Report to

THE INTERNATIONAL JOINT COMMISSION

on

THE DIVISION AND USE MADE OF THE WATERS OF

ST. MARY AND MILK RIVERS

by

J. T. JOHNSTON
representing Canada

and

N. C. GROVER
representing the United States

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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 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 1935.

Respectfully submitted,

Accredited Officer of His Majesty,

Accredited Officer of the United States.

April 7th, 1936.

Introduction.

The field work incidental to the division and administration of the waters of the St.Mary and Milk Rivers in Alberta, Saskatchewan and Montana was conducted, during the irrigation season of 1935, by the same engineers as in previous years.

Mr. N. C. Grover, Chief Hydraulic Engineer, United States Geological Survey, as accredited officer for the United States was represented in the field by Mr. W. A. Lamb, District Engineer, Helena, Montana. Mr. J. T. Johnston, Director, Dominion Water Power and Hydrometric Bureau, as accredited officer of His Majesty, was represented by Mr. S. G. Dawson, Ottawa, Canada.

The water of the two rivers was divided between the two countries in accordance with the Order of the Commission dated in Ottawa, Canada, on the 4th day of October, 1921.

The hydrometric data on which this report is based, were obtained in Montana by engineers of the United States Geological Survey under the personal supervision of Mr. Lamb; while those from streams and ditches in Canada were collected by Mr. W. T. McFarlane, under the direction of Mr. O. H. Hoover, Engineer in charge, Dominion Water Power and Hydrometric Bureau, Calgary, Alberta. The joint international gauging stations were visited frequently by representatives of both countries.

When the natural flow of St.Mary River fell below the combined capacity of the two canals diverting therefrom, and when the demand for water in each country was equivalent to or in excess of its share of the natural flow of St.Mary River, which, this season, occurred in mid-July and continued until the closing of the season, the field engineers kept closely informed as to the natural flow of the river, the water stored or released from storage and the quantity diverted by each country. Any discrepancy in the division was therefore discovered and adjustments made to allow each country its proper share as set forth in the Order of the Commission dated October 4th, 1921. Statements showing the daily division of waterwere prepared and forwarded to the Superintendent, Lethbridge section, Canadian Pacific Irrigation System; to the Project Manager, United States Bureau of Reclamation, Malta, Montana; and to the Director, Dominion Water Power and Hydrometric Bureau.

Division of Water.

The United States St.Mary canal was opened on April 24th and kept in continuous operation until the end of October, water being first delivered to the North Branch Milk River on May 4th. During the period between September 22nd and the end of October, while a small flow was diverted through the head gates, no water passed the St.Mary crossing nor was any delivered to

Milk River. As the loss in the canal between the intake and the crossing of the St.Mary River, which this year was about 11% of the water diverted at the headgates, is assumed to return directly to the river and eventually become available to Canada, the discharge of 158,900 acre-feet passing in the canal at the St.Mary River crossing is therefore considered as the actual quantity diverted from the St.Mary River by the United States. Of this quantity, 154,700 acre-feet were delivered to the North Branch Milk River and made available for irrigation in Montana. The slight 2.6% loss in the canal between St.Mary River crossing and Hudson Bay Divide, the end of the canal, was due to evaporation and seepage.

On November 1, 1934, a total of 2,944 acre-feet of water remained in storage in Sherburne reservoir. Approximately 18,600 acre-feet of water was in storage on April 1, 1935. The maximum storage reached during the season was 52,500 acre-feet on July 10. On October 31, 3,700 acre-feet remained in storage.

As only a small quantity of water was diverted in Canada from Milk River, the natural flow of the river is considered as being delivered to the United States at Eastern Crossing. The total diversion for irrigation from Milk River in Montana was 223,974 acre-feet.

The total recorded flow delivered to the United States at the International Boundary from the Northern tributaries of

Milk River during the year 1935 was 90,400 acre-feet, which is 144% of the flow recorded in 1934 and about 50% of the average for the years of record.

The Canadian Pacific Railway canal at Kimball, Alberta, diverted 165,400 acre-feet from the St.Mary River during the period of operation from the 27th of April to the 23rd of October, 148,200 acre-feet being used to irrigate lands in Southern Alberta.

The Dominion Water Power and Hydrometric Bureau is dependent to a large extent upon the irrigators themselves for records of the diversions in Canada from the Northern tributaries of Milk river as, in the majority of cases, the diversions are too small to justify the expense of appointing and paying gauge observers. Consequently the records are believed to be incomplete and of doubtful value. This year very little information on the total diversion from these tributaries is available, however, the diversions reported in Canada are shown in Table 3 and were; from Lodge Creek, 200 acre-feet; from Battle Creek 770 acre-feet; from Frenchman River, 415 acre-feet. There were no diversions from the other tributaries.

Any question as to the proper share of the St.Mary River being delivered to either country was decided in the following manner. Record of the daily flow was kept of Swiftcurrent Creek at Many Glacier and of Canyon Creek near Many

Glacier, but the flow of the other creeks entering Swiftcurrent Creek above the Sherburne dam were estimated. The total of these creeks gave the inflow into Sherburne reservoir. The losses by evaporation in the reservoir were considered when estimating the flow from the unrecorded small streams. A record of the outflow from the reservoir was kept at the gauging station just below the dam. The difference between the inflow and the outflow showed the quantity of water being stored or released from storage. A record of the daily flow of the United States' St.Mary canal at St.Mary Crossing was kept to find the water being diverted by the United States and a record of the daily flow of the St.Mary River at Kimball, near the International Boundary, was kept to determine the water being delivered to Canada.

If water was being stored in Sherburne reservoir, the natural flow of St.Mary River at the Boundary was obtained by adding the quantity of water stored to that diverted by the St.Mary canal and that delivered to Canada, a two day lag was allowed for stored water to reach the Boundary. If stored water was being released, the quantity released was deducted from the combined flow of the St.Mary canal and that in the river at Kimball to determine the natural flow.

The natural flow having been determined, the share to which each country was entitled was calculated on the following basis:-

(1) When the natural flow of the St.Mary River was 666 cubic-feet per second or less, Canada was entitled, by the ruling of the Commission, to three-fourths of that flow and the United States to one-fourth.

(2) When the natural flow of the St.Mary River was greater than 666 cubic-feet per second, Canada was entitled to 500 cubic-feet per second plus one-half of the increase over 666 cubic-feet per second, and the United States was entitled to the remainder.

No actual division was made of the waters of Milk River and its Northern tributaries.

Water Supply.

The precipitation on the prairies and foothills in the drainage basins of the St.Mary and Milk Rivers was below normal during 1935, while that in the mountainous areas forming the headwaters of the St.Mary River was above the average.

In the mountainous areas tributary to the St.Mary River basin, as shown by the fourteenth annual international survey of the snow conditions on the headwaters of Swiftcurrent Creek, an area considered typical of the headwaters of St.Mary

River, the snow cover was 113% of the mean of the thirteen years of record while the water content of this snow cover was 132% of the mean. The run-off of 66,300 acre-feet from the area surveyed, during May, June and July was about 95% of the average for the thirteen year period.

The natural flow of 468,000 acre-feet of St.Mary River at the boundary during the irrigation season of 1935, from the first of April to the end of October, was 74% of the average for the 33 years of record.

On the prairies, forming the major portion of the drainage basin of Milk River and its tributaries in Canada and Montana, while the winter precipitation was below normal, there was about normal rainfall during May, June and July.

The run-off from the prairies, as indicated by the Northern tributaries of Milk River, was about 50% of the average for the years of record.

The twenty-three international gauging stations previously used in the determination of the daily natural flow of the streams in the St.Mary and Milk River basins were maintained and operated under the joint supervision of the field engineers. Several stations previously discontinued by Canada on international streams and canals diverting therefrom were re-established.

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 1935.

Description of Tables.

The tables following have been prepared to summarize the data on the division and use made of the waters in the St.Mary and Milk River basins.

Table No. 1 shows the method used to determine the natural flow of the St.Mary River during the irrigation season of 1935, the water available for use and used by the United States and Canada. In this table there are four pages for each month from April to October, inclusive.

Page 1, (water stored or released from Sherburne reservoir) shows the daily inflow into and the outflow from Sherburne reservoir. The difference gives the quantity of water stored or released from storage. On this sheet the unrecoded inflow is determined by comparison with the recorded flows in Swiftcurrent and Canyon Creeks and with the use of the water levels of Sherburne reservoir to give the gain or loss in storage, after direct application of the evaporation and seepage losses has been made. This estimate is put in the column headed "unrecorded inflow".

Page 2, (determination of the natural flow of the St.Mary River) shows the actual flow of St.Mary River at Kimball near the International Boundary, the quantity of water diverted, stored or released from storage, by the United States and the computed natural flow of St.Mary River, or that flow which would have crossed the boundary had there been no interference. It has been determined that two days are required for stored water released from Sherburne reservoir to influence the flow at the Boundary, consequently, a two day lag has been applied to the stored or released water.

Page 3, (water available for use and used by the United States) shows the water available for use by the United States under the ruling of the Order of October 4th, 1921, the water diverted and stored and the excess or deficit in the quantity used over the quantity available.

Page 4, (water available for use and used by Canada) shows the natural flow of St.Mary River at the International Boundary, Canada's share by the ruling of the Commission, the actual discharge of St.Mary River at Kimball, which is the quantity available for use by Canada, the quantity used by Canada and the excess or deficit of the quantity received by Canada as compared with the share.

Table 2 is the statement showing the quantity in acre-feet taken each month by each country and the quantity thereof applied to the land, the quantity diverted from St.Mary River, the loss or waste from the canals and the diversions from Milk River in the United States.

Table 3 shows the available information on the diversions from the Northern tributaries of Milk River in Canada.

Table 4 gives the diversions from the Northern tributaries of Milk River in the United States.

DETERMINATION OF NATURAL FLOW OF ST.MARY RIVER
WATER STORED OR RELEASED FROM SHERBURNE RESERVOIR
APRIL - 1935.

DAY	Inflow to Sherburne Reservoir: Recorded inflow: Swift-current Creek	Canyon Creek	Un-recorded inflow est'd	Total inflow	Outflow Swiftcurrent Creek at Sherburne	Stored in Reservoir Sec-ft Gross	Released from Reservoir Sec-ft. Net
1							116
2							121
3							121
4							121
5							121
6							121
7							121
8							126
9							131
10							136
11							136
12						---	---
13	no record available	no record available	no record available	no record available	no record available	46	
14						46	
15						36	
16						36	
17						36	
18						36	
19						36	
20						46	
21						46	
22						36	
23						36	
24						36	
25						36	
26						40	
27						60	
28						202	
29						153	
30						103	
Total Sec-ft						1066	1371
Mean						35.5	45.7
Ac-ft						2110	2720

DETERMINATION OF NATURAL FLOW OF ST.MARY RIVER
APRIL - 1935

Day	St.Mary River at Kimball	Diverted by U.S.B.R.	Stored by U.S.B.R.	Total in Sec. Ft.	Stored Water Released	Natural Flow St.Mary River
1	248	--	--	--	116	132
2	243	--	--	--	116	127
3	226	--	--	--	116	110
4	209	--	--	--	121	88
5	208	--	--	--	121	87
6	207	--	--	--	121	86
7	206	--	--	--	121	85
8	214	--	--	--	121	93
9	222	--	--	--	121	101
10	232	--	--	--	126	106
11	232	--	--	--	131	101
12	298	--	--	--	136	162
13	398	--	--	--	136	262
14	294	--	--	--	--	294
15	373	--	46	46	--	419
16	916	--	46	46	--	962
17	684	--	36	36	--	720
18	589	--	36	36	--	625
19	533	--	36	36	--	569
20	544	--	36	36	--	580
21	561	--	36	36	--	597
22	517	--	46	46	--	563
23	484	--	46	46	--	530
24	479	--	36	36	--	515
25	501	--	36	36	--	537
26	544	--	36	36	--	580
27	561	--	36	36	--	597
28	578	--	40	40	--	618
29	606	--	60	60	--	666
30	659	--	202	202	--	861
Total Sec.Ft.	12566	--	810	810	1603	11773
Mean	419	--	27.0	27.0	53.4	392
Ac.Ft.	24920	--	1610	1610	3180	23350

DIVISION OF WATER OF ST.MARY RIVER
WATER AVAILABLE FOR USE AND USED BY U.S.A.
APRIL - 1935

Day	Natural Flow St.Mary River	AVAILABLE FOR USE BY U.S.A. U.S. Share	Released Storage Net	Total Available	USED BY U.S.A. Diverted	Stored Gross	Total Used	Excess Of Share	Deficit Used
1	132	33	116	149	--	--	--	--	149
2	127	32	116	148		--	--		148
3	110	28	116	144		--	--		144
4	88	22	121	143		--	--		143
5	87	22	121	143		--	--		143
6	86	22	121	143		--	--		143
7	85	21	121	142		--	--		142
8	93	23	121	144		--	--		144
9	101	25	121	146		--	--		146
10	106	26	126	152		--	--		152
11	101	25	131	156		--	--		156
12	162	40	136	176		--	--		176
13	262	66	136	202		--	--		202
14	294	74	--	74		--	--		74
15	419	105	--	105		46	46		59
16	962	314	--	314		46	46		268
17	720	193	--	193		36	36		157
18	625	156	--	156		36	36		120
19	569	142	--	142		36	36		106
20	580	145	--	145		36	36		109
21	597	149	--	149		36	36		113
22	563	141	--	141		46	46		95
23	530	132	--	132		46	46		86
24	515	129	--	129		36	36		93
25	537	134	--	134		36	36		98
26	580	145	--	145		36	36		109
27	597	149	--	149		36	36		113
28	618	154	--	154		40	40		114
29	666	166	--	166		60	60		106
30	861	264	--	264		202	202		62
Total Sec.Ft.	11773	3077	1603	4680	--	810	810	--	3870
Mean	392	103	53.4	156	--	27.0	27.0	--	129
Ac.Ft.	23350	6130	3180	9280	--	1610	1610	--	7680

DIVISION OF WATER OF ST.MARY RIVER
WATER AVAILABLE FOR USE AND USED BY CANADA
APRIL - 1935

Day	Natural flow of St.Mary R. at boundary	Canada's share Available	St.Mary R. at Kimball Delivered	Diverted by Canada Used	Excess or deficit of share delivered	
1	132	99	248	--	149	--
2	127	95	243	--	148	
3	110	82	226		144	
4	88	66	209		143	
5	87	65	208		143	
6	86	64	207		143	
7	85	64	206		142	
8	93	70	214		144	
9	101	76	222		146	
10	106	80	232		152	
11	101	76	232		156	
12	162	122	298		176	
13	262	196	398		202	
14	294	220	294		74	
15	419	314	373		59	
16	962	648	916		268	
17	720	527	684		157	
18	625	469	589		120	
19	569	427	533		106	
20	580	435	544		109	
21	597	448	561		113	
22	563	422	517		95	
23	530	398	484		86	
24	515	386	479		93	
25	537	403	501		98	
26	580	435	544	--	109	
27	597	448	561	72	113	
28	618	464	578	70	114	
29	666	500	606	141	106	
30	861	597	659	186	62	
Total Sec.Ft.	11773	8696	12566	469 (27-30)	3870	--
Mean	392	~~289~~ 290	419	117	129	--
Ac.Ft.	23350	17220	24920	930	7680	--

DETERMINATION OF NATURAL FLOW OF ST.MARY RIVER
WATER STORED OR RELEASED FROM SHERBURNE RESERVOIR.
MAY - 1935

Day	Inflow to Sherburne Reservoir: Recorded inflow: Swift-current Creek	Canyon Creek	Un-recorded inflow est'd	Total inflow	Outflow Swiftcurrent Creek at Sherburne	Stored in Reservoir Sec-ft Gross	Released from Reservoir Sec-ft Net
1	99					3	--
2	99					--	27
3	99					--	33
4	99					--	33
5	112		93	205	225	--	20
6	150		154	304	228	76	--
7	162		109	271	221	50	--
8	145		121	266	241	25	--
9	137		106	243	304	--	61
10	150		101	251	295	--	44
11	153		136	289	292	--	3
12	137		104	241	295	--	54
13	121		103	224	292	--	68
14	117		101	218	290	--	72
15	140		95	235	290	--	55
16	197		151	348	286	62	--
17	295		189	484	286	198	--
18	418		161	579	290	289	--
19	478		153	631	295	336	--
20	559		196	755	401	354	--
21	691		225	916	443	473	--
22	826		262	1088	431	657	--
23	1020		264	1284	440	844	--
24	927		275	1202	453	749	--
25	612		190	802	422	380	--
26	457		153	610	410	200	--
27	437		200	637	413	224	--
28	469		169	638	413	225	--
29	511		178	689	416	273	--
30	563	86	102	751	413	338	--
31	658	86	48	792	473	319	--
Total Sec-ft	11038		4139 (5-31)	14953 (5-31)	9258 (5-31)	6075	470
Mean	356		153	554	343	196	15.2
Ac-ft	21890	--	8210	29630	18380	12050	935

DETERMINATION OF NATURAL FLOW OF ST.MARY RIVER
MAY - 1935

Day	St.Mary River at Kimball	Diverted by U.S.B.R.	Stored by U.S.B.R.	Total in Sec. Ft.	Stored Water Released	Natural Flow St.Mary River
1	659	--	153	812	--	812
2	678	--	103	781	--	781
3	630	41	3	674	--	674
4	453	251	--	704	27	677
5	484	277	--	761	33	728
6	474	356	--	830	33	797
7	469	403	--	872	20	852
8	474	428	76	978	--	978
9	528	439	50	1017	--	1017
10	555	459	25	1039	--	1039
11	583	459	--	1042	61	981
12	606	461	--	1067	44	1023
13	618	462	--	1080	3	1077
14	612	464	--	1076	54	1022
15	612	471	--	1083	68	1015
16	618	488	--	1106	72	1034
17	696	495	--	1191	55	1136
18	808	495	62	1365	--	1365
19	958	498	198	1654	--	1654
20	1200	507	289	1996	--	1996
21	1450	513	336	2299	--	2299
22	1840	520	354	2714	--	2714
23	2430	530	473	3433	--	3433
24	2880	530	657	4067	--	4067
25	2990	509	844	4343	--	4343
26	2810	509	749	4068	--	4068
27	2550	504	380	3434	--	3434
28	2390	502	200	3092	--	3092
29	2230	500	224	2954	--	2954
30	2210	500	225	2935	--	2935
31	2290	498	273	3061	--	3061
Total Sec.Ft.	38785	13069 (3-31)	5674	57528	470	57058
Mean	1251	451	183	1856	15.2	1841
Ac.Ft.	76930	25920	11250	114100	935	113200

DIVISION OF WATER OF ST.MARY RIVER
WATER AVAILABLE FOR USE AND USED BY U.S.A.
MAY - 1935

Day	Natural Flow St.Mary River	AVAILABLE FOR USE BY U.S.A. U.S. Share	Released Storage Net	Total Available	USED BY U.S.A. Diverted	Stored Gross	Total Used	Excess Of Share	Deficit Used
1	812	239	--	239	--	153	153	--	86
2	781	224	--	224	--	103	103	--	121
3	674	170	--	170	41	3	44	--	126
4	677	172	27	199	251	--	251	52	--
5	728	197	33	230	277	--	277	47	--
6	797	232	33	265	356	--	356	91	--
7	852	259	20	279	403	--	403	124	--
8	978	322	--	322	428	76	504	182	--
9	1017	342	--	342	439	50	489	147	--
10	1039	353	--	353	459	25	484	131	--
11	981	324	61	385	459	--	459	74	--
12	1023	345	44	389	461	--	461	72	--
13	1077	372	3	375	462	--	462	87	--
14	1022	344	54	398	464	--	464	66	--
15	1015	341	68	409	471	--	471	62	--
16	1034	350	72	422	488	--	488	66	--
17	1136	401	55	456	495	--	495	39	--
18	1365	516	--	516	495	62	557	41	--
19	1654	660	--	660	498	198	696	36	--
20	1996	831	--	831	507	289	796	--	35
21	2299	983	--	983	513	336	849	--	134
22	2714	1190	--	1190	520	354	874	--	316
23	3433	1550	--	1550	530	473	1003	--	547
24	4067	1867	--	1867	530	657	1187	--	680
25	4343	2005	--	2005	509	844	1353	--	652
26	4068	1867	--	1867	509	749	1258	--	609
27	3434	1550	--	1550	504	380	884	--	666
28	3092	1379	--	1379	502	200	702	--	677
29	2954	1310	--	1310	500	224	724	--	586
30	2935	1301	--	1301	500	225	725	--	576
31	3061	1364	--	1364	498	273	771	--	593
Total Sec.Ft.	57058	23360	470	23830	13069 (3-31)	5674	18743	1317	6404
Mean	1841	754	15.2	769	451	183	605	42.5	207
Ac.Ft.	113200	46360	935	47280	25920	11250	37200	2613	12730

DIVISION OF WATER OF ST.MARY RIVER
WATER AVAILABLE FOR USE AND USED BY CANADA.
MAY - 1935

Day	Natural flow of St.Mary R. at boundary	Canada's share Available	St.Mary R. at Kimball Delivered	Diverted by Canada Used	Excess or Deficit of share delivered	
1	812	573	659	172	86	--
2	781	557	678	180	121	--
3	674	504	630	164	126	--
4	677	505	453	134	--	52
5	728	531	484	179	--	47
6	797	565	474	167	--	91
7	852	593	469	205	--	124
8	978	656	474	216	--	182
9	1017	675	528	238	--	147
10	1039	686	555	239	--	131
11	981	657	583	257	--	74
12	1023	678	606	267	--	72
13	1077	705	618	273	--	87
14	1022	678	612	241	--	66
15	1015	674	612	243	--	62
16	1034	684	618	241	--	66
17	1136	735	696	296	--	39
18	1365	849	808	352	--	41
19	1654	994	958	343	--	36
20	1996	1165	1200	343	35	--
21	2299	1316	1450	357	134	--
22	2714	1524	1840	379	316	--
23	3433	1883	2430	387	547	--
24	4067	2200	2880	392	680	--
25	4343	2338	2990	372	652	--
26	4068	2201	2810	347	609	--
27	3434	1884	2550	342	666	--
28	3092	1713	2390	359	677	--
29	2954	1644	2230	355	586	--
30	2935	1634	2210	369	576	--
31	3061	1697	2290	371	593	--
Total Sec.Ft.	57058	33698	38785	8780	6404	1317
Mean	1841	1087	1251	283	207	42.5
Ac.Ft.	113200	66840	76930	17420	12730	2613

DETERMINATION OF NATURAL FLOW OF ST.MARY RIVER WATER STORED OR RELEASED FROM SHERBURNE RESERVOIR. JUNE - 1935.

Day	Inflow to Sherburne reservoir: Recorded inflow: Swift-current Creek	Canyon Creek	Un-recorded inflow est'd	Total inflow	Outflow Swiftcurrent Creek at Sherburne	Stored in Reservoir Sec-ft Gross	Released from Reservoir Sec-ft Net
1	714	82	153	949	568	381	--
2	654	88	104	846	600	246	
3	503	103	73	679	603	76	
4	434	104	64	602	491	111	
5	469	95	47	611	387	224	
6	445	102	20	567	279	288	
7	414	94	20	528	171	357	
8	507	70	109	686	100	586	
9	604	63	66	733	99	634	
10	555	66	81	702	97	605	
11	537	67	126	730	99	631	
12	541	66	62	669	99	570	
13	546	59	94	699	97	602	
14	581	56	137	774	96	678	
15	537	62	84	683	95	588	
16	465	53	38	556	88	468	
17	453	51	57	561	88	473	
18	474	53	77	604	88	516	
19	503	58	93	654	88	566	
20	457	52	46	555	85	470	
21	396	47	75	518	84	434	
22	403	53	134	590	84	506	
23	461	60	26	547	82	465	
24	426	50	40	516	154	362	
25	349	40	40	429	182	247	
26	315	37	58	390	148	242	
27	318	39	22	379	154	225	
28	349	47	48	444	169	275	
29	403	53	67	523	237	286	
30	410	47	87	544	268	276	
Total Sec-ft	14223	1917	2128	18268	5880	12388	--
Mean	474	64	71	609	196	413	--
Ac-ft	28210	3800	4220	36230	11660	24570	--

DETERMINATION OF NATURAL FLOW OF ST.MARY RIVER
JUNE - 1935

Day	St.Mary River at Kimball	Diverted by U.S.B.R.	Stored by U.S.B.R.	Total in Sec. Ft.	Stored Water Released	Natural flow St.Mary River
1	2550	502	338	3390	--	3390
2	2770	506	319	3595		3595
3	2770	506	381	3657		3657
4	2680	506	246	3432		3432
5	2390	504	76	2970		2970
6	2180	502	111	2793		2793
7	1960	498	224	2682		2682
8	1810	504	288	2602		2602
9	1830	502	357	2689		2689
10	1840	506	586	2932		2932
11	1830	534	634	2998		2998
12	1790	572	605	2967		2967
13	1790	600	631	3021		3021
14	1810	614	570	2994		2994
15	1880	626	602	3108		3108
16	1780	630	678	3088		3088
17	1620	634	588	2842		2842
18	1520	630	468	2618		2618
19	1460	636	473	2569		2569
20	1400	636	516	2552		2552
21	1340	640	566	2546		2546
22	1260	658	470	2388		2388
23	1230	674	434	2338		2338
24	1200	692	506	2398		2398
25	1200	698	465	2363		2363
26	1120	696	362	2178		2178
27	1020	698	247	1965		1965
28	958	698	242	1898		1898
29	966	702	225	1893		1893
30	1030	712	275	2017		2017
Total Sec.Ft.	50984	18016	12483	81483	--	81483
Mean	1699	601	416	2716	--	2716
Ac.Ft.	101100	35730	24750	161600	--	161600

DIVISION OF WATER OF ST.MARY RIVER
WATER AVAILABLE FOR USE AND USED BY U.S.A.
June - 1935

Day	Natural Flow St.Mary River	AVAILABLE FOR USE BY U.S.A. U.S. Share	Released Storage Net	Total Available	USED BY U.S.A. Divert-ed	Stored Gross	Total Used	Excess Of Share Used	Deficit
1	3390	1528	--	1528	502	338	840	--	688
2	3595	1631	--	1631	506	319	825	--	806
3	3657	1662	--	1662	506	381	887	--	775
4	3432	1549	--	1549	506	246	752	--	797
5	2970	1318	--	1318	504	76	580	--	738
6	2793	1230	--	1230	502	111	613	--	617
7	2682	1174	--	1174	498	224	722	--	452
8	2602	1134	--	1134	504	288	792	--	342
9	2689	1178	--	1178	502	357	859	--	319
10	2932	1299	--	1299	506	586	1092	--	207
11	2998	1332	--	1332	534	634	1168	--	164
12	2967	1317	--	1317	572	605	1177	--	140
13	3021	1344	--	1344	600	631	1231	--	113
14	2994	1330	--	1330	614	570	1184	--	146
15	3108	1387	--	1387	626	602	1228	--	159
16	3088	1377	--	1377	630	678	1308	--	69
17	2842	1254	--	1254	634	588	1222	--	32
18	2618	1142	--	1142	630	468	1098	--	44
19	2569	1118	--	1118	636	473	1109	--	9
20	2552	1109	--	1109	636	516	1152	43	--
21	2546	1106	--	1106	640	566	1206	100	--
22	2388	1027	--	1027	658	470	1128	101	--
23	2338	1002	--	1002	674	434	1108	106	--
24	2398	1032	--	1032	692	506	1198	166	--
25	2363	1015	--	1015	698	465	1163	148	--
26	2178	922	--	922	696	362	1058	136	--
27	1965	816	--	816	698	247	945	129	--
28	1898	782	--	782	698	242	940	158	--
29	1893	780	--	780	702	225	927	147	--
30	2017	842		842	712	275	987	145	--
Total Sec.Ft.	81483	35737	--	35737	18016	12483	30499	1379	6617
Mean	2716	1191	--	1191	601	416	1017	46	221
Ac.Ft.	161600	70860	--	70860	35730	24750	60480	2740	13150

DIVISION OF WATER OF ST.MARY RIVER
WATER AVAILABLE FOR USE AND USED BY CANADA
JUNE - 1935.

Day	Natural flow of St.Mary R. at Boundary	Canada's share Available	St.Mary R. at Kimball Delivered	Diverted by Canada Used	Excess or Deficit of share delivered	
1	3390	1862	2550	348	688	--
2	3595	1964	2770	387	806	--
3	3657	1995	2770	355	775	--
4	3432	1883	2680	392	797	--
5	2970	1652	2390	390	738	--
6	2793	1563	2180	467	617	--
7	2682	1508	1960	556	452	--
8	2602	1468	1810	601	342	--
9	2689	1511	1830	664	319	--
10	2932	1633	1840	680	207	--
11	2998	1666	1830	714	164	--
12	2967	1650	1790	758	140	--
13	3021	1677	1790	837	113	--
14	2994	1664	1810	882	146	--
15	3108	1721	1880	882	159	--
16	3088	1711	1780	852	69	--
17	2842	1588	1620	843	32	--
18	2618	1476	1520	843	44	--
19	2569	1451	1460	867	9	--
20	2552	1443	1400	929	--	43
21	2546	1440	1340	929	--	100
22	2388	1361	1260	906	--	101
23	2338	1336	1230	906	--	106
24	2398	1366	1200	906	--	166
25	2363	1348	1200	906	--	148
26	2178	1256	1120	882	--	136
27	1965	1149	1020	837	--	129
28	1898	1116	958	837	--	158
29	1893	1113	966	876	--	147
30	2017	1175	1030	919	--	145
Total Sec.Ft.	81483	45746	50984	22151	6617	1379
Mean	2716	1525	1699	738	221	46
Ac.Ft.	161600	90740	101100	43940	13150	2740

DETERMINATION OF NATURAL FLOW OF ST. MARY RIVER
WATER STORED OR RELEASED FROM SHERBURNE RESERVOIR.
July - 1935

Day	Inflow to Sherburne Reservoir: Recorded inflow: Swift-current Creek	Canyon Creek	Un-recorded inflow est'd	Total inflow	Outflow Swiftcurrent Creek at Sherburne	Stored in Reservoir Sec-ft Gross	Released from Reservoir Sec-ft Net
1	342	36	52	430	348	82	--
2	256	30	34	320	374	--	54
3	253	36	47	336	323	13	--
4	275	44	63	382	318	64	--
5	298	44	80	422	363	59	--
6	315	46	71	432	390	42	--
7	308	42	56	406	396	10	--
8	288	41	77	406	404	2	--
9	282	40	22	344	434	--	90
10	282	37	56	375	437	--	62
11	249	35	56	340	469	--	129
12	256	33	96	385	529	--	144
13	269	33	75	377	526	--	149
14	282	31	95	408	543	--	135
15	298	28	97	423	564	--	141
16	318	26	91	435	571	--	136
17	346	32	94	472	578	--	106
18	325	29	91	445	575	--	130
19	292	33	114	439	575	--	136
20	265	36	98	399	600	--	201
21	237	32	93	362	589	--	227
22	212	29	36	277	536	--	259
23	224	31	16	271	536	--	265
24	234	37	35	306	536	--	230
25	246	36	76	358	607	--	249
26	259	40	46	345	607	--	262
27	237	36	66	339	644	--	305
28	215	33	59	307	644	--	337
29	185	28	29	242	662	--	420
30	168	25	39	232	662	--	430
31	156	24	63	243	681	--	438
Total Sec-ft	8172	1063	2023	11258	16021	272	~~4763~~ 5035
Mean	264	34.2	65	363	517	8.8	154
Ac-ft	16210	2100	4000	22320	31780	541	9470

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DETERMINATION OF NATURAL FLOW OF ST.MARY RIVER
JULY - 1935

Day	St.Mary River at Kimball	Diverted by U.S.B.R.	Stored by U.S.B.R.	Total in Sec. Ft.	Stored Water Released	Natural Flow St.Mary River
1	1050	716	286	2052	--	2052
2	1030	712	276	2018	--	2018
3	966	712	82	1760	--	1760
4	894	712	--	1606	54	1552
5	886	714	13	1613	--	1613
6	894	716	64	1674	--	1674
7	933	718	59	1710	--	1710
8	924	718	42	1684	--	1684
9	924	722	10	1656	--	1656
10	916	720	2	1638	--	1638
11	894	720	--	1614	90	1524
12	879	720	--	1599	62	1537
13	886	720	--	1606	129	1477
14	894	720	--	1614	144	1470
15	901	722	--	1623	149	1474
16	950	722	--	1672	135	1537
17	975	724	--	1699	141	1558
18	992	726	--	1718	136	1582
19	1000	726	--	1726	106	1620
20	1000	730	--	1730	130	1600
21	966	734	--	1700	136	1564
22	916	732	--	1648	201	1447
23	849	728	--	1577	227	1350
24	814	728	--	1542	259	1283
25	808	732	--	1540	265	1275
26	828	732	--	1560	230	1330
27	828	732	--	1560	249	1311
28	821	736	--	1557	262	1295
29	787	732	--	1519	305	1214
30	760	730	--	1490	337	1153
31	734	730	--	1464	420	1044
Total Sec.Ft.	27899	22436	834	51169	4167	47002
Mean	900	724	26.9	1651	134	1516
Ac.Ft.	55340	44500	1650	101500	8240	93230

DIVISION OF WATER OF ST.MARY RIVER
WATER AVAILABLE FOR USE AND USED BY U.S.A.
JULY - 1935

Day	Natural Flow St.Mary River	AVAILABLE FOR USE BY U.S.A. U.S. Share	Released Storage Net	Total Available	USED BY U.S.A. Diverted	Stored Gross	Total Used	Excess Of Share Used	Deficit
1	2052	859	--	859	716	286	1002	143	--
2	2018	842	--	842	712	276	988	146	--
3	1760	713	--	713	712	82	794	81	--
4	1552	609	54	663	712	--	712	49	--
5	1613	640	--	640	714	13	727	87	--
6	1674	670	--	670	716	64	780	110	--
7	1710	688	--	688	713	59	777	89	--
8	1684	675	--	675	718	42	760	85	--
9	1656	661	--	661	722	10	732	71	--
10	1638	652	--	652	720	2	722	70	--
11	1524	595	90	685	720	--	720	35	--
12	1537	602	62	664	720	--	720	56	--
13	1477	572	129	701	720	--	720	19	--
14	1470	568	144	712	720	--	720	8	--
15	1474	570	149	719	722	--	722	3	--
16	1537	602	135	737	722	--	722	--	15
17	1558	612	141	753	724	--	724	--	29
18	1582	624	136	760	726	--	726	--	34
19	1620	643	106	749	726	--	726	--	23
20	1600	633	130	763	730	--	730	--	33
21	1564	615	136	751	734	--	734	--	17
22	1447	557	201	758	732	--	732	--	26
23	1350	508	227	735	728	--	728	--	7
24	1283	475	259	734	728	--	728	--	6
25	1275	471	265	736	732	--	732	--	4
26	1330	498	230	728	732	--	732	4	--
27	1311	489	249	738	732	--	732	--	6
28	1295	481	262	743	736	--	735	--	7
29	1214	440	305	745	732	--	732	--	13
30	1153	410	337	747	730	--	730	--	17
31	1044	355	420	775	730	--	730	--	45
Total Sec.Ft.	47002	18329	4167	22496	22436	834	23270	1056	282
Mean	1516	591	134	725	724	26.9	751	34.1	9.1
Ac.Ft.	93230	36340	8240	44580	44500	1650	46200	2100	560

DIVISION OF WATER OF ST.MARY RIVER
WATER AVAILABLE FOR USE AND USED BY CANADA.
JULY - 1935.

Day	Natural flow of St.Mary R. at Boundary	Canada's share Available	St.Mary R. at Kimball Delivered	Diverted by Canada Used	Excess of share	deficit delivered
1	2052	1193	1050	922	--	143
2	2018	1176	1030	897	--	146
3	1760	1047	966	858	--	81
4	1552	943	894	811	--	49
5	1613	973	886	811	--	87
6	1674	1004	894	820	--	110
7	1710	1022	933	840	--	89
8	1684	1009	924	840	--	85
9	1656	995	924	837	--	71
10	1638	986	916	823	--	70
11	1524	929	894	820	--	35
12	1537	935	879	811	--	56
13	1477	905	886	817	--	19
14	1470	902	894	823	--	8
15	1474	904	901	831	--	3
16	1537	935	950	858	15	--
17	1558	946	975	879	29	--
18	1582	958	992	897	34	--
19	1620	977	1000	891	23	--
20	1600	967	1000	888	33	--
21	1564	949	966	876	17	--
22	1447	890	916	840	26	--
23	1350	842	849	792	7	--
24	1283	808	814	752	6	--
25	1275	804	808	741	4	--
26	1330	832	828	764	--	4
27	1311	822	828	766	6	--
28	1295	814	821	764	7	--
29	1214	774	787	750	13	--
30	1153	743	760	698	17	--
31	1044	689	734	662	45	--
Total Sec.Ft.	47002	28673	27899	25379	282	1056
Mean	1516	925	900	819	9.1	34.1
Ac.Ft.	93230	56890	55340	50340	560	2100

DETERMINATION OF NATURAL FLOW OF ST.MARY RIVER WATER STORED OR RELEASED FROM SHERBURNE RESERVOIR. AUGUST - 1935.

Day	Inflow to Sherburne Reservoir: Recorded inflow: Swift-current Creek	Canyon Creek	Un-recorded inflow est'd	Total inflow	Outflow Swiftcurrent Creek at Sherburne	Stored in Reservoir Sec-ft Gross	Released from Reservoir Sec-ft Net
1	153	23	75	251	681	--	430
2	148	22	42	212	681		469
3	126	20	30	176	681		505
4	124	19	70	213	719		506
5	114	19	28	161	719		558
6	108	18	24	150	719		569
7	110	17	46	173	757		584
8	114	17	96	227	757		530
9	114	17	97	228	757		529
10	112	17	72	201	370		169
11	114	18	68	200	540		340
12	114	18	88	220	681		461
13	126	20	21	167	662		495
14	134	20	53	207	719		512
15	129	20	82	231	727		496
16	112	18	81	211	742		531
17	99	15	95	209	753		544
18	91	13	82	186	749		563
19	87	13	40	140	746		606
20	80	12	69	161	757		596
21	78	12	93	183	761		578
22	78	12	76	166	749		583
23	80	14	50	144	696		552
24	89	14	64	167	607		440
25	89	13	29	131	585		454
26	85	12	53	150	560		410
27	83	12	43	138	533		395
28	80	12	48	140	571		431
29	80	12	84	176	582		406
30	80	12	51	143	557		414
31	78	12	45	135	540		405
Total Sec-ft	3209	493	1895	5597	20658		15061
Mean	104	15.9	61	181	666		486
Ac-ft	6360	980	3750	11090	40980		29880

DETERMINATION OF NATURAL FLOW OF ST.MARY RIVER
AUGUST - 1935

Day	St.Mary River at Kimball	Diverted by U.S.B.R.	Stored by U.S.B.R.	Total in Sec. Ft.	Stored Water Released	Natural Flow St.Mary River
1	721	732	--	1453	430	1023
2	690	728		1418	438	980
3	659	726		1385	430	955
4	630	728		1358	469	889
5	595	728		1323	505	818
6	561	730		1291	506	785
7	544	730		1274	558	716
8	528	728		1256	569	687
9	517	726		1243	584	659
10	668	551		1219	530	689
11	960	78		1038	529	683 #
12	463	562		1025	169	682 #
13	479	602		1081	340	741
14	484	620		1104	461	643
15	463	654		1117	495	622
16	463	666		1129	512	617
17	463	672		1135	496	639
18	458	672		1130	531	599
19	463	676		1139	544	595
20	443	674		1117	563	554
21	422	674		1096	606	490
22	412	674		1086	596	490
23	437	591		1028	578	450
24	1000	27		1027	583	444
25	595	388		983	552	431
26	495	443		938	440	498
27	437	461		898	454	444
28	360	482		842	410	432
29	341	491		832	395	437
30	337	497		834	431	403
31	332	497		829	406	423
Total Sec.Ft.	16420	18208	--	34628	15110	19518
Mean	530	587	--	1117	487	630
Ac.Ft.	32570	36110	--	68680	29970	38710

Adjusted.

DIVISION OF WATER OF ST.MARY RIVER
WATER AVAILABLE FOR USE AND USED BY U.S.A.
AUGUST - 1935

Day	Natural Flow St.Mary River	AVAILABLE FOR USE BY U.S.A. U.S. Share	Released Storage Net	Total Available	USED BY U.S.A. Diverted	Stored Gross	Total Used	Excess Of Share	Deficit Used
1	1023	345	430	775	732	--	732	--	43
2	980	323	438	761	728	--	728	--	33
3	955	311	430	741	726	--	726	--	15
4	889	278	469	747	728	--	728	--	19
5	818	242	505	747	728	--	728	--	19
6	785	226	506	732	730	--	730	--	2
7	716	191	558	749	730	--	730	--	19
8	687	177	569	746	728	--	728	--	18
9	659	165	584	749	726	--	726	--	23
10	689	178	530	708	551	--	551	--	157
11	683	175	529	704	78	--	78	--	626
12	682	174	169	343	562	--	562	219	--
13	741	204	340	544	602	--	602	58	--
14	643	161	461	622	620	--	620	--	2
15	622	156	495	651	654	--	654	3	--
16	617	154	512	666	666	--	666	--	--
17	639	160	496	656	672	--	672	16	--
18	599	150	531	681	672	--	672	--	9
19	595	149	544	693	676	--	676	--	17
20	554	138	563	701	674	--	674	--	27
21	490	122	606	728	674	--	674	--	54
22	490	122	596	718	674	--	674	--	44
23	450	112	578	690	591	--	591	--	99
24	444	111	583	694	27	--	27	--	667
25	431	108	552	660	388	--	388	--	272
26	498	124	440	564	443	--	443	--	121
27	444	111	454	565	461	--	461	--	104
28	432	108	410	518	482	--	482	--	36
29	437	109	395	504	491	--	491	--	13
30	403	101	431	532	497	--	497	--	35
31	423	106	406	512	497	--	497	--	15
Total Sec.Ft.	19518	5291	15110	20401	18208	--	18208	296	2489
Mean	630	171	487	658	587	--	587	9.9	80
Ac.Ft.	38710	10510	29970	40480	36110	--	36110	609	4980

DIVISION OF WATER OF ST.MARY RIVER
WATER AVAILABLE FOR USE AND USED BY CANADA
AUGUST - 1935.

Day	Natural flow of St.Mary R. at Boundary	Canada's share Available	St.Mary R. at Kimball Delivered	Diverted by Canada Used	Excess of share	deficit delivered
1	1023	678	721	637	43	--
2	980	657	690	613	33	--
3	955	644	659	579	15	--
4	889	611	630	558	19	--
5	818	576	595	533	19	--
6	785	559	561	503	2	--
7	716	525	544	488	19	--
8	687	510	528	471	18	--
9	659	494	517	457	23	--
10	689	511	668	551	157	--
11	683	508	960	826	452	--
12	682	508	463	410	--	45
13	741	537	479	427	--	58
14	643	482	484	435	2	--
15	622	466	463	406	--	3
16	617	463	463	405	--	--
17	639	479	463	410	--	16
18	599	449	458	405	9	--
19	595	446	463	412	17	--
20	554	416	443	396	27	--
21	490	368	422	379	54	--
22	490	368	412	367	44	--
23	450	338	437	354	99	--
24	444	333	1000	837	667	--
25	431	323	595	589	272	--
26	498	374	495	435	121	--
27	444	333	437	388	104	--
28	432	324	360	326	36	--
29	437	328	341	307	13	--
30	403	302	337	304	35	--
31	423	317	332	297	15	--
Total Sec.Ft.	19518	14227	16420	14505	2315	122
Mean	630	459	530	468	75	4
Ac.Ft.	38710	28200	32570	28770	4610	246

DETERMINATION OF NATURAL FLOW OF ST.MARY RIVER WATER STORED OR RELEASED FROM SHERBURNE RESERVOIR SEPTEMBER - 1935.

Day	Inflow to Sherburne Reservoir: Recorded inflow: Swift-current Creek	Canyon Creek	Un-recorded inflow est'd	Total inflow	Outflow Swiftcurrent Creek at Sherburne	Stored in Reservoir Sec-ft Gross	Released from Reservoir Sec-ft Net
1	81	12	47	140	540	--	400
2	91	12	41	144	546	--	402
3	89	12	20	121	526	--	405
4	80	11	33	124	502	--	378
5	76	12	38	126	499	--	373
6	85	16	30	131	492	--	361
7	80	16	30	126	499	--	373
8	73	15	29	117	499	--	382
9	69	13	29	111	482	--	371
10	71	12	28	111	469	--	358
11	73	11	27	111	437	--	326
12	74	10	27	111	404	--	293
13	75	9	27	111	340	--	229
14	76	11	27	114	274	--	160
15	78	15	27	120	223	--	103
16	80	30	26	136	190	--	54
17	80	28	26	134	154	--	20
18	73	23	24	120	133	--	13
19	65	20	23	108	126	--	18
20	60	17	22	99	119	--	20
21	58	14	21	93	106	--	13
22	56	14	20	90	95	--	5
23	56	13	19	88	89	--	1
24	59	13	19	91	89	2	--
25	60	12	18	90	90	--	--
26	56	12	17	85	91	--	6
27	51	11	16	78	47	31	--
28	50	11	15	76	31	45	--
29	50	10	14	74	29	45	--
30	46	10	13	69	28	41	--
Total Sec-ft	2071	425	753	3249	8149	164	5064
Mean	69	14.2	25.1	108.3	272	5.5	169
Ac-ft	4110	842	1490	6440	16160	327	10050

DETERMINATION OF NATURAL FLOW OF ST.MARY RIVER
SEPTEMBER - 1935

Day	St.Mary River at Kimball	Diverted by U.S.B.R.	Stored by U.S.B.R.	Total in Sec. Ft.	Stored Water Released	Natural Flow St.Mary River
1	346	489	--	835	414	421
2	337	486	--	823	405	418
3	328	488	--	816	400	416
4	315	488	--	803	402	401
5	298	488	--	786	405	381
6	332	488	--	820	378	442
7	303	489	--	792	373	419
8	290	489	--	779	361	418
9	283	489	--	772	373	399
10	265	488	--	753	382	371
11	265	482	--	747	371	376
12	283	448	--	731	358	373
13	261	428	--	689	326	363
14	246	399	--	645	293	352
15	251	346	--	597	229	368
16	232	332	--	564	160	404
17	240	274	--	514	103	411
18	254	220	--	474	54	420
19	265	187	--	452	20	432
20	248	178	--	426	13	413
21	261	140	--	401	18	383
22	393	31	--	424	20	404
23	373	8	--	381	13	368
24	373	7	--	380	5	375
25	369	7	--	376	1	375
26	355	6	2	363	--	363
27	346	6	--	352	--	352
28	319	6	--	325	6	319
29	286	12	31	329	--	329
30	283	5	45	333	--	333
Total Sec.Ft.	9000	8404	78	17482	5883	11599
Mean	300	280	2.6	583	196	387
Ac.Ft.	17850	16660	155	34660	11660	23000

DIVISION OF WATER OF ST.MARY RIVER
WATER AVAILABLE FOR USE AND USED BY U.S.A.
SEPTEMBER - 1935

Day	Natural Flow St.Mary River	AVAILABLE FOR USE BY U.S.A. U.S. Share	Released Storage Net	Total Available	USED BY U.S.A. Diverted	Stored Gross	Total Used	Excess Of Share	Deficit Used
1	421	105	414	519	489	--	489	--	30
2	418	104	405	509	486	--	486	--	23
3	416	104	400	504	488	--	488	--	16
4	401	100	402	502	488	--	488	--	14
5	381	95	405	500	488	--	488	--	12
6	442	111	378	489	488	--	488	--	1
7	419	105	373	478	489	--	489	11	--
8	418	104	361	465	489	--	489	24	--
9	399	100	373	473	489	--	489	16	--
10	371	93	382	475	488	--	488	13	--
11	376	94	371	465	482	--	482	17	--
12	373	93	358	451	448	--	448	--	3
13	363	91	326	417	428	--	428	11	--
14	352	88	293	381	399	--	399	18	--
15	368	92	229	321	346	--	346	25	--
16	404	101	160	261	332	--	332	71	--
17	411	103	103	206	274	--	274	68	--
18	420	105	54	159	220	--	220	61	--
19	432	108	20	128	187	--	187	59	--
20	413	103	13	116	178	--	178	62	--
21	383	96	18	114	140	--	140	26	--
22	404	101	20	121	31	--	31	--	90
23	368	92	13	105	8	--	8	--	97
24	375	94	5	99	7	--	7	--	92
25	375	94	1	95	7	--	7	--	88
26	363	91	--	91	6	2	8	--	83
27	352	88	--	88	6	--	6	--	82
28	319	80	6	86	6	--	6	--	80
29	329	82	--	82	12	31	43	--	39
30	333	84	--	84	5	45	50	--	34
Total Sec.Ft.	11599	2901	5883	8784	8404	78	8482	482	784
Mean	387	~~97~~ 96.7	196	293	280	2.6	283	16.1	26.1
Ac.Ft.	23000	5770	11660	17430	16660	155	16820	958	1550

DIVISION OF WATER OF ST.MARY RIVER
WATER AVAILABLE FOR USE AND USED BY CANADA.
SEPTEMBER - 1935

Day	Natural flow of St.Mary R. at Boundary	Canada's share Available	St.Mary R. at Kimball Delivered	Diverted by Canada Used	Excess of share	deficit delivered
1	421	316	346	307	30	--
2	418	314	337	302	23	--
3	416	312	328	291	16	--
4	401	301	315	283	14	--
5	381	286	298	270	12	--
6	442	331	332	297	1	--
7	419	314	303	270	--	11
8	418	314	290	260	--	24
9	399	299	283	256	--	16
10	371	278	265	241	--	13
11	376	282	265	236	--	17
12	373	280	283	256	3	--
13	363	272	261	238	--	11
14	352	264	246	227	--	18
15	368	276	251	236	--	25
16	404	303	232	212	--	71
17	411	308	240	222	--	68
18	420	315	254	233	--	61
19	432	324	265	239	--	59
20	413	310	248	228	--	62
21	383	287	261	241	--	26
22	404	303	393	328	90	--
23	368	276	373	337	97	--
24	375	281	373	328	92	--
25	375	281	369	323	88	--
26	363	272	355	315	83	--
27	352	264	346	310	82	--
28	319	239	319	291	80	--
29	329	247	286	264	39	--
30	333	249	283	257	34	--
Total Sec.Ft.	11599	8698	9000	7862	784	482
Mean	387	290	300	262	26.1	16.1
Ac.Ft.	23000	17230	17850	15590	1550	958

DETERMINATION OF NATURAL FLOW OF ST.MARY RIVER WATER STORED OR RELEASED FROM SHERBURNE RESERVOIR. OCTOBER - 1935.

Day	Inflow to Sherburne Reservoir: Recorded inflow: Swift-current Creek	Canyon Creek	Un-recorded inflow est'd	Total inflow	Outflow Swiftcurrent Creek at Sherburne	Stored in Reservoir Sec-ft Gross	Released from Reservoir Sec-ft Net
1	46	9	13	68	26	42	--
2	48	10	13	71	14	57	
3	50	9	12	71	0	71	
4	48	9	12	69	14	55	
5	48	9	11	68	31	37	
6		9		54	31	23	
7		8		57	32	25	
8		8		59	34	25	
9		9		59	32	27	
10		8		59	32	27	
11		8		62	33	29	
12		8		62	33	29	
13				68	38	30	
14				71	38	33	
15				68	37	31	
16				72	38	34	
17				74	40	35	
18				77	42	35	
19				78	42	36	
20				79	42	37	
21				78	40	38	
22				80	41	39	
23				85	45	40	
24				78	36	42	
25				71	28	43	
26				67	23	44	
27				63	18	45	
28				64	18	46	
29				64	17	47	
30							
31							
Total Sec.Ft.							--
Mean							--
Ac.Ft.							--

DETERMINATION OF NATURAL FLOW OF ST.MARY RIVER
OCTOBER - 1935

Day	St.Mary River at Kimball	Diverted by U.S.B.R.	Stored by U.S.B.R.	Total in Sec. Ft.	Stored Water Released	Natural Flow St.Mary River
1	283	--	45	328	--	328
2	268		42	310		310
3	261		42	303		303
4	246		57	303		303
5	232		71	303		303
6	220		55	275		275
7	218		37	255		255
8	220		23	243		243
9	218		25	243		243
10	213		25	238		238
11	209		27	236		236
12	204		27	231		231
13	202		29	231		231
14	199		29	228		228
15	194		30	224		224
16	193		33	226		226
17	196		31	227		227
18	187		34	221		221
19	194		34	228		228
20	200		35	235		235
21	193		36	229		229
22	190		37	227		227
23	194		38	232		232
24	199		39	238		238
25	189		40	229		229
26	187		42	229		229
27	186		43	229		229
28	182		44	226		226
29	100		45	145		145
30	75		46	121		121
31	59		47	106		106
Total Sec.Ft.	6111	--	1188	7299	--	7299
Mean	197	--	38.3	235	--	235
Ac.Ft.	12120	--	2360	14480	--	14480

DIVISION OF WATER OF ST.MARY RIVER
WATER AVAILABLE FOR USE AND USED BY U.S.A.
OCTOBER - 1935

Day	Natural Flow St.Mary River	AVAILABLE FOR USE BY U.S.A. U.S. Share	Released Storage Net	Total Available	USED BY U.S.A. Diverted	Stored Gross	Total Used	Excess Of Share	Deficit Used
1	328	82	--	82	--	45	45	--	37
2	310	78		78		42	42	--	36
3	303	76		76		42	42	--	34
4	303	76		76		57	57	--	19
5	303	76		76		71	71	--	5
6	275	69		69		55	55	--	14
7	255	64		64		37	37	--	27
8	243	61		61		23	23	--	38
9	243	61		61		25	25	--	36
10	238	60		60		25	25	--	35
11	236	59		59		27	27	--	32
12	231	58		58		27	27	--	31
13	231	58		58		29	29	--	29
14	228	57		57		29	29	--	28
15	224	56		56		30	30	--	26
16	226	56		56		33	33	--	23
17	227	57		57		31	31	--	26
18	221	55		55		34	34	--	21
19	228	57		57		34	34	--	23
20	235	59		59		35	35	--	24
21	229	57		57		36	36	--	21
22	227	57		57		37	37	--	20
23	232	58		58		38	38	--	20
24	238	60		60		39	39	--	21
25	229	57		57		40	40	--	17
26	229	57		57		42	42	--	15
27	229	57		57		43	43	--	14
28	226	56		56		44	44	--	12
29	145	36		36		45	45	9	--
30	121	30		30		46	46	16	--
31	106	26		26		47	47	21	--
Total Sec.Ft.	7299	1826	--	1826	--	1188	1188	46	684
Mean	235	58.9	--	58.9	--	38.3	38.3	1.5	22.1
Ac.Ft.	14480	3600	--	3500	--	2360	2360	92	1320

DIVISION OF WATER OF ST.MARY RIVER
WATER AVAILABLE FOR USE AND USED BY CANADA.
OCTOBER - 1935

Day	Natural flow of St.Mary R. at Boundary	Canada's share Available	St.Mary R. at Kimball Delivered	Diverted by Canada Used	Excess or deficit of share delivered	
1	328	246	283	256	37	--
2	310	232	268	243	36	--
3	303	227	261	234	34	--
4	303	227	246	224	19	--
5	303	227	232	211	5	--
6	275	206	220	200	14	--
7	255	191	218	197	27	--
8	243	182	220	201	38	--
9	243	182	218	197	36	--
10	238	178	213	191	35	--
11	236	177	209	183	32	--
12	231	173	204	176	31	--
13	231	173	202	176	29	--
14	228	171	199	168	28	--
15	224	168	194	162	26	--
16	226	170	193	156	23	--
17	227	170	196	166	26	--
18	221	166	187	150	21	--
19	228	171	194	161	23	--
20	235	176	200	165	24	--
21	229	172	193	154	21	--
22	227	170	190	150	20	--
23	232	174	194	116	20	--
24	238	178	199	--	21	--
25	229	172	189	--	17	--
26	229	172	187	--	15	--
27	229	172	186	--	14	--
28	226	170	182	--	12	--
29	145	109	100	--	--	9
30	121	91	75	--	--	16
31	106	80	59	--	--	21
Tolal Sec.Ft.	7299	5473	6111	4236 (1-23)	684	46
Mean	235	176	197	184	22.1	1.5
Ac.Ft.	14480	10980	12120	8400	1320	92

Table 2

DIVISION OF ST.MARY RIVER

CANADA

Water Available in Acre-Feet

1935

Month	St.Mary R. at Kimball	Rolph Creek	Lee Creek	Pothole Creek	Combined Flow
April	24,920	no record	5,590	2,920	33,430
May	76,920		9,680	273	86,873
June	101,100		5,270	--	106,370
July	55,340		1,300	--	56,640
August	32,570		183	--	32,753
September	17,850		284	--	18,134
October	12,120	41	417	--	12,578
Total	320,820	41	22,724	3,193	346,778[a]

DISPOSITION

Month	Diverted by A.R. & I. Co.	Gain or Loss	Wasted by A.R. & I.Co.	Applied to Land	St.Mary R. Lethbridge
April	930	+ 430	4,280	--	34,790
May	17,420	+ 269	5,802	12,160	67,150
June	43,940	- 1,074	3,116	39,750	67,100
July	50,340	- 1,392	2,868	46,080	9,650
August	28,770	- 1,228	1,342	26,200	5,660
September	15,590	+ 70	107	15,553	1,390
October	8,400	+ 1,070	1,020	8,450	2,890
Total	165,400[b]	- 1,855[c]	18,535[d]	148,193[f]	188,630[x]

a - Computed. b - Diverted by A.R. & I. Co. at Kimball.
c - Loss between Kimball and Magrath.
d - Wasted in Pinepound and Pothole creeks.
f - Flow in canal at Magrath plus diversion by Laterals.
x - Below all points of diversion.

Table 2 (Cont.)

DIVISION OF ST.MARY RIVER

UNITED STATES

Water available in Acre-Feet

1935

Month	St.Mary River						Total Flow Milk River Eastern Crossing
	U. S. Share	Sherburne Res. Stored	Sherburne Res. Released	Total Available for Diversion	Diverted	Unused	
April	6,130		1,570	7,700		7,700	39,750
May	46,360	10,315		36,045	25,920	10,125	36,650
June	70,860	24,750		46,110	35,730	10,380	37,000
July	36,340		6,590	42,930	44,500	1,570	43,710
Aug.	10,500		29,970	40,470	36,110	4,360	35,650
Sept.	5,770		11,505	17,275	16,660	615	19,650
Oct.	3,640	2,440		1,200		1,200	2,380
Total	179,600	37,505	49,635	191,730	158,920	32,810	214,790

Note: Water stored in Sherburne Reservoir April 1 = 18,100 Acre-Feet
" " " " " Oct. 31 = 3,700 "

DIVERSIONS FROM MILK RIVER IN THE UNITED STATES

(Quantities in Acre-Feet)

Month	Ft. Belknap Canal	Paradise Canal	Harlem Canal	Agency Canal	Dodson North Canal	Dodson South Canal	Van-dalia Canal	Total
March						2,628		2,628
April	1,054		159	444		14,020	825	16,502
May	5,214	2,058	1,763	6,887	1,071	21,777	4,816	43,586
June	8,110	3,683	2,515	4,969	3,702	11,220	4,772	38,971
July	10,645	4,615	2,771	2,380	3,033	15,610	3,523	42,577
Aug.	9,366	4,056	2,485	1,968	2,396	14,618	4,631	39,520
Sept.	5,328	1,680	1,438	4,237	3,038	8,642	3,967	28,330
Oct.	3,104		395	2,182	248	4,433	1,498	11,860
Total	42,821	16,092	11,526	23,067	13,488	92,948	24,032	223,974

Table 3

DISPOSITION OF THE WATERS OF THE NORTHERN TRIBUTARIES
OF MILK RIVER IN CANADA
1935

Quantities in Acre-Feet

Irrigator	Source of Supply	Estimated Diversion
Lodge Creek Drainage Basin		
Shock, J.J.	Shock coulee	50
Spangler, C.B.	Lodge creek	150
Hillman, W.	Thelma creek	No data available
Roth, R.L.	Lodge creek	No data available
Mudie, H.A.	Sexton creek	No data available
Clarke, T.S.	Sexton creek	No data available
Read, J.	Read creek	No data available
Hartt, J.E.	Thelma creek	No data available
Mitchell, W.	Lodge creek	No data available
Sturm, A.	Middle creek	No data available
Mitchell Bros.	Middle creek	No data available
Legge, G.A.	Middle creek	No data available
Spangler, J.M.	Lodge creek	No data available
Jahn, B.A.	Middle creek	No data available
Total from Lodge Creek Basin		200
Battle Creek Drainage Basin		
Leslie, J.	Sixmile coulee	180
Spangler, J.M.	Sixmile coulee	75
Lindner Bros.	Battle creek	175
Patterson, W.G.	Battle creek	40
Stirling & Nash	Battle creek	300
Wood & Anderson	Whitemud coulee	No water diverted
Parsonage, E.J.	Shafer creek	No water diverted
Marshall & Gaff	Battle creek	No water diverted
Gaff, J.A.	Battle creek	No water diverted
Shepherd Bros.	Battle creek	No data available
Fondrick, G.	Battle creek	No data available
Richardson, L.E.	Battle creek	No water diverted
McKinnon, J.	Battle creek	No data available
Wilkes Bros.	Battle creek	No data available
Total from Battle Creek Basin		770

Table 3 (cont'd)

Quantities in Acre-Feet

Irrigator	Source of Supply	Estimated Diversion
<u>Frenchman River Drainage Basin</u>		
Wylie, D.J.	Oxarart creek	200
Hensman, S.A.	N.B. Frenchman river	100
Pearse, S.	Concrete coulee	80
Bolingbroke, J.E.	Bolingbroke creek	8
Bate, A.E.	Bate creek	27
Kokott, T.	Calf creek	No data available
Armstrong,	Armstrong coulee	No data available
Gilchrist Bros.	Belanger creek	No data available
Morrison, A.A.	Frenchman river	No data available
Morrison, G.N.	Frenchman river	No data available
Caton, W.E.	Fairwell creek	No data available
Total from Frenchman River Basin		415

Table 4

DIVERSIONS FROM THE NORTHERN TRIBUTARIES

OF MILK RIVER IN THE UNITED STATES

1935

(Quantities in Acre-Feet)

Irrigator	April	May	June	July	Aug.	Sept.	Oct.	Total
				Lodge Creek				
N. Chinook Canal	2,170	410	7	487	4	0	0	3,078
				Battle Creek				
Matheson Canal	34	471	134	109	74	0	0	822
				Frenchman River				
Frenchman Canal	80	1,440	1,260	776	111	0	0	3,667