Report to

THE INTERNATIONAL JOINT COMMISSION

on

THE DIVISION AND USE MADE OF THE WATERS OF

ST. MARY AND MILK RIVERS

by

G. L. PARKER
representing the United States

and

VICTOR MEEK
representing Canada

1943

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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 ended October 31st, 1943.

Respectfully submitted,

G. M. Carper

Accredited Officer of the United States.

V. Meade

Accredited Officer of His Majesty.

April 4th, 1944.

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 1943, by the same groups of engineers as in previous years.

The Chief Hydraulic Engineer, United States Geological Survey, Mr. G. L. Parker, as accredited officer of the United States was represented in the field by Mr. A. H. Tuttle, District Engineer, Helena, Montana. Mr. Victor Meek, Controller, Dominion Water and Power Bureau, as accredited officer of His Majesty, was represented by Mr. O. H. Hoover, Acting District Engineer, Calgary, Alberta.

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 supervision of Mr. Tuttle; while those from streams and ditches in Canada were collected by engineers of the Dominion Water and Power Bureau, under the direction of Mr. Hoover. The

joint international gauging stations were visited frequently by representatives of both countries.

The annual report was compiled and assembled by Mr. S. G. Dawson, Dominion Water and Power Bureau, Ottawa, Canada.

The run-off from the St. Mary River basin during the irrigation season of 1943 was 117 per cent of the average for the 40 years of record and the natural flow in the river exceeded the combined capacity of the irrigation facilities on the river until the end of July, nevertheless, the field engineers constantly kept themselves 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 water were 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 Controller, Dominion Water and Power Bureau, Ottawa, Canada.

Division of Water

The United States St. Mary Canal was in operation at the headgates from May 1st to the end of October, but water was not delivered to the North Branch Milk River until June 6th.

As the seepage from the canal between the intake and the crossing of the St. Mary River, which this year was 10 per cent of the water diverted at the headgates, is assumed to return directly to the river and eventually become available to Canada, the discharge of 118,200 acre-feet passing in the canal at St. Mary Crossing during the period June 5th to October 12th, is considered as the actual quantity diverted from the St. Mary River by the United States. A total of 118,600 acre-feet was delivered to the North Branch Milk River and made available for irrigation in Montana. The slight increase between the St. Mary River Crossing and the Hudson Bay Divide, the end of the canal, indicated that local inflow was probably in excess of any losses due to evaporation and seepage.

On October 31st, 1942, 3,453 acre-feet of water remained in Sherburne Reservoir. By March 31st, 1943, 16,630 acre-feet of water were in storage, which was increased to 60,318 acre-feet by July 25th. From July 26th

to October 9th, water was released in varying amounts to supplement the flow of St. Mary River.

As only a small quantity of water was diverted in Canada from Milk River, the natural flow of the river, which is estimated at 106,000 acre-feet for the open water period, from March 1st to October 31st, is considered as being delivered to the United States at Eastern Crossing. The total measured diversion for irrigation from Milk River in Montana was 195,541 acre-feet.

The quantity delivered to the United States at the International Boundary from the Northern Tributaries of Milk River, during the open water period of 1943, was 227,170 acre-feet. This flow is 269 per cent of that recorded in 1942 and about 174 per cent of the average for the previous 16 years.

During the open water period of 1943, Canada diverted to Cypress Lake reservoir, 11,540 acre-feet of the flow of Battle Creek, but later returned 2,353 acre-feet, while 22,670 acre-feet was delivered to Montana at the International Boundary. In the Frenchman River Basin, Canada stored in Cypress Lake reservoir about 6,247 acre-feet of the flow from Davis, Belanger and Sucker Creeks, and 13,756 acre-feet from the main streams in the reservoirs at East End and Val Marie. From this storage 15,580 acre-feet was released to

irrigate lands in the Frenchman River valley in Canada, while 104,800 acre-feet of the natural flow of Frenchman River was delivered to Montana. The apportionment during the open water season is shown in Table 3.

The Canadian Pacific Railway Canal at Kimball, Alberta, diverted 210,250 acre-feet from the St. Mary River during the period of operation from the 11th of April to the 24th of October and applied 175,880 acre-feet of this diversion to lands in Southern Alberta during the irrigation season.

The Dominion Water and Power 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. The total diversions from these tributaries in Canada as reported and shown in Table 4 were: from Lodge Creek, 1,000 acre-feet; from Battle Creek, 9,187 acre-feet; from Frenchman River, 16,186 acre-feet.

Any question as to the proper share of St. Mary River being delivered to either country was decided in the following manner. Record of the daily flow was kept of Swift-current Creek at Many Glacier, but the flow from the other

creeks entering Swiftcurrent Creek above the Sherburne dam was 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 in the United States St. Mary Canal at St. Mary crossing was kept to find the water diverted by the United States and a record of the daily flow in 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 or its Northern Tributaries except those of Frenchman River and Battle Creek.

Water Supply

The precipitation on the foothills and in the mountainous areas forming the headwaters of the St. Mary and Milk Rivers was above normal during the winter of 1942-43, as was that on the prairies tributary to Milk River, although the precipitation during the growing season was much below normal.

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

waters of St. Mary River, the snow cover of 61.2 inches was 116.6 per cent of the mean for the previous 21 years, while the water content, 28.6 inches, of this snow cover was 121.7 per cent of the mean. The run-off of 71,630 acre-feet from the area surveyed, during May, June, and July, was 108 per cent of the average for the previous twenty-one years.

The natural flow of 675,700 acre-feet of St. Mary River at the Boundary during the irrigation season of 1943, from the first of April to the end of October, was 117 per cent of the average for 40 years of record and 140,000 more than in 1942.

The run-off from the prairies, as indicated by the Northern Tributaries of Milk River, was 174 per cent of the average for the last sixteen years.

Twenty-two gauging stations used in the determination of the natural flow of the streams in the St. Mary and Milk River Basins were operated jointly as international gauging stations. The gauging stations necessitated by the operation of reservoirs and two irrigation districts in the Frenchman River valley in Canada and established for the determination of the natural flow of the river and of Battle Creek were again maintained in 1943.

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 1943

Description of Tables

The Tables following have been prepared to summerize 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 St. Mary River during the irrigation season of 1943, the water available for use and used by 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 inflows into and the outflow from Sherburne reservoir. The difference gives the quantity of water stored or released from storage. On this sheet the unrecorded inflow is determined by comparison with the recorded flows in Swiftcurrent Creek 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 International 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 and used 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 as compared with the share 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 a statement showing the quantity in acre-feet taken each month by each country and the quantity thereof which is applied to the land, the quantity diverted from the St. Mary River, the loss or waste from canals and the diversions from Milk River in the United States.

Table 3 shows the determination of the natural flow of Frenchman River at the International Boundary. This table consists of three pages; page 1 shows the quantity used by Canada in Cypress Lake Reservoir and at East End; page 2 shows the quantity used by Canada at Val Marie; and page 3 shows the total quantity used by Canada, the natural flow of Frenchman River at the Boundary and the quantity delivered to the United States.

Table 4 shows the available information on the diversions from the Northern Tributaries of Milk River in Canada.

Table 5 gives the measured diversions from the Northern Tributaries of Milk River in the United States. Smaller diversions have not been measured.

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

APRIL - 1943

Day	Inflow to Sherburne Reservoir: Recorded inflow: Swiftcurrent 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	29	58	87	1	86	--
2	32	187	219	1	218	--
3	38	90	128	1	127	--
4	52	49	101	1	100	--
5	62	64	126	1	125	--
6	68	69	137	1	136	--
7	86	102	188	1	187	--
8	99	117	216	1	215	--
9	116	112	228	1	227	--
10	129	146	275	1	274	--
11	129	139	268	1	267	--
12	142	116	258	1	257	--
13	171	193	364	1	363	--
14	218	196	414	1	413	--
15	302	202	504	1	503	--
16	311	306	617	1	616	--
17	298	152	450	1	449	--
18	325	202	527	1	526	--
19	399	345	744	1	743	--
20	494	204	698	1	697	--
21	426	249	675	1	674	--
22	298	177	475	1	474	--
23	227	221	448	1	447	--
24	184	33	217	1	216	--
25	156	141	297	1	296	--
26	142	83	225	1	224	--
27	129	114	243	1	242	--
28	116	191	307	1	306	--
29	122	157	279	1	278	--
30	116	120	236	1	235	--
Total sec-ft.	5416	4535	9951	30	9921	--
Mean	181	151	332	1	331	--
Ac-ft.	10740	9000	19740	60	19680	--

DETERMINATION OF NATURAL FLOW OF ST. MARY RIVER

APRIL - 1943

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	217	--	76	293	--	293
2	274	--	30	304	--	304
3	332	--	86	418	--	418
4	365	--	218	583	--	583
5	398	--	127	525	--	525
6	432	--	100	532	--	532
7	508	--	125	633	--	633
8	535	--	136	671	--	671
9	601	--	187	788	--	788
10	607	--	215	822	--	822
11	601	--	227	828	--	828
12	641	--	274	915	--	915
13	676	--	267	943	--	943
14	714	--	257	971	--	971
15	789	--	363	1152	--	1152
16	834	--	413	1247	--	1247
17	951	--	503	1454	--	1454
18	1080	--	616	1696	--	1696
19	1240	--	449	1689	--	1689
20	1390	--	526	1916	--	1916
21	1540	--	743	2283	--	2283
22	1580	--	697	2277	--	2277
23	1560	--	674	2234	--	2234
24	1560	--	474	2034	--	2034
25	1430	--	447	1877	--	1877
26	1400	--	216	1616	--	1616
27	1350	--	296	1646	--	1646
28	1320	--	224	1544	--	1544
29	1410	--	242	1652	--	1652
30	1360	--	306	1666	--	1666
Total sec-ft.	27695	--	9514	37209	--	37209
Mean	923	--	317	1240	--	1240
Ac-ft.	54930	--	18870	73800	--	73800

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

APRIL - 1943

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	293	73	--	73	--	76	76	3	--
2	304	76	--	76	--	30	30	--	46
3	418	104	--	104	--	86	86	--	18
4	583	146	--	146	--	218	218	72	--
5	525	131	--	131	--	127	127	--	4
6	532	133	--	133	--	100	100	--	33
7	633	158	--	158	--	125	125	--	33
8	671	169	--	169	--	136	136	--	33
9	788	227	--	227	--	187	187	--	40
10	822	244	--	244	--	215	215	--	29
11	828	247	--	247	--	227	227	--	20
12	915	291	--	291	--	274	274	--	17
13	943	305	--	305	--	267	267	--	38
14	971	319	--	319	--	257	257	--	62
15	1152	409	--	409	--	363	363	--	46
16	1247	457	--	457	--	413	413	--	44
17	1454	560	--	560	--	503	503	--	57
18	1696	681	--	681	--	616	616	--	65
19	1689	678	--	678	--	449	449	--	229
20	1916	791	--	791	--	526	526	--	265
21	2283	975	--	975	--	743	743	--	232
22	2277	972	--	972	--	697	697	--	275
23	2234	950	--	950	--	674	674	--	276
24	2034	850	--	850	--	474	474	--	376
25	1877	772	--	772	--	447	447	--	325
26	1616	641	--	641	--	216	216	--	425
27	1646	656	--	656	--	296	296	--	360
28	1544	605	--	605	--	224	224	--	381
29	1652	659	--	659	--	242	242	--	417
30	1666	666	--	666	--	306	306	--	360
Total sec-ft.	37209	13945	--	13945	--	9514	9514	75	4506
Mean	1240	465	--	465	--	317	317	2	150
Ac-ft.	73800	27660	--	27660	--	18870	18870	150	8940

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

APRIL - 1943

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 Delivered	Deficit of Share Delivered
1	293	220	217	--	--	3
2	304	228	274	--	46	--
3	418	314	332	--	18	--
4	583	437	365	--	--	72
5	525	394	398	--	4	--
6	532	399	432	--	33	--
7	633	475	508	--	33	--
8	671	502	535	--	33	--
9	788	561	601	--	40	--
10	822	578	607	--	29	--
11	828	581	601	13	20	--
12	915	624	641	4	17	--
13	943	638	676	8	38	--
14	971	652	714	36	62	--
15	1152	743	789	51	46	--
16	1247	790	834	49	44	--
17	1454	894	951	53	57	--
18	1696	1015	1080	55	65	--
19	1689	1011	1240	57	229	--
20	1916	1125	1390	60	265	--
21	2283	1308	1540	86	232	--
22	2277	1305	1580	183	275	--
23	2234	1284	1560	183	276	--
24	2034	1184	1560	179	376	--
25	1877	1105	1430	170	325	--
26	1616	975	1400	172	425	--
27	1646	990	1350	181	360	--
28	1544	939	1320	231	381	--
29	1652	993	1410	227	417	--
30	1666	1000	1360	238	360	--
Total sec-ft.	37209	23264	27695	2236	4506	75
Mean	1240	775	923	(11-30) 112	150	2
Ac-ft.	73800	46140	54930	4430	8940	150

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

MAY - 1943

Day	Inflow to Sherburne Reservoir: Recorded inflow: Swiftcurrent 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	129	141	270	1	269	--
2	147	111	258	1	257	--
3	151	20	171	1	170	--
4	182	240	422	1	421	--
5	177	140	317	223	94	--
6	164	114	278	428	--	150
7	156	131	287	378	--	91
8	142	93	235	351	--	116
9	137	148	285	315	--	30
10	139	169	308	295	13	--
11	124	120	244	295	--	51
12	108	96	204	295	--	91
13	99	69	168	295	--	127
14	95	116	211	295	--	84
15	99	114	213	292	--	79
16	90	93	183	290	--	107
17	88	93	181	290	--	109
18	92	119	211	290	--	79
19	112	123	235	290	--	55
20	169	152	321	292	29	--
21	276	180	456	292	164	--
22	497	332	829	297	532	--
23	816	341	1157	299	858	--
24	639	293	932	303	629	--
25	571	285	856	306	550	--
26	662	304	966	310	656	--
27	756	360	1116	312	804	--
28	791	321	1112	317	795	--
29	699	276	975	458	517	--
30	602	250	852	548	304	--
31	558	279	837	551	286	--
Total sec-ft.	9467	5623	15090	8911	7348	1169
Mean	305	181	486	287	237	38
Ac-ft.	18780	11150	29930	17670	14570	2320

DETERMINATION OF NATURAL FLOW OF ST. MARY RIVER

MAY - 1943

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	1430	--	278	1708	--	1708
2	1450	--	235	1685	--	1685
3	1350	--	269	1619	--	1619
4	1300	--	257	1557	--	1557
5	1240	--	170	1410	--	1410
6	1340	--	421	1761	--	1761
7	1400	--	94	1494	--	1494
8	1410	--	--	1410	150	1260
9	1410	--	--	1410	91	1319
10	1470	--	--	1470	116	1354
11	1480	--	--	1480	30	1450
12	1430	--	13	1443	--	1443
13	1370	--	--	1370	51	1319
14	1370	--	--	1370	91	1279
15	1380	--	--	1380	127	1253
16	1370	--	--	1370	84	1286
17	1340	--	--	1340	79	1261
18	1300	--	--	1300	107	1193
19	1280	--	--	1280	109	1171
20	1300	--	--	1300	79	1221
21	1380	--	--	1380	55	1325
22	1560	--	29	1589	--	1589
23	1840	--	164	2004	--	2004
24	2130	--	532	2662	--	2662
25	2370	--	858	3228	--	3228
26	2650	--	629	3279	--	3279
27	2920	--	550	3470	--	3470
28	3220	--	656	3876	--	3876
29	3340	--	804	4144	--	4144
30	3450	--	795	4245	--	4245
31	3490	--	517	4007	--	4007
Total sec-ft.	55770	--	7271	63041	1169	61872
Mean	1799	--	235	2034	38	1996
Ac-ft.	110600	--	14420	125000	2320	122700

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

MAY - 1943

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	1708	687	--	687	--	278	278	--	409
2	1685	676	--	676	--	235	235	--	441
3	1619	643	--	643	--	269	269	--	374
4	1557	612	--	612	--	257	257	--	355
5	1410	538	--	538	--	170	170	--	368
6	1761	714	--	714	--	421	421	--	293
7	1494	580	--	580	--	94	94	--	486
8	1260	463	150	613	--	--	--	--	613
9	1319	493	91	584	--	--	--	--	584
10	1354	510	116	626	--	--	--	--	626
11	1450	558	30	588	--	--	--	--	588
12	1443	555	--	555	--	13	13	--	542
13	1319	493	51	544	--	--	--	--	544
14	1279	473	91	564	--	--	--	--	564
15	1253	460	127	587	--	--	--	--	587
16	1286	476	84	560	--	--	--	--	560
17	1261	464	79	543	--	--	--	--	543
18	1193	430	107	537	--	--	--	--	537
19	1171	419	109	528	--	--	--	--	528
20	1221	444	79	523	--	--	--	--	523
21	1325	496	55	551	--	--	--	--	551
22	1589	628	--	628	--	29	29	--	599
23	2004	835	--	835	--	164	164	--	671
24	2662	1164	--	1164	--	532	532	--	632
25	3228	1447	--	1447	--	858	858	--	589
26	3279	1473	--	1473	--	629	629	--	844
27	3470	1568	--	1568	--	550	550	--	1018
28	3876	1771	--	1771	--	656	656	--	1115
29	4144	1905	--	1905	--	804	804	--	1101
30	4245	1956	--	1956	--	795	795	--	1161
31	4007	1837	--	1837	--	517	517	--	1320
Total sec-ft.	61872	25768	1169	26937	--	7271	7271	--	19666
Mean	1996	831	38	~~869~~	--	235	235	--	634
Ac-ft.	122700	51110	2320	53430	--	14420	14420	--	39010

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

MAY - 1943

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	1708	1021	1430	254	409	--
2	1685	1009	1450	253	441	--
3	1619	976	1350	244	374	--
4	1557	945	1300	240	355	--
5	1410	872	1240	237	368	--
6	1761	1047	1340	258	293	--
7	1494	914	1400	248	486	--
8	1260	797	1410	240	613	--
9	1319	826	1410	244	584	--
10	1354	844	1470	235	626	--
11	1450	892	1480	224	588	--
12	1443	888	1430	220	542	--
13	1319	826	1370	250	544	--
14	1279	806	1370	305	564	--
15	1253	793	1380	305	587	--
16	1286	810	1370	305	560	--
17	1261	797	1340	297	543	--
18	1193	763	1300	298	537	--
19	1171	752	1280	308	528	--
20	1221	777	1300	326	523	--
21	1325	829	1380	393	551	--
22	1589	961	1560	386	599	--
23	2004	1169	1840	390	671	--
24	2662	1498	2130	388	632	--
25	3228	1781	2370	395	589	--
26	3279	1806	2650	390	844	--
27	3470	1902	2920	399	1018	--
28	3876	2105	3220	413	1115	--
29	4144	2239	3340	474	1101	--
30	4245	2289	3450	490	1161	--
31	4007	2170	3490	528	1320	--
Total sec-ft.	61872	36104	55770	9937	19666	--
Mean	1996	1165	1799	321	634	--
Ac-ft.	122700	71610	110600	19710	39010	--

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

JUNE - 1943

Day	Inflow to Sherburne Reservoir: Recorded Inflow: Swiftcurrent 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	536	177	713	554	159	--
2	453	300	753	564	189	--
3	346	286	632	564	68	--
4	267	177	444	564	--	120
5	230	193	423	564	--	141
6	209	200	409	564	--	155
7	221	220	441	561	--	120
8	224	203	427	557	--	130
9	260	223	483	554	--	71
10	360	246	606	551	55	--
11	453	248	701	557	144	--
12	453	354	807	564	243	--
13	445	305	750	568	182	--
14	388	306	694	564	130	--
15	430	318	748	561	187	--
16	558	329	887	561	326	--
17	786	507	1293	568	725	--
18	1480	482	1962	1100	862	--
19	1110	496	1606	1730	--	124
20	981	321	1302	1710	--	408
21	718	366	1084	1750	--	666
22	616	394	1010	1860	--	850
23	580	317	897	1800	--	903
24	457	246	703	1040	--	337
25	418	249	667	548	119	--
26	434	218	652	510	142	--
27	486	250	736	516	220	--
28	511	238	749	516	233	--
29	515	253	768	519	249	--
30	580	295	875	519	356	--
Total sec-ft.	15505	8717	24222	23658	4589	4025
Mean	517	290	807	789	153	134
Ac-ft.	30750	17290	48040	46920	9100	7980

DETERMINATION OF NATURAL FLOW OF ST. MARY RIVER

JUNE - 1943

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	3450	--	304	3754	--	3754
2	3400	--	286	3686	--	3686
3	3420	--	159	3579	--	3579
4	3360	--	189	3549	--	3549
5	3190	28	68	3286	--	3286
6	2870	163	--	3033	120	2913
7	2900	176	--	3076	141	2935
8	2740	191	--	2931	155	2776
9	2350	404	--	2754	120	2634
10	2280	425	--	2705	130	2575
11	2250	444	--	2694	71	2623
12	2260	534	55	2849	--	2849
13	2600	546	144	3290	--	3290
14	2630	536	243	3409	--	3409
15	2840	444	182	3466	--	3466
16	2980	443	130	3553	--	3553
17	3220	448	187	3855	--	3855
18	3890	444	326	4660	--	4660
19	4550	450	725	5725	--	5725
20	5100	457	862	6419	--	6419
21	5090	459	--	5549	124	5425
22	5000	459	--	5459	408	5051
23	4930	455	--	5385	666	4719
24	4410	448	--	4858	850	4008
25	3750	437	--	4187	903	3284
26	3320	428	--	3748	337	3411
27	3080	421	119	3620	--	3620
28	2930	416	142	3488	--	3488
29	2900	412	220	3532	--	3532
30	2930	414	233	3577	--	3577
Total sec-ft.	100620	10482	4574	115676	4025	111651
Mean	3354	403	(5-30) 152	3856	134	3722
Ac-ft.	199600	20790	9070	229500	7980	221500

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

JUNE - 1943

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	3754	1710	--	1710	--	304	304	--	1406
2	3686	1676	--	1676	--	286	286	--	1390
3	3579	1623	--	1623	--	159	159	--	1464
4	3549	1608	--	1608	--	189	189	--	1419
5	3286	1476	--	1476	28	68	96	--	1380
6	2913	1290	120	1410	163	--	163	--	1247
7	2935	1301	141	1442	176	--	176	--	1266
8	2776	1221	155	1376	191	--	191	--	1185
9	2634	1150	120	1270	404	--	404	--	866
10	2575	1121	130	1251	425	--	425	--	826
11	2623	1145	71	1216	444	--	444	--	772
12	2849	1258	--	1258	534	55	589	--	669
13	3290	1478	--	1478	546	144	690	--	788
14	3409	1538	--	1538	536	243	779	--	759
15	3466	1566	--	1566	444	182	626	--	940
16	3553	1610	--	1610	443	130	573	--	1037
17	3855	1761	--	1761	448	187	635	--	1126
18	4660	2163	--	2163	444	326	770	--	1393
19	5725	2695	--	2695	450	725	1175	--	1520
20	6419	3043	--	3043	457	862	1319	--	1724
21	5425	2545	124	2669	459	--	459	--	2210
22	5051	2359	408	2767	459	--	459	--	2308
23	4719	2193	666	2859	455	--	455	--	2404
24	4008	1837	850	2687	448	--	448	--	2239
25	3284	1475	903	2378	437	--	437	--	1941
26	3411	1539	337	1876	428	--	428	--	1448
27	3620	1643	--	1643	421	119	540	--	1103
28	3488	1577	--	1577	416	142	558	--	1019
29	3532	1599	--	1599	412	220	632	--	967
30	3577	1622	--	1622	414	233	647	--	975
Total sec-ft.	111651	50822	4025	54847	10482	4574	15056	--	39791
Mean	3722	1694	134	1828	(5-30) 403	152	502	--	1326
Ac-ft.	221500	100800	7980	108800	20790	9070	29860	--	78920

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

JUNE - 1943

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	3754	2044	3450	530	1406	--
2	3686	2010	3400	544	1390	--
3	3579	1956	3420	536	1464	--
4	3549	1941	3360	542	1419	--
5	3286	1810	3190	552	1380	--
6	2913	1623	2870	611	1247	--
7	2935	1634	2900	674	1266	--
8	2776	1555	2740	662	1185	--
9	2634	1484	2350	669	866	--
10	2575	1454	2280	686	826	--
11	2623	1478	2250	740	772	--
12	2849	1591	2260	747	669	--
13	3290	1812	2600	737	788	--
14	3409	1871	2630	724	759	--
15	3466	1900	2840	750	940	--
16	3553	1943	2980	777	1037	--
17	3855	2094	3220	847	1126	--
18	4660	2497	3890	862	1393	--
19	5725	3030	4550	869	1520	--
20	6419	3376	5100	847	1724	--
21	5425	2880	5090	832	2210	--
22	5051	2692	5000	927	2308	--
23	4719	2526	4930	935	2404	--
24	4008	2171	4410	1030	2239	--
25	3284	1809	3750	1060	1941	--
26	3411	1872	3320	1070	1448	--
27	3620	1977	3080	1060	1103	--
28	3488	1911	2930	1070	1019	--
29	3532	1933	2900	1100	967	--
30	3577	1955	2930	1100	975	--
Total sec-ft.	111651	60829	100620	24090	39791	--
Mean	3722	2028	3354	803	1326	--
Ac-ft.	221500	120700	199600	47780	78920	--

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

JULY - 1943

Day	Inflow to Sherburne Reservoir: Recorded Inflow: Swiftcurrent 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	616	247	863	519	344	--
2	602	224	826	522	304	--
3	643	265	908	522	386	--
4	616	212	828	522	306	--
5	507	227	734	522	212	--
6	437	200	637	522	115	--
7	486	190	676	525	151	--
8	528	220	748	525	223	--
9	567	227	794	522	272	--
10	494	178	672	522	150	--
11	384	161	545	497	48	--
12	298	148	446	233	213	--
13	245	127	372	22	350	--
14	233	113	346	21	325	--
15	267	192	459	22	437	--
16	270	108	378	19	359	--
17	251	110	361	112	249	--
18	242	115	357	174	183	--
19	286	137	423	230	193	--
20	328	145	473	263	210	--
21	332	162	494	263	231	--
22	315	146	461	265	196	--
23	292	134	426	263	163	--
24	308	114	422	263	159	--
25	295	136	431	309	122	--
26	267	110	377	380	--	3
27	233	120	353	398	--	45
28	221	96	317	396	--	79
29	204	89	293	396	--	103
30	190	72	262	396	--	134
31	184	90	274	398	--	124
Total sec-ft.	11141	4815	15956	10543	5901	488
Mean	359	155	514	340	190	16
Ac-ft.	22100	9550	31650	20910	11700	960

DETERMINATION OF NATURAL FLOW OF ST. MARY RIVER

JULY - 1943

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	3130	414	249	3793	--	3793
2	3180	414	356	3950	--	3950
3	3240	416	344	4000	--	4000
4	3290	416	304	4010	--	4010
5	3240	414	386	4040	--	4040
6	3050	412	306	3768	--	3768
7	2930	407	212	3549	--	3549
8	2870	404	115	3389	--	3389
9	2900	407	151	3458	--	3458
10	2870	407	223	3500	--	3500
11	2800	409	272	3481	--	3481
12	2540	434	150	3124	--	3124
13	2060	544	48	2652	--	2652
14	1710	538	213	2461	--	2461
15	1550	536	350	2436	--	2436
16	1410	534	325	2269	--	2269
17	1270	552	437	2259	--	2259
18	1230	555	359	2144	--	2144
19	1220	553	249	2022	--	2022
20	1250	553	183	1986	--	1986
21	1330	555	193	2078	--	2078
22	1350	559	210	2119	--	2119
23	1360	559	231	2150	--	2150
24	1340	557	196	2093	--	2093
25	1320	555	163	2038	--	2038
26	1330	555	159	2044	--	2044
27	1320	553	122	1995	--	1995
28	1270	552	--	1822	3	1819
29	1200	550	--	1750	45	1705
30	1120	546	--	1666	79	1587
31	1050	544	--	1594	103	1491
Total sec-ft.	61730	15404	6506	83640	230	83410
Mean	1991	497	210	2698	7	2691
Ac-ft.	122400	30550	12900	165900	456	165400

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

JULY - 1943

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	3793	1730	--	1730	414	249	663	--	1067
2	3950	1808	--	1808	414	356	770	--	1038
3	4000	1833	--	1833	416	344	760	--	1073
4	4010	1838	--	1838	416	304	720	--	1118
5	4040	1853	--	1853	414	386	800	--	1053
6	3768	1717	--	1717	412	306	718	--	999
7	3549	1608	--	1608	407	212	619	--	989
8	3389	1528	--	1528	404	115	519	--	1009
9	3458	1562	--	1562	407	151	558	--	1004
10	3500	1583	--	1583	407	223	630	--	953
11	3481	1574	--	1574	409	272	681	--	893
12	3124	1395	--	1395	434	150	584	--	811
13	2652	1159	--	1159	544	48	592	--	567
14	2461	1064	--	1064	538	213	751	--	313
15	2436	1051	--	1051	536	350	886	--	165
16	2269	968	--	968	534	325	859	--	109
17	2259	963	--	963	552	437	989	26	--
18	2144	905	--	905	555	359	914	9	--
19	2022	844	--	844	553	249	802	--	42
20	1986	826	--	826	553	183	736	--	90
21	2078	872	--	872	555	193	748	--	124
22	2119	893	--	893	559	210	769	--	124
23	2150	908	--	908	559	231	790	--	118
24	2093	880	--	880	557	196	753	--	127
25	2038	852	--	852	555	163	718	--	134
26	2044	855	--	855	555	159	714	--	141
27	1995	831	--	831	553	122	675	--	156
28	1819	743	3	746	552	--	552	--	194
29	1705	686	45	731	550	--	550	--	181
30	1587	627	79	706	546	--	546	--	160
31	1491	579	103	682	544	--	544	--	138
Total sec-ft.	83410	36535	230	36765	15404	6506	21910	35	14890
Mean	2691	1179	7	1186	497	210	707	1	480
Ac-ft.	165400	72470	456	72930	30550	12900	43450	70	29530

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

JULY - 1943

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	3793	2063	3130	1100	1067	--
2	3950	2142	3180	1100	1038	--
3	4000	2167	3240	1070	1073	--
4	4010	2172	3290	1020	1118	--
5	4040	2187	3240	1050	1053	--
6	3768	2051	3050	1080	999	--
7	3549	1941	2930	1080	989	--
8	3389	1861	2870	1090	1009	--
9	3458	1896	2900	1090	1004	--
10	3500	1917	2870	1100	953	--
11	3481	1907	2800	1090	893	--
12	3124	1729	2540	1080	811	--
13	2652	1493	2060	1080	567	--
14	2461	1397	1710	1090	313	--
15	2436	1365	1550	1040	165	--
16	2269	1385	1410	1010	109	--
17	2259	1296	1270	1030	--	26
18	2144	1239	1230	1040	--	9
19	2022	1178	1220	1040	42	--
20	1986	1160	1250	1030	90	--
21	2078	1206	1330	1050	124	--
22	2119	1226	1350	1040	124	--
23	2150	1242	1360	1030	118	--
24	2093	1213	1340	1030	127	--
25	2038	1186	1320	1030	134	--
26	2044	1189	1330	1050	141	--
27	1995	1164	1320	1040	156	--
28	1819	1076	1270	1010	194	--
29	1705	1019	1200	1030	181	--
30	1587	960	1120	1000	160	--
31	1491	912	1050	956	138	--
Total sec-ft.	83410	46875	61730	32576	14890	35
Mean	2691	1512	1991	1050	480	1
Ac-ft.	165400	92980	122400	64610	29530	70

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

AUGUST - 1943

Day	Inflow to Sherburne Reservoir: Recorded Inflow: Swiftcurrent 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	179	84	263	453	--	190
2	171	88	259	491	--	232
3	161	53	214	488	--	274
4	159	68	227	488	--	261
5	149	86	235	485	--	250
6	142	56	198	485	--	287
7	137	105	242	482	--	240
8	144	6	150	479	--	329
9	129	65	194	476	--	282
10	118	72	190	476	--	286
11	112	36	148	470	--	322
12	105	27	132	470	--	338
13	103	5	108	467	--	359
14	105	52	157	470	--	313
15	105	44	149	467	--	318
16	95	50	145	461	--	316
17	92	45	137	461	--	324
18	93	9	102	527	--	425
19	92	14	106	635	--	529
20	92	38	130	662	--	532
21	88	42	130	765	--	635
22	97	20	117	769	--	652
23	88	23	111	761	--	650
24	83	30	113	765	--	652
25	79	41	120	753	--	633
26	77	5	82	741	--	659
27	76	20	96	729	--	633
28	74	36	110	721	--	611
29	76	21	97	717	--	620
30	83	41	124	697	--	573
31	90	10	100	682	--	582
Total sec-ft.	3394	1292	4686	17993	--	13307
Mean	109	42	151	580	--	429
Ac-ft.	6730	2560	9290	35690	--	26400

DETERMINATION OF NATURAL FLOW OF ST. MARY RIVER

AUGUST - 1943

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	986	542	--	1528	134	1394
2	968	544	--	1512	124	1388
3	959	540	--	1499	190	1309
4	915	538	--	1453	232	1221
5	898	536	--	1434	274	1160
6	865	536	--	1401	261	1140
7	834	538	--	1372	250	1122
8	803	534	--	1337	287	1050
9	747	529	--	1276	240	1036
10	721	529	--	1250	329	921
11	682	531	--	1213	282	931
12	630	536	--	1166	286	880
13	607	538	--	1145	322	823
14	573	532	--	1105	338	767
15	557	532	--	1089	359	730
16	530	531	--	1061	313	748
17	508	529	--	1037	318	719
18	487	527	--	1014	316	698
19	508	529	--	1037	324	713
20	535	532	--	1067	425	642
21	568	536	--	1104	529	575
22	630	546	--	1176	532	644
23	647	542	--	1189	635	554
24	635	542	--	1177	652	525
25	630	542	--	1172	650	522
26	612	540	--	1152	652	500
27	601	538	--	1139	633	506
28	579	538	--	1117	659	458
29	568	538	--	1106	633	473
30	562	538	--	1100	611	489
31	551	540	--	1091	620	471
Total sec-ft.	20896	16623	--	37519	12410	25109
Mean	674	536	--	1210	400	810
Ac-ft.	41450	32970	--	74420	24620	49800

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

AUGUST - 1943

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	1394	530	134	664	542	--	542	--	122
2	1388	527	124	651	544	--	544	--	107
3	1309	488	190	678	540	--	540	--	138
4	1221	444	232	676	538	--	538	--	138
5	1160	413	274	687	536	--	536	--	151
6	1140	403	261	664	536	--	536	--	128
7	1122	394	250	644	538	--	538	--	106
8	1050	358	287	645	534	--	534	--	111
9	1036	351	240	591	529	--	529	--	62
10	921	294	329	623	529	--	529	--	94
11	931	299	282	581	531	--	531	--	50
12	880	273	286	559	536	--	536	--	23
13	823	245	322	567	538	--	538	--	29
14	767	217	338	555	532	--	532	--	23
15	730	198	359	557	532	--	532	--	25
16	748	207	313	520	531	--	531	11	--
17	719	193	318	511	529	--	529	18	--
18	698	182	316	498	527	--	527	29	--
19	713	190	324	514	529	--	529	15	--
20	642	160	425	585	532	--	532	--	53
21	575	144	529	673	536	--	536	--	137
22	644	161	532	693	546	--	546	--	147
23	554	138	635	773	542	--	542	--	231
24	525	131	652	783	542	--	542	--	241
25	522	130	650	780	542	--	542	--	238
26	500	125	652	777	540	--	540	--	237
27	506	126	633	759	538	--	538	--	221
28	458	114	659	773	538	--	538	--	235
29	473	118	633	751	538	--	538	--	213
30	489	122	611	733	538	--	538	--	195
31	471	118	620	738	540	--	540	--	198
Total sec-ft.	25109	7793	12410	20203	16623	--	16623	73	3653
Mean	810	251	400	651	536	--	536	2	118
Ac-ft.	49800	15460	24620	40080	32970	--	32970	140	7250

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

AUGUST - 1943

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 Delivered	Deficit of Share Delivered
1	1394	864	986	904	122	--
2	1388	861	968	893	107	--
3	1309	821	959	882	138	--
4	1221	777	915	856	138	--
5	1160	747	898	841	151	--
6	1140	737	865	818	128	--
7	1122	728	834	793	106	--
8	1050	692	803	772	111	--
9	1036	685	747	722	62	--
10	921	627	721	684	94	--
11	931	632	682	655	50	--
12	880	607	630	617	23	--
13	823	578	607	595	29	--
14	767	550	573	562	23	--
15	730	532	557	546	25	--
16	748	541	530	522	--	11
17	719	526	508	502	--	18
18	698	516	487	474	--	29
19	713	523	508	492	--	15
20	642	482	535	524	53	--
21	575	431	568	552	137	--
22	644	483	630	619	147	--
23	554	416	647	638	231	--
24	525	394	635	631	241	--
25	522	392	630	622	238	--
26	500	375	612	608	237	--
27	506	380	601	582	221	--
28	458	344	579	571	235	--
29	473	355	568	552	213	--
30	489	367	562	542	195	--
31	471	353	551	530	198	--
Total sec-ft.	25109	17316	20896	20101	3653	73
Mean	810	559	674	648	118	2
Ac-ft.	49800	34350	41450	39870	7250	140

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

SEPTEMBER - 1943

Day	Inflow to Sherburne Reservoir: Recorded Inflow: Swiftcurrent 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	84	16	100	682	--	582
2	88	41	129	674	--	545
3	79	10	89	662	--	573
4	72	9	81	658	--	577
5	76	20	96	651	--	555
6	72	12	84	643	--	559
7	67	56	123	635	--	512
8	62	5	67	624	--	557
9	58	5	63	610	--	547
10	55	37	92	595	--	503
11	53	34	87	588	--	501
12	55	18	73	568	--	495
13	55	26	81	658	--	577
14	55	10	65	693	--	628
15	53	5	58	670	--	612
16	50	29	79	643	--	564
17	48	26	74	624	--	550
18	53	10	63	606	--	543
19	53	5	58	578	--	520
20	50	5	55	554	--	499
21	48	5	53	580	--	527
22	55	5	60	606	--	546
23	56	14	70	571	--	501
24	56	8	64	538	--	474
25	56	6	62	506	--	444
26	56	25	81	476	--	395
27	56	5	61	433	--	372
28	56	5	61	366	--	305
29	55	33	88	282	--	194
30	52	19	71	190	--	119
Total sec-ft.	1784	504	2288	17164	--	14876
Mean	59	17	76	572	--	496
Ac-ft.	3540	1000	4540	34040	--	29500

DETERMINATION OF NATURAL FLOW OF ST. MARY RIVER

SEPTEMBER - 1943

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	535	540	--	1075	573	502
2	535	538	--	1073	582	491
3	519	538	--	1057	582	475
4	492	538	--	1030	545	485
5	508	538	--	1046	573	473
6	482	536	--	1018	577	441
7	461	536	--	997	555	442
8	446	536	--	982	559	423
9	432	534	--	966	512	454
10	407	531	--	938	557	381
11	388	529	--	917	547	370
12	374	527	--	901	503	398
13	351	525	--	876	501	375
14	369	527	--	896	495	401
15	388	529	--	917	577	340
16	388	531	--	919	628	291
17	384	529	--	913	612	301
18	388	529	--	917	564	353
19	388	531	--	919	550	369
20	356	525	--	881	543	338
21	328	523	--	851	520	331
22	328	523	--	851	499	352
23	333	523	--	856	527	329
24	320	521	--	841	546	295
25	303	517	--	820	501	319
26	278	514	--	792	474	318
27	244	508	--	752	444	308
28	217	493	--	710	395	315
29	294	378	--	672	372	300
30	248	362	--	610	305	305
Total sec-ft.	11484	15509	--	26993	15718	11275
Mean	383	517	--	900	524	376
Ac-ft.	22780	30760	--	53540	31180	22360

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

SEPTEMBER - 1943

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	502	126	573	699	540	--	540	--	159
2	491	123	582	705	538	--	538	--	167
3	475	119	582	701	538	--	538	--	163
4	485	121	545	666	538	--	538	--	128
5	473	118	573	691	538	--	538	--	153
6	441	110	577	687	536	--	536	--	151
7	442	110	555	665	536	--	536	--	129
8	423	106	559	665	536	--	536	--	129
9	454	114	512	626	534	--	534	--	92
10	381	95	557	652	531	--	531	--	121
11	370	92	547	639	529	--	529	--	110
12	398	100	503	603	527	--	527	--	76
13	375	94	501	595	525	--	525	--	70
14	401	100	495	595	527	--	527	--	68
15	340	85	577	662	529	--	529	--	133
16	291	73	628	701	531	--	531	--	170
17	301	75	612	687	529	--	529	--	158
18	353	88	564	652	529	--	529	--	123
19	369	92	550	642	531	--	531	--	111
20	338	84	543	627	525	--	525	--	102
21	331	83	520	603	523	--	523	--	80
22	352	88	499	587	523	--	523	--	64
23	329	82	527	609	523	--	523	--	86
24	295	74	546	620	521	--	521	--	99
25	319	80	501	581	517	--	517	--	64
26	318	80	474	554	514	--	514	--	40
27	308	77	444	521	508	--	508	--	13
28	315	79	395	474	493	--	493	19	--
29	300	75	372	447	378	--	378	--	69
30	305	76	305	381	362	--	362	--	19
Total sec-ft.	11275	2819	15718	18537	15509	--	15509	19	3047
Mean	376	94	524	618	517	--	517	1	102
Ac-ft.	22360	5590	31180	36770	30760	--	30760	40	6040

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

SEPTEMBER - 1943

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	502	376	535	510	159	--
2	491	368	535	508	167	--
3	475	356	519	447	163	--
4	485	364	492	430	128	--
5	473	355	508	437	153	--
6	441	331	482	426	151	--
7	442	332	461	435	129	--
8	423	317	446	422	129	--
9	454	340	432	408	92	--
10	381	286	407	386	121	--
11	370	276	388	368	110	--
12	398	298	374	354	76	--
13	375	281	351	331	70	--
14	401	301	369	347	68	--
15	340	255	388	368	133	--
16	291	218	388	370	170	--
17	301	226	384	361	158	--
18	353	265	388	372	123	--
19	369	277	388	370	111	--
20	338	254	356	338	102	--
21	331	248	328	314	80	--
22	352	264	328	310	64	--
23	329	247	333	314	86	--
24	295	221	320	303	99	--
25	319	239	303	284	64	--
26	318	238	278	260	40	--
27	308	231	244	234	13	--
28	315	236	217	206	--	19
29	300	225	294	271	69	--
30	305	229	248	234	19	--
Total sec-ft.	11275	8456	11484	10718	3047	19
Mean	376	282	382	357	102	1
Ac-ft.	22360	16770	22780	21260	6040	40

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

OCTOBER - 1943

Day	Inflow to Sherburne Reservoir: Recorded Inflow: Swiftcurrent 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	52	18	70	159	--	89
2	47	20	67	126	--	59
3	46	21	67	108	--	41
4	44	11	55	97	--	42
5	44	22	66	85	--	19
6	47	16	63	82	--	19
7	46	12	58	76	--	18
8	44	20	64	70	--	6
9	43	19	62	67	--	5
10	44	21	65	64	1	--
11	56	11	67	66	1	--
12	72	1	73	72	11	--
13	76	25	101	83	18	--
14	70	59	129	89	40	--
15	62	38	100	91	9	--
16	63	65	128	94	34	--
17	56	99	155	86	69	--
18	60	94	154	52	102	--
19	55	38	93	1	92	--
20	50	28	78	1	77	--
21	46	11	57	1	56	--
22	46	21	67	1	66	--
23	43	24	67	1	66	--
24	40	20	60	1	59	--
25	40	23	63	1	62	--
26	46	15	61	1	60	--
27	52	13	65	1	64	--
28	55	8	63	1	62	--
29	55	13	68	1	67	--
30	53	12	65	--	65	--
31	53	12	65	--	65	--
Total sec-ft.	1606	810	2416	1578	1136	298
Mean	52	26	78	51	37	10
Ac-ft.	3190	1610	4790	3130	2250	590

DETERMINATION OF NATURAL FLOW OF ST. MARY RIVER

OCTOBER - 1943

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	190	322	--	512	194	318
2	282	209	--	491	119	372
3	241	203	--	444	89	355
4	207	188	--	395	59	336
5	290	105	--	395	41	354
6	278	98	--	376	42	334
7	263	97	--	360	19	341
8	244	95	--	339	19	320
9	230	95	--	325	18	307
10	217	95	--	312	6	306
11	214	82	--	296	5	291
12	328	8	1	337	--	337
13	328	2	1	331	--	331
14	324	--	1	325	--	325
15	328	--	18	346	--	346
16	333	--	40	373	--	373
17	338	--	9	347	--	347
18	342	--	34	376	--	376
19	324	--	69	393	--	393
20	303	--	102	405	--	405
21	286	--	92	378	--	378
22	270	--	77	347	--	347
23	244	--	56	300	--	300
24	244	--	66	310	--	310
25	234	--	66	300	--	300
26	227	--	59	286	--	286
27	224	--	62	286	--	286
28	217	--	60	277	--	277
29	214	--	64	278	--	278
30	214	--	62	276	--	276
31	201	--	67	268	--	268
Total sec-ft.	8179	1599	1006	10784	611	10173
Mean	264	(1-13) 123	32	348	20	328
Ac-ft.	16220	3170	2000	21390	1210	20180

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

OCTOBER - 1943

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	318	80	194	274	322	--	322	48	--
2	372	93	119	212	209	--	209	--	3
3	355	89	89	178	203	--	203	25	--
4	336	84	59	143	188	--	188	45	--
5	354	88	41	129	105	--	105	--	24
6	334	84	42	126	98	--	98	--	28
7	341	85	19	104	97	--	97	--	7
8	320	80	19	99	95	--	95	--	4
9	307	77	18	95	95	--	95	--	--
10	306	76	6	82	95	--	95	13	--
11	291	73	5	78	82	--	82	4	--
12	337	84	--	84	8	1	9	--	75
13	331	83	--	83	2	1	3	--	80
14	325	81	--	81	--	1	1	--	80
15	346	86	--	86	--	18	18	--	68
16	373	93	--	93	--	40	40	--	53
17	347	87	--	87	--	9	9	--	78
18	376	94	--	94	--	34	34	--	60
19	393	98	--	98	--	69	69	--	29
20	405	101	--	101	--	102	102	1	--
21	378	94	--	94	--	92	92	--	2
22	347	87	--	87	--	77	77	--	10
23	300	75	--	75	--	56	56	--	19
24	310	78	--	78	--	66	66	--	12
25	300	75	--	75	--	66	66	--	9
26	286	72	--	72	--	59	59	--	13
27	286	72	--	72	--	62	62	--	10
28	277	69	--	69	--	60	60	--	9
29	278	70	--	70	--	64	64	--	6
30	276	69	--	69	--	62	62	--	7
31	268	67	--	67	--	67	67	--	--
Total sec -ft.	10173	2544	611	3155	1599	1006	2605	136	686
Mean	328	82	20	102	(1-13)123	32	84	4	22
Ac-ft.	20180	5050	1210	6260	3170	2000	5170	270	1360

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

OCTOBER - 1943

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	318	238	190	176	--	48
2	372	279	282	281	3	--
3	355	266	241	237	--	25
4	336	252	207	202	--	45
5	354	266	290	279	24	--
6	334	250	278	274	28	--
7	341	256	263	258	7	--
8	320	240	244	241	4	--
9	307	230	230	225	--	--
10	306.	230	217	214	--	13
11	291	218	214	209	--	4
12	337	253	328	314	75	--
13	331	248	328	319	80	--
14	325	244	324	318	80	--
15	346	260	328	319	68	--
16	373	280	333	323	53	--
17	347	260	338	323	78	--
18	376	282	342	326	60	--
19	393	295	324	306	29	--
20	405	304	303	284	--	1
21	378	284	286	270	2	--
22	347	260	270	256	10	--
23	300	225	244	231	19	--
24	310	232	244	164	12	--
25	300	225	234	--	9	--
26	286	214	227	--	13	--
27	286	214	224	--	10	--
28	277	208	217	--	9	--
29	278	208	214	--	6	--
30	276	207	214	--	7	--
31	268	201	201	--	--	--
Total sec-ft.	10173	7629	8179	6349	686	136
Mean	328	246	264	(1-24) 265	22	4
Ac-ft.	20180	15130	16220	12590	1360	270

DIVISION OF ST. MARY RIVER
CANADA
1943

Water Available in Acre-Feet

Month	St.Mary R. at Kimball	Rolph Creek	Lee Creek	Pothole Creek	Combined Flow
April	54930	1730	9510	1260	67430
May	110600	1230	13210	1420	126460
June	199600	1010	15410	121	216141
July	122400	202	4550	48	127200
August	41450	122	948	--	42520
September	22780	137	627	--	23544
October	16220	113		--	
Total	567980	4544		2849	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	4430	+1154	3414	2170	68290
May	19710	- 592	5622	13496	105100
June	47780	-2551	4926	40303	191800
July	64610	-4713	9877	50020	92600
August	39870	- 372	2318	37180	6760
September	21260	- 108	800	20352	2400
October	12590	+ 348	579	12359	
Total	b 210250	c -6834	d 27536	f 175880	x

a - Computed. b - Diverted by A.R. & I.Co. at Kimball
c - Loss or gain between Kimball and Magrath.
d - Wasted in Pinepound and Pothole Creeks.
e - Estimated.
f - Flow in canals at Magrath plus diversions by laterals.
x - Below all points of diversion.

DIVISION OF ST. MARY RIVER
UNITED STATES
1943

Water Available in Acre-Feet

Month	St. Mary River: W. S. Share	St. Mary River: Sherburne Res. Stored	St. Mary River: Sherburne Res. Released from Storage	St. Mary River: Total Available for Diversion	Diverted	Unused	Total Flow Milk River Eastern Crossing
April	27660	18870	--	27660	--	27660	36740
May	51110	14420	2320	53430	--	53430	19480
June	100800	9070	7980	108780	20790	87990	39390
July	72470	12900	456	72926	30550	42376	35360
August	15460	--	24620	40080	32970	7110	33270
September	5590	--	31180	36770	30760	6010	31440
October	5050	2000	1210	6260	3170	3090	11650
Total	278140	57260	67766	345906	118240	227666	207330

DIVERSIONS FROM MILK RIVER IN UNITED STATES
1943
Quantities in Acre-Feet

Month	Fort Belknap Canal	Paradise Canal	Harlem Canal	Harlem No.2	Agency Canal	Dodson North	Dodson South	Van-dalia Canal	Total
April	----	----	196	----	----	298	545	---	1039
May	6178	1366	2222	222	218	2672	12377	3596	28851
June	6633	1960	1438	444	1931	1039	5841	1944	21230
July	9833	3301	2156	729	2752	2384	6912	5098	33165
August	12759	4691	3790	983	4297	4334	11683	5919	48456
September	9666	3604	1960	855	1307	1849	12793	4760	36794
October	4613	1525	2025	---	614	1059	4803	4919	19558
November	2614	----	----	---	---	234	585	3015	6448
Total	52296	16447	13787	3233	11119	13869	55539	29251	195541

DETERMINATION OF NATURAL FLOW OF FRENCHMAN RIVER AT THE INTERNATIONAL BOUNDARY 1943

Water used by Canada at Cypress Lake and East End
Quantities in Second-Feet

Date at Intern'l Boundary	Used at Cypress: Stored	Used at Cypress: Released	Used at East End: Stored	Used at East End: Released	Used at East End: Diverted	Used at East End: Return Flow	Total used
March							
1 - 10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11 - 20	0.0	0.0	0.0	24.0	0.0	0.0	-24.0
21 - 31	0.0	0.0	53.0	0.0	0.0	0.0	53.0
April							
1 - 10	1111.9	0.0	11.0	0.0	0.0	0.0	1122.9
11 - 20	1465.2	0.0	1.0	0.0	0.0	0.0	1466.2
21 - 30	107.0	0.0	168.0	0.0	0.0	0.0	275.0
May							
1 - 10	73.7	0.0	77.0	0.0	0.0	0.0	150.7
11 - 20	76.1	0.0	206.0	0.0	0.0	0.0	282.1
21 - 31	63.0	0.0	97.0	0.0	26.5	0.0	186.5
June							
1 - 10	35.7	0.0	62.0	0.0	132.4	22.0	208.1
11 - 20	39.3	1.0	58.0	0.0	251.4	22.0	325.7
21 - 30	42.9	17.2	0.0	16.0	329.0	45.0	293.7
July							
1 - 10	44.2	25.6	0.0	58.0	258.1	30.0	188.7
11 - 20	21.8	26.2	0.0	143.0	234.4	28.0	59.0
21 - 31	12.3	1.0	0.0	143.0	286.7	31.0	124.0
August							
1 - 10	9.3	286.1	0.0	130.0	327.4	35.0	-114.4
11 - 20	8.7	158.2	0.0	79.0	270.5	31.0	11.0
21 - 31	2.7	325.6	0.0	7.0	289.8	33.0	- 73.1
September							
1 - 10	2.7	323.1	59.0	0.0	211.2	28.0	- 78.2
11 - 20	0.0	327.5	91.0	0.0	100.1	1.0	-137.4
21 - 30	3.3	338.5	105.0	0.0	84.1	12.0	-158.1
October							
1 - 10	6.1	326.6	0.0	30.0	111.8	16.0	-254.7
11 - 20	4.7	123.4	0.0	31.0	112.7	16.0	- 53.0
21 - 31	18.9	0.4	0.0	40.0	96.8	14.0	61.3
Total sec-ft.	3149.5	2280.4	988.0	701.0	3172.9	364.0	+3915.0
Mean	12.9	9.3	4.0	2.9	12.7	1.5	16.0
Ac-ft.	6247	4523	1960	1390	6194	722	7766

DETERMINATION OF NATURAL FLOW OF FRENCHMAN RIVER AT THE INTERNATIONAL BOUNDARY 1943

Water used by Canada at Val Marie
Quantities in Second-Feet

Upper Val Marie			Lower Val Marie				
Stored	Released	Diverted	Stored	Released	Diverted	Return Flow	Total used
March							
60.0	0.0	0.0	955.0	0.0	0.0	0.0	1015.0
100.0	0.0	0.0	0.0	621.0	0.0	0.0	-521.0
257.0	0.0	0.0	2369.0	0.0	0.0	0.0	2626.0
April							
0.0	292.0	0.0	0.0	253.0	0.0	0.0	-545.0
50.0	0.0	0.0	531.0	0.0	0.0	0.0	581.0
56.0	0.0	0.0	135.0	0.0	24.6	0.0	215.6
May							
47.0	0.0	0.0	0.0	236.0	38.3	0.0	-150.7
45.0	0.0	0.0	0.0	167.0	143.2	21.0	0.2
23.0	0.0	0.0	0.0	172.0	168.0	26.0	- 7.0
June							
13.0	0.0	0.0	0.0	515.0	434.7	40.0	-107.3
5.0	0.0	0.0	15.0	0.0	418.5	40.0	398.5
0.0	193.0	0.0	181.0	0.0	353.8	34.0	307.8
July							
385.0	0.0	0.0	0.0	513.0	149.3	23.0	- 1.7
24.0	0.0	0.0	0.0	120.0	136.0	20.0	20.0
0.0	1019.0	0.0	148.0	0.0	423.0	38.0	-486.0
August							
23.0	0.0	0.0	0.0	402.0	272.6	22.0	-128.4
43.0	0.0	0.0	0.0	54.0	118.0	18.0	89.0
88.0	0.0	0.0	0.0	124.0	81.8	8.0	37.8
September							
110.0	0.0	0.0	0.0	82.0	52.5	4.0	76.5
136.0	0.0	0.0	0.0	72.0	53.8	4.0	113.8
128.0	0.0	0.0	0.0	39.0	63.5	5.0	147.5
October							
68.0	0.0	0.0	44.0	0.0	43.9	4.0	151.9
68.0	0.0	0.0	39.0	0.0	36.6	4.0	139.6
61.0	0.0	0.0	26.0	0.0	16.4	1.0	102.4
1790.0	1504.0	0.0	4443.0	3370.0	3028.5	312.0	4075.5
7.3	6.1	0.0	18.1	13.8	12.4	1.3	16.6
3550	2983	0.0	8813	6684	6007	619	8084

DETERMINATION OF NATURAL FLOW OF FRENCHMAN RIVER AT THE INTERNATIONAL BOUNDARY 1943

Quantities in Second-Feet

Date at Intern'l Boundary	CANADA Used at East End	CANADA Used at Val Marie	CANADA Total Used	Frenchman River Flow at Boundary	Frenchman River Natural Flow	UNITED STATES Share	UNITED STATES Received + or -
March							
1 - 10	0.0	1015.0	1015.0	174.0	1189.0	594.5	-420.5
11 - 20	-24.0	-521.0	-545.0	611.0	66.0	33.0	578.0
21 - 31	53.0	2626.0	2679.0	18522.0	21201.0	10600.5	7921.5
April							
1 - 10	1122.9	-545.0	577.9	22550.0	23127.9	11564.0	10986.0
11 - 20	1466.2	581.0	2047.2	3186.0	5233.2	2616.6	569.4
21 - 30	275.0	215.6	490.6	1219.0	1709.6	854.8	364.2
May							
1 - 10	150.7	-150.7	0.0	762.0	762.0	381.0	381.0
11 - 20	282.1	0.2	282.3	907.0	1189.3	594.6	312.4
21 - 31	186.5	- 7.0	179.5	774.0	953.5	476.8	297.2
June							
1 - 10	208.1	-107.3	100.8	770.0	870.8	435.4	334.6
11 - 20	325.7	398.5	724.2	1072.0	1796.2	898.1	173.9
21 - 30	293.7	307.8	601.5	763.0	1364.5	682.2	80.8
July							
1 - 10	188.7	- 1.7	187.0	660.0	847.0	423.5	236.5
11 - 20	59.0	20.0	79.0	445.0	524.0	262.0	183.0
21 - 31	124.0	-486.0	-362.0	110.0	-252.0	-126.0	236.0
August							
1 - 10	-114.4	-128.4	-242.8	77.0	-165.8	- 82.9	159.9
11 - 20	11.0	89.0	100.0	44.0	144.0	72.0	28.0
21 - 31	- 73.1	37.8	- 35.3	14.8	- 20.5	- 10.2	25.0
September							
1 - 10	- 78.2	76.5	- 1.7	19.3	17.6	8.8	10.5
11 - 20	-137.4	113.8	- 23.6	9.8	- 13.8	- 6.9	16.7
21 - 30	-158.1	147.5	- 10.6	3.8	- 6.8	- 3.4	7.2
October							
1 - 10	-254.7	151.9	-102.8	2.0	-100.8	- 50.4	52.4
11 - 20	- 53.0	139.6	86.6	12.1	98.7	49.4	- 37.3
21 - 31	61.3	102.4	163.7	150.5	314.2	157.1	- 6.6
Total sec-ft.	3915.0	4075.5	7990.5	52858.3	60848.8	30424.5	22433.8
Mean	16.0	16.6	32.6	215.7	248.4	124.2	91.6
Ac-ft.	7766	8084	15850	104844	120694	60347	44497

Table 4

ESTIMATED DIVERSION FROM THE NORTHERN TRIBUTARIES
OF MILK RIVER IN CANADA
1943

Quantities in Acre-Feet

Irrigator	Source of Supply	Estimated Diversion
Lodge Creek Basin		
Lindner Bros.	Middle Creek	1000
Total diverted from Lodge Creek		1000
Flow of Lodge Creek at Boundary		36100
Battle Creek Basin		
Lindner Bros.	Battle Creek	125
Fondrick, G.	Battle Creek	30
McKinnon, J.	Battle Creek	450
Stirling & Nash	Battle Creek	400
Spangler, C.B.	Sixmile Coulee	100
Shepherd Bros.	Halfway Coulee	40
Battle Creek diversion to Cypress Lake	11540	
less return of	2353	9187
Total diverted from Battle Creek		10332
Flow of Battle Creek at Boundary		22670
Frenchman River Basin		
Armstrong Bros.	Fairwell Creek	10
Hensman, S.	N.B. Frenchman River	50
Armstrong Bros.	Clarence Coulee	30
Howard, J.	Concrete Coulee	75
Bolingbroke, J.E.	Bolingbroke Creek	5
Beck, M.	a Coulee	10
Morrison, M.A.	a Coulee	100
Bate Bros.	Garden Creek	20
East End Irrigation District		7766
Val Marie Irrigation District		8084
Total diverted from Frenchman River		16150
Flow of Frenchman River at Boundary		104844

Table 5

MEASURED DIVERSIONS FROM THE NORTHERN TRIBUTARIES

OF MILK RIVER IN THE UNITED STATES

1943

Quantities in Acre-Feet

Irrigator	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Total
				Lodge Creek					
North Chinook Canal	1,110	1,490	115	2	51	0	0	0	2,768
				Battle Creek					
Matheson Canal	#	0	179	62	0	65	22	61	389
				Frenchman River					
Frenchman Canal	912	1,380	316	180	290	256	78	0	3,412
Total	2,022	2,870	610	244	341	321	100	61	6,569

Note:- Some floodwater overflow from Battle Creek passing the gage during March reached the highest stage of record. It supplied an early flood irrigation of lands served by the canal, but was not an intentional diversion and has not been included in the Computations.