	314	444	389	130	
30	389	292	401	356	109	
TOTAL SEC. FT.	14467	10808	28855	17789	18047	0
MEAN	482	360	962	593	602	0
TOTAL AC. FT.	28695	21421	57243	35286	35822	0

No deficiency during September

DETERMINATION OF NATURAL FLOW OF ST. MARY RIVER
OCTOBER - 1923

Day	St. Mary River at Kimball	Diverted by U.S.R.S.	Stored by U.S.R.S.	Total	Stored water Released	Natural Flow River at Kimball
1	379				0	379
2	355				0	347
3	334					334
4	312					312
5	298					298
6	285					285
7	277					277
8	521					521
9	758					758
10	780					780
11	758					758
12	765					765
13	765					765
14	782					782
15	742					742
16	720					720
17	713					713
18	692					692
19	657					657
20	644					644
21	618					618
22	573					573
23	549					549
24	513					513
25	496					496
26	490					490
27	519					519
28	531					531
29	531					531
30	519					519
31	508					508
				TOTAL SEC. FT.	17	17367
				MEAN		560
				TOTAL AC. FT.	34	34448

No water diverted by U.S.R.S. during October

No water stored during October

No stored water released after October 2nd.

DIVISION OF WATER OF ST. MARY RIVER
WATER USED BY UNITED STATES
OCTOBER - 1923

Day	AVAILABLE FOR USE BY U.S.:				USED BY U.S.A.:			Excess : of share used.	Defic- : iency
	Natural Flow : St. Mary River : at Kimball	U.S. : Share	Stored : Water	Total : Released	Diverted	Stored	Total		
1	370	92	0	101				101	
2	347	87	0	95				95	
3	334	84		84				84	
4	312	78		78				78	
5	298	74		74				74	
6	285	71		71				71	
7	277	69		69				69	
8	521	130		130				130	
9	758	212		212				212	
10	780	223		223				223	
11	758	212		212				212	
12	765	216		216				216	
13	765	216		216				216	
14	782	224		224				224	
15	742	204		204				204	
16	720	193		193				193	
17	713	190		190				190	
18	692	179		179				179	
19	657	164		164				164	
20	644	161		161				161	
21	618	154		154				154	
22	573	143		143				143	
23	549	137		137				137	
24	513	128		128				128	
25	496	124		124				124	
26	490	122		122				122	
27	519	130		130				130	
28	531	133		133				133	
29	531	133		133				133	
30	519	130		130				130	
31	508	127		127				127	
TOTAL									
SBC.FT.	17367	4540	17	4557	0	0	0	4557	
MEAN	560	147		147	0	0	0	147	
TOTAL									
.FT.	34448	9005	34	9039	0	0	0	9039	

No stored water released after October 2nd

No water diverted during October

No water stored during October

No water used during October

No excess used during October.

DIVISION OF WATER OF ST. MARY RIVER
WATER AVAILABLE FOR USE AND USED
BY CANADA. OCTOBER - 1923

Day	Natural Flow : :St. Mary River: : at Kimball:	Canada's : Share :	St. Mary River: : at Kimball :	Diverted by: Canada :	Excess : of share delivered	Deficiency
1	370	278	379	325	101	
2	347	260	355	311	95	
3	334	250	334	292	84	
4	312	234	312	108	78	
5	298	224	298	10	74	
6	285	214	285	150	71	
7	277	208	277	237	69	
8	521	391	521	313	130	
9	758	546	758	426	212	
10	780	557	780	486	223	
11	758	546	758	497	212	
12	765	549	765	497	216	
13	765	549	765	474	216	
14	782	558	782	461	224	
15	742	538	742	447	204	
16	720	527	720	448	193	
17	713	523	713	441	190	
18	692	513	692	417	179	
19	657	493	657	397	164	
20	644	483	644	384	161	
21	618	464	618	366	154	
22	573	430	573	350	143	
23	549	412	549	342	137	
24	513	385	513	339	128	
25	496	372	496	339	124	
26	490	368	490	326	122	
27	519	389	519	324	130	
28	531	398	531	324	133	
29	531	398	531	316	133	
30	519	389	519	197	130	
31	508	381	508	70	127	
TOTAL	17367	12827	17384	10414	4557	o
SEC. FT.						
MEAN	560	413	560	336	147	o
TOTAL	34448	25443	34482	20660	9039	o
AC. FT.						

No deficiency during October.

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27a

DIVISION OF ST. MARY RIVER
CANADA

Table - 2

WATER AVAILABLE - IN ACRE FEET

Month	St. Mary River	Rolph Cr.	Pothole Cr.	Lee Cr.	Combined flow
April	25111	307	454	2755	28627
May	127525	344	178	8178	136225
June	150188	786	1047	11841	163862
July	66345	412	5	4304	71066
August	39782	295	-	1826	41903
September	57243	143	-	666 ^e	58052
October	34495	98	-	750	35343
TOTAL	500689	2385^a	1684^b	30320	535078^c

DISPOSITION

Month	Diverted by A.R. & I.Co.	Wasted by A.R. & I.Co.	Losses A.R. & I.Co.	Stored in Chin Res.	St. Mary R. Lethbridge.
April	1738	1910	-	-	25825
May	25825	7028	-603	6030	99610
June	40046	21612	+910	5617	156500
July	37815	17892	+849	4151	52080
August	29514	5988	-1698	5441	17401
September	35286	14222	-935	4745	41355
October	20660	1199	-351	4621	
TOTAL	190884^d	70851^e	-1828^f	30603	x

a - includes seepage losses from U.S.R.S. St. Mary Canal

b - natural flow only

c - computed

d - diverted by A.R. & I.Co. at Kimball

e - wasted in Pinepound and Pothole wasteways

f - evaporation and seepage losses between Kimball and McGrath (includes local inflow)

x - below all points of diversion

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28A

ST. MARY AND MILK RIVERS

Division of Water, 1923

Table 2.

UNITED STATES

Figures rounded to hundreds of acre-feet

Water Available - Acre-feet				
(1)	(2)	(3)	(4)	(5)
Month: St. Mary River at Kimball :	: Diverted to Milk River :	: Total natural flow No. & So. forks Milk River at Boundary. :	: Milk River at Eastern Crossing :	: Milk River at Lohman above Ft. Belknap Canal. (e) :
April: 25,100 :	---	: 10,600	: 19,500	: 26,400
May :127,525 :	13,000	: 12,400	: 24,200	: 18,500
June :150,188 :	24,000	: 10,600	: 49,200	: 75,600
July : 66,345 :	21,800	: 3,500	: 30,400	: 66,400
Aug. : 39,782 :	20,100	: 2,100	: 19,900	: 23,500
Sept.: 57,243 :	3,600	: 7,600	: 8,900	: 12,000
Oct. : 34,495 :	---	: 1,600	: 2,100	: 4,700
Total: 500,689 :	82,500	48,400	154,200	227,100

Disposition - Acre-feet				
(6)	(7)	(8)	(9)	(10)
Month: Diverted by Milk River Canals (d) :	: Stored in Nelson Reservoir. :	: Applied to land - gross: (e) :	: Wasted (f) :	: Milk River at Vandalia (g) :
April 21,500	8,400	12,800	100	60,700
May 22,400	600	23,000	700	6,400
June 20,700	6,700	11,300	---	591,000
July 4,500	800	1,400	---	373,000
Aug. 26,100	14,100	4,700	1,600	35,600
Sept. 5,600	800	1,700	2,700	27,600
Oct. 400	---	---	200	15,400
Total 101,200	31,400	54,900	5,300	1,109,700

- (b) During operation of St. Mary Canal the natural flow of the North Fork is measured above the canal outlet.
- (c) Obtained by adding the Fort Belknap diversion to the flow of the river measured below the diversion dam.
- (d) Paradise, Fort Belknap, Harlem, Agency, Dodson North, Dodson South, and Vandalia Canals.
- (e) Diversion less water stored and wasted (from each canal).
- (f) Wasted from Vandalia Canal. Waste from other canals is available for redirection at Vandalia or other diversion dams.
- (g) Below all points of diversion.

Table 3.

Diversions in the United States from Northern
Tributaries of Milk River

Season of 1923.

Irrigator	Stream	Quantities in Acre-feet							
		April	May	June	July	Aug.	Sept.	Oct.	Total
Chinook North Association	Lodge Creek	785	531	1170	3010	217	--	--	5710
Matheson Canal	Battle Creek	654	335	246	--	--	--	--	1235
Frenchman "	Frenchman "	No record - probably no diversion.							
Rock Creek "	Rock Creek	1675	622	502	12				2811

DISPOSITION OF THE WATERS OF LODGE CREEK

Table-3

1923

QUANTITIES IN ACRE-FEET

Irrigator	:	April	:	May	:	June	:	July	:	August	:	Total
-----------	---	-------	---	-----	---	------	---	------	---	--------	---	-------

J. English	A small amount diverted in April & May											
J. E. Hart (south)	15											15
J. E. Hart (north)	16											16
J. E. Hart	11	55		27								93
J. Read	A small amount diverted in April & May											

TOTAL RECORDED AS USED BY CANADA	42	55		27								124
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FLOW AT THE BOUNDARY	7855	387	5415	4181	234	18072
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No flow at the Boundary in September.

Battle Creek

38
3/1

DISPOSITION OF THE WATERS OF BATTLE CREEK

1923

QUANTITIES IN ACRE-FEET

Irrigator	April	May	June	July	August	September	October	Total
J. Leslie	-	-	19	-	-	-	-	19
Wood & Anderson	32	44	-	-	-	-	-	76
J. M. Spangler	-	-	68	3	-	-	3	74
Linder Bros.	26	159	74	14	-	-	-	273
W. G. Patterson	-	100	8	-	-	-	-	108
Marshall & Gaff	-	80	217	-	-	-	-	297
A. Gaff	-	19	56	-	-	-	-	75
Shepherd Bros.	33	57	-	-	-	-	-	90
Shepherd Bros.	42	-	-	-	-	-	-	42
W. S. Wilson	-	200	27	-	-	-	-	227
Wilkes Bros.	-	197	41	-	-	-	-	238
J. McKinnon	-	181	9	-	-	-	-	190
Stirling & Nash	-	447	149	1	-	-	-	597

TOTAL RECORDED AS USED BY CANADA	133	1484	668	18	-	-	3	2306
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FLOW AT THE BOUNDARY	6010	1568	3273	3628	1254	196	314	16243
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DISPOSITION OF THE WATERS OF FRENCHMAN RIVER

Table-3

1923QUANTITIES IN ACRE-FEET

Irrigator	April	May	June	July	August	September	October	Total
D. J. Wylie	-	47	60	-	-	-	-	107
A. M. Cross	-	64	36	-	-	-	-	100
F. Cross	-	48	67	-	-	-	-	115
V. J. Bull	-	175	200	-	-	-	-	375
Bolingbroke	-	-	46	-	-	-	-	46
J. C. Strong	A small amount in April-				-	-	-	
S. Pearse	-	16	131	57	-	-	-	204
A. Bate	-	3	0	2	-	-	-	5
TOTAL RECORDED AS USED BY CANADA	-	353	540	59				952

FLOW AT THE BOUNDARY	17970	6641	52721	10760	2564	476	799	91931
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