

Report on
Division and Use of Water
of
St. Mary and Milk Rivers

1923

WATER-SURVEY OF CANADA
CALGARY DISTRICT OFFICE

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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.

Accredited Reclamation Officer of the United States.

Date: 28th February, 1924.

FEB 28 1924 00630

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.J.Davis, the accredited officers for the United States, were represented in the field by their officers of the Bureau of Reclamation. Mr. J.B.Challiss, 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.E.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.I. 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, 1933, diverting 52,500 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. 13,073 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.

TABLE SHOWING DIVISION OF
ST. MARY RIVER

1923

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;Deficit
	: 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
Total Sec.-ft.	12655	3277	3277	3277
Mean	422	109	109	109
Total Ac.-ft.	25111	6486	6486	6486

no stored water released during April

no water diverted during April

no water stored during April

Table No. 1

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

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

no diversion during April
no water stored during April

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

Day	Natural Flow: St.Mary River:	Canada's share at Kimball :	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	525	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

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

Day	St.Mary River	Diverted	Stored by	Total	Stored Water	Natural Flow
	at Kimball	by U.S.R.S.	U.S.R.S.		Released	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

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

Day	Natural Flow	AVAILABLE FOR USE BY U.S.	USED BY U.S.						
	St.Mary River	U.S. Share	Stored Water Released	Total	Diverted	Stored	Total	Excess	Deficiency
	at Kimball	%							% of Share Used
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	439		439	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		859
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	2592	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

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

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.	Canyon	Other Creeks	Total	Creek below	Sherburne		
	at Many Glacier	Creek	:	:	:	:		
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	

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 ri. 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	3665	-	3655
9	3150	416	147	3713	-	3713
10	3320	417	158	3892	-	3892
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

DIVISION OF WATER OF St. Mary River
Water Used by United States
June 1924

Day	Natural Flow at Kinball	Available for use by U.S.A.			Used by U.S.A.			Excess: Per cent above or below	
		Stored water	Total	Diverted: Stored: Total	Diverted	Stored	Total	of share used	
1	3690	1678	-	1678	390	-	390	-	1288
2	3728	1697	-	1697	408	-	408	-	1289
3	4095	1836	-	1836	408	357	765	-	1071
4	3940	1803	-	1803	401	339	740	-	1063
5	3689	1878	-	1878	403	66	469	-	1209
6	3791	1654	22	1706	403	-	403	-	1305
7	3696	1681	8	1689	414	-	414	-	1275
8	3685	1676	-	1676	412	103	515	-	1161
9	3713	1690	-	1690	416	147	563	-	1127
10	3695	1780	-	1780	417	158	575	-	1205
11	4090	1878	-	1878	419	231	650	-	1226
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	1608	-	1808	424	1025	1449	-	359
16	3616	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	769	1005	-	195
22	3405	1536	-	1536	412	213	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	2669	1178	-	1178	352	507	879	-	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	12950	25074	-	20331
Mean	3359	1513	3	1514	404	432	836	-	678
Total Ac.Ft.	199874	90030	60	90090	24040	25706	49746	-	40344

Division of Water of St. Mary River
as Available for Use and Used in Canada
June, 1923

Day	Natural flow of St. Mary R. at Kimball	Canada's share	St. Mary River at Kimball	Diverted by Canada	Excess * of share	Deficiency delivered
1	3690	2012	3800	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	554	
17	3212	1773	2080	632	307	
18	2944	1639	1900	632	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	673	
Total Ac.Ft.	199874	109844	150188	40046	40344	

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

Day	INFLOW TO SHERBURNIE RESERVOIR				Swifcurrent at Sherburne	STORED	Released
	Swifcurrent Cr.	Canyon Cr.	Other Cr.	Total			
1	418		71.0	40	529	0.3	529
2	409		68.0	40	517	-	517
3	387		66.0	40	493	-	493
4	353		68.0	40	453	0.7	452
5	308		58.0	40	396	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	326	21.0	307
9	263		46.2	50	559	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	50	419	144.0	275
13	296		43.3	50	389	200.0	159
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	24.0	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	6374
Mean	267		43.0	31	341	71	270
Total Ac.Ft.	16417		2644	1906	20967	4366	16601

Determination of natural flow of St. Mary River

July 1923.

Day	St. Mary River Diverted by at Kimball	Diverted by 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	884	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

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	Deficit or excess used.
		Stored water	U.S. Share released.	Total	Diverted	Stored	Total		
1	2526	1096		1096	438	528	966	-	150
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	233	-	111
6	2370	968		968	438	452	850	-	78
7	2115	690		690	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	728	111	-
17	1773	720		720	347	166	513	-	20
18	1701	683		683	275	166	441	-	24
19	1639	652		652	276	123	399	-	253
20	1584	625		625	270	104	374	-	251
21	1463	274		574	236	107	343	-	231
22	1505	586		586	229	206	435	-	171
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	450	-	-
28	1213	440		440	204	257	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
MEAN	1726	696	0	696	354	292	646	27.4	77
TOTAL AG. FT.	106128	42795	0	42795	21767	17954	39721	1661	4735

DIVISION OF WATER ON 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	632	130	-
2	2589	1461	1590	634	129	-
3	2599	1467	1630	682	163	-
4	2528	1431	1570	661	139	-
5	2423	1370	1490	659	111	-
6	2270	1302	1300	650	78	-
7	2115	1225	1280	637	52	-
8	1917	1125	1140	618	15	-
9	1849	1091	1090	618	-	1
10	1760	1051	1020	611	-	31
11	1678	1006	932	590	-	74
12	1675	1005	864	592	-	141
13	1643	939	841	615	-	148
14	1620	977	826	624	-	151
15	1596	920	768	614	-	182
16	1556	945	834	620	-	111
17	1773	1053	1260	686	207	-
18	1791	1018	1260	653	242	-
19	1639	987	1240	641	253	-
20	1584	959	1210	641	291	-
21	1483	909	1140	630	231	-
22	1505	919	1070	622	151	-
23	1504	919	1020	620	101	-
24	1499	887	958	607	71	-
25	1381	857	898	607	41	-
26	1339	837	857	588	29	-
27	1255	795	795	567	-	-
28	1213	773	772	548	-	1
29	1172	753	742	526	-	11
30	1137	732	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

	Inflow to Sherburne Reservoir			Swiftcurrent Cr.				
Day	Swiftcurrent Cr.	Many Glacier	Canyon Cr.	Other Cr.	Total	Sherburne	Stored	Released
1	156	23.3		13	192	21.6	170	-
2	126	20.0		13	162	90.0	72	-
3	102	18.8		13	134	182.0	-	40
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	-	285
15	120	18.3		17	156	440.0	-	284
16	120	17.9		21	159	437.0	-	286
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	467.0	-	278
21	215	27.0		45	357	511.0	-	154
22	245	56.0		41	342	511.0	-	169
23	185	39.4		10	234	508.0	-	271
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	-	341
28	125	22.8		2	150	559.0	-	409
29	120	21.8		2	144	529.0	-	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	430	14345

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	640
10	467	274	-	741	61	680
11	366	388	-	754	159	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

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; Deficiency of Share	Deficiency used
	Natural Flow : St. Mary River: at Kimball	U.S. Share	Stored Water Released	Total	Diverted:	Stored	Total			
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	275	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	556	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	-	56	-
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	335	283	619	390	-	390	-	229	-
22	1067	366	270	644	396	-	396	-	240	-
23	1150	408	154	562	398	-	398	-	164	-
24	1089	378	159	547	386	-	386	-	163	-
25	989	328	274	602	382	-	382	-	220	-
26	947	306	316	622	382	-	382	-	240	-
27	889	277	332	609	380	-	380	-	289	-
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 SEC.FT.	24434	7206	6419	13625	10145	655	10800	312	3137	
MEAN	788	232	207	439	327	21	348	10	101	
TOTAL AC.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	Definitions of share delivered
1	1071	703	657	472	-	46
2	1015	675	604	453	-	71
3	959	647	585	471	-	82
4	868	601	592	490	-	9
5	738	536	585	452	49	-
6	715	524	585	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	298	229	-
22	1067	701	949	276	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 AC.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 SHERBURN RESERVOIR				Swiftcurrent Cr. below Sherburne	Stored in September	Released in September
	Swiftcurrent Cr.: Canyon Cr.: Other Crs.	Total					
1	115	18.3	2	135	945	1	410
2	108	17.5	2	128	548	1	420
3	98	16.7	2	117	602	1	485
4	84	15.8	2	102	703	1	601
5	82	14.6	2	99	773	1	674
6	80	14.2	2	96	766	1	670
7	76	13.2	2	91	763	1	672
8	78	12.9	2	93	753	1	660
9	80	12.0	2	95	736	1	641
10	74	12.6	2	89	723	1	634
11	65	11.3	2	78	707	1	629
12	56	10.8	2	69	697	1	628
13	54	10.5	2	66	682	1	616
14	53	10.2	2	65	669	1	604
15	50	10.5	1	60	671	1	601
16	65	11.3	2	78	828	1	750
17	56	10.2	1	68	800	1	732
18	46	10.0	2	58	773	1	715
19	48	9.5	2	60	821	1	761
20	50	9.2	2	61	821	1	760
21	52	9.8	1	63	770	1	707
22	53	10.0	1	64	691	1	627
23	54	9.8	1	65	660	1	595
24	58	9.2	1	68	544	1	476
25	60	9.2	1	70	268	1	108
26	56	9.2	1	66	132	1	56
27	52	9.2	1	62	87	1	25
28	46	9.0	1	56	68	1	12
29	40	8.5	-	49	58	1	9
30	36	8.5	-	45	53	1	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.	3868	684	91	4583	35107	0	30524

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

Day	St. Mary River	Diverted by: at Kimball.	Stored by: U.S.R.S.	Total	Stored water Released.	Natural flow 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		1257	672	589
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
TOTAL SMC.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	AVAILABLE FOR USE BY U.S.	USED BY U.S.A.					
	St. Mary River U.S.	Stored at Kimball.	Diverted Water Released:	Stored	Total	Excess of share used.	Deficiency of share used.	
1	715	191	416	607	336.0	-	336.0	-
2	701	184	415	599	374.0	-	374.0	-
3	698	182	410	592	350.0	-	358.0	-
4	685	176	420	596	216.0	-	216.0	360
5	698	182	485	667	183.0	-	183.0	284
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	765
9	583	146	672	818	45.1	-	45.1	713
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.	28595	7620	32132	39392	3584	0	3584	35822

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

Day	Natural Flow : St. Mary River:	Canada's share at Kimball :	St. Mary River : Diverted by at Kimball :	Excess of share delivered	Deficiency of share delivered	
1	715	524	795	559	271	Excess September
2	701	517	742	520	225	Deficiency October
3	698	516	750	545	234	-
4	685	509	839	698	380	-
5	698	516	1000	728	484	-
6	651	488	1050	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	419	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	750	-
17	579	434	1180	657	746	-
18	440	330	1190	653	860	-
19	368	276	1100	648	824	-
20	375	281	1090	650	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

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

Day	St. Mary River	Diverted by: at Kimball	Stored by: U.S.R.S.	Total	Stored water: Released	Natural flow St. Mary River at Kimball
1	379				9	370
2	355				8	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	772				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
	17,374					5
TOTAL SEC. FT.	17384				17	17387
MEAN	561					560

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

No water stored during October

No stored water released after October 2nd.

17,374
TOTAL SEC. FT. 17384

MEAN 561
TOTAL AC.FT. 34482

34 34448

772 2
11/157

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

Day	AVAILABLE FOR USE BY U.S.A.			USED BY U.S.A.			Excess of share used.	Deficiency of share used.
	Natural Flow : U.S.	Stored : St. Mary River Share at Kimball	Released :	Diverted : Total	Stored : Total			
1	370	92	9	101				101
2	347	87	8	95				98
3	334	84		84				64
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	760	223		223				223
11	758	212		212				212
12	762	216		216				216
13	762	216		216				216
14	78 772	224 219		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	5	4535						
SEG.FT.	17367	4540	17	4557	0	0	0	4557
MEAN	560	147		147	0	0	0	147
TOTAL	AJ.FT.	34448	9005	34	9039	0	0	9039

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: Diverted by:		Excess : Delivered by Canada : of share delivered
	St. Mary River: Canada's at Fairbank:	Share	St. Mary River: Canada's at Kimball:	Share	
1	370	278	379	325	101
2	347	260	329	311	95
3	334	250	334	292	64
4	312	234	312	108	73
5	298	224	298	10	74
6	285	214	265	150	71
7	277	208	277	237	69
8	521	391	521	313	130
9	758	546	758	420	212
10	780	557	780	486	223
11	702	445	758	497	212
12	765	544	765	497	216
13	762	549	762	474	216
14	782 772	556 553	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	493	644	384	161
21	618	464	618	366	154
22	573	430	573	356	143
23	549	412	549	342	137
24	513	385	513	339	128
25	496	372	496	339	124
26	490	368	490	328	122
27	519	389	519	324	130
28	531	396	531	324	133
29	531	398	531	316	133
30	519	389	519	197	150
31	508	382	508	70	127
TOTAL SEC. FT.	17387	1282 ^{y2}	17384	10414	4557
MEAN	(560)	413	560	336	147
TOTAL AG. FT.	34446	25443	34462	20360	9039

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	Diverted St. M.	Total natural flow No. & So.	Milk River at Eastern forks Milk River Crossing	Milk River at Lohman above Ft. Belknap Canal. (c)
:	River at Kimball :	to Milk River	:at Boundary.	:	
:	:		(b)	:	
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 Reser-voir.	Applied to land - gross:	Wasted	Milk River Vandalia
:					
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, Karlem, 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 rediversion at Vandalia or other diversion dams.

(g) Below all points of diversion.

DIVISION OF ST. MARY RIVER
CANADA

Table - 2

WATER AVAILABLE - IN ACFT. FEET

Month	: St. Mary River	: Ralph 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	1684	30320	535078

DISPOSITION

Month	: Diverted by : A.R. & I.C.O.	: Wasted by : A.R. & I.C.O.	: Losses A.R. & I.C.O.	: Stored in St. Mary R. Chin Res.	: Lethbridge
April	1738	1910	-	-	25825
May	25825	7028	-603	-	99616
June	40046	21612	+910	-	156500
July	37815	17892	+849	-	52080
August	29514	5988	-1698	-	17401
September	35286	14222	-935	-	41355
October	20560	1199	-351	-	
TOTAL	190884^d	70851^e	-1828		

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

b - natural flow only

c - computed

d - diverted by A.R. & I.C.O. at Kimball

e - wasted in Pinepound and Pothole wasteways

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

x - below all points of diversion

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
-------------------------------------	----	----	----	--	--	-----

FLOW AT THE BOUNDARY	7895	387	5415	4181	234	18972
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No flow at the Boundary in September.

DISPOSITION OF THE WATERS OF BATTLE CREEK

Table-3

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 & aff	-	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 & Ash	-	447	149	1	-	-	-	597
TOTAL RECORDED AS USED BY CANADA	133	1484	668	18	-	-	3	2306

FLOW AT THE
BOUNDARY

6010 1568 3273 3628 1254 196 314 16243

DISPOSITION OF THE WATERS OF FRENCHMAN RIVER

Table-3

1923 :

QUANTITIES IN ACRE-FOOT

Irrigator	April	May	June	July	August	September	October	Total
D. J. Vylie	-	47	60	-	-	-	-	107
A. M. Cross	-	64	36	-	-	-	-	100
F. Cross	-	48	67	-	-	-	-	115
V. J. Bull	-	175	200	-	-	-	-	375
Bolingbroke	-	-	46	5	0	-	-	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

Table 3.

Diversion 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
Metheson Canal	Battle Creek	654	335	246	--	--	--	--	1235
Frenchman "	Frenchman "	No record - probably no diversion.							
Rock Creek "	Rock Creek	1675	622	502	12				2811

HD
1694
.A2
R424
1923

Report to the International Joint
Commission on the division and use
of the waters of the St. Mary and
Milk Rivers...

HD
1694
.A2
R424
1923

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