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CANADA

DEPARTMENT OF ENERGY, MINES AND RESOURCES

INLAND WATERS BRANCH

APPENDICES A AND B TO THE REPORT TO THE INTERNATIONAL JOINT COMMISSION ON THE DIVISION OF THE WATERS OF THE ST. MARY AND MILK RIVERS

BY

E. L. HENDRICKS

representing United States

AND

J. D. McLEOD

representing Canada

- 1969 -

APPENDIX A TO THE

REPORT TO

THE INTERNATIONAL JOINT COMMISSION

ON

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Table 8-1 NATURAL FLOW OF ST. MARY RIVER AT INTERNATIONAL BOUNDARY AND ITS DIVISION BETWEEN CANADA AND UNITED STATES (Cu. ft. per sec.)

1969 Day APRIL	Computed Natural Flow St. Mary River At Int. Bdry.	Canada's share of St. Mary River Natural Flow	Recorded Flow of St. Mary River near Int. Bdry.	Canada received more (+) or less (-) than share +	-	U.S. share of St. Mary River	Storage Factors Lake Sherburne (1-day lag applied) Stored	Released	Diverted by St. Mary Canal	Net Used by United States	U.S. Used more (+) or less (-) than share +	-
1	919	626	852	226		293	67		0	67		226
2	594	446	550	104		148	44		0	44		104
3	539	404	472	68		135	67		0	67		68
4	428	321	384	63		107	44		0	44		63
5	532	399	410	11		133	122		0	122		11
6	538	404	440	36		134	98		0	98		36
7	487	365	433	68		122	54		0	54		68
8	467	350	376	26		117	91		0	91		26
9	572	429	409		20	143	163		0	163	20	
10	608	456	463	7		152	145		0	145		7
11	699	516	502		14	183	197		0	197	14	
12	783	558	533		25	225	250		0	250	25	
13	933	633	558		75	300	375		0	375	75	
14	775	554	562	8		221	213		0	213		8
15	755	544	603	59		211	152		0	152		59
16	779	556	649	93		223	130		0	130		93
17	819	576	702	126		243	117		0	117		126
18	874	604	751	147		270	123		0	123		147
19	912	623	772	149		289	140		0	140		149
20	956	645	779	134		311	177		0	177		134
21	989	661	794	133		328	195		0	195		133
22	985	659	833	174		326	152		0	152		174
23	1,066	700	909	209		366	157		0	157		209
24	1,438	886	1,140	254		552	298		0	298		254
25	1,662	998	1,200	202		664	462		0	462		202
26	1,604	969	1,240	271		635	364		0	364		271
27	1,554	944	1,260	316		610	294		0	294		316
28	1,551	942	1,240	298		609	311		0	311		298
29	1,482	908	1,210	302		574	272		0	272		302
30	1,366	850	1,160	310		516	206		0	206		310
31	—	—	—	—	—	—	—		-	—	—	—
Total Sec.-ft.	27,666	18,526	22,186	(3,794) 3,660	(134)	9,140	5,480		0	5,480	(134)	(3,794) 3,660
Mean	922	618	740	122		305	183		0	183		122
Ac.-ft.	54,876	36,746	44,006	7,260		18,129	10,870		0	10,870		7,260

Table 8-2 NATURAL FLOW OF ST. MARY RIVER AT INTERNATIONAL BOUNDARY AND ITS DIVISION BETWEEN CANADA AND UNITED STATES (Cu. ft. per sec.)

1969 Day MAY	Computed Natural Flow St. Mary River at Int. Bdry.	Canada's share of St. Mary River Natural Flow	Recorded Flow of St. Mary River near Int. Bdry.	Canada received more (+) or less (-) than share +	-	U.S. share of St. Mary River	Storage Factors Lake Sherburne (1-day lag applied) Stored	Released	Diverted by St. Mary Canal	Net Used by United States	U.S. Used more (+) or less (-) than share +	-
1	1,330	832	1,150	318		498	180		0	180		318
2	1,286	810	1,120	310		476	166		0	166		310
3	1,217	775	1,070	295		442	147		0	147		295
4	1,121	727	1,020	293		394	101		0	101		293
5	1,100	717	979	262		383	121		0	121		262
6	1,084	709	955	246		375	129		0	129		246
7	1,097	715	955	240		382	142		0	142		240
8	1,266	800	992	192		466	274		0	274		192
9	1,389	861	1,050	189		528	339		0	339		189
10	1,526	930	1,160	230		596	366		0	366		230
11	1,783	1,058	1,310	252		725	473		0	473		252
12	2,112	1,223	1,510	287		889	602		0	602		287
13	2,400	1,367	1,710	343		1,033	690		0	690		343
14	2,556	1,445	1,820	375		1,111	703		33	736		375
15	2,765	1,549	1,690	141		1,216	685		390	1,075		141
16	2,912	1,623	1,740	117		1,289	549		623	1,172		117
17	2,598	1,466	1,790	324		1,132	114		694	808		324
18	2,423	1,378	1,750	372		1,045		26	699	673		372
19	2,272	1,303	1,650	347		969		76	698	622		347
20	2,134	1,234	1,550	316		900		113	697	584		316
21	2,010	1,172	1,430	258		838		115	695	580		258
22	1,848	1,091	1,320	229		757		163	691	528		229
23	1,737	1,035	1,230	195		702		183	690	507		195
24	1,852	1,093	1,160	67		759	6		686	692		67
25	2,143	1,238	1,180		58	905	278		685	963	58	
26	2,461	1,397	1,350		47	1,064	421		690	1,111	47	
27	2,856	1,595	1,550		45	1,261	609		697	1,306	45	
28	2,961	1,647	1,650	3		1,314	609		702	1,311		3
29	2,713	1,523	1,620	97		1,190	390		703	1,093		97
30	2,678	1,506	1,690	184		1,172	282		706	988		184
31	3,216	1,775	1,870	95		1,441	640		706	1,346		95
Total Sec.-ft.	62,846	36,594	43,021	(6,577) 6,427	(150)	26,252	9,016	676	11,485	19,825	(150)	(6,577) 6,427
Mean	2,027	1,180	1,388	207		847	291	21.8	370	640		207
Ac.-ft.	124,655	72,584	85,332	12,748		52,071	17,883	1,341	22,780	39,323		12,748

Table 8-3 NATURAL FLOW OF ST. MARY RIVER AT INTERNATIONAL BOUNDARY AND ITS DIVISION BETWEEN CANADA AND UNITED STATES (Cu. ft. per sec.)

1969 Day JUNE	Computed Natural Flow St. Mary River at Int. Bdry.	Canada's share of St. Mary River Natural Flow	Recorded Flow of St. Mary River near Int. Bdry.	Canada received more (+) or less (-) than share +	-	U.S. share of St. Mary River	Storage Factors Lake Sherburne (1-day lag applied) Stored	Released	Diverted by St. Mary Canal	Net Used by United States	U.S. Used more (+) or less (-) than share +	-
1	3,211	1,772	1,880	108		1,439	624		707	1,331		108
2	2,943	1,638	1,810	172		1,305	427		706	1,133		172
3	2,832	1,583	1,780	197		1,249	349		703	1,052		197
4	2,966	1,650	1,800	150		1,316	463		703	1,166		150
5	3,083	1,708	1,840	132		1,375	540		703	1,243		132
6	3,273	1,803	1,930	127		1,470	637		706	1,343		127
7	4,006	2,170	2,710	540		1,836	585		711	1,296		540
8	4,135	2,234	3,410	1,176		1,901	32		693	725		1,176
9	3,885	2,109	3,490	1,381		1,776		297	692	395		1,381
10	3,547	1,940	3,360	1,420		1,607		502	689	187		1,420
11	3,241	1,787	2,980	1,193		1,454		423	684	261		1,193
12	3,252	1,793	2,620	827		1,459		45	677	632		827
13	2,971	1,652	2,280	628		1,319	13		678	691		628
14	2,572	1,453	1,970	517		1,119		106	708	602		517
15	2,260	1,297	1,680	383		963		129	709	580		383
16	2,047	1,190	1,470	280		857		129	706	577		280
17	1,923	1,128	1,250	122		795		28	701	673		122
18	1,932	1,133	1,040		93	799	197		695	892	93	
19	2,045	1,189	1,080		109	856	274		691	965	109	
20	2,364	1,349	1,200		149	1,015	471		693	1,164	149	
21	2,347	1,340	1,220		120	1,007	432		695	1,127	120	
22	2,306	1,320	1,200		120	986	412		694	1,106	120	
23	2,272	1,303	1,170		133	969	406		696	1,102	133	
24	2,286	1,310	1,190		120	976	398		698	1,096	120	
25	2,805	1,569	1,650	81		1,236	444		711	1,155		81
26	4,450	2,392	3,580	1,188		2,058	190		680	870		1,188
27	4,099	2,216	3,830	1,614		1,883		342	611	269		1,614
28	4,404	2,369	3,690	1,321		2,035	27		687	714		1,321
29	4,334	2,334	3,800	1,466		2,000		159	693	534		1,466
30	4,071	2,202	3,350	1,148		1,869	28		693	721		1,148
31	---	---	---	---	---	---	---	---	---	---	---	---
Total Sec.-ft.	91,862	50,933	66,260	(16,171) 15,327	(844)	40,929	6,949	2,160	20,813	25,602	(844)	(16,171) 15,327
Mean	3,062	1,698	2,209	511		1,364	232	72.0	694	853		511
Ac.-ft.	182,208	101,026	131,427	30,401		81,183	13,783	4,284	41,283	50,782		30,401

Table 8-4 NATURAL FLOW OF ST. MARY RIVER AT INTERNATIONAL BOUNDARY AND ITS DIVISION BETWEEN CANADA AND UNITED STATES (Cu. ft. per sec.)

1969 Day JULY	Computed Natural Flow St. Mary River at Int. Bdry.	Canada's share of St. Mary River Natural Flow	Recorded Flow of St. Mary River near Int. Bdry.	Canada received more (+) or less (-) than share +	-	U.S. share of St. Mary River	Storage Factors Lake Sherburne (1-day lag applied) Stored	Released	Diverted by St. Mary Canal	Net Used by United States	U.S. Used more (+) or less (-) than share +	-
1	3,657	1,995	2,820	825		1,662	126		711	837		825
2	3,306	1,820	2,460	640		1,486	143		703	846		640
3	3,048	1,691	2,210	519		1,357	138		700	838		519
4	2,834	1,584	2,030	446		1,250	111		693	804		446
5	2,686	1,510	1,900	390		1,176	96		690	786		390
6	2,539	1,436	1,780	344		1,103	74		685	759		344
7	2,377	1,355	1,670	315		1,022	23		684	707		315
8	2,247	1,290	1,560	270		957		3	690	687		270
9	2,060	1,197	1,380	183		863		26	706	680		183
10	1,972	1,153	1,250	97		819	19		703	722		97
11	1,892	1,113	1,170	57		779	22		700	722		57
12	1,856	1,095	1,120	25		761	39		697	736		25
13	1,742	1,038	1,060	22		704		14	696	682		22
14	1,637	985	983		2	652		38	692	654	2	
15	1,482	908	904		4	574		111	689	578	4	
16	1,396	865	831		34	531		120	685	565	34	
17	1,321	827	758		69	494		119	682	563	69	
18	1,208	771	714		57	437		187	681	494	57	
19	1,152	743	676		67	409		204	680	476	67	
20	1,071	702	673		29	369		283	681	398	29	
21	1,031	682	657		25	349		306	680	374	25	
22	1,064	699	627		72	365		249	686	437	72	
23	1,008	671	614		57	337		305	699	394	57	
24	1,035	684	623		61	351		287	699	412	61	
25	972	653	651		2	319		381	702	321	2	
26	933	633	696	63		300		465	702	237		63
27	889	611	709	98		278		523	703	180		98
28	884	609	699	90		275		517	702	185		90
29	859	596	675	79		263		516	700	184		79
30	820	577	652	75		243		532	700	168		75
31	866	600	655	55		266		489	700	211		55
Total Sec.-ft.	51,844	31,093	35,207	(4,593) 4,114	(479)	20,751	791	5,675	21,521	16,637	(479)	(4,593) 4,114
Mean	1,672	1,003	1,136	133		669	25.5	183	694	537		133
Ac.-ft.	102,833	61,673	69,833	8,160		41,160	1,569	11,256	42,687	32,999		8,160

Table 8-5 NATURAL FLOW OF ST. MARY RIVER AT INTERNATIONAL BOUNDARY AND ITS DIVISION BETWEEN CANADA AND UNITED STATES (Cu. ft. per sec.)

1969 Day AUGUST	Computed Natural Flow St. Mary River at Int. Bdry.	Canada's share of St. Mary River Natural Flow	Recorded Flow of St. Mary River near Int. Bdry.	Canada received more (+) or less (-) than share +	Canada received more (+) or less (-) than share -	U.S. share of St. Mary River	Storage Factors Lake Sherburne (1-day lag applied) Stored	Storage Factors Lake Sherburne (1-day lag applied) Released	Diverted by St. Mary Canal	Net Used by United States	U.S. Used more (+) or less (-) than share +	U.S. Used more (+) or less (-) than share -
1	736	535	628	93		201		592	700	108		93
2	786	560	552		8	226		462	696	234	8	
3	740	537	505		32	203		460	695	235	32	
4	718	526	473		53	192		448	693	245	53	
5	739	536	459		77	203		417	697	280	77	
6	672	503	424		79	169		446	694	248	79	
7	568	426	394		32	142		519	693	174	32	
8	550	412	394		18	138		533	689	156	18	
9	516	387	393	6		129		568	691	123		6
10	491	368	382	14		123		581	690	109		14
11	514	386	372		14	128		550	692	142	14	
12	490	368	383	15		122		586	693	107		15
13	501	376	390	14		125		582	693	111		14
14	460	345	384	39		115		617	693	76		39
15	447	335	375	40		112		621	693	72		40
16	451	338	356	18		113		596	691	95		18
17	435	326	353	27		109		609	691	82		27
18	422	316	344	28		106		613	691	78		28
19	462	346	327		19	116		555	690	135	19	
20	453	340	316		24	113		552	689	137	24	
21	420	315	306		9	105		574	688	114	9	
22	414	310	310	0		104		584	688	104		0
23	395	296	324	28		99		618	689	71		28
24	438	328	330	2		110		582	690	108		2
25	442	332	322		10	110		571	691	120	10	
26	425	319	342	23		106		609	692	83		23
27	409	307	346	39		102		629	692	63		39
28	382	286	338	52		96		648	692	44		52
29	383	287	326	39		96		635	692	57		39
30	374	280	310	30		94		626	690	64		30
31	383	287	290	3		96		594	687	93		3
Total Sec.-ft.	15,616	11,613	11,748	(510) 135	(375)	4,003		17,577	21,445	3,868	(375)	(510) 135
Mean	504	375	379	4.4		129		567	692	125		4.4
Ac.-ft.	30,974	23,034	23,302	268		7,940		34,864	42,536	7,672		268

Table 8-6 NATURAL FLOW OF ST. MARY RIVER AT INTERNATIONAL BOUNDARY AND ITS DIVISION BETWEEN CANADA AND UNITED STATES (Cu. ft. per sec.)

1969 Day SEPTEMBER	Computed Natural Flow St. Mary River at Int. Bdry.	Canada's share of St. Mary River Natural Flow	Recorded Flow of St. Mary River near Int. Bdry.	Canada received more (+) or less (-) than share +	Canada received more (+) or less (-) than share -	U.S. share of St. Mary River	Storage Factors Lake Sherburne (1-day lag applied) Stored	Storage Factors Lake Sherburne (1-day lag applied) Released	Diverted by St. Mary Canal	Net Used by United States	U.S. Used more (+) or less (-) than share +	U.S. Used more (+) or less (-) than share -
1	318	238	268	30		80		636	686	50		30
2	353	265	247		18	88		579	685	106	18	
3	340	255	226		29	85		571	685	114	29	
4	290	218	247	29		72		644	687	43		29
5	315	236	251	15		79		623	687	64		15
6	303	227	241	14		76		626	688	62		14
7	306	230	223		7	76		603	686	83	7	
8	302	226	204		22	76		584	682	98	22	
9	258	194	210	16		64		634	682	48		16
10	233	175	225	50		58		675	683	8		50
11	162	122	236	114		40		757	683	- 74		114
12	190	142	215	73		48		681	656	- 25		73
13	412	309	215		94	103		344	541	197	94	
14	469	352	269		83	117		154	354	200	83	
15	392	294	388	94		98		136	140	4		94
16	369	277	426	149		92		62	5	- 57		149
17	342	256	382	126		86		41	1	- 40		126
18	330	248	353	105		82		23	0	- 23		105
19	295	221	327	106		74		32	0	- 32		106
20	285	214	309	95		71		24	0	- 24		95
21	294	220	298	78		74		4	0	- 4		78
22	287	215	286	71		72	1		0	1		71
23	282	212	276	64		70	6		0	6		64
24	311	233	282	49		78	29		0	29		49
25	333	250	293	43		83	40		0	40		43
26	352	264	304	40		88	48		0	48		40
27	368	276	325	49		92	43		0	43		49
28	391	293	340	47		98	51		0	51		47
29	353	265	364	99		88		11	0	- 11		99
30	418	314	390	76		104	28		0	28		76
31	---	---	---	---	---	---	---	---	---	---	---	---
Total Sec.-ft.	9,653	7,241	8,620	(1,632) 1,379	(253)	2,412	246	8,444	9,231	1,033	(253)	(1,632) 1,379
Mean	322	241	287	46.0		80.4	8.2	281	308	34.4		46.0
Ac.-ft.	19,147	14,363	17,098	2,735		4,784	488	16,749	18,310	2,049		2,735

Table 8-7 NATURAL FLOW OF ST. MARY RIVER AT INTERNATIONAL BOUNDARY AND ITS DIVISION BETWEEN CANADA AND UNITED STATES (Cu. ft. per sec.)

1969 Day OCTOBER	Computed Natural Flow St. Mary River at Int. Bdry.	Canada's share of St. Mary River Natural Flow	Recorded Flow of St. Mary River near Int. Bdry.	Canada received more (+) or less (-) than share +	-	U.S. share of St. Mary River	Storage Factors Lake Sherburne (1-day lag applied) Stored	Released	Diverted by St. Mary Canal	Net Used by United States	U.S. Used more (+) or less (-) than share +	-
1	476	357	424	67		119	52		0	52		67
2	557	418	468	50		139	89		0	89		50
3	559	419	542	123		140	17		0	17		123
4	615	461	590	129		154	25		0	25		129
5	583	437	613	176		146		30	0	- 30		176
6	563	422	619	197		141		56	0	- 56		197
7	537	403	592	189		134		55	0	- 55		189
8	542	406	562	156		136		20	0	- 20		156
9	547	410	546	136		137	1		0	1		136
10	851	592	492		100	259	359		0	359	100	
11	544	408	446	38		136	98		0	98		38
12	554	416	416	0		138	138		0	138		0
13	499	374	385	11		125	114		0	114		11
14	476	357	366	9		119	110		0	110		9
15	449	337	348	11		112	101		0	101		11
16	428	321	330	9		107	98		0	98		9
17	401	301	313	12		100	88		0	88		12
18	379	284	300	16		95	79		0	79		16
19	363	272	288	16		91	75		0	75		16
20	397	298	294		4	99	103		0	103	4	
21	351	263	274	11		88	77		0	77		11
22	317	238	259	21		79	58		0	58		21
23	319	239	243	4		80	76		0	76		4
24	304	228	247	19		76	57		0	57		19
25	378	284	247		37	94	131		0	131	37	
26	372	279	249		30	93	123		0	123	30	
27	372	279	253		26	93	119		0	119	26	
28	374	280	265		15	94	109		0	109	15	
29	394	296	264		32	98	130		0	130	32	
30	363	272	273	1		91	90		0	90		1
31	357	268	274	6		89	83		0	83		6
Total Sec.-ft.	14,221	10,619	11,782	(1,407) 1,163	(244)	3,602	2,600	161	0	2,439	(244)	(1,407) 1,163
Mean	459	343	380	37.5		116	83.9	5.2	0	78.7		37.5
Ac.-ft.	28,207	21,063	23,370	2,307		7,145	5,157	319	0	4,838		2,307

Table 9-1

HISTORICAL SUMMARY
OF NATURAL FLOW OF
ST. MARY RIVER AT INTERNATIONAL BOUNDARY

	Mean Monthly Discharge In Cfs. During Irrigation Season April - October							Run-off In Acre-Feet		
Year	April	May	June	July	August	September	October	Non Irrigation Season Nov. - Mar.	Irrigation Season Apr. - Oct.	For Year Nov. - Oct.
1901-02						618	477			
1902-03	568	1726	5200	2924	1404	1109	917	57,965	837,816	895,781
1903-04	724	2022	2936	1903	933	420	221	96,361	555,162	651,523
1904-05	304	1215	2461	1642	847	371	772	39,128	461,855	500,983
1905-06	481	1504	2285	1826	946	628	756	51,592	511,307	562,899
1906-07	489	1931	4259	3117	1335	1214	632	124,082	785,988	910,070
1907-08	844	2485	7500	2488	834	462	481	62,436	910,631	973,067
1908-09	350	1904	5169	3000	1460	640	450	65,276	785,464	850,740
1909-10	1188	2315	2243	1175	580	553	1036	87,729	551,042	638,771
1910-11	520	2035	3470	1679	1053	1380	621	97,349	650,860	748,209
1911-12	542	2031	2347	1582	887	524	423	59,092	505,795	564,887
1912-13	749	1913	4519	2024	1162	574	448	69,604	688,735	758,339
1913-14	637	2230	2298	1430	719	584	841	58,564	530,307	588,871
1914-15	575	1644	2251	1722	969	842	739	83,970	530,287	614,257
1915-16	664	1707	4634	3463	1228	947	391	109,773	789,058	898,831
1916-17	453	2215	4104	2427	759	470	378	58,828	654,520	713,348
1917-18	661	1875	3093	1185	763	489	394	91,256	511,779	603,035
1918-19	340	1978	2116	919	498	336	186	49,684	386,325	436,009
1919-20	429	1720	3133	2355	800	572	557	61,025	579,977	641,002
1920-21	646	2664	3713	1809	755	416	499	72,117	636,167	708,284
1921-22	282	2293	3835	1578	642	420	301	64,657	565,880	630,537
1922-23	422	2286	3359	1726	788	482	560	47,191	583,204	630,395
1923-24	393	2080	3152	1534	728	397	302	51,406	520,145	571,551
1924-25	1272	3461	3512	1893	807	542	406	78,619	720,710	799,329
1925-26	670	1264	1078	818	405	751	1141	49,198	371,837	421,035

Table 9-2

HISTORICAL SUMMARY

OF NATURAL FLOW OF

ST. MARY RIVER AT INTERNATIONAL BOUNDARY

	Mean Monthly Discharge In Cfs. During Irrigation Season April - October							Run-off In Acre-Feet		
Year	April	May	June	July	August	September	October	Non Irrigation Season Nov. - Mar.	Irrigation Season Apr. - Oct.	For Year Nov. - Oct.
1926-27	600	2685	5434	2812	1274	1509	1143	74,838	935,423	1,010,261
1927-28	546	3695	2940	2594	921	513	863	112,116	734,376	846,492
1928-29	314	1837	2558	1272	493	291	289	66,040	427,448	493,488
1929-30	1477	2425	2489	1264	511	370	314	52,374	535,575	587,949
1930-31	224	1957	1838	796	592	464	294	38,856	374,083	412,939
1931-32	567	2497	2896	1409	595	307	240	83,750	515,819	599,569
1932-33	416	1764	4339	2169	766	492	685	67,488	643,242	710,730
1933-34	1734	3441	2929	1155	540	323	269	168,272	629,044	797,316
1934-35	392	1841	2716	1516	630	387	235	136,576	467,568	604,144
1935-36	617	2417	2152	823	420	252	162	30,004	414,845	444,849
1936-37	267	1797	3752	1409	475	298	285	34,013	500,701	534,714
1937-38	696	2611	3323	1622	510	360	322	65,262	571,983	637,245
1938-39	640	2271	1721	1069	459	292	188	59,359	402,996	462,355
1939-40	381	1860	1802	737	382	427	415	37,815	364,056	401,871
1940-41	364	1333	1429	879	359	520	635	32,842	334,846	367,688
1941-42	676	1890	2773	1824	754	526	397	94,304	535,668	629,972
1942-43	1240	1996	3722	2691	810	376	328	63,366	675,767	739,133
1943-44	197	1273	1634	809	536	424	374	36,343	318,121	354,464
1944-45	153	2000	3382	1455	457	486	421	46,471	505,676	552,147
1945-46	658	2361	2731	1500	571	495	521	76,816	535,571	612,387
1946-47	913	2729	2585	1634	657	526	1250	86,866	624,962	711,828
1947-48	621	2963	5486	1576	758	329	266	71,379	725,024	796,403
1948-49	526	2337	2272	991	471	532	404	35,419	456,637	492,056
1949-50	462	1969	4537	3159	1100	492	929	96,111	766,778	862,889
1950-51	819	3366	3431	3230	1128	1209	1390	141,366	885,233	1,026,599

Table 9-3

HISTORICAL SUMMARY

OF NATURAL FLOW OF

ST. MARY RIVER AT INTERNATIONAL BOUNDARY

	Mean Monthly Discharge In Cfs. During Irrigation Season April - October							Run-off In Acre-Feet		
Year	April	May	June	July	August	September	October	Non Irrigation Season Nov. - Mar.	Irrigation Season Apr. - Oct.	For Year Nov. - Oct.
1951-52	969	2408	2204	1433	839	409	264	82,832	517,093	599,925
1952-53	635	2716	5534	2519	887	438	283	62,545	786,960	849,505
1953-54	435	3237	3637	3184	1100	771	736	62,618	795,874	858,492
1954-55	267	1491	3755	2248	799	363	810	79,260	589,738	668,998
1955-56	525	2793	3631	2027	828	441	513	89,020	652,395	741,415
1956-57	275	3569	2947	1077	478	303	332	59,363	545,264	604,627
1957-58	401	2754	2847	1182	556	482	529	58,512	530,645	589,157
1958-59	702	2110	4056	2128	799	1035	979	93,513	714,693	808,206
1959-60	688	1387	3049	1604	646	374	237	95,385	482,907	578,292
1960-61	415	2223	3774	1324	566	406	658	58,502	566,754	625,256
1961-62	806	1840	2590	1265	728	435	515	60,686	495,327	556,013
1962-63	348	1760	3391	1708	555	405	272	99,509	510,656	610,165
1963-64	199	1979	6412	2100	669	594	704	44,360	763,940	808,300
1964-65	665	2132	4149	2030	875	633	609	67,981	671,228	739,209
1965-66	785	2129	3382	1766	663	452	361	71,082	577,267	648,349
1966-67	279	2468	4544	2466	799	387	308	66,046	681,394	747,440
1967-68	291	1903	3227	1593	782	1056	802	94,522	584,465	678,987
1968-69	922	2027	3062	1672	504	322	459	78,927	542,900	621,827
Average	**587**	**2190**	**3339**	**1790**	**754**	**547**	**529**	**71,934**	**589,788**	**661,722**

1902 data not included in average.

Table 10-1

HISTORICAL SUMMARY

OF UNITED STATES SHARE OF

NATURAL FLOW OF ST. MARY RIVER AT INTERNATIONAL BOUNDARY

	Mean Monthly Discharge In Cfs. During Irrigation Season April - October							Run-off In Acre-Feet		
Year	April	May	June	July	August	September	October	Non Irrigation Season Nov. - Mar.	Irrigation Season Apr. - Oct.	For Year Nov. - Oct.
1901-02						156	114			
1902-03	170	696	2433	1306	535	388	295	28,983	352,098	381,081
1903-04	221	844	1301	784	302	105	55.2	48,180	218,938	267,118
1904-05	79.4	442	1064	654	268	92.4	241	19,564	172,185	191,749
1905-06	144	586	976	746	306	174	221	25,796	191,286	217,082
1906-07	122	801	1962	1392	500	440	174	62,041	326,525	388,566
1907-08	302	1076	3583	1077	256	115	120	31,218	393,572	424,790
1908-09	88	785	2418	1533	563	174	112	32,638	331,192	363,830
1909-10	430	991	954	421	150	150	351	43,865	208,947	252,812
1910-11	130	851	1568	672	360	523	170	48,674	258,357	307,031
1911-12	139	849	1006	624	280	131	106	29,546	190,175	219,721
1912-13	244	789	2092	845	414	150	112	34,802	280,792	315,594
1913-14	192	949	982	548	197	154	253	29,282	198,764	228,046
1914-15	167	655	958	694	318	256	205	41,985	197,290	239,275
1915-16	172	686	2150	1565	447	314	97.8	54,886	328,788	383,674
1916-17	116	949	1885	1047	215	117	94.6	29,414	267,802	297,216
1917-18	191	782	1580	426	216	122	99.4	45,628	194,448	240,076
1918-19	98.7	822	891	295	125	84.0	45.5	24,842	142,621	167,463
1919-20	116	699	1400	1011	241	146	142	30,512	227,566	258,078
1920-21	180	1185	1690	738	219	104	129	36,059	255,689	291,748
1921-22	75.8	980	1720	622	170	105	75.0	32,328	228,434	260,762
1922-23	109	976	1513	696	232	122	146	23,596	229,833	253,429
1923-24	98.7	878	1409	600	200	99.0	75.5	25,703	203,399	229,102
1924-25	470	1564	1589	779	238	136	102	39,310	295,509	334,819
1925-26	226	465	372	251	101	214	410	24,599	123,780	148,379

Table 10-2

HISTORICAL SUMMARY

OF UNITED STATES SHARE OF

NATURAL FLOW OF ST. MARY RIVER AT INTERNATIONAL BOUNDARY

	Mean Monthly Discharge In Cfs. During Irrigation Season April - October							Run-off In Acre-Feet		
Year	April	May	June	July	August	September	October	Non Irrigation Season Nov. - Mar.	Irrigation Season Apr. - Oct.	For Year Nov. - Oct.
1926-27	208	1176	2550	1239	470	588	405	37,419	401,387	438,806
1927-28	152	1681	1303	1130	296	130	282	56,058	302,731	358,789
1928-29	78.5	752	1112	469	124	72.8	72.2	33,020	162,343	195,363
1929-30	572	1046	1078	465	128	92.5	78.8	26,187	209,274	235,461
1930-31	56.1	813	752	233	168	116	73.5	19,428	134,186	153,614
1931-32	153	1082	1281	537	151	76.8	59.9	41,875	202,453	244,328
1932-33	116	715	2003	918	220	123	223	33,744	261,031	294,775
1933-34	710	1554	1298	411	139	80.5	67.3	84,136	257,770	341,906
1934-35	103	754	1101	591	171	96.7	58.9	68,288	179,546	247,834
1935-36	191	1042	910	250	105	62.9	40.5	15,002	157,613	172,615
1936-37	66.3	734	1709	538	121	74.5	71.3	17,006	200,099	217,105
1937-38	225	1139	1495	644	129	90.1	80.5	32,631	230,229	262,860
1938-39	202	969	694	368	115	72.9	47.0	29,680	149,764	179,444
1939-40	95.9	764	734	208	95.5	109	104	18,907	127,835	146,742
1940-41	93.4	500	548	281	89.7	133	167	16,421	109,876	126,297
1941-42	215	778	1219	746	221	134	99.6	47,152	206,753	253,905
1942-43	465	831	1694	1179	251	94.0	82.1	31,683	278,134	309,817
1943-44	49.2	475	650	254	136	106	93.4	18,172	106,824	124,996
1944-45	38.3	841	1524	561	115	123	105	23,235	200,071	223,306
1945-46	211	1014	1199	583	149	124	135	38,408	206,912	245,320
1946-47	305	1198	1126	650	176	136	458	43,433	245,873	289,306
1947-48	201	1315	2576	621	223	82.1	66.6	35,690	306,970	342,660
1948-49	148	1002	969	329	118	143	101	17,709	170,269	187,978
1949-50	116	827	2102	1413	383	127	325	48,056	320,765	368,821
1950-51	251	1516	1549	1448	397	438	528	70,683	372,351	443,034

Table 10-3

HISTORICAL SUMMARY
OF UNITED STATES SHARE OF
NATURAL FLOW OF ST. MARY RIVER AT INTERNATIONAL BOUNDARY

	Mean Monthly Discharge In Cfs. During Irrigation Season April - October							Run-off In Acre-Feet		
Year	April	May	June	July	August	September	October	Non Irrigation Season Nov. - Mar.	Irrigation Season Apr. - Oct.	For Year Nov. - Oct.
1951-52	348	1037	935	550	260	102	66.1	41,416	200,079	241,495
1952-53	218	1191	2600	1093	281	109	70.7	31,272	336,248	367,520
1953-54	111	1462	1652	1425	383	227	214	31,309	332,634	363,943
1954-55	66.9	590	1711	957	245	90.6	265	39,630	237,646	277,276
1955-56	153	1230	1649	847	250	111	130	44,510	264,855	309,365
1956-57	70.2	1618	1306	372	120	75.8	82.9	29,682	221,248	250,930
1957-58	100	1215	1237	424	143	128	132	29,256	206,065	235,321
1958-59	201	888	1861	897	237	351	325	46,756	287,954	334,710
1959-60	191	529	1358	635	183	93.6	59.3	47,693	184,278	231,971
1960-61	104	949	1720	495	144	101	188	29,251	223,748	252,999
1961-62	285	753	1128	466	211	109	130	30,343	186,427	216,770
1962-63	87.7	713	1529	687	140	101	67.9	49,755	201,094	250,849
1963-64	49.7	823	3039	883	187	149	201	22,180	321,442	343,622
1964-65	215	899	1908	848	272	169	164	33,991	270,687	304,678
1965-66	226	899	1524	716	177	113	90.2	35,541	226,647	262,188
1966-67	69.6	1084	2105	1066	241	96.9	77.1	33,023	286,978	320,001
1967-68	72.7	785	1477	630	226	364	245	47,261	227,993	275,254
1968-69	305	847	1364	669	129	80.4	116	39,464	212,412	251,876
Average	**182**	**930**	**1503**	**729**	**229**	**155**	**153**	**35,967**	**235,037**	**271,004**

1902 data not included in average

Table 11-1

HISTORICAL SUMMARY
OF CANADIAN SHARE OF
NATURAL FLOW OF ST. MARY RIVER AT INTERNATIONAL BOUNDARY

Mean Monthly Discharge In Cfs. During Irrigation Season April - October								Run-off In Acre-Feet		
Year	April	May	June	July	August	September	October	Non-Irrigation Season Nov. - Mar.	Irrigation Season Apr. - Oct.	For Year Nov. - Oct.
1901-02						462	358			
1902-03	[illegible]	1030	2767	1619	869	721	622	28,982	485,718	514,700
1903-04	[illegible]	1174	1635	1115	631	315	166	48,181	336,224	384,405
1904-05	225	776	1547	[illegible]	580	278	531	19,564	289,670	309,234
1905-06	846	[illegible]	1[illegible]	1[illegible]	640	454	535	25,796	320,021	345,817
1906-07	[illegible]	1[illegible]	325[illegible]	1[illegible]	834	774	457	62,041	459,463	521,504
1907-08	[illegible]	1[illegible]	3017	1111	578	346	361	31,218	517,059	548,277
1908-09	202	1[illegible]	2[illegible]	[illegible]	897	466	338	32,638	454,272	486,910
1909-10	7[illegible]	1[illegible]	1[illegible]	[illegible]	430	403	685	43,864	342,095	385,959
1910-11	[illegible]	1[illegible]	1[illegible]	1[illegible]	694	857	452	48,675	392,503	441,178
1911-12	[illegible]	1182	1[illegible]	[illegible]	608	393	317	29,546	315,620	345,166
1912-13	[illegible]	1[illegible]	2126	1[illegible]	748	424	336	34,802	407,942	442,744
1913-14	481	1[illegible]	1[illegible]	[illegible]	522	430	587	29,282	331,543	360,825
1914-15	[illegible]	[illegible]	1[illegible]	1[illegible]	652	586	534	41,985	332,997	374,982
1915-16	[illegible]	[illegible]	2[illegible]	[illegible]	781	633	294	54,887	460,270	515,157
1916-17	[illegible]	[illegible]	2[illegible]	[illegible]	545	352	284	29,414	386,717	416,131
1917-18	[illegible]	[illegible]	[illegible]	[illegible]	545	367	295	45,628	317,332	362,960
1918-19	[illegible]	[illegible]	[illegible]	[illegible]	374	252	140	24,842	243,703	268,545
1919-20	[illegible]	[illegible]	[illegible]	[illegible]	559	426	415	30,513	352,411	382,924
1920-21	[illegible]	[illegible]	[illegible]	[illegible]	535	312	373	36,058	380,477	416,535
1921-22	[illegible]	[illegible]	[illegible]	[illegible]	472	315	226	32,329	337,446	369,775
1922-23	[illegible]	[illegible]	[illegible]	[illegible]	556	360	414	23,595	353,371	376,966
1923-24	[illegible]	[illegible]	[illegible]	[illegible]	529	298	226	25,703	316,746	342,449
1924-25	[illegible]	[illegible]	[illegible]	[illegible]	569	406	305	39,309	425,201	464,510
1925-26	[illegible]	[illegible]	[illegible]	[illegible]	304	537	731	24,599	248,057	272,656

Table 11-2

HISTORICAL SUMMARY

OF CANADIAN SHARE OF

NATURAL FLOW OF ST. MARY RIVER AT INTERNATIONAL BOUNDARY

	Mean Monthly Discharge In Cfs. During Irrigation Season April - October							Run-off In Acre-Feet		
Year	April	May	June	July	August	September	October	Non Irrigation Season Nov. - Mar.	Irrigation Season Apr. - Oct.	For Year Nov. - Oct.
1926-27	392	1509	2884	1573	804	921	738	37,419	534,036	571,455
1927-28	394	2014	1637	1464	625	383	581	56,058	431,645	487,703
1928-29	236	1085	1446	803	368	218	217	33,020	265,105	298,125
1929-30	906	1380	1411	799	383	278	235	26,187	326,301	352,488
1930-31	168	1144	1086	563	424	348	221	19,428	239,897	259,325
1931-32	415	1415	1615	872	444	230	180	41,875	313,367	355,242
1932-33	300	1049	2336	1251	546	369	462	33,744	382,211	415,955
1933-34	1024	1887	1631	744	401	242	201	84,136	371,274	455,410
1934-35	290	1087	1525	925	459	290	177	68,288	288,022	356,310
1935-36	426	1376	1243	574	315	189	122	15,002	257,232	272,234
1936-37	200	1063	2043	871	354	224	214	17,007	300,603	317,610
1937-38	471	1473	1828	978	380	270	241	32,631	341,754	374,385
1938-39	438	1302	1027	701	344	219	141	29,679	253,232	282,911
1939-40	285	1096	1068	530	287	319	311	18,908	236,221	255,129
1940-41	271	833	881	598	269	387	468	16,421	224,969	241,390
1941-42	461	1112	1553	1079	533	392	297	47,152	328,915	376,067
1942-43	775	1165	2028	1512	559	282	246	31,683	397,632	429,315
1943-44	148	798	984	555	400	318	280	18,171	211,297	229,468
1944-45	115	1158	1858	894	342	363	316	23,236	305,605	328,841
1945-46	446	1347	1532	917	422	371	386	38,408	328,659	367,067
1946-47	607	1531	1459	984	481	390	791	43,433	379,089	422,522
1947-48	420	1649	2910	955	535	247	200	35,689	418,054	453,743
1948-49	378	1335	1303	662	353	390	303	17,710	286,368	304,078
1949-50	346	1143	2435	1746	717	364	604	48,055	446,013	494,068
1950-51	568	1850	1882	1782	731	771	862	70,683	512,882	583,565

Table 11-3

HISTORICAL SUMMARY

OF CANADIAN SHARE OF

NATURAL FLOW OF ST. MARY RIVER AT INTERNATIONAL BOUNDARY

	Mean Monthly Discharge In Cfs. During Irrigation Season April - October							Run-off In Acre-Feet		
Year	April	May	June	July	August	September	October	Non Irrigation Season Nov. - Mar.	Irrigation Season Apr. - Oct.	For Year Nov. - Oct.
1951-52	621	1371	1269	883	578	307	198	41,416	317,014	358,430
1952-53	417	1525	2934	1426	606	328	212	31,273	450,712	481,985
1953-54	325	1775	1985	1759	717	544	522	31,309	463,240	494,549
1954-55	200	901	2044	1291	554	272	545	39,630	352,094	391,724
1955-56	372	1563	1982	1180	578	330	383	44,510	387,538	432,048
1956-57	205	1951	1640	705	358	227	249	29,681	324,016	353,697
1957-58	300	1539	1590	758	413	354	397	29,256	324,581	353,837
1958-59	501	1222	2195	1231	562	684	654	46,757	426,738	473,495
1959-60	496	858	1691	969	463	281	178	47,692	298,629	346,321
1960-61	311	1275	2054	828	422	305	470	29,251	343,007	372,258
1961-62	522	1087	1462	799	517	327	385	30,343	308,898	339,241
1962-63	260	1047	1862	1021	415	304	204	49,754	309,560	359,314
1963-64	149	1156	3373	1217	482	444	503	22,180	442,497	464,677
1964-65	449	1233	2241	1182	603	463	445	33,990	400,540	434,530
1965-66	559	1230	1858	1050	485	339	270	35,541	350,620	386,161
1966-67	209	1383	2439	1400	558	290	231	33,023	394,415	427,438
1967-68	218	1118	1780	963	556	692	558	47,261	356,471	403,732
1968-69	618	1180	1698	1003	375	241	343	39,463	330,489	369,952
Average	**405**	**1260**	**1836**	**1061**	**525**	**391**	**376**	**35,967**	**354,751**	**390,718**

1902 data not included in average.

TABLE NO. 12-1

DETERMINATION OF NATURAL FLOW OF MILK RIVER AT EASTERN CROSSING OF INTERNATIONAL BOUNDARY

Quantities in cfs. for April 1969

DATE		RECORDER FLOWS				NATURAL FLOW COMPUTATIONS				NATURAL FLOW
Western Crossing	Eastern Crossing	North Fork Milk River above St. Mary Canal	North Milk River near International Boundary	Milk River at Western Crossing	Milk River at Eastern Crossing	Total Flow Entering Canada	Natural Flow Entering Canada	Evaporation Loss in Canada	Inflow or Loss in Canada	AT EASTERN CROSSING
	1									1,100
	2				Diversion began on May 14, 1969,					2,430
	3				Use Milk River at Eastern Crossing as					3,940
	4				natural flow for April.					3,220
	5									2,770
	6									2,150
	7									2,170
	8									2,140
	9									1,840
	10									1,430
	11									1,010
	12									995
	13									980
	14									945
	15									884
	16									852
	17									745
	18									640
	19									587
	20									555
	21									556
	22									531
	23									470
	24									438
	25									412
	26									457
	27									662
	28									625
	29									506
	30									444
	31									
TOTAL										36,484

TABLE NO. 12-2

DETERMINATION OF NATURAL FLOW OF MILK RIVER AT EASTERN CROSSING OF INTERNATIONAL BOUNDARY

Quantities in cfs. for May 1969

DATE		RECORDER FLOWS				NATURAL FLOW COMPUTATIONS				NATURAL FLOW
Western Crossing	Eastern Crossing	North Fork Milk River above St. Mary Canal	North Milk River near International Boundary	Milk River at Western Crossing	Milk River at Eastern Crossing	Total Flow Entering Canada	Natural Flow Entering Canada	Evaporation Loss in Canada	Inflow or Loss in Canada	AT EASTERN CROSSING
	1									435
	2			Diversion began May 14, 1969.						432
	3			Use Milk River at Eastern Crossing as						411
	4			natural flow until May 18.						379
	5									355
1	6									342
	7									328
	8									309
	9									289
5	10									276
	11									275
	12									276
	13									258
	14									248
10	15									243
	16									238
	17									248
	18									257
	19	36	42	139	340	181	175	2	159	336
15	20	42	54	134	811	188	176	7	623	806
	21	37	467	141	837	608	178	17	229	424
	22	40	665	158	826	823	198	20	3	221
	23	35	700	160	811	860	195	21	- 49	167
	24	33	700	144	829	844	177	25	- 15	187
20	25	32	701	124	835	825	156	34	10	200
	26	31	697	117	808	814	148	42	- 6	184
	27	31	696	111	799	807	142	27	- 8	161
	28	31	693	100	795	793	131	35	2	168
	29	31	692	91	766	783	122	34	- 17	139
25	30	30	689	85	775	774	115	23	1	139
	31	29	691	77	811	768	106	36	43	185
TOTAL										

TABLE NO. 12-3

DETERMINATION OF NATURAL FLOW OF MILK RIVER AT EASTERN CROSSING OF INTERNATIONAL BOUNDARY

Quantities in cfs. for June 1969

DATE		RECORDER FLOWS				NATURAL FLOW COMPUTATIONS				NATURAL FLOW
Western Crossing	Eastern Crossing	North Fork Milk River above St. Mary Canal	North Milk River near International Boundary	Milk River at Western Crossing	Milk River at Eastern Crossing	Total Flow Entering Canada	Natural Flow Entering Canada	Evaporation Loss in Canada	Inflow or Loss in Canada	AT EASTERN CROSSING
May 27	1	29	697	69	813	766	98	41	47	186
	2	28	698	63	825	761	91	44	64	199
	3	27	706	60	840	766	87	38	74	199
	4	46	738	64	905	802	110	41	103	254
31	5	39	740	84	842	824	123	46	18	187
1	6	31	725	183	808	908	214	29	- 100	143
	7	29	722	132	814	854	161	18	- 40	139
	8	28	721	94	840	815	122	30	25	177
	9	27	719	74	865	793	101	40	72	213
5	10	26	719	61	1,060	780	87	43	280	410
	11	28	725	55	1,200	780	83	31	420	534
	12	86	828	70	1,040	898	156	20	142	318
	13	47	764	404	935	1,168	451	20	- 233	238
	14	36	728	426	881	1,154	462	29	- 273	218
10	15	32	718	286	858	1,004	318	31	- 146	203
	16	30	716	193	848	909	223	26	- 61	188
	17	34	721	150	847	871	184	27	- 24	187
	18	35	712	142	850	854	177	40	- 4	213
	19	29	718	172	829	890	201	11	- 61	151
15	20	28	736	134	844	870	162	14	- 26	150
	21	27	736	109	828	845	136	17	- 17	136
	22	27	734	92	834	826	119	24	8	151
	23	26	724	78	837	802	104	29	35	168
	24	28	717	71	875	788	99	14	87	200
20	25	32	725	73	902	798	105	12	104	221
	26	30	725	128	913	853	158	22	60	240
	27	28	722	136	1,040	858	164	19	182	365
	28	27	723	113	1,580	836	140	27	744	911
	29	30	729	110	1,730	839	140	17	891	1,048
25	30	80	838	178	1,390	1,016	258	29	374	661
	31									
TOTAL		1,030	21,924	4,004	28,673	25,928	5,034	829	2,745	8,608

TABLE NO. 12-4

DETERMINATION OF NATURAL FLOW OF MILK RIVER AT EASTERN CROSSING OF INTERNATIONAL BOUNDARY

Quantities in cfs. for July 1969

DATE		RECORDED FLOW				NATURAL FLOW COMPUTATIONS				NATURAL FLOW
Western Crossing	Eastern Crossing	North Fork Milk River above St. Mary Canal	North Milk River near International Boundary	Milk River at Western Crossing	Milk River at Eastern Crossing	Total Flow Entering Canada	Natural Flow Entering Canada	Evaporation Loss in Canada	Inflow or Loss in Canada	AT EASTERN CROSSING
June 26	1	112	878	655	1,660	1,533	767	33	127	927
	2	52	683	784	1,780	1,467	836	44	313	1,193
	3	61	703	574	1,390	1,277	635	34	113	782
	4	117	905	595	1,270	1,500	712	38	- 230	520
30	5	70	742	711	1,240	1,453	781	17	- 213	585
1	6	51	708	402	1,080	1,110	453	25	- 30	448
	7	48	710	277	1,040	987	325	27	53	405
	8	45	702	221	1,080	923	266	34	157	457
	9	39	681	193	959	874	232	25	85	342
5	10	36	678	169	938	847	205	30	91	326
	11	36	676	156	924	832	192	33	92	317
	12	34	675	152	897	827	186	32	70	288
	13	33	675	150	864	825	183	31	39	253
	14	31	686	161	833	847	192	24	- 14	202
10	15	29	697	136	818	833	165	35	- 15	185
	16	28	696	111	813	807	139	33	6	178
	17	28	694	98	806	792	126	35	14	175
	18	27	696	90	806	786	117	35	20	172
	19	27	697	79	813	776	106	25	37	168
15	20	26	697	71	780	768	97	32	12	141
	21	26	698	63	780	761	89	35	19	143
	22	26	698	57	772	755	83	32	17	132
	23	26	697	54	766	751	80	38	15	133
	24	26	695	52	750	747	78	36	3	117
20	25	26	699	49	758	748	75	50	10	135
	26	25	698	48	767	746	73	44	21	138
	27	25	699	44	731	743	69	39	- 12	96
	28	25	710	40	730	750	65	40	- 20	85
	29	25	718	37	741	755	62	46	- 14	94
25	30	24	722	33	734	755	57	44	- 21	80
	31	24	718	32	731	750	56	43	- 19	80
TOTAL		1,208	22,031	6,294	29,051	28,325	7,502	1,069	726	9,297

TABLE NO. 12-5

DETERMINATION OF NATURAL FLOW OF MILK RIVER AT EASTERN CROSSING OF INTERNATIONAL BOUNDARY

Quantities in cfs. for August 1969

DATE		RECORDER FLOWS				NATURAL FLOW COMPUTATIONS				NATURAL FLOW
Western Crossing	Eastern Crossing	North Fork Milk River above St. Mary Canal	North Milk River near International Boundary	Milk River at Western Crossing	Milk River at Eastern Crossing	Total Flow Entering Canada	Natural Flow Entering Canada	Evaporation Loss in Canada	Inflow or Loss in Canada	AT EASTERN CROSSING
July 27	1	24	724	30	736	754	54	43	- 18	79
	2	24	727	29	719	756	53	55	- 37	71
	3	24	727	28	729	755	52	46	- 26	72
	4	24	730	26	712	756	50	52	- 44	58
31	5	24	731	24	724	755	48	60	- 31	77
1	6	24	734	21	722	755	45	54	- 33	66
	7	24	728	19	670	747	43	52	- 77	18
	8	24	724	18	666	742	42	46	- 76	12
	9	24	722	17	656	739	41	48	- 83	6
5	10	24	730	15	670	745	39	64	- 75	28
	11	23	717	14	684	731	37	38	- 47	28
	12	23	721	14	684	735	37	48	- 51	34
	13	23	719	13	679	732	36	43	- 53	26
	14	23	717	13	658	730	36	47	- 72	11
10	15	23	717	13	660	730	36	62	- 70	28
	16	23	714	13	674	727	36	46	- 53	29
	17	23	715	12	660	727	35	47	- 67	15
	18	23	713	11	666	724	34	44	- 58	20
	19	22	718	11	664	729	33	54	- 65	22
15	20	22	721	10	673	731	32	56	- 58	30
	21	21	720	9	662	729	30	57	- 67	20
	22	22	716	9	657	725	31	45	- 68	8
	23	22	721	8	643	729	30	47	- 86	0
	24	21	723	8	646	731	29	54	- 85	0
20	25	21	720	8	652	728	29	62	- 76	15
	26	21	717	7	652	724	28	62	- 72	18
	27	20	713	6	636	719	26	57	- 83	0
	28	21	719	6	649	725	27	43	- 76	0
	29	21	720	6	630	726	27	52	- 96	0
25	30	19	723	5	632	728	24	46	- 96	0
	31	19	719	5	628	724	24	43	- 96	0
TOTAL		696	22,360	428	20,793	22,788	1,124	1,574 3	- 1,995	791

TABLE NO. 12-6

DETERMINATION OF NATURAL FLOW OF MILK RIVER AT EASTERN CROSSING OF INTERNATIONAL BOUNDARY

Quantities in cfs. for September 1969

DATE		RECORDED FLOWS				NATURAL FLOW COMPUTATIONS				NATURAL FLOW
Western Crossing	Eastern Crossing	North Fork Milk River above St. Mary Canal	North Milk River near International Boundary	Milk River at Western Crossing	Milk River at Eastern Crossing	Total Flow Entering Canada	Natural Flow Entering Canada	Evaporation Loss in Canada	Inflow or Loss in Canada	AT EASTERN CROSSING
August 27	1	20	726	4	636	730	24	46	- 94	0
	2	20	721	4	624	725	24	50	- 101	0
	3	20	724	4	635	728	24	34	- 93	0
	4	21	723	4	653	727	25	30	- 74	0
	5	20	723	4	640	727	24	34	- 87	0
1	6	20	717	3	623	720	23	34	- 97	0
	7	19	714	3	623	717	22	49	- 94	0
	8	19	710	3	617	713	22	37	- 96	0
	9	20	711	3	629	714	23	39	- 85	0
5	10	20	709	3	647	712	23	37	- 65	0
	11	20	710	3	645	713	23	39	- 68	0
	12	20	710	2	660	712	22	36	- 52	6
	13	20	708	2	676	710	22	57	- 34	45
	14	20	707	2	691	709	22	27	- 18	31
10	15	20	707	2	675	709	22	31	- 34	19
	16	20	709	2	634	711	22	32	- 77	0
	17	19	706	2	558	708	21	31	- 150	0
	18	19	655	1	448	656	20	32	- 208	0
	19	19	535	2	343	537	21	21	- 194	0
15	20	20	376	3	254	379	23	17	- 125	0
	21	20	168	3	191	171	23	9	20	52
	22	20	51	3	155	54	23	6	101	130
	23	20	36	4	131	40	24	8	91	123
	24	20	35	3	118	38	23	6	80	109
20	25	21	36	4	105	40	25	4	65	94
	26	24	34	5	99	39	29	3	60	92
	27	22	29	6	92	35	28	3	57	88
	28	22	28	7	84	35	29	5	49	83
	29	21	27	10	78	37	31	3	41	75
25	30	21	27	12	72	39	33	3	33	69
	31									
TOTAL		607	14,172	113	13,036	14,285	720	763	- 1,249	1,016

TABLE NO. 12-7

DETERMINATION OF NATURAL FLOW OF MILK RIVER AT EASTERN CROSSING OF INTERNATIONAL BOUNDARY

Quantities in cfs. for October 1969

DATE		RECORDER FLOWS				NATURAL FLOW COMPUTATIONS				NATURAL FLOW
Western Crossing	Eastern Crossing	North Fork Milk River above St. Mary Canal	North Milk River near International Boundary	Milk River at Western Crossing	Milk River at Eastern Crossing	Total Flow Entering Canada	Natural Flow Entering Canada	Evaporation Loss in Canada	Inflow or Loss in Canada	AT EASTERN CROSSING
	1									67
	2			Diversion ended September		20, 1969				58
	3									60
	4			Channel completely drained		by September 30.				65
	5									70
	6			Use Milk River at Eastern		Crossing as				70
	7			natural flow from October		1, 1969.				68
	8									75
	9									83
	10									92
	11									85
	12									80
	13									72
	14									72
	15									72
	16									70
	17									68
	18									70
	19									73
	20									73
	21									72
	22									71
	23									70
	24									70
	25									70
	26									75
	27									90
	28									80
	29									70
	30									90
	31									120
TOTAL										2,321

DETERMINATION OF NATURAL FLOW OF LODGE CREEK
AT INTERNATIONAL BOUNDARY

1969
Table 13-1
Alberta Reservoirs
Quantities in cfs-days

Division Period at International Boundary	Michele Reservoir		Greasewood Reservoir		Massy Reservoir		Total Change In Reservoir Contents In Upper Lodge Creek Basin		Adjustment For Channel Losses To International Boundary	Net Change In Reservoir Contents In Upper Lodge Creek Basin	
	Stored	Released	Stored	Released	Stored	Released	Stored	Released	Computed	Stored	Released
March 1 - 10	0	0	0	0	0	0	0	0	0	0	0
March 11 - 20	0	0	0	0	0	0	0	0	0	0	0
March 21 - 31	0	0	0	0	0	0	0	0	0	0	0
April 1 - 10	124	0	0	0	82	0	206	0	46	160	0
April 11 - 20	116	0	14	0	0	33	97	0	36	61	0
April 21 - 30	7	0	9	0	15	0	31	0	31	0	0
May 1 - 10	0	31	2	0	3	0	0	26	- 26	0	0
May 11 - 20	0	0	2	0	0	0	2	0	2	0	0
May 21 - 31	0	3	1	0	0	3	0	5	- 5	0	0
June 1 - 10	0	0	1	0	0	34	0	33	- 31	0	2
June 11 - 20	0	3	1	0	0	10	0	12	- 12	0	0
June 21 - 30	0	1	1	0	0	0	0	0	0	0	0
July 1 - 10	0	6	1	0	0	0	0	5	- 5	0	0
July 11 - 20	0	0	1	0	0	0	1	0	1	0	0
July 21 - 31	0	1	1	0	2	0	2	0	2	0	0
Aug. 1 - 10	3	0	0	0	2	0	5	0	5	0	0
Aug. 11 - 20	0	1	0	0	3	0	2	0	2	0	0
Aug. 21 - 31	0	0	1	0	5	0	6	0	6	0	0
Sept. 1 - 10	0	0	0	24	4	0	0	20	- 20	0	0
Sept. 11 - 20	0	3	0	0	3	0	0	0	0	0	0
Sept. 21 - 30	0	3	0	0	3	0	0	0	0	0	0
Oct. 1 - 10	0	4	0	0	4	0	0	0	0	0	0
Oct. 11 - 20	0	4	0	0	2	0	0	2	- 2	0	0
Oct. 21 - 31	0	6	0	0	2	0	0	4	- 4	0	0
Total	250	66	35	24	130	80	352	107	26	221	2
Acre-feet	496	131	70	48	258	159	698	212	52	438	4

DETERMINATION OF NATURAL FLOW OF LODGE CREEK
AT INTERNATIONAL BOUNDARY
19 69

Table 13-2
Alberta Reservoirs
Quantities in cfs-days

Division Period at International Boundary	Bare Creek Reservoir		Adjustment for Channel Losses to International Boundary	Net Change in Contents Bare Creek Reservoir		Cressday Reservoir		Adjustment for Channel Losses to International Boundary	Net Change in Contents Cressday Reservoir	
	Stored	Released	Computed	Stored	Released	Stored	Released	Computed	Stored	Released
Mar. 1 - 10	0	0	0	0	0	0	0	0	0	0
Mar.11 - 20	0	0	0	0	0	0	0	0	0	0
Mar.21 - 31	0	0	0	0	0	0	0	0	0	0
Apr. 1 - 10	209	0	46	163	0	160	0	28	132	0
Apr.11 - 20	274	0	52	222	0	66	0	23	43	0
Apr.21 - 30	24	0	24	0	0	3	0	3	0	0
May 1 - 10	1	0	1	0	0	0	9	- 9	0	0
May 11 - 20	5	0	5	0	0	0	9	- 9	0	0
May 21 - 31	4	0	4	0	0	0	2	- 2	0	0
June 1- 10	0	0	0	0	0	2	0	2	0	0
June 11- 20	0	0	0	0	0	0	1	- 1	0	0
June 21- 30	10	0	10	0	0	15	0	15	0	0
July 1- 10	5	0	5	0	0	6	0	6	0	0
July 11- 20	0	0	0	0	0	0	6	- 6	0	0
July 21- 31	0	1	- 1	0	0	0	0	0	0	0
Aug. 1- 10	0	64	- 38	0	26	3	0	3	0	0
Aug. 11- 20	9	0	9	0	0	4	0	4	0	0
Aug. 21- 31	5	0	5	0	0	4	0	4	0	0
Sept. 1- 10	2	0	2	0	0	0	4	- 4	0	0
Sept.11- 20	0	70	- 36	0	34	2	0	2	0	0
Sept.21- 30	5	0	5	0	0	4	0	4	0	0
Oct. 1- 10	7	0	7	0	0	0	1	- 1	0	0
Oct. 11- 20	2	0	2	0	0	0	2	- 2	0	0
Oct. 21- 31	2	0	2	0	0	2	0	2	0	0
Total	564	135	104	385	60	271	34	62	175	0
Acre-feet	1119	268	206	764	119	537	67	123	347	0

DETERMINATION OF NATURAL FLOW OF LODGE CREEK
AT INTERNATIONAL BOUNDARY
1969

Table 13-3

Alberta Reservoirs
Quantities in cfs-days

Division Period at International Boundary	Mitchell Reservoir		Adjustment for Channel Losses to International Boundary	Net Change in Contents Mitchell Reservoir		Jaydot Reservoir		Adjustment for Channel Losses to International Boundary	Net Change in Contents Jaydot Reservoir	
	Stored	Released	Computed	Stored	Released	Stored	Released	Computed	Stored	Released
Mar. 1 - 10	0	0	0	0	0	0	0	0	0	0
Mar.11 - 20	0	0	0	0	0	0	0	0	0	0
Mar.21 - 31	0	0	0	0	0	0	0	0	0	0
Apr. 1 - 10	249	0	34	215	0	139	0	14	125	0
Apr.11 - 20	190	0	30	160	0	0	2	- 2	0	0
Apr.21 - 30	20	0	20	0	0	0	2	- 2	0	0
May 1 - 10	0	18	- 18	0	0	0	2	- 2	0	0
May 11 - 20	0	11	- 11	0	0	0	1	- 1	0	0
May 21 - 31	0	16	- 16	0	0	0	1	- 1	0	0
June 1- 10	0	37	- 23	0	14	1	0	1	0	0
June 11- 20	0	34	- 22	0	12	3	0	3	0	0
June 21- 30	0	22	- 20	0	2	4	0	4	0	0
July 1- 10	0	28	- 21	0	7	3	0	3	0	0
July 11- 20	0	22	- 20	0	2	0	3	- 3	0	0
July 21- 31	0	17	- 17	0	0	2	0	2	0	0
Aug. 1- 10	0	16	- 16	0	0	2	0	2	0	0
Aug. 11- 20	0	14	- 14	0	0	0	0	0	0	0
Aug. 21- 31	0	11	- 11	0	0	2	0	2	0	0
Sept. 1- 10	0	11	- 11	0	0	1	0	1	0	0
Sept.11- 20	o	11	- 11	0	0	0	1	- 1	0	0
Sept.21- 30	0	5	- 5	0	0	0	2	- 2	0	0
Oct. 1- 10	0	7	- 7	0	0	0	1	- 1	0	0
Oct. 11- 20	0	6	- 6	0	0	0	1	- 1	0	0
Oct. 21- 31	0	6	- 6	0	0	1	0	1	0	0
Total	459	292	- 171	375	37	158	16	17	125	0
Acre-feet	910	579	- 339	743	73	313	31	34	248	0

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Table 13-4

Middle Creek Reservoir Storage and Diversion
Quantities in cfs-days

Division Period at International Boundary	Middle Creek Reservoir		Middle Creek Outlet	Bedford Project Outlet	Flood Spillway	Return Flow from	Gross Depletion Middle Creek Reservoir	Adjustment for Channel Losses to International Boundary	Net Depletion Middle Creek Reservoir
	Stored	Released						Computed	
Mar. 1 - 10	6	0	0	0	0	0	6	6	0
Mar. 11 - 20	5	0	0	0	0	0	5	5	0
Mar. 21 - 31	6	0	0	0	0	0	6	6	0
Apr. 1 - 10	1,172	0	0	0	0	0	1,172	89	1,083
Apr. 11 - 20	1,143	0	0	0	0	0	1,143	87	1,056
Apr. 21 - 30	93	0	0	0	0	0	93	24	69
May 1 - 10	61	0	0	0	0	0	61	24	37
May 11 - 20	26	0	0	0	0	0	26	21	5
May 21 - 31	20	0	0	0	0	0	20	20	0
June 1 - 10	0	230	246	0	0	0	16	16	0
June 11 - 20	0	105	114	0	0	0	9	9	0
June 21 - 30	36	0	62	0	0	0	98	32	66
July 1 - 10	84	0	0	0	0	0	84	30	54
July 11 - 20	19	0	0	0	0	0	19	19	0
July 21 - 31	71	0	0	0	0	0	71	30	41
Aug. 1 - 10	8	0	0	0	0	0	8	8	0
Aug. 11 - 20	54	0	0	0	0	0	54	25	29
Aug. 21 - 31	33	0	0	0	0	0	33	24	9
Sep. 1 - 10	14	0	0	0	0	0	14	14	0
Sep. 11 - 20	0	45	0	0	0	0	- 45	- 23	- 22
Sep. 21 - 30	0	197	28	199	0	0	30	21	9
Oct. 1 - 10	0	81	0	84	0	0	3	3	0
Oct. 11 - 20	0	121	123	0	0	24	- 22	- 21	- 1
Oct. 21 - 31	0	16	54	0	0	58	- 20	- 20	0
Total	2,851	795	627	283	0	82	2,884	449	2,435
Acre-feet	5,655	1,577	1,244	561	0	163	5,270	890	4,830

DETERMINATION OF NATURAL FLOW OF LODGE CREEK
AT INTERNATIONAL BOUNDARY
1969
Table 13-5
Altawan Reservoir Storage and Diversion
Quantities in cfs-days

Division Period at International Boundary	Altawan Reservoir Stored	Altawan Reservoir Released	Spangler Ditch	Return Flow from Spangler Project	Return Flow from Bedford Project	Gross Depletion at Altawan	Adjustment for Channel Losses to International Boundary Computed	Net Depletion of Altawan
Mar. 1 - 10	0	0	0	0	0	0	0	0
Mar. 11 - 20	0	0	0	0	0	0	0	0
Mar. 21 - 31	1	0	0	0	0	1	1	0
Apr. 1 - 10	2,460	0	0	0	0	2,460	84	2,376
Apr. 11 - 20	163	0	26	0	104	85	12	73
Apr. 21 - 30	0	132	170	1	3	34	11	23
May 1 - 10	117	0	8	41	0	84	14	70
May 11 - 20	11	0	3	1	0	13	10	3
May 21 - 31	0	259	213	0	0	- 46	- 13	- 33
June 1 - 10	0	315	291	47	10	- 81	- 16	- 65
June 11 - 20	0	185	174	8	1	- 20	- 11	- 9
June 21 - 30	0	163	148	58	0	- 73	- 15	- 58
July 1 - 10	32	0	0	5	1	26	11	15
July 11 - 20	9	0	0	0	0	9	9	0
July 21 - 31	13	0	0	0	20	- 7	- 7	0
Aug. 1 - 10	0	149	131	0	3	- 21	- 11	- 10
Aug. 11 - 20	0	338	345	0	0	7	7	0
Aug. 21 - 31	0	54	39	7	0	- 22	- 12	- 10
Sep. 1 - 10	7	0	0	0	0	7	7	0
Sep. 11 - 20	0	1	0	0	0	- 1	- 1	0
Sep. 21 - 30	15	0	0	0	0	15	10	5
Oct. 1 - 10	0	6	0	0	0	- 6	- 6	0
Oct. 11 - 20	0	1	0	0	0	- 1	- 1	0
Oct. 21 - 31	4	0	0	0	25	- 21	- 11	- 10
Total	2,832	1,603	1,548	168	167	2,442	72	2,370
Acre-feet	5,617	3,179	3,070	333	331	4,844	143	4,701

DETERMINATION OF NATURAL FLOW OF LODGE CREEK
AT INTERNATIONAL BOUNDARY
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Table 13-6
Quantities in cfs-days

Division Period at International Boundary	Net Depletion in Canada	Adjustment for Minor Diversions in Canada	Lodge Creek at International Boundary	Lodge Creek at International Boundary		
				Natural Flow	United States Share	Received in Excess
Mar. 1 - 10	0	0	0	0	0	0
Mar. 11 - 20	0	0	0	0	0	0
Mar. 21 - 31	0	0	0	0	0	0
Apr. 1 - 10	4,254	202	6,354	10,810	5,405	949
Apr. 11 - 20	1,615	101	1,718	3,434	1,717	1
Apr. 21 - 30	92	101	196	389	194	2
May 1 - 10	107	0	80	187	94	- 14
May 11 - 20	8	0	45	53	27	18
May 21 - 31	- 33	0	28	0	0	28
June 1 - 10	- 81	0	39	0	0	39
June 11 - 20	- 21	0	8	0	0	8
June 21 - 30	6	0	54	60	30	24
July 1 - 10	62	0	8	70	35	- 27
July 11 - 20	- 2	0	0	0	0	0
July 21 - 31	41	0	0	41	20	- 20
Aug. 1 - 10	- 36	0	0	0	0	0
Aug. 11 - 20	29	0	0	29	15	- 15
Aug. 21 - 31	- 1	0	0	0	0	0
Sep. 1 - 10	0	0	0	0	0	0
Sep. 11 - 20	- 56	0	0	0	0	0
Sep. 21 - 30	14	0	0	14	7	- 7
Oct. 1 - 10	0	0	0	0	0	0
Oct. 11 - 20	- 1	0	0	0	0	0
Oct. 21 - 31	- 10	0	0	0	0	0
Total	5,987	404	8,530	15,087	7,544	986
Acre-Feet	11,875	801	16,919	29,925	14,963	1,956

DETERMINATION OF NATURAL FLOW OF BATTLE CREEK
AT INTERNATIONAL BOUNDARY
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Table 14-1

Quantities in cfs-days

Division Period at International Boundary	Reesor Lake		Adams Lake		Total Change in Contents Reesor Lake and Adams Lake		Adjustment for Channel Losses to International Boundary computed	Net Depletion at Reesor Lake and Adams Lake	
	Stored	Released	Stored	Released	Stored	Released		Stored	Released
Mar. 1 - Mar. 4	0	0	0	0	0	0	0	0	0
Mar. 5 - Mar.14	0	0	0	0	0	0	0	0	0
Mar.15 - Mar.25	0	0	0	0	0	0	0	0	0
Mar.26 - Apr. 4	0	0	0	0	0	0	0	0	0
Apr. 5 - Apr.14	67	0	27	0	94	0	60	34	0
Apr.15 - Apr.24	0	23	8	0	0	15	- 15	0	0
Apr.25 - May 4	0	21	7	0	0	14	- 14	0	0
May 5 - May 14	0	9	9	0	0	0	0	0	0
May 15 - May 25	8	0	11	0	19	0	19	0	0
May 26 - June 4	8	0	13	0	21	0	21	0	0
June 5 -June 14	19	0	15	0	34	0	34	0	0
June 15-June 24	27	0	14	0	41	0	41	0	0
June 25-July 4	23	0	7	0	30	0	30	0	0
July 5-July 14	20	0	1	0	21	0	21	0	0
July 15-July 25	32	0	12	0	44	0	44	0	0
July 26-Aug. 4	29	0	3	0	32	0	32	0	0
Aug. 5 - Aug.14	9	0	4	0	13	0	13	0	0
Aug.15 - Aug.25	8	0	7	0	15	0	15	0	0
Aug.26 - Sept.4	6	0	10	0	16	0	16	0	0
Sept. 5-Sept.14	3	0	1	0	4	0	4	0	0
Sept.15-Sept.24	0	1		3	0	4	- 4	0	0
Sept.25- Oct. 4	0	4	27	0	23	0	23	0	0
Oct. 5 - Oct.14	25	0	36	0	61	0	60	1	0
Oct.15 - Oct.25	30	0	22	0	52	0	52	0	0
Oct.26 - Oct.31	17	0	3	0	20	0	20	0	0
Total	331	58	237	3	540	33	472	35	0
Acre-feet	656	115	470	6	1,071	66	936	69	0

DETERMINATION OF NATURAL FLOW OF BATTLE CREEK
AT INTERNATIONAL BOUNDARY
1969
Table 14-2
Diversion to Cypress Lake
Quantities in cfs - days

Division Period at International Boundary	West Inflow Canal	West Inflow Canal Drain	Diversion to Cypress Lake	West Outflow Canal	Net Diversion to Cypress Lake
Mar. 1 - Mar. 4	0	0	0	0	0
Mar. 5 - Mar.14	0	0	0	0	0
Mar.15 - Mar.25	0	0	0	0	0
Mar.26 - Apr. 4	0	0	0	0	0
Apr. 5 - Apr.14	2,970	1	2,969	30	2,939
Apr.15 - Apr.24	1,654	0	1,654	212	1,442
Apr.25 - May 4	279	0	279	87	192
May 5 - May 14	130	0	130	71	59
May 15 - May 25	5	135	- 130	218	- 348
May 26 - June 4	5	325	- 320	974	- 1,294
June 5 - June 14	7	111	- 104	235	- 339
June 15 - June 24	6	2	4	1	3
June 25 - July 4	6	2	4	33	- 29
July 5 - July 14	85	1	84	56	28
July 15 - July 25	67	8	59	395	- 336
July 26 - Aug. 4	15	18	- 3	1,550	- 1,553
Aug. 5 - Aug.14	33	34	- 1	630	- 631
Aug.15 - Aug.25	10	10	0	0	0
Aug.26 - Sept.4	0	0	0	0	0
Sept. 5 - Sept.14	0	0	0	0	0
Sept.15 - Sept.24	0	0	0	0	0
Sept.25 - Oct. 4	0	0	0	0	0
Oct. 5 - Oct.14	0	0	0	1	- 1
Oct.15 - Oct.25	0	0	0	1	- 1
Oct.26 - Oct.31	0	0	0	1	- 1
Total	5,272	647	4,625	4,495	130
Acre-feet	10,457	1,283	9,174	8,916	258

DETERMINATION OF NATURAL FLOW OF BATTLE CREEK
AT INTERNATIONAL BOUNDARY

1969

Table 14-3
Diversion to Irrigated Lands
Computed in cfs - days

Division Period at International Boundary	Stirling & Lake Lines	McKenzie Lines	Richards-on Line	Midway Ditch	Total Diversion	Return Flow	Net Diversion to Irrigated Land
Mar. 1 - Mar. 4	0	0	0	0	0	0	0
Mar. 5 - Mar.14	0	0	0	0	0	0	0
Mar.15 - Mar.25	0	0	0	0	0	0	0
Mar.26 - Apr. 4	0	0	0	0	0	0	0
Apr. 5 - Apr.14	144	0	0	0	144	29	115
Apr.15 - Apr.24	217	0	0	0	217	43	174
Apr.25 - May 4	44	0	0	0	44	9	35
May 5 - May 14	0	0	0	0	0	0	0
May 15 - May 25	2	49	117	152	320	64	256
May 26 - June 4	216	333	360	545	1,454	291	1,163
June 5 - June 14	0	173	46	45	264	53	211
June 15-June 24	0	2	0	0	2	0	2
June 25-July 4	0	0	0	0	0	0	0
July 5-July 14	0	0	0	0	0	0	0
July 15-July 25	1	24	92	233	350	70	280
July 26-Aug. 4	190	443	482	560	1,675	335	1,340
Aug. 5 - Aug.14	0	168	126	221	515	103	412
Aug.15 - Aug.25	0	0	0	0	0	0	0
Aug.26 - Sept.4	0	0	0	0	0	0	0
Sept. 5-Sept.14	0	0	0	0	0	0	0
Sept.15-Sept.24	0	0	0	0	0	0	0
Sept.25- Oct. 4	0	0	0	0	0	0	0
Oct. 5 - Oct.14	0	0	0	0	0	0	0
Oct.15 - Oct.25	33	0	0	0	33	7	26
Oct.26 - Oct.31	0	0	0	0	0	0	0
Total	847	1,192	1,223	1,756	5,018	1,004	4,014
Acre-feet	1,680	2,364	2,426	3,483	9,953	1,991	7,962

DETERMINATION OF NATURAL FLOW OF BATTLE CREEK
AT INTERNATIONAL BOUNDARY

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Table 14-4
Quantities in cfs-days

Division Period at International Boundart	Net Depletion in Canada	Battle Creek at International Boundary	Apparent Natural Flow of Battle Creek at International Boundary	Adjustment for Minor Diversions in Canada	Net Depletion at Reesor Lake and Adams Lake	Battle Creek at International Boundary		
						Natural Flow	United States Share	Received in Excess
Mar. 1 - Mar. 4	0	20	20	2	0	22	11	9
Mar. 5 - Mar.14	0	50	50	5	0	55	28	22
Mar.15 - Mar.25	0	79	79	8	0	87	44	35
Mar.26 - Apr. 4	0	906	906	87	0	993	496	410
Apr. 5 - Apr.14	3,054	4,828	7,882	757	34	8,673	4,336	492
Apr.15 - Apr.24	1,616	637	2,253	217	0	2,470	1,235	- 598
Apr.25 - May 4	227	463	690	66	0	756	378	85
May 5 - May 14	59	464	523	50	0	573	286	178
May 15 - May 25	- 92	312	220	21	0	241	120	192
May 26 - June 4	-131	121	- 10	- 1	0	0	0	121
June 5 -June 14	-128	192	64	6	0	70	35	157
June 15-June 24	5	48	53	5	0	58	29	19
June 25-July 4	- 29	136	107	10	0	117	58	78
July 5-July 14	28	175	203	20	0	223	112	63
July 15-July 25	-56	29	- 27	- 2	0	0	0	29
July 26-Aug. 4	-213	55	-158	- 15	0	0	0	55
Aug. 5 - Aug.14	-219	203	- 16	- 2	0	0	0	203
Aug.15 - Aug.25	0	21	21	2	0	23	12	9
Aug.26 - Sept.4	0	0	0	0	0	0	0	0
Sept. 5-Sept.14	0	0	0	0	0	0	0	0
Sept.15-Sept.24	0	0	0	0	0	0	0	0
Sept.25- Oct. 4	0	0	0	0	0	0	0	0
Oct. 5 - Oct.14	- 1	0	- 1	0	1	0	0	0
Oct.15 - Oct.25	25	35	60	6	0	66	33	2
Oct.26 - Oct.31	- 1	57	56	5	0	61	31	26
Total	4,144	8,831	12,975	1,247	35	14,488	7,244	1,587
Acre-feet	8,220	17,516	25,736	2,473	69	28,737	14,368	3,148

Determination of Natural Flow of
Frenchman River at International Boundary
1969
Table 15-1
Cypress Lake Storage and Diversion
Quantities in cfs-days

Division Period at International Boundary	Belanger Creek Diversion to Cypress Lake	Cypress Lake East Outflow Canal	Net Belanger Creek Diversion	Cypress Lake Natural Overflow	Gross Depletion at Cypress Lake	Adjustment for Channel Losses to International Boundary	Net Depletion at Cypress Lake
				computed		computed	
Mar. 1 - 10	0	5	- 5	0	- 5	- 5	0
Mar. 11 - 20	0	5	- 5	0	- 5	- 5	0
Mar. 21 - 31	0	8	- 8	0	- 8	- 8	0
Apr. 1 - 10	0	9	- 9	0	- 9	- 9	0
Apr. 11 - 20	1,886	187	+ 1,699	0	+ 1,699	+ 355	+ 1,344
Apr. 21 - 30	540	71	+ 469	0	+ 469	+ 134	+ 335
May 1 - 10	104	118	- 14	0	- 14	- 14	0
May 11 - 20	108	142	- 34	0	- 34	- 34	0
May 21 - 31	21	119	- 98	0	- 98	- 76	- 22
June 1 - 10	9	64	- 55	0	- 55	- 55	0
June 11 - 20	0	65	- 65	0	- 65	- 62	- 3
June 21 - 30	14	49	- 35	0	- 35	- 35	0
July 1 - 10	6	354	- 348	0	- 348	- 198	- 150
July 11 - 20	8	111	- 103	0	- 103	- 81	- 22
July 21 - 31	0	9	- 9	0	- 9	- 9	0
Aug. 1 - 10	0	1	- 1	0	- 1	- 1	0
Aug. 11 - 20	0	0	0	0	0	0	0
Aug. 21 - 31	0	0	0	0	0	0	0
Sept. 1 - 10	0	0	0	0	0	0	0
Sept. 11 - 20	0	0	0	0	0	0	0
Sept. 21 - 30	0	0	0	0	0	0	0
Oct. 1 - 10	0	0	0	0	0	0	0
Oct. 11 - 20	0	0	0	0	0	0	0
Oct. 21 - 31	0	0	0	0	0	0	0
Total	2,696	1,317	+ 1,379	0	+ 1,379	- 103	+ 1,482
Acre-feet	5,348	2,612	+ 2,736	0	+ 2,736	- 204	+ 2,940

Determination of Natural Flow of
Frenchman River at International Boundary
1969
Table 15-2
East End Reservoir Storage and Diversion
Quantities in cfs-days

Division Period at International Boundary	East End Reservoir		East End Canal	Return Flow from East End District	Gross Depletion at East End	Adjustment for Channel Losses to International Boundary	Net Depletion at East End
	Stored	Released					
				computed		computed	
Mar. 1 - 10	1	0	0	0	+ 1	+ 1	0
Mar. 11 - 20	1	0	0	0	+ 1	+ 1	0
Mar. 21 - 31	0	4	0	0	- 4	- 4	0
Apr. 1 - 10	8	0	0	0	+ 8	+ 8	0
Apr. 11 - 20	724	0	0	0	+ 724	+ 151	+ 573
Apr. 21 - 30	116	0	0	0	+ 116	+ 60	+ 56
May 1 - 10	114	0	0	0	+ 114	+ 60	+ 54
May 11 - 20	0	39	0	0	- 39	- 39	0
May 21 - 31	33	0	66	13	+ 86	+ 63	+ 23
June 1 - 10	0	210	488	98	+ 180	+ 83	+ 97
June 11 - 21	0	214	479	96	+ 169	+ 98	+ 71
June 21 - 30	0	225	414	83	+ 106	+ 72	+ 34
July 1 - 10	483	0	61	12	+ 532	+ 243	+ 289
July 11 - 20	234	0	0	0	+ 234	+ 124	+ 110
July 21 - 31	75	0	0	0	+ 75	+ 63	+ 12
Aug. 1 - 10	0	0	1	0	+ 1	+ 1	0
Aug. 11 - 20	0	232	314	63	+ 19	+ 19	0
Aug. 21 - 31	0	295	389	78	+ 16	+ 16	0
Sept. 1 - 10	0	179	146	29	- 62	- 55	- 7
Sept. 11 - 20	0	19	0	0	- 19	- 19	0
Sept. 21 - 30	15	0	0	0	+ 15	+ 15	0
Oct. 1 - 10	33	0	0	0	+ 33	+ 33	0
Oct. 11 - 20	0	54	0	0	- 54	- 51	- 3
Oct. 21 - 31	0	20	0	0	- 20	- 20	0
Total	1,837	1,491	2,358	472	+ 2,232	+ 923	+ 1,309
Acre-feet	3,643	2,957	4,677	936	+ 4,427	+ 1,831	+ 2,596

Determination of Natural Flow of
Frenchman River at International Boundary
1969
Table 15-3
Val Marie Storage
Quantities in cfs-days

Division Period at International Boundary	Val Marie West Reservoir		Val Marie Reservoir		Total Change in Reservoir Contents at Val Marie	
	Stored	Released	Stored	Released	Stored	Released
Mar. 1 - 10	18	0	0	6	12	0
Mar. 11 - 20	54	0	6	0	60	0
Mar. 21 - 31	141	0	17	0	158	0
Apr. 1 - 10	1,256	0	1,495	0	2,751	0
Apr. 11 - 20	0	301	1,864	0	1,563	0
Apr. 21 - 30	199	0	99	0	298	0
May 1 - 10	57	0	119	0	176	0
May 11 - 20	0	21	179	0	158	0
May 21 - 31	0	1	155	0	154	0
June 1 - 10	0	397	0	669	0	1,066
June 11 - 20	0	328	0	643	0	971
June 21 - 30	0	8	0	106	0	114
July 1 - 10	358	0	193	0	551	0
July 11 - 20	396	0	0	6	390	0
July 21 - 31	207	0	24	0	231	0
Aug. 1 - 10	0	104	0	201	0	305
Aug. 11 - 20	0	668	0	615	0	1,283
Aug. 21 - 31	0	319	0	470	0	789
Sept. 1 - 10	0	96	0	74	0	170
Sept. 11 - 20	35	0	0	73	0	38
Sept. 21 - 30	63	0	0	5	58	0
Oct. 1 - 10	95	0	0	25	70	0
Oct. 11 - 20	344	0	0	54	290	0
Oct. 21 - 31	264	0	0	51	213	0
Total	3,487	2,243	4,151	2,998	7,133	4,736
Acre-feet	6,916	4,449	8,233	5,947	14,147	9,394

Determination of Natural Flow of
Frenchman River at International Boundary
1969
Table 15-4
Val Marie Diversions
Quantities in cfs-days

Division Period at International Boundary	Val Marie West Gravity Canal	Val Marie West Pumping Canal	Val Marie Main Canal	Electric Pumps	Total Canal Diversion at Val Marie	Return Flow from Val Marie Projects	Gross Depletion at Val Marie	Adjustment for Channel Losses to International Boundary	Net Depletion at Val Marie
						computed		computed	
Mar. 1 - 10	0	0	0	0	0	0	+ 12	+ 12	0
Mar. 11 - 20	0	0	0	0	0	0	+ 60	+ 22	+ 38
Mar. 21 - 31	0	0	0	0	0	0	+ 158	+ 27	+ 131
Apr. 1 - 10	0	0	0	0	0	0	+ 2,751	+ 184	+ 2,567
Apr. 11 - 20	0	0	0	0	0	0	+ 1,563	+ 113	+ 1,450
Apr. 21 - 30	0	0	0	0	0	0	+ 298	+ 37	+ 261
May 1 - 10	0	0	0	0	0	0	+ 176	+ 36	+ 140
May 11 - 20	0	0	0	0	0	0	+ 158	+ 34	+ 124
May 21 - 31	0	0	0	0	0	0	+ 154	+ 35	+ 119
June 1 - 10	352	211	758	41	1,362	272	+ 24	+ 21	+ 3
June 11 - 20	165	239	711	42	1,157	231	- 45	- 24	- 21
June 21 - 30	0	155	221	11	387	77	+ 196	+ 48	+ 148
July 1 - 10	0	0	0	0	0	0	+ 551	+ 105	+ 446
July 11 - 20	0	0	0	0	0	0	+ 390	+ 79	+ 311
July 21 - 31	0	0	0	0	0	0	+ 231	+ 55	+ 176
Aug. 1 - 10	82	52	308	0	442	88	+ 49	+ 25	+ 24
Aug. 11 - 20	430	240	897	31	1,598	320	- 5	- 5	0
Aug. 21 - 31	106	254	605	16	981	196	- 4	- 4	0
Sept. 1 - 10	0	124	99	0	223	45	+ 8	+ 8	0
Sept. 11 - 20	0	0	65	0	65	13	+ 14	+ 14	0
Sept. 21 - 30	0	0	0	0	0	0	+ 58	+ 24	+ 34
Oct. 1 - 10	0	0	0	0	0	0	+ 70	+ 23	+ 47
Oct. 11 - 20	0	0	0	0	0	0	+ 290	+ 36	+ 254
Oct. 21 - 31	0	4	0	0	4	1	+ 216	+ 34	+ 182
Total	1,135	1,279	3,664	141	6,219	1,243	+ 7,373	+ 939	+ 6,434
Acre-feet	2,251	2,537	7,268	280	12,336	2,467	+ 14,622	+ 1,862	+ 12,760

Determination of Natural Flow
Frenchman River at International Boundary
1969
Table 15-5
Quantities in cfs-days

Division Period at International Boundary	Net Depletion in Canada	Frenchman River at International Boundary	Apparent Natural Flow of Frenchman River at International Boundary	Adjustment for Minor Diversions in Canada	Frenchman River at International Boundary		
					Natural Flow	United States Share	Received in Excess
				computed			
Mar. 1 - 10	0	50	50	2	52	26	+ 24
Mar. 11 - 20	+ 38	70	108	4	112	56	+ 14
Mar. 21 - 31	+ 131	158	289	11	300	150	+ 8
Apr. 1 - 10	+ 2,567	8,217	10,784	398	11,182	5,591	+ 2,626
Apr. 11 - 20	+ 3,367	9,333	12,700	469	13,169	6,584	+ 2,749
Apr. 21 - 30	+ 652	2,719	3,371	124	3,495	1,748	+ 971
May 1 - 10	+ 194	3,665	3,859	143	4,002	2,001	+ 1,664
May 11 - 20	+ 124	907	1,031	38	1,069	534	+ 373
May 21 - 31	+ 120	526	646	24	670	335	+ 191
June 1 - 10	+ 100	441	541	20	561	280	+ 161
June 11 - 20	+ 47	490	537	20	557	278	+ 212
June 21 - 30	+ 182	459	641	24	665	332	+ 127
July 1 - 10	+ 585	519	1,104	41	1,145	572	- 53
July 11 - 20	+ 399	222	621	23	644	322	- 100
July 21 - 31	+ 188	147	335	12	347	174	- 27
Aug. 1 - 10	+ 24	132	156	6	162	81	+ 51
Aug. 11 - 20	0	336	336	12	348	174	+ 162
Aug. 21 - 31	0	314	314	12	326	163	+ 151
Sept. 1 - 10	- 7	109	102	4	106	53	+ 56
Sept. 11 - 20	0	55	55	2	57	29	+ 26
Sept. 21 - 30	+ 34	41	75	3	78	39	+ 2
Oct. 1 - 10	+ 47	126	173	6	179	90	+ 36
Oct. 11 - 20	+ 251	105	356	13	369	185	- 80
Oct. 21 - 31	+ 182	90	272	10	283	141	- 51
Total	+ 9,225	29,231	38,456	1,421	39,877	19,938	+ 9,293
Acre-feet	+ 18,296	57,981	76,277	2,819	79,096	39,548	+ 18,433

APPENDIX B TO THE

REPORT TO

THE INTERNATIONAL JOINT COMMISSION

ON

THE DIVISION OF THE WATERS OF

THE ST. MARY AND MILK RIVERS

BY

E. L. HENDRICKS

representing United States

AND

J. D. McLEOD

representing Canada

- 1969 -

WORK COPY

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1969
Appendix "B"

WORK COPY

Daily Gage Height, in Feet, and Discharge, in Second-Feet, of ST MARY River or Creek

At INTERNATIONAL BOUNDARY for the Year Ending September 30, 1969

Drainage Area 469 Square Miles. Water-Stage Recorder Fischer-Porter Digital Datum — : —

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

Dist. Engr. W.S. of Canada File Number Washington 95-0205.00
District
District Chief U.S.G.S. No 8

Gage Read to — Once Twice a Day by —

Gage heights used to half tenths between and tenths hundredths, below and tenths above these limits.

Day	October Gage height	October Discharge	November Gage height	November Discharge	December Gage height	December Discharge	January Gage height	January Discharge	February Gage height	February Discharge	March Gage height	March Discharge
1	5.97	1560	4.44	433	3.80	b 189	5.68	b 147	5.18	b 147	4.75	b 130
2	5.75	1340	4.44	433	3.96	220	5.61	154	5.14	161	4.70	121
3	5.55	1150	4.45	438	4.12	240	5.55	163	4.97	168	4.69	119
4	5.40	1030	4.45	437	4.01	237	5.51	166	4.99	186	4.69	119
5	5.30	950	4.45	436	4.04	230	5.49	173	4.99	173	4.73	118
6	5.17	862	4.42	424	4.11	220	5.47	180	4.90	176	4.67	112
7	5.09	801	4.38	406	4.14	230	5.42	194	4.86	166	4.76	106
8	5.02	754	4.37	402	4.08	243	5.41	178	4.80	163	4.63	101
9	4.96	713	4.35	392	4.03	227	5.47	180	4.84	173	4.64	102
10	4.90	676	4.31	374	4.02	208	5.44	173	4.83	170	4.69	102
11	4.83	636	4.29	366	3.99	200	5.43	170	4.76	166	4.67	99
12	4.84	640	4.30	370	4.00	188	5.48	158	4.99	173	4.68	101
13	4.82	627	4.25	350	4.10	202	5.49	161	5.67	180	4.70	104
14	4.76	590	4.21	334	4.12	208	5.53	158	5.42	168	4.71	106
15	4.72	571	4.23	342	4.09	214	5.47	168	5.52	156	4.66	114
16	4.70	559	4.12	298	4.05	202	5.39	161	5.22	145	4.80	121
17	4.68	549	4.12	b 278	4.04	194	5.29	161	5.13	136	5.17	127
18	4.64	528	4.18	b 302	4.03	188	5.26	154	5.01	132	5.12	125
19	4.61	514	4.16	314	4.00	180	5.24	149	5.00	130	5.26	154
20	4.58	502	4.17	318	4.11	178	5.20	152	4.95	121	5.39	186
21	4.54	478	4.17	318	4.17	168	5.13	158	4.92	116	5.48	211
22	4.51	467	4.18	321	4.23	158	5.17	156	4.91	114	5.53	227
23	4.48	451	4.15	309	4.34	161	5.05	152	4.72	107	5.21	205
24	4.45	436	4.10	289	4.61	166	4.97	145	4.71	106	5.11	205
25	4.41	420	4.10	289	4.88	158	4.88	147	4.77	107	5.20	217
26	4.38	407	4.04	264	5.02	156	4.80	140	4.72	107	5.40	290
27	4.36	398	4.10	289	5.34	149	4.89	138	4.75	121	5.80	460
28	4.36	395	4.05	271	5.60	140	5.02	134	4.70	b 121	5.58	500
29	4.39	411	4.09	286	5.61	142	5.18	136	—	—	5.43	500
30	4.41	418	4.04	265	5.64	149	5.10	140			5.30	510
31	4.44	433			5.74	b 149	4.99	b 138			6.13	b 936
Total		20,266		10,348		5,894		4,884		4,089		6,628
Mean		654		345		190		158		146		214
Runoff in inches												
Runoff in acre-feet		40,200		20,520		11,690		9,690		8,110		13,150
Maximum		1560		438		243		194		186		936
Minimum		395		264		140		134		106		99

Day	April Gage height	April Discharge	May Gage height	May Discharge	June Gage height	June Discharge	July Gage height	July Discharge	August Gage height	August Discharge	September Gage height	September Discharge	Day
1	5.76	b 852	5.54	1150	6.27	1880	7.05	2820	4.82	628	4.04	268	1
2	4.98	b 550	5.51	1120	6.21	1810	6.77	2460	4.68	552	3.99	247	2
3	4.52	472	5.45	1070	6.18	1780	6.56	2210	4.59	505	3.93	226	3
4	4.33	384	5.38	1020	6.20	1800	6.41	2030	4.53	473	3.99	247	4
5	4.39	410	5.34	979	6.24	1840	6.29	1900	4.50	459	4.00	251	5
6	4.46	440	5.31	955	6.32	1930	6.18	1780	4.42	424	3.97	241	6
7	4.44	433	5.31	955	6.97	2710	6.08	1670	4.35	394	3.92	223	7
8	4.31	376	5.35	992	7.45	3410	5.97	1560	4.35	394	3.86	204	8
9	4.39	409	5.43	1050	7.50	3490	5.79	1380	4.35	393	3.88	210	9
10	4.51	463	5.56	1160	7.42	3360	5.66	1250	4.33	382	3.92	225	10
11	4.58	502	5.72	1310	7.17	2980	5.57	1170	4.30	372	3.96	236	11
12	4.65	533	5.92	1510	6.90	2620	5.51	1120	4.33	383	3.89	215	12
13	4.70	558	6.12	1710	6.62	2280	5.44	1060	4.34	390	3.89	215	13
14	4.70	562	6.21	1820	6.35	1970	5.34	983	4.33	384	4.05	269	14
15	4.78	603	6.10	1690	6.09	1680	5.23	904	4.31	375	4.34	388	15
16	4.86	649	6.15	1740	5.88	1470	5.13	831	4.27	356	4.42	426	16
17	4.94	702	6.19	1790	5.65	1250	5.03	758	4.26	353	4.33	382	17
18	5.02	751	6.15	1750	5.42	1040	4.96	714	4.23	344	4.26	353	18
19	5.05	772	6.06	1650	5.47	1080	4.90	676	4.19	327	4.19	327	19
20	5.06	779	5.96	1550	5.60	1200	4.90	673	4.16	316	4.15	309	20
21	5.08	794	5.84	1430	5.62	1220	4.87	652	4.14	306	4.12	298	21
22	5.13	833	5.73	1320	5.60	1200	4.82	627	4.15	310	4.09	286	22
23	5.24	909	5.63	1230	5.57	1170	4.80	614	4.18	324	4.06	276	23
24	5.53	1140	5.56	1160	5.59	1190	4.81	623	4.20	330	4.08	282	24
25	5.60	1200	5.58	1180	6.06	1650	4.86	651	4.18	322	4.11	293	25
26	5.64	1240	5.76	1350	7.56	3580	4.93	696	4.23	342	4.14	304	26
27	5.67	1260	5.96	1550	7.70	3830	4.95	709	4.24	346	4.19	325	27
28	5.64	1240	6.06	1650	7.62	3690	4.94	699	4.22	338	4.23	340	28
29	5.62	1210	6.03	1620	7.68	3800	4.90	675	4.19	326	4.28	364	29
30	5.56	1160	6.10	1690	7.41	3350	4.86	652	4.15	310	4.34	390	30
31			6.26	1870			4.87	655	4.18	290			31
Total		22,186		43,021		66,260		35,207		11,748		8,620	239,151
Mean		740		1388		2209		1,136		379		287	655
Runoff in inches													
Runoff in acre-feet		44,010		85330		131,400		69,830		23,300		17,100	474,400
Maximum		1260		1,870		3,830		2,820		628		426	3,830
Minimum		376		955		1,040		614		290		204	99

Mean Disch. daily 4,140 Max. 99 Min.

Date of Gage Year 1968

Equivalent gage-heights from primary recorder except as noted by ice.
b Estimated. Discharges used F.B. 5 to 11 are based on Mar. 11 to Dec. 1 gage-height relation affected by ice.

Dec. Engr. W.S. of Canada R.D. Yates
Approved Nov. 1968
District Chief U.S.G.S. Charles A. Fisher

Gage Datum at 1215.5 Feet above Sea Level

Gage Height Range: Max. 6.74 on Mar. 11 — Min. 3.65 ft. on Dec. 1 at 1600

Discharge Range: Max. 1560 on Oct. 1 — Min. 99 on Dec. 1

Some ft. at — on —

Nov. G.H. — ft. Min. G.H. — ft.

Total Runoff 1968-69: 239,151

Daily Gage Height, in Feet, and Discharge, in Second-Feet, of ST MARY River ~~Creek~~

At ~~Near~~ INTERNATIONAL BOUNDARY for the Year Ending September 30, 1970

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

Washington

Drainage Area 460 Square Miles. Water-Stage Recorder Fischer-Porter digital Datum — —

Gage Read to — Once Twice a Day by —

Used (after fabrication) Nic 8

Day	October Gage height	October Discharge	November Gage height	November Discharge	December Gage height	December Discharge	January Gage height	January Discharge	February Gage height	February Discharge	March Gage height	March Discharge
1	4.42 301	424										
2	4.52	468										
3	4.66	542										
4	4.76	590										
5	4.80	613										
6	4.81	619										
7	4.76	592										
8	4.70	562										
9	4.67	546										
10	4.56	492										
11	4.47	446										
12	4.40	416										
13	4.33	385										
14	4.29	366										
15	4.24 302	348										
16	4.20	330										
17	4.16	313										
18	4.13	300										
19	4.10	288										
20	4.11	294										
21	4.06	274										
22	4.02	259										
23	3.98	243										
24	3.99	247										
25	3.99	247										
26	4.00	249										
27	4.01	253										
28	4.04	265										
29	4.04	264										
30	4.06	273										
31	4.06 303	274										
Total		11,762										
Mean		380										
Accumulation per square mile												
Runoff in inches		23.370										
Maximum		619										
Minimum		243										

Day	April Gage height	April Discharge	May Gage height	May Discharge	June Gage height	June Discharge	July Gage height	July Discharge	August Gage height	August Discharge	September Gage height	September Discharge
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												
31												
Total												
Mean												
Accumulation per square mile												
Runoff in inches												
Maximum												
Minimum												

Equivalent gage heights and discharges from primary print-out listed, except A 35 rated used on Oct. 31.

APPROVED R.D. Yeary

2

5-0155. Lake Sherburne at Sherburne, Mont.

Month-end elevation and contents
Water year October 1968 to September 1969

Date	Elevation (feet)†	Contents (acre-feet)	Change in Contents (acre-feet)
Sept. 30	4,732.45	3,100	-
Oct. 31	4,745.62	12,860	+ 9,760
Nov. 30	4,752.16	18,840	+ 5,980
Dec. 31	4,755.62	22,220	+ 3,380
Calendar year 1968	-	-	+ 2,030
Jan. 31	4,758.66	25,460	+ 3,240
Feb. 28	g4,760.00	26,900	+ 1,440
Mar. 31	4,761.41	28,450	+ 1,550
Apr. 30	4,770.61	39,490	+ 11,040
May 31	4,782.28	56,550	+ 17,060
June 30	4,787.13	64,720	+ 8,170
July 31	4,780.02	53,030	- 11,690
Aug. 31	4,750.94	17,650	- 35,380
Sept. 30	4,731.72	2,660	- 14,990
Water year 1968-69	-	-	- 440

† Elevations at 2400 hours.
g From graph based on gage readings.

Maximum contents, 65,880 ac-ft at 1900 July 12 (elevation, 4,787.81 ft).
Minimum contents, 2,080 ac-ft at 1600 Sept. 20 (elevation, 4,730.73 ft).

5-0155. Lake Sherburne at Sherburne, Mont.

Month-end elevation and contents
Water year October 1969 to September 1970

Date	Elevation (feet)†	Contents (acre-feet)	Change in Contents (acre-feet)
Sept. 30	4,731.72	2,660 .	-
Oct. 31	4,738.86	7,490	+ 4,830

APP[illegible]

9-192-a.

Daily Gage Height, in Feet, and Discharge, in Second-Feet, of SWIFTCURRENT River / Creek

At SHERBURNE, MONT. for the Year Ending September 30, 1969

Drainage Area 643 Square Miles. Water-Stage Recorder Fischer-Porter digital and Stevens A-35 Datum 1 6

Gage Read to — Once Twice a Day by —

APPROVED

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

Dist. Engr. WS of Interior

District Chief Hydrologist

Day	October Gage height	October Discharge	November Gage height	November Discharge	December Gage height	December Discharge	January Gage height	January Discharge	February Gage height	February Discharge	March Gage height	March Discharge	April Gage height	April Discharge	May Gage height	May Discharge	June Gage height	June Discharge	July Gage height	July Discharge	August Gage height	August Discharge	September Gage height	September Discharge
1	S *	136	1.42 **	0.16									a .10		a 1.0	3.14 ±5	89	4.05 ±1	236	4.61 *	498	487	612	561	674
2	1.87	2.0	1.36	.12									.10		h 1.34	3.13 ±4	89	4.06	239	4.50	452	484	607	438	661
3	1.87	2.0	1.36	.12									.10		a 1.2	3.15 ±4	89	4.06	239	4.52	460	485	603	561	713
4	1.85	1.7	1.35	.12									.05		1.2	3.15 ±3	88	4.06	239	4.52	460	485	603	516	743
5	1.73	.95	1.34	.12									.05		1.0	3.16 ±3	89	3.87	195	4.51	456	484	598	511	718
6	1.70	.80	1.33	.11									.05		a 1.0	3.16 ±2	88	4.28 ±1	297	4.51	452	483	594	505	694
7	1.65	.60	1.31	.09									.05		1.42 ** a	3.17 ±2	89	6.09 ±5	1100	4.50	452	495	648	439	665
8	1.65	.60	1.30	.08									.05		a 1.0	3.17 ±1	88	6.38 ±9	1280	4.37	402	502	679	527	723
9	1.65	.60	1.32	.10									.05		1.21 a	3.18 ±1	89	6.36	1270	4.26	363	501	675	513	728
10	1.62	.48	1.32	.10									.05		a 1.0	3.19 ±0	89	6.02	1090	4.26	363	5.00	670	5.19	757
11	1.58	.36	1.32	.10									.10		1.0	3.21 ±0	91	5.22	677	4.29	374	5.08	706	491	631
12	1.61	.44	1.34	.12									.10		1.0	3.21 ±9	91	4.92	546	4.31	381	5.14	733	427	367
13	1.56	.32	1.31	.09									.10		a 4.0	3.22 ±9	92	4.92	546	4.27	367	5.13	729	367	207
14	1.55	.30	1.32	.10									.10		S v 63	3.23 ±8	91	4.76	483	4.26	363	5.11	720	333	137
15	1.56 *	.32	1.31	.09									.10		3.08 ±5	83	4.38 ±8	349	4.69	457	4.26 *	363	5.09	711	311	101
16	1.55	.30	1.30	.08									a .10		3.10	85	4.91 ±7	534	4.39	355	4.25	360	5.08	706	302 *	86
17	S *	9.0	1.24	.04									h 1.47 ** b .09		3.09	84	4.92 ±7	537	3.67 *	169	4.36	398	5.06	697	295	77
18	3X188 * 5X232	10	1.24	.04									a .09		3.09	84	4.92 ±6	534	3.26	97	4.41	416	5.04	688	291	73
19	2.31	14	1.30	.08									h 1.44 b .08		3.10	85	4.92 ±6	534	3.27	98	4.54	409	5.03	684	286 *	68
20	2.27	13	f 1.32 **	.10									a .08		3.11	86	4.92 ±5	530	3.27	98	4.61	503	5.01	675	275	57
21	2.27	13											a .09		3.10	85	4.92 ±5	530	3.27	98	4.60	501	5.09	711	276	58
22	2.27	13											h 1.48 b .11		3.11	86	4.91 ±4	522	3.28	99	4.65	520	5.12	724	276	58
23	2.27	13											a .10		3.12	87	4.56 ±4	394	3.28	99	4.73	554	5.10	715	268	70
24	2.27	13											h 1.44 b .08		3.14	89	4.14 ±3	264	3.28 ±9	99	4.86	609	5.08	706	295	77
25	S	5.7											h 1.20 ±5 .04		3.13	88	4.03 ±3	236	S v	514	5.02	680	5.15	738	302	86
26	1.52	.24											h 1.23 ** ±5 .07		3.14	89	4.03 ±2	234	S v	1570	5.11	721	5.18	751	310	99
27	1.47	.19											h 1.26 ±4 .08		3.14	89	4.04 ±2	236	5.87	1140	5.10	714	5.16	742	321	117
28	1.44	.17											a .10		3.14	89	4.04 ±1	234	5.87	1140	5.11	715	5.13	729	328	129
29	1.44	.17											.08		3.14 *	89	4.04	234	5.43	877	5.09	711	5.10	715	328	128
30	1.45	.18											.06		3.14 ±3	89	4.04	234	4.91	630	5.08	706	5.06	697	338	140
31	1.43	.17											a .06				4.05 ±1	236			5.28 *	800	5.04 *	687	Oct. 15 *	
Total		25259											2.46			1,4[illegible]25		7,624		15,977		15,583		21,252		9,834
Mean		815											.078			48.5		246		533		503		686		328
Max. daily		501											4.9			2,890		15,120		31,690		30,910		42,160 50		19,510
Minimum		136											.11			89		537		570		800		751		757
Minute		.17											.04			.09		88		97		360		594		57

Drainage Area 2,420 Sec. ft. at 2030 on June 25 Sec. ft. on 7.63 ft. on Nov. 17, 18 Mar. 25 — ft. on — ft. on — ft. on — ft. on — ft. on — ft. on Same ft. on —

Recorded Allowed

+ Discharge measurement made on this day. ** Field estimate made on this day.
a - No gage-height record. b - Stage-discharge relation affected by ice.
f - From partly estimated gage-height record. Equivalent gage-heights from Primary print out listing of Sept. 1968 and Aug. 31 to May 17, July 20-23 and Apr. 29 to Sept. 30. Discharge from primary print out Apr. 30

-15 shift

Nov. 1968 to 6-25-69 No. 11 No. 12

5

5-2160.00

Stanley W. Fuller

5

RBB 12-2

RBB 12-2

RBB 12-2

RBB 2-2468

9-199-a. July 1937

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

Daily Gage Height, in Feet, and Discharge, in Second-Feet, of SWIFTCURRENT ~~River~~ Creek

At ~~Near~~ SHERBURNE, MONT for the Year Ending September 30, 1970

File Number: Washington 95-0060.00
District 6

Used rating table ~~dated~~ No. 12

Drainage Area 643 Square Miles. Water-Stage Recorder Fischer Porter digital Ratio

Gage Read to ~~hundredths, tenths, quarter-foot, half-foot~~ hundredths ~~tenths and tenths, quarter-foot, half-foot~~ and feet. Once ~~Twice~~ a Day by

Day	October Gage height	October Discharge	November Gage height	November Discharge	December Gage height	December Discharge	January Gage height	January Discharge	February Gage height	February Discharge	March Gage height	March Discharge
1	3.55	180										
2	3.72	217										
3	3.79	235										
4	3.78	232										
5	3.70	212										
6	3.53	176										
7	3.44	159										
8	3.39	147										
9	2.90	72										
10	1.66	26										
11	1.67	27										
12	1.62	22										
13	1.55	1.6										
14	1.39	.75										
15	1.37*	.67										
16	1.22	.18										
17	.97	.02										
18	.92	.01										
19	.89	.01										
20	.89	.01										
21	.89	.01										
22	.93	.02										
23	1.02	.04										
24	1.13	.08										
25	1.12	.07										
26	1.13	.08										
27	1.13	.08										
28	1.13	.08										
29	1.13*	.08										
30	226*	19										
31	51126.00 / 75142.28	.17										
Total		1,660.46										
Mean		53.6										
Second-feet per square mile												
Run-off in inches												
Run-off in acre-feet		3,290										
Maximum		235										
Minimum		.01										

Day	April Gage height	April Discharge	May Gage height	May Discharge	June Gage height	June Discharge	July Gage height	July Discharge	August Gage height	August Discharge	September Gage height	September Discharge
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												
31												

Mich. Disch. ... See ft. at ... on ... ft. Max. G. H. ... ft. Min. G. H. ... (G. H.)

Mil. Disch. ... See ft. on ... ft. Max. G. H. ... ft. Min. G. H. ... (G. H.)

APPROVED: R. D. Mc... Dist. Engr., WS of Canada

Gage Height and Discharge Engr. U.S.G.S.

* Discharge measurement made on this day. Equivalent gage-heights and discharges from primary printout listed Oct. 1 - Sept. 30. F- Partly estimated gage-height record.

Time RBB 1-25-70

RBB 1-25-70

RBB 1-25-70

DAILY DISCHARGES

DEPARTMENT OF ENERGY, MINES AND RESOURCES
INLAND WATERS BRANCH – WATER SURVEY OF CANADA

7

Station Name St. Mary Canal at St. Mary Crossing Station No. 05AE029

Daily Gauge Heights in Feet and Daily Discharges in Cubic Feet per Second for the Year 1969

Drainage Area square miles Type of Gauge Manual ☐ Recording ☑

Day	January		February		March		April		May		June	
	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge
1								0		0	8.03	707
2								0		0	8.03	706
3								0		0	8.01	703
4								0		0	8.02	703
5								0		0	8.01	703
6								0		0	8.03	706
7								0		0	8.05	711
8								0		0	7.97	693
9								0		0	7.96	692
10								0		0	7.95	689
11								0		0	7.92	684
12								0		0	7.89	677
13								0		0	7.89	678
14								0	1.55	32.8	8.04	708
15								0	6.39	390	8.04	709
16								0	7.63	623	8.03	706
17								0	7.97	694	8.01	701
18								0	7.99	699	7.98	695
19								0	7.99	698	7.96	691
20								0	7.99	697	7.97	693
21								0	7.98	695	7.97	695
22								0	7.96	691	7.97	694
23								0	7.95	690	7.98	696
24								0	7.93	686	7.99	698
25								0	7.93	685	8.05	711
26								0	7.95	690	7.90	680
27								0	7.99	697	7.57	611
28								0	8.01	702	7.94	687
29						0		0	8.02	703	7.97	693
30						0		0	8.03	706	7.96	693
31						0			8.03	706		
total								0		11,484.8		20,813
mean								0		370		694
ac-ft								0		22,800		41,300
max								0		706		711
min								0		0		611

Day	July		August		September		October		November		December	
	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge
1	8.05	711	8.00	700	7.93	686		0				
2	8.02	703	7.98	696	7.93	685		0				
3	8.00	700	7.97	695	7.93	685		0				
4	7.97	693	7.96	693	7.94	687		0				
5	7.95	690	7.99	697	7.94	687		0				
6	7.93	685	7.97	694	7.94	688		0				
7	7.92	684	7.97	693	7.93	686		0				
8	7.95	690	7.95	689	7.92	682		0				
9	8.03	706	7.96	691	7.92	682		0				
10	8.01	703	7.95	690	7.92	683		0				
11	8.00	700	7.96	692	7.92	683		0				
12	7.99	697	7.96	693	7.79	656		0				
13	7.98	696	7.97	693	7.23	541		0				
14	7.96	692	7.96	693	6.20	354		0				
15	7.95	689	7.97	693	4.40	140		0				
16	7.93	685	7.96	691	2.03	52		0				
17	7.92	682	7.96	691	1.67	0.96		0				
18	7.91	681	7.96	691	1.48	0.36		0				
19	7.91	680	7.95	690	1.34	0.14		0				
20	7.91	681	7.95	689	1.22	0.02		0				
21	7.90	680	7.94	688		0		0				
22	7.93	686	7.94	688		0		0				
23	8.00	699	7.95	689		0		0				
24	8.00	699	7.95	690		0		0				
25	8.01	702	7.96	691		0		0				
26	8.01	702	7.96	692		0		0				
27	8.02	703	7.96	692		0		0				
28	8.01	702	7.96	692		0		0				
29	8.00	700	7.96	692		0		0				
30	8.00	700	7.95	690		0		0				
31	8.00	700	7.94	687				0				
total		21,521		21,445		9,231.68		0				
mean		694		692		308		0				
ac-ft		42,700		42,500		18,300		0				
max		711		700		688		0				
min		680		687		0		0				

~~Peak Flows~~ For the Period (April to October)

Maximum ~~instantaneous~~ daily discharge, 711 cfs at G.H. 8.05 ft on Jun. 7425, Jul. 1

Minimum instantaneous daily discharge, cfs at G.H. ft at on

Mean discharge, cfs Total discharge, 168,000 ac-ft

Prior to May 14 at 1245 MDT all canal diversions were returned to the St. Mary River by drains

Data from May 1 to September 30 processed by computer and pencil follower methods

Computed from Table No. 5 dated Nov. 14, 63 from Mar. 29 to Oct. 31

" " " " — " — " — " —

" " " " — " — " — " —

Total discharge 84,495.48 cfs-days

Accuracy Excellent

Maximum instantaneous daily gauge height, ft at on

Minimum instantaneous daily gauge height, ft at on

	January to		Mar. 29 to Oct. 31		to December		Summary
	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	
Computed by			RBB				RBB
Date			Nov. 27, 69				Nov. 28, 69
Checked by							
Date			Dec 31, 69				Dec. 31, 69

R. D. McCoy
Sup. Engr. WS of Canada

George M. Wilson
District Chief U.S.G.S.

Approved by

Date

R79 (Dec 67)

DAILY DISCHARGES

DEPARTMENT OF ENERGY, MINES AND RESOURCES
INLAND WATERS BRANCH – WATER SURVEY OF CANADA

8

Station Name Milk River at Western Crossing of International Boundary Station No. 11AA025

Daily Gauge Heights in Feet and Daily Discharges in Cubic Feet per Second for the Year 1969

Drainage Area 397 square miles Type of Gauge Manual ☐ Recording ☑

Day	January Gauge Height	January Discharge	February Gauge Height	February Discharge	March Gauge Height	March Discharge	April Gauge Height	April Discharge	May Gauge Height	May Discharge	June Gauge Height	June Discharge
1					5.45	36.4	6.48	1500	3.54	18.5	3.47	18.3
2					5.61	39.1	6.71	1770	3.49	173	3.29	132
3					5.78	40.0	5.98	1540	3.49	172	3.13	94.3
4					5.88	42.0	5.41	1070	3.45	161	3.02	73.8
5					5.72	38.2	5.35	1040	3.42	155	2.94	60.7
6					5.64	28.2	5.46	1160	3.41	151	2.89	54.8
7					5.69	23.5	5.51	1230	3.44	161	2.99	69.6
8					5.63	21.3	5.05	902	3.48	176	4.04	404
9						20.2	4.45	544	3.44	164	4.11	426
10						19.6	4.46	552	3.42	158	3.76	286
11						21.8	4.46	552	3.44	167	3.49	193
12						30.3	4.47	557	3.46	172	3.35	150
13						45.0	4.43	533	3.40	157	3.32	142
14						61.7	4.35	500	3.34	139	3.42	172
15						80.0	4.05	367	3.32	134	3.29	134
16						105	3.98	336	3.34	141	3.18	109
17					5.59	145	3.93	316	3.40	158	3.10	92.4
18					5.87	174	4.03	359	3.41	160	3.03	78.3
19					5.72	189	4.06	370	3.35	144	2.99	71.0
20					5.85	221	3.89	303	3.28	124	3.00	72.6
21					5.67	249	3.80	268	3.25	117	3.25	128
22					5.49	231	3.71	237	3.22	111	3.29	136
23						189	3.84	286	3.17	100	3.19	113
24						156	4.21	436	3.12	91.1	3.17	110
25					5.18	126	4.31	481	3.09	84.5	3.43	178
26			5.05	25.4	5.17	80.0	3.92	314	3.05	76.8	4.53	655
27			5.15	26.1	5.47	78.3	3.73	245	3.00	69.4	4.78	784
28			5.30	29.6	5.42	68.1	3.71	238	2.97	63.4	4.40	574
29					5.23	68.1	3.66	223	2.94	60.4	4.43	595
30					5.28	76.6	3.61	207	2.97	64.0	4.64	711
31					5.20	123			3.07	83.8		
total						2826.4		18436		4073.4		6982.5
mean						91.2		615		131		233
ac-ft						5610		36600		8080		13800
max						249		1770		185		784
min						19.6		207		60.4		54.8

Day	July Gauge Height	July Discharge	August Gauge Height	August Discharge	September Gauge Height	September Discharge	October Gauge Height	October Discharge	November Gauge Height	November Discharge	December Gauge Height	December Discharge
1	4.03	402	2.49	20.9	1.93	3.4	2.37	13.4	2.67	31.6		
2	3.72	277	2.45	19.0	1.93	3.4	2.38	13.7	2.66	30.5		
3	3.56	221	2.44	18.2	1.93	3.3	2.46	17.3	2.68	31.8		
4	3.47	193	2.41	16.8	1.91	3.1	2.48	18.4	2.65	29.6A		
5	3.39	169	2.37	15.2	1.88	2.7	2.51	20.0				
6	3.35	156	2.35	14.2	1.86	2.5	2.54	21.9				
7	3.33	152	2.34	13.9	1.84	2.3	2.60	25.9				
8	3.33	150	2.33	13.4	1.82	2.0	2.61	27.3				
9	3.36	161	2.33	13.4	1.80	1.8	2.61	27.2				
10	3.27	136	2.33	13.3	1.79	1.7	2.58	25.6				
11	3.17	111	2.30	12.5	1.79	1.6	2.57	25.5				
12	3.11	97.8	2.28	11.8	1.77	1.5	2.57	25.8				
13	3.07	89.6	2.25	11.1	1.75	1.2	2.57	25.9				
14	3.02	78.9	2.24	10.6	1.86	2.2	2.60	28.8				
15	2.97	71.3	2.21	9.8	1.90	2.6	2.57	26.5				
16	2.92	62.8	2.18	8.9	1.92	2.8	2.57	27.3				
17	2.87	56.5	2.17	8.6	1.93	2.9	2.55	26.5				
18	2.85	54.2	2.17	8.4	1.98	3.5	2.53	24.8				
19	2.84	51.8	2.16	8.2	1.97	3.4	2.54	25.0				
20	2.82	49.3	2.14	7.6	1.99	3.7	2.57	27.2				
21	2.80	47.6	2.09	6.5	2.08	5.1	2.56	26.1				
22	2.77	44.3	2.05	5.7	2.13	6.0	2.56	25.7				
23	2.73	40.2	2.08	6.2	2.16	6.7	2.57	26.1				
24	2.69	36.5	2.07	5.8	2.27	9.5	2.62	29.5				
25	2.66	33.2	2.03	5.1	2.35	11.7	2.64	31.0				
26	2.64	31.6	2.01	4.7	2.35	11.9	2.60	28.7				
27	2.62	30.3	1.99	4.4	2.35	11.9	2.49	21.5				
28	2.61	28.9	1.96	4.0	2.38	12.9	2.57	25.9				
29	2.59	27.9	1.94	3.7	2.40	13.8	2.51	25.2				
30	2.57	25.9	1.93	3.6	2.39	13.6	2.63	31.5				
31	2.53	23.5	1.93	3.5			2.70	34.8				
total		3110.1		309.0		154.7		780.0				
mean		100		10.0		5.2		25.2				
ac-ft		6170		613		307		1550				
max		402		20.9		13.8		34.8				
min		23.5		3.5		1.2		13.4				

[redacted] For the Period (March to October)

Maximum ~~instantaneous~~ daily discharge, 1770 cfs at G.H. 6.71 ft at on April 2

Minimum instantaneous ~~daily~~ discharge, 0.90 cfs at G.H. 1.69 ft at 1545 MST on Sept. 13

Mean discharge, 150 cfs Total discharge, 72,700 ac-ft

A-Manual gauge reading
Ice conditions February 26 to April 7

Data from April 7 to November 3 processed by Computer and pencil follower methods.

Computed from Table No. 10 dated Nov. 27, 67 from February 26 to November 4

Total discharge 36.672.1 cfs-days

Accuracy

Maximum instantaneous ~~daily~~ gauge height, 7.69 ft at 1420 MST on April 1

Minimum instantaneous ~~daily~~ gauge height, 1.69 ft at 1545 MST on September 13

	January to		Feb. 26 to Nov 4		to December		Summary
	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	
Computed by / Date			RBB Nov. 26, 1969				RBB Nov 27, 69
Checked by / Date			U.S.G.S. Engineers Jan 22, 70				U.S.G.S. Engineers Jan 22, 70

APPROVED: R.D. May, Dist. Engr. WS of Canada
George McCabe, District Chief U.S.G.S.
Date

R79 (Dec 67)

DAILY DISCHARGES

9

DEPARTMENT OF ENERGY, MINES AND RESOURCES
INLAND WATERS BRANCH – WATER SURVEY OF CANADA

Station Name Milk River at Milk River Station No. 11AA005

Daily Gauge Heights in Feet and Daily Discharges in Cubic Feet per Second for the Year 1969

Drainage Area 1,040 square miles Type of Gauge Manual ☐ Recording ☑

Day	January Gauge Height	January Discharge	February Gauge Height	February Discharge	March Gauge Height	March Discharge	April Gauge Height	April Discharge	May Gauge Height	May Discharge	June Gauge Height	June Discharge
1	2.52	39.8	3.51	35.6	3.24	65.4	5.04	2300	2.36	302	3.30	855
2	2.63	41.2	3.33	38.4	3.34	69.0	6.46	3730	2.30	280	3.34	883
3	2.61	41.2	3.16	39.8	3.39	70.8	5.77	3020	2.31	283	3.26	833
4	2.48	47.2	3.04	34.2	3.42	69.0	5.28	2500	2.28	271	3.20	797
5	2.39	45.6	2.99	34.2	3.45	63.6	4.65	1900	2.22	249	3.17	784
6	2.23	41.2	3.11	34.2	3.50	60.0	4.72	1930	2.19	237	3.15	771
7	2.23	35.6	3.02	32.8	3.51	52.0	4.77	1940	2.17	229	3.24	825
8	2.50	28.8	2.89	32.8	3.54	42.6	4.35	1550	2.18	233	3.45	949
9	2.64	21.6	2.67	32.8	3.57	39.8	3.57	974	2.18	236	3.74	1130
10	2.77	20.4	2.68	32.8	3.59	39.8	3.41	879	2.14	219	3.55	1010
11	2.85	22.8	2.64	31.4	3.62	41.2	3.41	880	2.12	211	3.38	913
12	2.92	27.6	2.73	32.8	3.63	45.6	3.38	860	2.12	214	3.32	878
13	3.05	26.4	2.76	32.8	3.65	65.4	3.29	808	2.13	218	3.28	851
14	3.08	21.6	3.05	34.2	3.65	92.0	3.22	765	2.12	216	3.27	847
15	3.05	20.4	3.25	35.6	3.63	129	2.98	622	2.12	215	3.29	862
16	3.07	19.2	3.26	38.4	3.63	171	2.80	519	2.12	216	3.26	846
17	3.04	20.4	3.19	39.8	3.65	217	2.73	477	2.88	608	3.23	826
18	3.22	20.4	3.10	41.2	404	260	2.72	469	3.38	894	3.18	799
19	3.25	19.2	3.20	42.6	4.51	522	2.75	489	3.40	903	3.16	783
20	3.25	19.2	3.24	45.6	5.06	696	2.65	436	3.36	881	3.27	852A
21	3.25	19.2	3.20	48.8	5.22	708	2.55	383	3.33	863		858 E
22	3.18	20.4	3.19	50.4	4.98	660	2.44	332	3.30	851	3.29	864A
23	3.17	20.4	3.21	52.0	4.50	564	2.41	319	3.28	836	3.20	810A
24	3.30	22.8	3.12	55.2	3.96	440	2.62	421	3.25	821	3.22	821
25	3.30	26.4	3.22	56.8	3.80	360	2.89	579	3.23	810	3.42	945
26	3.16	22.8	3.19	58.4	4.49	600	2.78	513	3.21	797	3.77	1170
27	3.23	21.6	3.15	61.8	4.79	918	2.57	396	3.18	781	4.34	1590
28	3.30	204	3.21	63.6	4.14	1360	2.47	348	3.17	774	3.98	1310
29	3.37	20.4	–	–	3.72	1090	2.46	347	3.17	777	3.95	1290
30	3.44	21.6			3.39	909	2.41	324	3.20	797	448	1710
31	3.53	30.0			3.60	1080			3.27	838		
total		825.8		1169.0		11,500.2		31,010		16,060		28,662
mean		26.6		41.8		371		1,030		518		955
ac-ft		1640		2,320		22,800		61,500		31,900		56,900
max		47.2		63.6		1360		3,730		903		1,710
min		19.2		31.4		39.8		319		211		771

Day	July Gauge Height	July Discharge	August Gauge Height	August Discharge	September Gauge Height	September Discharge	October Gauge Height	October Discharge	November Gauge Height	November Discharge	December Gauge Height	December Discharge
1	3.98	1310	3.07	730	3.00	702	1.48	66.4	1.65	106	1.60	61.8
2	3.64	1080	3.06	723	3.00	699	1.48	66.8	1.59	92.0	1.61	60.0
3	3.55	1020	3.05	721	2.99	696	1.52	74.0	1.58	90.6	1.59	56.8
4	3.44	955	3.05	720	2.99	696	1.55	80.0	1.58	89.8	1.60	53.6
5	3.39	927	3.04	717	2.98	690	1.55	80.1	1.59	90.0	1.60	48.8
6	3.50	991	3.03	710	2.98	693	1.56	81.7	1.56	86.8	1.59	44.0
7	3.33	886	3.02	703	2.98	692	1.55	79.8	1.56	85.1	1.50	41.2
8	3.28	861	3.03	707	2.99	695	1.55	81.5	1.55	84.4	1.53	42.6
9	3.28	857	3.02	705	2.98	690	1.56	82.4	1.54	82.9	1.62	42.6
10	3.28	861	3.02	703	2.98	690	1.57	86.2	1.54	83.0	1.71	440
11	3.25	840	3.01	699	2.98	693	1.57	86.8	1.54	83.0	1.72	47.2
12	3.21	815	3.01	697	2.98	690	1.58	87.7	1.55	67.2	1.77	50.4
13	3.18	796	3.01	698	2.97	687	1.56	84.7	1.54	61.8	1.93	55.2
14	3.16	784	3.01	698	2.87	631	1.56	84.4	1.51	58.4	1.81	48.8
15	3.15	777	3.02	705	2.67	511	1.56	85.6	1.62	56.8	1.78	440
16	3.13	770	3.01	699	2.40	367	1.55	83.4	1.57	55.2	1.77	42.6
17	3.13	769	3.00	694	2.07	227	1.54	83.1	1.61	55.2	1.78	41.2
18	3.13	769	3.00	695	1.79	131	1.53	834	1.62	56.8	1.80	42.6
19	3.13	768	3.00	694	1.63	90.3	1.56	85.4	1.65	61.8	1.76	41.2
20	3.12	763	3.00	692	1.56	72.1	1.55	83.1	1.65	63.6	1.76	42.6
21	3.11	759	3.00	695	1.56	76.7	1.53	79.9	1.67	63.6	1.79	42.6
22	3.10	752	3.01	698	1.56	77.7	1.55	83.6	1.62	63.6	1.82	42.6
23	3.10	750	3.01	702	1.54	74.0	1.54	81.3	1.65	65.4	1.85	42.6
24	3.12	761	3.02	706	1.49	64.9	1.55	85.0	1.55	58.4	1.85	41.2
25	3.11	753	3.01	700	1.47	61.2	1.60	74.4	1.57	56.8	1.85	39.8
26	3.09	744	3.00	696	1.48	63.2	1.62	65.4	1.51	52.0	1.83	37.0
27	3.09	744	3.00	695	1.49	67.1	1.58	60.0	1.56	55.2	1.79	35.6
28	3.10	749	3.01	702	1.49	66.1	1.57	60.0	1.60	58.4	1.76	32.8
29	3.09	744	3.01	703	1.49	66.5	1.59	60.0	1.62	61.8	1.84	30.0
30	3.08	739	3.01	707	1.49	66.9	1.69	88.0	1.63	63.6	1.87	27.6
31	3.08	736	3.01	703			1.64	103			1.96	26.4
total		25,830		21,817		11,731.7		2467.1		2109.2		1,349.4
mean		833		704		391		79.6		70.3		43.5
ac-ft		51,200		43,300		23,300		4890		4,180		2.680
max		1,310		730		702		103		106		61.8
min		736		692		61.2		60.0		52.0		26.4

For the Year [redacted] (January to December)

Maximum instantaneous ~~daily~~ discharge, 4,010 cfs at G.H. 6.73 ft at 0040 MST on April 2

Minimum ~~instantaneous~~ daily discharge, 19.2 cfs at G.H. 3.25 ft at on January 16, 19, 20, 21

Mean discharge, 423 cfs Total discharge, 307,000 ac-ft

A-Manual gauge reading
Ice conditions January 1 to March 27, October 25 to 30, November 12 to December 31
E-Estimate

Data from March 28 to October 24, November 3 to 11 processed by computer and pencil follower methods.

Computed from Table No. 8 dated Nov. 23, 67 from January 1 to December 31

Total discharge 154,531.4 cfs-days

Accuracy

Maximum instantaneous ~~daily~~ gauge height, 6.73 ft at 0040 MST on April 2

Minimum instantaneous ~~daily~~ gauge height, 1.28 ft at 0920 MST on October 17

	January to March 31		to		April 1 to December 31		Summary
	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	
Computed by Date	DGB Dec 4, 69				DGB Jan 14, 70		DGB Jan 14, 70
Checked by Date	U. S. G. S. Engineers Jan. 19, 70				U. S. G. S. Engineers Jan 19, 70		U. S. G. S. Engineers Jan 28, '70

APPROVED: R. D. May
George M. Cooke

Approved by / Date

R79 (Dec 67)

Montana Specials

9-102

Daily Gage Height, in Feet, and Discharge, in Second-Feet, of Milk River Creek

At Near eastern crossing for the Year Ending September 30, 1962.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

File Number: Washington ..... District 06-1350.00

Used rating table ~~dated~~ No. 6 10

Drainage Area ..... Square Miles. Water-Stage Recorder ..... Ratio ..... Gage Read to ..... Once/Twice a Day by .....

Gage heights used to ~~half tenths between~~ ..... and ..... feet; hundredths ~~below and tenths above these limits~~.

Max. Disch. 4,230 Sec.-ft. at 06.00 on Apr. 3 (G. H. 6.78 ft.). Max. G. H. 9.87 ft. at ~~unknown~~ on Mar. 17 Ice Jam
Min. Disch. daily 25 Sec.-ft. on Mar. 6-10 (G. H. — ft.). Min. G. H. — ft. on —
* Discharge measurement made on this day. a No gage-height record.
b Stage-discharge relation affected by ice. d Boat staff gage-height record.
f Flow partly estimated by ice. g From graph based on staff-gage readings. h Staff gage read daily.

Equivalent gage heights from periods of open-water discharge from primary print out listed for mast Apr 18 except May 7, 8, July 9, 12, 16-20 and Sept 20-24 Oct 31 primary print out after

Day	January Gage height	January Discharge	February Gage height	February Discharge	March Gage height	March Discharge	April Gage height	April Discharge	May Gage height	May Discharge	June Gage height	June Discharge
1					h 2.65	* b 30	3.77	1100	2.67	435	3.35	813
2						a	5	* 2430	2.66	432	3.37	825
3							6.55	3940	2.61	411	3.39	840
4							5.99	3220	2.54	379	3.49	905
5						30	5.62	2770	2.48	355	3.39	842
6						25	5.04	2150	2.45	342	3.34	808
7							5.06	2170	2.41	328	3.35	814
8							5.03	* 2140	f 2.36	309	3.39	840
9							4.70	1840	2.31	289	3.43	865
10						25		a 1430	2.27	276	3.71	1060
11						28	h 3.64	1010	2.27	275	3.81	1200
12						30		a 995	2.27	276	3.69	1040
13							f 3.60	* 980	2.22	* 258	3.54	935
14						30	3.55	945	2.20	248	3.45	881
15						a 35	3.46	884	2.18	243	3.42	858
16					g 3.12	b 58 70	3.41	852	2.16	238	3.40	848
17					g 6.00	b 1.70 1500	f	a 745	2.19	248	3.40	847
18					h 7.52	b 1.00 3900	f 3.07	* use 640	2.22	257	3.41	850
19					6.54	b 1.65 3100	2.97	587	2.44	340	3.38	829
20					5.87	b# 1.30 2720	2.91	555	3.35	811	3.40	844
21					5.53	b 1.20 2450	2.91	556	3.39	837	3.37	828
22					5.32	b 1.10 2330	2.86	531	3.37	826	3.38	834
23					4.97	1.00 2080	2.74	470	3.35	811	3.39	837
24					4.21	* 1430	2.67	438	3.38	* 829	3.45	875
25					3.98	1250	2.61	412	3.38	835	3.49	902
26					4.07	1320	2.71	457	3.34	808	3.50	913
27					4.14	1370	3.11	662	3.33	799	3.69	1040
28					4.22	1440	3.05	625	3.32	795	4.40	1580
29					4.20	1420	2.81	506	3.28	766	4.57	1730
30					3.96	1230	2.69	* 444	3.29	775	4.16	1390
31					3.59	973			3.35	811		
Total						2901		36484		15642		28673
Mean						936		1216		505		956
Second-feet per square mile												
Run-off in inches												
Run-off in acre-feet						57540		72370 60		31030		56870
Maximum						3900		3940		837		1730
Minimum						25		412		238		808

Day	July Gage height	July Discharge	August Gage height	August Discharge	September Gage height	September Discharge	October Gage height	October Discharge	November Gage height	November Discharge	December Gage height	December Discharge
1	4.50	1660	3.25	62 736	3.22	15 636		a 67				
2	4.64	1780	3.24	59 719	3.19	15 624	h 1.55	58				
3	4.46	1390	3.25	59 729	3.20	14 635		a 60				
4	4.01	1270	3.24	54 712	3.24	14 653		65				
5	3.97	1240	3.25	54 724	3.20	13 640		70				
6	3.75	1080	3.26	65 722	3.17	13 623		a 70				
7	3.68	1040	3.18	65 670	3.16	12 623	h 1.59	68				
8	3.74	1080	3.18	66 666	3.15	12 617		a 75				
9	f 3.57	959	3.16	66 656	3.16	11 629		a 83				
10	3.54	938	3.19	67 670	3.20	11 647	d 1.68	92				
11	3.52	924	3.22	67 684	3.19	11 645		a 85				
12	f 3.48	897	3.23	68 684	3.21	10 660		80				
13	3.43	864	3.22	68 679	3.23	10 676		72				
14	3.38	833	3.19	68 658	3.25	09 691		72				
15	3.36	818	3.21	10 660	3.21	* 08 675		72				
16	3.35	813	3.23	10 674	3.13	07 634		a 70				
17	3.34	806	3.22	11 660	3.00	08 558	h 1.59	68				
18	3.34	806	3.23	11 666	2.79	09 448		a 70				
19	3.35	813	3.24	12 664	2.55	* 10 343	h 1.61	73				
20	3.30	780	3.25	12 673	2.29	08 254		a 73				
21	3.30	780	3.24	13 662	2.08	06 191		70				
22	3.29	772	3.23	13 657	1.94	04 155		71				
23	3.28	766	3.22	14 643	1.84	02 131		70				
24	3.25	750	3.22	14 646	1.79	* 118		70				
25	3.27	758	3.24	15 652	f 1.73	105		a 70				
26	3.28	767	3.25	15 652		a 99	f 1.70 b	75				
27	3.22	731	3.23	16 636		a 92	1.78	90				
28	3.22 *	730	3.25	16 649	h 1.65	84	1.73	80				
29	3.25 01	741	3.22	17 * 630		a 78	1.89	70				
30	3.24 01	734	3.22	16 632		a 72	1.92	90				
31	3.25 02	731	3.21	16 628			f 1.83 b	* 120				
Total		29051		20793		13036		2321				175,011
Mean		937		671		435		74.9				
Second-feet per square mile												
Run-off in inches												
Run-off in acre-feet		57620		41240		25860		4600				347,100
Maximum		1,780		736		691		120				
Minimum		730		628		72		58				

Estimated gage heights and discharges based on temporary rating for period Apr 18 to Oct 31 when staff gage was not used.

(Oct. 1-Sept. 25)

APPROVED: R. D. Nelson

F.M.C.

F.M.C.

Montana Special

9-192

Daily Gage Height, in Feet, and Discharge, in Second-Feet, of South Fork Milk River ~~Creek~~

~~At~~ Near Babb, Mont. for the Year ~~Ending September 30~~, 1969

Drainage Area 68.6 Square Miles. Water-Stage Recorder Fischer-Porter digital Ratio

Gage Read to Once/Twice a Day by

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

File Number Washington District 06-1322.00

Used rating table ~~dated~~ No. 5 11

Gage heights used to ~~half tenths between~~ and ~~feet~~; hundredths ~~below and tenths above these limits~~.

Max. Disch. 405 Sec.-ft. at 16.15 on June 26 (G. H. 4.20 ft.). Max. G. H. 4.21 ft. at 15.15 on Apr. 2 (G. H. 2.44 ft.). Min. G. H. Same ft. on —

Min. Disch. 6.2 Sec.-ft. on Sept. 14, 15 (G. H. 2.44 ft.). Min. G. H. Same ft. on —

* Discharge measurement made on this day. a No gage-height record.

b Stage-discharge relation affected by ice. f From partly estimated gage-height record.

Equivalent gage heights from primary print out except computed from rating table. Discharge for open-water period June 16, 17 and Sept. 13-16.

Day	January Gage height	January Discharge	February Gage height	February Discharge	March Gage height	March Discharge	April Gage height	April Discharge	May Gage height	May Discharge	June Gage height	June Discharge
1						a 6.0	4.25	b 200	3.07	65	3.09	68
2						8.0	4.35	283	3.08	66	2.99	53
3						8.0	4.10	248	3.06	63	2.93	46
4						8.0	3.79	181	3.04	61	2.90	42
5						a 7.0	3.93	225	3.03	60	2.89	41
6					f 3.89	* b 5.5	4.17	b 328	3.05	61	2.90	42
7					3.67	5.0	3.99	* 280	3.07	65	3.54	165
8					3.52	5.0	3.58	152	3.06	63	3.63	193
9					3.42	5.0	3.65	172	3.04	61	3.40	129
10					3.33	4.5	3.69	187	3.06	64	3.22	89
11					3.28	5.0	3.67	181	3.08	66	3.11	70
12					3.25	5.5	3.64	175	3.09	67	3.11	70
13					3.23	8.0	3.61	170	3.08	* 67	3.17	80
14					3.21	9.0	3.40	114	3.08	66	3.09	68
15					3.14	10	3.37	110	3.09	68	3.02	58
16					3.19	13	3.32	99	3.17	79	3.00	* 55
17					3.37	20	3.41	121	3.18	81	2.95	49
18					3.49	30	3.39	117	3.11	71	2.92	44
19					3.45	27	3.29	97	3.06	63	3.01	57
20					3.42	24	3.21	83	3.06	63	3.19	83
21					3.42	24	3.15	74	3.03	60	3.13	72
22					3.35	19	3.29	101	3.01	56	3.06	62
23					3.36	19	3.61	184	2.98	53	2.98	51
24					3.28	* 15	3.58	* 180	2.97	51	2.97	50
25					3.33	17	3.36	119	2.95	48	3.58	177
26					3.37	17	3.25	94	2.93	45	4.05	336
27					3.59	18	3.21	87	2.91	44	3.88	268
28					3.69	21	3.18	83	2.90	42	3.57	170
29					3.67	24	3.17	80	2.89	41	3.51	153
30					3.78	40	3.11	70	3.00	56	3.42	128
31					4.02	b 8.9			3.29	103		
Total						516.5		459.5		1919		2069
Mean						16.7		15.3		61.9		99.0
Second-feet per square mile												
Run-off in inches												
Run-off in acre-feet						1,020		9,110		3,810		5,890
Maximum						89		328		103		336
Minimum						4.5		7.0		4.1		4.1

Day	July Gage height	July Discharge	August Gage height	August Discharge	September Gage height	September Discharge	October Gage height	October Discharge	November Gage height	November Discharge	December Gage height	December Discharge
1	3.28	e 9.7	2.71	e 2.0	2.51	e 9.2	2.61	e 1.3				
2	3.20	8.2	2.69	1.9	2.50	8.7	2.60	1.3				
3	3.19	8.0	2.67	1.8	2.48	7.9	2.63	e 1.4				
4	3.15	e 7.3	2.67	1.8	2.48	8.1	2.66	e 1.7				
5	3.11	e 6.6	2.67	1.8	2.50	8.7	2.70	1.9				
6	3.10	6.5	2.66	e 1.8	2.52	e 9.3	2.70	1.9				
7	3.12	6.8	2.67	e 1.9	2.51	e 8.7	2.70	1.9				
8	3.11	6.6	2.65	1.8	2.51	8.8	2.66	1.7				
9	3.06	5.9	2.65	1.7	2.49	8.2	2.62	e 1.5				
10	3.01	5.2	2.64	1.7	2.49	7.9	2.63	e 1.5				
11	2.98	e 4.8	2.61	1.5	2.48	7.7	2.65	1.7				
12	2.96	e 4.4	2.60	1.4	2.48	7.5	2.65	1.7				
13	2.92	4.0	2.60	1.5	2.46	e 7.0	2.62	* e 1.5				
14	2.92	4.0	2.61	* 1.5	2.44	e 6.2	2.62	e 1.6				
15	2.90	* 3.8	2.60	1.5	2.44	6.2	2.65	1.7				
16	2.90	3.8	2.57	1.3	2.46	* 6.7	2.63	1.6				
17	2.90	3.8	2.55	e 1.2	2.49	7.8	2.60	1.5				
18	2.89	3.7	2.55	e 1.2	2.50	8.1	2.60	1.4				
19	2.87	3.4	2.56	1.2	2.50	7.9	2.61	1.5				
20	2.87	3.5	2.53	1.1	2.52	e 8.8	2.62	1.6				
21	2.85	3.2	2.53	1.1	2.58	e 11	2.64	1.7				
22	2.82	e 2.9	2.51	0.9	2.60	12	2.67	e 1.8				
23	2.81	e 2.9	2.51	0.9	2.58	10	2.65	e 1.8				
24	2.81	2.9	2.51	e 0.9	2.58	11	2.66	1.9				
25	2.80	2.8	2.50	e 0.9	2.61	13	2.66	1.9				
26	2.79	2.8	2.49	0.8	2.61	e 13	2.64	1.7				
27	2.79	2.7	2.48	0.8	2.59	e 13	2.65	1.8				
28	2.76	2.5	2.48	0.8	2.58	12	2.62	1.6				
29	2.73	2.2	2.49	0.8	2.58	12	2.63	1.6				
30	2.71	2.1	2.50	0.9	2.59	e 12	2.64	1.7				
31	2.71	e 2.1	2.52	e 0.9			* 2.66	e 1.9				
Total		139.1		48.0		280.4		51.3				126019
Mean		4.49		1.55		9.35		1.65				
Second-feet per square mile												
Run-off in inches												
Run-off in acre-feet		2,760		829		556		1,020				25,000
Maximum		9.7		2.0		13		1.9				
Minimum		2.1		0.8		6.2		1.3				

Montana Special

9-192

Daily Gage Height, in Feet, and Discharge, in Second-Feet, of No. Fk. Milk River ab. St Mary Canal River/Creek

At / Near Browning, Mont. for the Year ~~Ending September 30~~, 1969

Drainage Area ..... Square Miles. Water-Stage Recorder's ..... Ratio 1 : 6

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

File Number { Washington District 06-1335.00

Used rating table ~~dated~~ No. 2

Gage Read to ..... Once / Twice a Day by .....

Gage heights used to ~~half tenths between~~ ..... and ..... feet; hundredths ~~below and to nthe above these limits~~.

recorded Max. Disch. 176 Sec.-ft. at 0.00 on June 26 (G. H. 2.68 ft.) Max. G. H. 2.08 ft. at 1420 on April 4 observed
Min. Disch. 19 Sec.-ft. on several times in May (G. H. — ft.) Min. G. H. 1.24 ft. on Sept 29 & Oct 1 backwater from ice

* Discharge measurement made on this day. b Stage discharge relation affected by ice. Equivalent gage heights from primary print out listed except those for Apr. 29 and June 30. Discharge from computer running operator-center periods except Apr 29 & June 30, Sept 19, 22, 24 & Sept 26 to Oct 5 from rating table.

Day	January Gage height	January Discharge	February Gage height	February Discharge	March Gage height	March Discharge	April Gage height	April Discharge	May Gage height	May Discharge	June Gage height	June Discharge
1									1.49	+.03 41	1.36	+.02 31
2									1.47	+.02 38	1.33	29
3									1.45	37	1.32	28
4									1.46	38	1.30	27
5									1.47	+.02 38	1.29	26
6									1.49	+.01 39	1.31	28
7									1.49	39	2.00	86
8									1.44	36	1.58	47
9									1.45	36	1.43	36
10									1.46	+.01 37	1.38	32
11									1.47	.00 37	1.35	30
12									1.48	37	1.41	+.02 34
13									1.45*	35	1.41	+.03 35
14									1.45	36	1.33	29
15									1.54	42	1.31	28
16									1.47	37	1.30	27
17									1.52	40	1.29	27
18									1.44	35	1.27	26
19									1.41	.00 33	1.31	28
20									1.40	+.01 32	1.37	32
21									1.37	31	1.34	30
22									1.37	31	1.31	28
23									1.37	31	1.30	27
24									1.37	31	1.33	+.03 30
25									1.36	30	1.92	+.04 82
26									1.35	29	2.21	112
27									1.35	29	1.62	52
28									1.33	28	1.72	61
29							h 1.51	+.03 42	1.32	27	2.26	117
30							1.45	+.03 38	1.57	46	1.82	+.04 76
31									1.49	+.01 39		
Total										1095		1273
Mean										35.3		42.4
Second-feet per square mile												
Run-off in inches												
Run-off in acre-feet										2,170		2520
Maximum										46		117
Minimum										27		26

Day	July Gage height	July Discharge	August Gage height	August Discharge	September Gage height	September Discharge	October Gage height	October Discharge	November Gage height	November Discharge	December Gage height	December Discharge
1	1.62	+.03 51	1.33	-.05 24	1.27	-.08 20	1.30	-.07 22	1.32	-.01 26		
2	1.58	+.03 48	1.32	24	1.27	19	1.30	22	1.31	.00 26		
3	1.56	+.02 45	1.32	24	1.26	19	1.38	26	+1.30	+.00 26		
4	1.48	+.02 39	1.32	24	1.28	20	1.35	24				
5	1.45	+.01 36	1.32	-.05 24	1.28	20	1.34	-.07 24				
6	1.45	+.01 36	1.32	-.06 23	1.28	20	1.33	-.06 24				
7	1.44	.00 34	1.32	23	1.28	20	1.32	23				
8	1.42	.00 33	1.32	23	1.28	20	1.31	23				
9	1.39	-.01 31	1.31	23	1.27	20	1.30	22				
10	1.37	-.01 29	1.31	23	1.28	20	1.33	24				
11	1.36	-.02 28	1.31	23	1.27	-.08 20	1.35	25				
12	1.35	-.02 28	1.31	23	1.28	-.09 19	1.32	23				
13	1.35	-.03 27	1.31*	23	1.28	19	1.32	-.06 23				
14	1.35	-.03 27	1.30	22	1.27	19	1.33	-.5 24				
15	1.35	-.04 26	1.29	22	1.29	20	1.34	-.05 25				
16	1.35	26	1.28	21	1.29	20	1.32*	-.5 24				
17	1.35	26	1.29	22	1.29*	20	1.33	-.5 24				
18	1.35	26	1.30	-.06 22	1.29	20	1.31	-.04 24				
19	1.35	26	1.29	-.07 21	1.29	-.09 20	1.32	24				
20	1.35	26	1.29	21	1.30	-.08 21	1.32	24				
21	1.34	25	1.29	21	1.35	24	1.31	-.04 24				
22	1.33	-.04 25	1.28	20	1.32	22	1.31	-.03 24				
23	1.34	-.05 25	1.29	21	1.31	22	1.31	24				
24	1.34	25	1.28	21	1.30	21	1.32	-.03 25				
25	1.33	24	1.26	19	1.30	21	1.31	-.02 25				
26	1.32	24	1.26	19	1.30	21	1.31	-.02 25				
27	1.32	24	1.27	20	1.30	-.08 21	1.46	b 25				
28	1.33	24	1.26	20	1.30	-.07 22	1.38	b 26				
29	1.32	24	1.28	20	1.30	22	1.32	-.01 26				
30	1.33	24	1.28	-.07 21	1.30	-.07 22	1.32	26				
31	1.33	-.05 24	1.28	-.08 20			1.32	-.01 26				
Total		916		677		614		750				5,325
Mean		29.5		21.8		20.5		24.2				
Second-feet per square mile												
Run-off in inches												
Run-off in acre-feet		1820		1,340		1,220		1490				10,560
Maximum		51		24		24		26				
Minimum		24		19		19		22				

May to October 1969

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DAILY DISCHARGES

DEPARTMENT OF ENERGY, MINES AND RESOURCES
INLAND WATERS BRANCH – WATER SURVEY OF CANADA

Station Name North Milk River near International Boundary Station No. 11AA001

Daily Gauge Heights in Feet and Daily Discharges in Cubic Feet per Second for the Year 1969

Drainage Area 91·8 square miles Type of Gauge Manual ☐ Recording ☑

Day	January		February		March		April		May		June	
	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge
1					3·53	24·2	5·39	517	3·38	52·3	5·87	725
2					3·52	24·2	5·12	436	3·38	52·6	5·86	722
3					3·52	24·8	5·05	409	3·34	48·0	5·85	721
4					3·51	24·8	4·70	309	3·33	47·4	5·84	719
5					3·49	24·2	4·75	324	3·32	46·6	5·84	719
6					3·48	24·2	4·82	348	3·34	48·1	5·85	725
7					3·47	22·4	4·27	204	3·34	48·2	6·08	828
8					3·43	20·0	3·82	113	3·29	43·4	5·93	764
9					3·41	19·1	3·81	111	3·29	43·1	5·85	728
10					3·41	18·2	3·85	118	3·30	43·8	5·82	718
11					3·42	15·1	3·81	111	3·29	43·5	5·82	716
12					3·38	13·3	3·78	106	3·30	44·3	5·82	721
13					3·37	12·2	3·76	104	3·27	41·5	5·80	712
14					3·40	12·9	3·61	81·8	3·27	41·5	5·81	718
15					3·63	25·4	3·55	73·5	3·38	53·7	5·85	736
16					3·58	23·0	3·55	73·7	5·22	467	5·85	736
17					4·23	65·8	3·60	80·4	5·76	665	5·84	734
18					5·08	85·6	3·58	77·2	5·85	700	5·81	724
19					4·97	108	3·49	66·2	5·84	700	5·79	717
20					4·63	119	3·44	60·1	5·85	701	5·80	725
21					4·43	92·6	3·42	57·3	5·83	697	5·79	725
22					4·12	73·5	3·54	72·1	5·82	696	5·78	722
23					3·75	59·8	3·68	90·7	5·82	693	5·77	723
24					3·64	56·2	3·70	93·7	5·81	692	5·77	729
25			3·60	24·8	3·68	59·8	3·50	67·7	5·80	689	6·00	838
26			3·60	24·8	4·08	72·2	3·41	56·3	5·80	691	6·07	878
27			3·66	25·4	4·47	100	3·43	58·2	5·81	697	5·63	683
28			3·55	24·8	4·28	105	3·42	56·9	5·81	698	5·66	703
29					4·01	95·5	3·40	54·6	5·83	706	6·10	905
30					3·82	100	3·34	48·9	5·90	738	5·74	742
31					4·91	345			5·90	740		
total					1,866·0		4379·3		11,668·0		22,256	
mean					60·2		146		376		742	
ac-ft					3,700		8,690		23,100		44,100	
max					119		517		740		905	
min					12·2		48·9		41·5		683	

Day	July		August		September		October		November		December	
	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge
1	5·65	708	5·50	734	5·45	717	2·53	26·2	2·60	30·1		
2	5·65	710	5·48	728	5·45	714	2·53	26·2	2·59	29·6		
3	5·62	702	5·47	724	5·44	710	2·64	32·7	2·58	29·1		
4	5·55	681	5·47	722	5·44	711	2·63	31·8	2·57	28·6A		
5	5·54	678	5·49	730	5·44	709	2·59	29·5				
6	5·52	676	5·46	717	5·44	710	2·58	29·2				
7	5·51	675	5·47	721	5·44	710	2·56	28·0				
8	5·50	675	5·46	719	5·43	708	2·55	27·6				
9	5·52	686	5·46	717	5·43	707	2·53	26·6				
10	5·53	697	5·46	717	5·43	707	2·58	29·3				
11	5·52	696	5·45	714	5·44	709	2·61	30·7				
12	5·51	694	5·45	715	5·43	706	2·58	29·2				
13	5·50	696	5·44	713	5·30	655	2·56	28·3				
14	5·49	697	5·46	718	4·96	535	2·57	28·7				
15	5·48	697	5·47	721	4·46	376	2·59	29·8				
16	5·48	698	5·46	720	3·65	168	2·56	28·2				
17	5·48	698	5·45	716	2·89	51·4	2·55	27·7				
18	5·47	697	5·46	721	2·70	35·9	2·57	28·8				
19	5·46	695	5·47	723	2·68	34·9	2·56	28·0				
20	5·46	699	5·46	720	2·70	36·2	2·57	28·6				
21	5·46	698	5·45	717	2·66	33·8	2·56	27·9				
22	5·45	699	5·45	713	2·57	28·6	2·56	27·9				
23	5·48	710	5·46	719	2·55	27·7	2·56	27·8				
24	5·49	718	5·46	720	2·53	26·5	2·58	29·3				
25	5·50	722	5·47	723	2·53	26·5	2·58	28·9				
26	5·48	718	5·46	719	2·53	26·2	2·57	28·8				
27	5·49	724	5·48	726	2·53	26·7	2·62	29·0				
28	5·49	727	5·46	721	2·52	26·1	2·58	29·3				
29	5·48	727	5·47	724	2·52	26·0	2·71	29·5				
30	5·49	730	5·47	723	2·53	26·2	2·62	29·8				
31	5·49	731	5·47	723			2·60	30·0				
total	21,759		22,338		10,684·7		893·3					
mean	702		721		356		28·8					
ac-ft	43,200		44,300		21,200		1,770					
max	731		734		717		32·7					
min	675		713		26·0		26·2					

For the Period (March to October)

Maximum instantaneous ~~daily~~ discharge, 970 cfs at G.H. 6·26 ft at 0735 MST on June 26

Minimum ~~instantaneous~~ daily discharge, 12·2 cfs at G.H. 3·37 ft at on March 13

Mean discharge, 391 cfs | Total discharge, 190,000 ac-ft

A- Manual gauge reading
Ice conditions February 25 to March 31, October 27 to 30

Data from February 26 to November 3 processed by computer and pencil follower methods.

Computed from Table No. 8 dated Nov. 15.67 from Feb. 25 to Jul. 28
" " " " 9 " Nov. 21.69 " Jul. 29 " Nov. 4
" " " " " " " " " " " "

Total discharge 95,844·3 cfs-days

Accuracy

Maximum instantaneous ~~daily~~ gauge height, 7·72 ft at 1800 MST on March 31

Minimum instantaneous ~~daily~~ gauge height, 2·28 ft at 0720 MST on October 18

	January to		Feb 25 to Nov. 4		to December		Summary
	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	
Computed by Date			RBB Dec 1, 69				RBB Dec 1/69
Checked by Date			U.S.G.S. Engineers Jan 14.1970				U.S.G.S. Engineers Jan. 14.1970

Approved by R.D. Wang Jnt. Engr. WS of Canada, George M. Clarke U.S.G.S.

Date

R79 (Dec 67)

DEPARTMENT OF ENERGY, MINES AND RESOURCES
INLAND WATERS BRANCH - WATER SURVEY OF CANADA

STAGE AND CONTENTS

Station Name ALTAWAN RESERVOIR near GOVENLOCK Station No. 11AB089

Elevations in Feet and Contents in Acre-Feet for the Year 1969

Month	Elevation at End of Month	Contents at End of Month	Change in Contents During Month	Equivalent in cfs
October 1968	2933.07 E	743		
January 1969	Winter	Storage	- 4	
February	2933.03 E	739		
March	2933.06 E	742	+ 3	+ 0.05
April	2951.94	5,600	+ 4858	+ 81.6
May	2950.31	4,950	- 650	- 10.6
June	2946.60	3,630	- 1320	- 22.2
July	2946.27	3,520	- 110	- 1.8
August	2941.84	2,210	- 1310	- 21.3
September	2941.56	2,140	- 70	- 1.2
October	2941.41	2,100	- 40	- 0.65
November				
December				
Change in Contents during the Period			+ 1361	+ 2.8

March 1 October 31

Maximum	instantaneous	2953.55	08:00	April 12	6,270 ac-ft
Minimum	daily	2933.03		March 4 to 10	739 ac-ft

E - Estimated

APPROVED: R.D. Mory
Dist. Engr. WS of Canada

George M. Pike
District Engr. U.S.G.S.

Computed by	Checked by
K.G. Clarke	U. S. G. S. Engineers
Date Nov. 26, 1969	Date Jan. 13, 1970

R243 (Dec 67)

Daily Gage Height, in Feet, and Discharge, in Second-Feet, of Lodge Creek below McRae Creek international boundary for the Year ~~Ending September 30~~, 1969

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

Washington — Gauging Station No. 4

Drainage Area 818 Square Miles. Water-Stage Recorder Stevens A35 Datum 1 : 6. Gage Read to hundredths by B.W. White

Day	January		February		March		April		May		June		July		August		September		October		November		December	
	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge
1								0	1.55	9.0	1.09	1.10	1.18 oo	1.70										
2							2.16	b 13	1.54	8.7	1.02 **	.72	1.12 oo *	1.30										
3							3.72	b 128	S	18	S	5.8	1.12	1.3			*							
4							4.40	b 210	1.60	10	1.47	6.9	1.02	.72										
5					*		6.16	b 638	1.56	9.3	1.43	5.9	.99	.59										
6							6.80	** b 838	1.48	7.2	1.35	4.1	.98	.54										
7							S	* 1570	1.42	5.7	1.28	2.8	1.01	.68										
8							S	* 1640	1.38	4.8	1.34	3.9	.99	.59										
9							S	* 1090	1.33	3.7	1.36	4.3	.95	.42										
10							S	* 227	1.35	4.1	1.31 *	3.3	.92	.32										
11							3.14	* 122	1.49	7.4	1.26	2.5	.87 **	.16										
12							4.02	230	1.46 *	6.7	1.17	1.6	.85	.10										
13							4.35	287	1.37	4.6	1.11	1.2	.83	.04										
14							4.37	291	1.32	3.5	1.04	.82	.79	0										
15							4.25	269	1.27	2.6	.98	.54	.77	0										
16							3.65	176	1.24	2.3	.93	.36	.75	0										
17							3.19	126	S	4.3	.90	.26	.75	0										
18					*		2.85	96	1.42	5.7	.87	.16	.74	0										
19							2.53	69	1.36	4.3	.83	.04	.74	0										
20							2.33	52	1.31	3.3	.84 oo	.02	.74	0					*					
21							2.16	40	1.31	3.3	S V	3.4	.74	0										
22							1.99	29	1.33	3.7	1.62 oo	10	.73	0	*									
23							1.87	* 23	1.36	4.3	1.60 oo *	9.5	.73	0			*							
24							1.78	18	1.39	5.0	1.48 oo	6.4	f .71	0										
25							1.69	14	1.31	3.3	1.42 oo	5.2	.70	* 0										
26					*		1.78	18	1.24	2.3	1.41 oo	5.0	.68	0										
27							1.82	20	1.18	1.7	1.37 oo	4.1	.67	0										
28							1.67	13	1.14	1.4	1.39 oo	4.8	.67	0										
29							1.62	* 11	S	1.1	1.33 oo	3.5	.66	0										
30							1.57	9.5	.98	.54	1.27 oo	2.5	.65	0					*					
31									1.13	1.3			.64 *	0										
Total					0			8,267.5		153.14		100.77		8.46	0		0		0					
Mean					0			276		4.94		3.36		.27	0		0		0					
Runoff in acre-feet					0			16,400		304		200		17	0		0		0					16,920
Maximum					0			1640		18		10		1.7	0		0		0					
Minimum					0			0		.54		.04		0	0		0		0					

1940 Apr. 7 at 1730 Same

No flow at times

*Discharge measurement or observation of no flow made on this day. **Field estimate made on this day. b Stage-discharge relation affected by ice. V Variable shift

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Canadian Timetable

Canadian Timetable

STAGE AND CONTENTS

Station Name Michele Reservoir Station No. 11AB091

Elevations in Feet and Contents in Acre-Feet for the Year 1969

Month	Elevation	Contents at Last of Month	Change in Contents During Month	Equivalent in cfs
Oct. 1968	987.5	238		
January 1969			+ 2	
February	987.6	240		
March	987.6	240	0	0
April	997.8	678	+ 438	7.4
May	996.7	619	- 59	0.96
June	996.0	583	- 36	0.60
July	995.2	543	- 40	0.65
August	994.4	506	- 37	0.60
September	993.7	472	- 34	0.57
October	992.9	436	- 36	0.59
November				
December				
Change in Contents during			+ 196	0.40

March to October

Maximum daily elevation 998.96 April 21 Contents 744 ac-ft

Minimum daily elevation 987.56 March 20 Contents 240 ac-ft

Elevations from graph of observed readings

Computed by	Checked by
LTH	RJB
Date Dec 8, 69	Date Dec 9, 69

RJ33 (Dec 67)

STAGE AND CONTENTS

Station Name Greasewood Reservoir Station No. 11AB092

Elevation in Feet and Contents in Acre-Feet for the Year 1969

Month	Elevation at End of Month	Contents at End of Month	Change in Contents During Month	Equivalent in cfs
Oct 1968	Dry	0		
January 1969			0	
February	Dry	0		
March	Dry	0	0	0
April	94.1	47.6	+ 47.6	0.80
May	94.6	52.0	+ 4.4	0.07
June	94.6	52.0	0	0
July	94.6	52.0	0	0
August	94.1	47.6	- 4.4	0.07
September	Dry	0	- 47.6	0.80
October	Dry	0	0	0
November				
December				
Change in Contents during Year			0	0

		March	October
Maximum daily elevation	94.86	July 15	54.1 acre-ft
Minimum daily elevation	Dry	various times	0 acre-ft

Elevations from graph of observed readings

Computed by	Checked by
LTH	
Date Dec 9, 69	Date

STAGE AND CONTENTS

Station Name Massy Reservoir Station No. 11AB104

~~Gauge Height~~ Elevations in Feet and ~~—~~ Total Contents in Acre-Feet for the Year 19 69

Month	~~Gauge Height~~ Elevation at End of Month	Contents at End of Month	Change in Contents During Month	Equivalent in cfs
~~December~~ Oct 1968	93.8	155		
January 1969			- 122.1	
February	87.3 E	32.9		
March	87.3	32.9	0	0
April	93.8	155	+ 122.1	2.1
May	92.0	114	- 41	0.67
June	88.4	48.0	- 66	1.1
July	88.2	45.0	- 3.0	0.05
August	88.8	54.0	+ 9.0	0.15
September	89.6	67.6	+ 13.6	0.23
October	90.4	82.1	+ 14.5	0.24
November				
December				
Change in Contents during ~~Year~~ Period			+ 49.2	0.10

Summary ~~Calendar Year~~ For the Period March to October

Maximum ~~instantaneous~~ daily ~~gauge height~~ elevation 95.5 feet on April 6 Contents 197 E ac-ft

Minimum ~~instantaneous~~ daily ~~gauge height~~ elevation 87.3 feet on April 2 Contents 32.9 ac-ft

Elevations from graph of observed readings

Computed by	Checked by
LTH	[illegible]
Date Dec 8, 69	Date Dec. 8/69

DEPARTMENT OF ENERGY, MINES AND RESOURCES
INLAND WATERS BRANCH — WATER SURVEY OF CANADA

STAGE AND CONTENTS

Station Name Bare Creek Reservoir Number 11AB099

Elevations in Feet ~~Gage Height~~ — Contents in Acre-Feet for the Year 1969

Month	Elevation in Feet at Beginning of Month	Contents at Beginning of Month	Change in Contents During Month	Equivalent in cfs
Oct 1968	3718.2	482		
November 1969			- 18	
February	3717.9	464		
March	3717.9	464	0	0
April	3729.8	1450	+ 986	16.6
May	3729.4	1400	- 50	0.81
June	3729.1	1370	- 30	0.50
July	3728.5	1300	- 70	1.1
August	3726.7	1120	- 180	2.9
September	3725.0	964	- 156	2.6
October	3725.0	964	0	0
November				
December				
Change in Contents During ~~Month~~ Year			+ 500	1.0

			March	October
Maximum ~~daily~~	~~Elevation~~	3729.83	April 20 to 26	Contents 1450 ac-ft
Minimum ~~daily~~	~~Elevation~~	3717.90 E	March 1 to April 3	Contents 464 ac-ft

Elevations from graph of observed readings

Computed by	Checked by
LTH	[illegible]
Date Dec 5, 69	Date Dec 5/69

STAGE AND CONTENTS

Station Name Cressday Reservoir Station No. 11AB097

Elevations ~~Gauge Heights~~ — Contents in Acre-Feet for the Year 19 69

Month	Elevations ~~Gauge Heights~~ at End of Month	Contents at End of Month	Change in Contents During Month	Equivalent in cfs
Oct ~~October~~ 1968	3157.9 E	147		
January 1969			- 4	
February	3157.8 E	143		
March	3157.8	143	0	0
April	3162.5	543	+ 400	6.7
May	3161.8	448	- 95	1.5
June	3161.6	424	- 24	0.40
July	3161.0	359	- 65	1.1
August	3160.3	294	- 65	1.1
September	3160.0	270	- 24	0.40
October	3159.8	256	- 14	0.23
November				
December				
Change in Contents ~~During the Year~~ Period			+ 113	0.23

Date ~~Year~~ March October

Maximum ~~daily~~	~~Elevation~~	3163.00 E	April 8	Contents	627 ac-ft
Minimum ~~daily~~	~~Elevation~~	3157.75	March 1	Contents	141 ac-ft

Elevations from graph of observed readings

Computed by	Checked by
LTH	[illegible]
Date Dec 4, 69	Date Dec. 4/69

RC13 (Dec 67)

DAILY DISCHARGES

DEPARTMENT OF ENERGY, MINES AND RESOURCES
INLAND WATERS BRANCH – WATER SURVEY OF CANADA

Station Name *Walburger Coulee below Diversions* Station No. *11AB086*

Daily Gauge Heights in Feet and Daily Discharges in Cubic Feet per Second for the Year 19*69*

Drainage Area square miles Type of Gauge Manual ☐ Recording ☒

Day	January Gauge Height	January Discharge	February Gauge Height	February Discharge	March Gauge Height	March Discharge	April Gauge Height	April Discharge	May Gauge Height	May Discharge	June Gauge Height	June Discharge
1								0	2.41	0.08	2.31	0.01
2								0	2.39	0.06	V	0.83
3								0	2.37	0.05	V	0.67
4								0	2.36	0.04	2.92	2.0
5								0	2.35	0.03	2.93	2.0
6								0	2.35	0.03	2.92	2.0
7								0	2.34	0.03	2.88	1.7
8								0	2.34	0.02	2.61	0.63
9								10.5 E	2.33	0.02	2.35	0.05
10							3.85	21.1 A	2.32	0.01	2.32	0.02
11								17.8 E	2.32	0.02	2.39	0.08
12								14.7 E	2.31	0.01	2.34	0.03
13								11.9 E	2.31	0.01	2.31	0
14								9.4 E	2.31	0.01	2.30	0
15								7.2 E	2.31	0.01	2.34	0.10
16								5.3 E	2.32	0.02	2.57	0.32
17								3.7 E	2.33	0.03	2.36	0.02
18								2.4 E	2.32	0.02	2.30	0
19								1.4 E	2.33	0.03	2.30	0
20								0.70 E	2.34	0.04	2.35	0
21								0.20 E	2.33	0.03	2.36	0
22							2.41	0.05 A	2.32	0.02	2.36	0
23							2.38	0.02	2.31	0.01	2.38	0
24							2.36	0.01	2.31	0.01	2.39	0.03
25							2.35	0	2.29	0	2.46	0.09
26								0		0	2.41	0.04
27								0		0	2.38	0.02
28								0		0	2.38	0.02
29								0		0	2.40	0.04
30								0		0	2.38	0.03
31									2.31	0.01		
total								106.38		0.65		10.73
mean								3.55		0.02		0.36
ac-ft								211		1.3		21.3
max								21.1		0.08		2.0
min								0		0		0

Day	July Gauge Height	July Discharge	August Gauge Height	August Discharge	September Gauge Height	September Discharge	October Gauge Height	October Discharge	November Gauge Height	November Discharge	December Gauge Height	December Discharge
1	2.45	0.10	2.69	0.78		0		0	V	3.3		
2	2.40	0.05	2.34	0.01		"		0	V	4.3		
3	2.38	0.03	2.29	0		"		0	2.52	0.11		
4	2.38	0.03		0		"		0	2.52	0.10 A		
5	2.43	0.08		0		"		0				
6	2.48	0.13		0		"		0				
7	2.45	0.10		0		"		0				
8	2.52	0.21		0		"		0				
9	2.61	0.33		0		"	2.30	0				
10	2.46	0.11		0		"	2.32	0.01				
11	2.37	0.02		0		"	2.31	0				
12	2.34	0		0		"		0				
13	2.31	0		0		"		0				
14	2.31	0		0		"		0				
15	2.31	0		0		"		0				
16	2.32	0	1.88	0		"		0				
17	2.31	0	V	0.08		"	2.32	0				
18	2.32	0	2.41	0.11		"	2.33	0.01				
19	2.32	0	2.36	0.06		"	2.34	0.02				
20	2.31	0	2.31	0.01		"	2.34	0.02				
21	V	1.1	2.31	0.01		"	2.34	0.02				
22	3.03	2.0	2.34	0.04		"	V	2.4				
23	3.03	2.1	2.42	0.12		"	3.39	7.1				
24	3.35	5.2	2.40	0.10		"	3.38	6.8				
25	3.44	6.0	2.30	0.01		"	2.84	1.8				
26	2.81	1.1	2.24	0		"	2.35	0				
27	2.44	0.10		0		"	2.32	0				
28	V	2.1		0		"	V	1.7				
29	2.61	0.48		0		"	3.22	5.0				
30	2.69	0.74		0		"	2.40	0.01				
31	2.84	1.2		0			2.34	0				
total		23.31		1.33		0		24.89				
mean		0.75		0.04		0		0.80				
ac-ft		46.2		2.6		0		49.4				
max		6.0		0.78		0		7.1				
min		0		0		0		0				

~~For the Year or~~ For the Period (*April 1* to *October 31*)

Maximum ~~instantaneous~~ daily discharge, *21.1* cfs at G.H. *3.85 -0.12 shift* ft at on *April 10*

Minimum instantaneous daily discharge, cfs at G.H. ft at on

Mean discharge, cfs Total discharge, *332* ac-ft

A - Manual gauge reading
E - Estimated
V - Subdivided

All data processed by computer and pencil follower methods.

Computed from Table No. *4* dated *Dec. 1/67* from *April 1* to *Nov. 4*

Total discharge *167.29* cfs-days

Accuracy

Maximum instantaneous daily gauge height, ft at on

Minimum instantaneous daily gauge height, ft at on

	January to		to		to December		Summary
	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	
Computed by			*K. J. Clarke*				
Date			*Dec. 15, 1969*				
Checked by			U. S. G. S. Engineers				
Date			*Memo Jan 14, 1970*				

APPROVED *R. D. Way* Dist. Eng. WS of Canada *George M. Clarke* U.S.G.S. Date

R79 (Dec 67)

DEPARTMENT OF ENERGY, MINES AND RESOURCES
INLAND WATERS BRANCH – WATER SURVEY OF CANADA

Station Name *Spangler Ditch near Govenlock* Station No. *11AB060*

Daily Gauge Heights in Feet and Daily Discharges in Cubic Feet per Second for the Year 19*69*

Drainage Area ____ square miles Type of Gauge Manual ☐ Recording ☒

Day	January Gauge Height	January Discharge	February Gauge Height	February Discharge	March Gauge Height	March Discharge	April Gauge Height	April Discharge	May Gauge Height	May Discharge	June Gauge Height	June Discharge
1						0		0		0	3.42	41.2
2						"		0		0	3.37	38.9
3						"		0		0	3.10	27.3
4						"		0		0	3.10	27.4
5						"		0		0	3.09	26.9
6						"		0		0	3.03	24.8
7						"		0		0	2.71	17.3
8						"		0		0	1.83	2.7
9						"		0		0	1.49	0.67
10						"		0	V	0.50	1.29	0.05
11						"		0	1.67	2.10	1.21	0
12						"		0	1.39	0.35		0
13						"		0	1.30	0.08		0
14						"		0	1.28	0.01		0
15						"		0	1.25	0	V	33.0
16						"		0		0	3.54	46.8
17						"		9.0 E		0	3.54	46.9
18						"		16.8 E		0	3.54	46.7
19						"		16.9 E		0	3.45	42.3
20						"		16.9 E		0	3.26	34.1
21						"		17.0 E		0	3.09	27.0
22						"	2.47	17.0 A		0	2.93	21.3
23						"	2.47	16.9	0.99	0	2.79	17.1
24						"	2.47	16.8	V	22.7	V	6.0
25						"	2.47	16.8	3.29	35.2	1.35	0.01
26						"	2.48	17.1	3.34	37.4	1.35	0.01
27						"	2.48	17.2	3.37	38.7	1.34	0
28						"	2.48	17.3	3.38	39.1		0
29						"	V	8.4	3.40	39.8		0
30						"	1.20	0	3.47	43.2		0
31						"			3.42	40.9		
total						0		204.1		300.04		528.44
mean						0		6.80		9.68		17.6
ac-ft						0		405		595		1050
max						0		17.3		43.2		46.9
min						0		0		0		0

Day	July Gauge Height	July Discharge	August Gauge Height	August Discharge	September Gauge Height	September Discharge	October Gauge Height	October Discharge	November Gauge Height	November Discharge	December Gauge Height	December Discharge
1		0		0		0		0				
2		"		0		"		"				
3		"		0		"		"				
4		"	V	1.6		"		"				
5		"	3.25	29.2		"		"				
6		"	3.35	33.1		"		"				
7		"	3.35	33.0		"		"				
8		"	3.38	34.0		"		"				
9		"	3.42	35.9		"		"				
10		"	3.42	36.0		"		"				
11		"	3.57	42.8		"		"				
12		"	3.69	48.7		"		"				
13		"	3.67	47.9		"		"				
14		"	3.57	42.9		"		"				
15		"	3.32	31.9		"		"				
16		"	3.06	22.2		"		"				
17		"	2.98	19.8		"		"				
18		"	2.88	17.0		"		"				
19		"	2.75	13.8		"		"				
20		"	2.69	12.4		"		"				
21		"	2.56	10.1		"		"				
22		"	1.93	3.1		"		"				
23		"	1.34	0		"		"				
24		"		0		"		"				
25		"		0		"		"				
26		"		0		"		"				
27		"		0		"		"				
28		"		0		"		"				
29		"		0		"		"				
30		"		0		"		"				
31		"		0				"				
total		0		515.4		0		0				
mean		0		16.6		0		0				
ac-ft		0		1020		0		0				
max		0		48.7		0		0				
min		0		0		0		0				

~~For the Year~~ For the Period (*March* to *October*)

Maximum ~~instantaneous~~ daily discharge, *48.7* cfs at G.H. *3.69* $^{-0.29,5}$ ft at on *August 12*

Minimum instantaneous daily discharge, cfs at G.H. ft at on

Mean discharge, cfs Total discharge, *3,070* ac-ft

A - Manual gauge
E - Estimated
V - Subdivided

All data processed by computer and pencil follower methods.

Computed from Table No. *6* dated *Dec.4/69* from *March 1* to *October 31*

Total discharge *1,547.98* cfs-days

Accuracy *Records good.*

Maximum instantaneous daily gauge height, ft at on

Minimum instantaneous daily gauge height, ft at on

	January to		*March* to *October*		to December		Summary
	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	
Computed by / Date			*K. G. Clarke* *Dec. 18, 1969*				
Checked by / Date			U. S. G. S. Engineers *Memo Jan. 14, 1970*				

APPROVED: *R. D. May* Dist. *George M. Cooke* Date

R79 (Dec 67)

DEPARTMENT OF ENERGY, MINES AND RESOURCES
INLAND WATERS BRANCH — WATER SURVEY OF CANADA

STAGE AND CONTENTS

Station Name: Jaydot Reservoir — Station No. 11AB098

Elevations ~~Gage Heights~~ in Feet and ~~—~~ Contents in Acre-Feet for the Year 1969.

Month	Elevation at the Beginning of Month	Contents at Beginning of Month	Change in Contents During Month	Mean Inflow in cfs
Oct. ~~December~~ 1968	3014.7	61		
~~January~~ 1969			- 5	
February	3014.4	56		
March	3014.4	56	0	0
April	3021.0	298	+ 242	4.1
May	3020.5	262	- 36	0.59
June	3020.2	244	- 18	0.30
July	3019.7	216	- 28	0.46
August	3018.9	180	- 36	0.59
September	3018.4	160	- 20	0.34
October	3018.2	153	- 7	0.11
November				
December				
Change in Contents During ~~Calendar~~ Period			+ 97	0.20

Summary ~~Calendar~~ March October

Maximum ~~calendar~~ daily ~~gage height~~ elevation	3021.45	April 8	Contents	329 ac-ft
Minimum ~~calendar~~ daily ~~gage height~~ elevation	3014.40	March 4	Contents	56 ac-ft

Elevations from graph of observed readings.

Compiled by	Checked by
LTH	MBB
Date Dec 4, 69	Date Dec 4, 69

DAILY DISCHARGES

DEPARTMENT OF ENERGY, MINES AND RESOURCES
INLAND WATERS BRANCH – WATER SURVEY OF CANADA

Station Name *Middle Creek near Alberta Boundary* Station No. *11AB009*

Daily Gauge Heights in Feet and Daily Discharges in Cubic Feet per Second for the Year 1969

Drainage Area *116* square miles Type of Gauge Manual ☐ Recording ☒

Day	January		February		March		April		May		June	
	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge
1					3·09	0·62	3·14	0·75	3·42	3·6	3·19	1·0
2					3·07	0·52	3·18	0·94	3·51	4·8	3·18	1·0
3					3·07	0·50	V	14·7	3·38	2·8	3·19	1·0
4					3·07	0·50	3·89	15·8	3·31	1·9	3·19	1·1
5					3·06	0·49	4·09	23·3	3·27	1·6	3·18	1·0
6					3·06	0·48	V	294	3·25	1·4	3·18	1·0
7					3·06	0·48	8·22	834	3·23	1·3	3·19	1·1
8					3·06	0·48	6·27	283	3·23	1·3	3·20	1·1
9					3·06	0·49	5·10	97·2	3·21	1·2	3·19	1·1
10					3·07	0·50	4·87	80·8	3·22	1·2	3·18	0·98
11					3·07	0·50	5·40	145	3·23	1·3	3·19	1·1
12					3·07	0·51	5·27	125	3·22	1·2	3·18	1·0
13					3·08	0·53	5·13	108	3·22	1·2	3·18	0·99
14					3·08	0·54	5·00	94·5	3·22	1·2	3·18	0·98
15					3·07	0·52	4·52	49·9	3·22	1·2	3·17	0·96
16					3·07	0·51	4·21	28·8	3·22	1·2	3·17	0·97
17					3·07	0·51	4·02	18·8	3·23	1·3	3·17	0·97
18					3·07	0·50	3·92	14·9	3·22	1·3	3·18	1·0
19					3·07	0·50	3·89	13·8	3·21	1·2	3·18	1·0
20					3·07	0·50	3·81	11·4	3·21	1·2	3·20	1·1
21					3·06	0·48	3·69	8·2	3·22	1·2	3·21	1·2
22					3·06	0·48	3·58	5·9	3·21	1·2	3·23	1·3
23					3·07	0·50	3·48	4·2	3·20	1·1	3·25	1·4
24					3·07	0·51	3·41	3·1	3·20	1·1	3·29	1·8
25					3·06	0·49	3·42	3·3	3·20	1·1	3·28	1·7
26					3·07	0·50	3·52	4·8	3·20	1·1	3·22	1·2
27					3·11	0·65	3·46	3·9	3·19	1·1	3·19	1·0
28					3·11	0·64	3·37	2·6	3·20	1·1	3·19	1·0
29					3·09	0·56	3·29	1·8	3·18	1·0	3·19	1·0
30					3·07	0·52	3·27	1·6	3·19	1·0	3·18	1·0
31					3·10	0·59			3·19	1·0		
total						16·10		2293·99		45·4		33·05
mean						0·52		76·5		1·46		1·10
ac-ft						31·9		4550		90·1		65·6
max						0·65		834		4·8		1·8
min						0·48		0·75		1·0		0·96

Day	July		August		September		October		November		December	
	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge
1	3·18	1·0	3·16	0·88	3·13	0·75	3·11	0·44	3·12	0·67		
2	3·18	0·99	3·15	0·84	3·13	0·75	3·11	0·43	3·11	0·65		
3	3·18	0·99	3·15	0·83	3·12	0·71	3·13	0·51	3·11	0·65		
4	3·18	0·98	3·15	0·86	3·12	0·68	3·13	0·52	3·11	0·65		
5	3·19	1·1	3·15	0·86	3·12	0·66	3·11	0·47				
6	3·21	1·2	3·15	0·87	3·12	0·63	3·10	0·43				
7	3·20	1·1	3·14	0·79	3·11	0·58	3·09	0·41				
8	3·19	1·0	3·14	0·78	3·11	0·58	3·09	0·43				
9	3·18	0·99	3·14	0·81	3·11	0·57	3·10	0·46				
10	3·17	0·97	3·14	0·82	3·11	0·53	3·10	0·47				
11	3·17	0·94	3·13	0·77	3·11	0·53	3·10	0·45				
12	3·14	0·79	3·14	0·82	3·11	0·52	3·09	0·46				
13	3·16	0·91	3·15	0·83	3·10	0·47	3·10	0·47				
14	3·16	0·89	3·14	0·82	3·10	0·46	3·10	0·47				
15	3·16	0·92	3·13	0·77	3·10	0·46	3·10	0·49				
16	3·17	0·95	3·13	0·75	3·11	0·47	3·10	0·50				
17	3·17	0·97	3·14	0·79	3·11	0·45	3·10	0·51				
18	3·16	0·89	3·14	0·80	3·12	0·47	3·10	0·52				
19	3·17	0·97	3·15	0·84	3·12	0·45	3·10	0·52				
20	3·17	0·95	3·13	0·76	3·12	0·45	3·11	0·55				
21	3·17	0·94	3·14	0·78	3·18	0·62	3·12	0·58				
22	3·15	0·87	3·13	0·76	3·14	0·48	3·13	0·64				
23	3·17	0·93	3·13	0·77	3·14	0·48	3·14	0·69				
24	3·16	0·90	3·13	0·74	3·13	0·46	3·17	0·85				
25	3·14	0·81	3·12	0·69	3·12	0·44	3·16	0·82				
26	3·17	0·97	3·12	0·71	3·12	0·44	3·15	0·77				
27	3·17	0·94	3·12	0·72	3·12	0·44	3·15	0·79				
28	3·16	0·92	3·12	0·72	3·12	0·45	3·15	0·79				
29	3·16	0·89	3·13	0·74	3·12	0·45	3·14	0·75				
30	3·16	0·90	3·13	0·75	3·12	0·46	3·13	0·70				
31	3·16	0·90	3·13	0·75			3·12	0·67				
total		29·47		24·42		15·89		17·56				
mean		0·95		0·79		0·53		0·57				
ac-ft		58·5		48·4		31·5		34·8				
max		1·2		0·88		0·75		0·85				
min		0·79		0·69		0·44		0·41				

For the Year or For the Period (March 1 to October 31)

Maximum instantaneous ~~daily~~ discharge, 1,220 cfs at G.H. 9·25 ft at 06:50 on April 7

Minimum ~~instantaneous~~ daily discharge, 0·41 cfs at G.H. 3·09 -.05 shift ft at on October 7

Mean discharge, 10·1 cfs Total discharge, 4,910 ac-ft

Ice conditions, March 1 to April 6

All data processed by computer and pencil follower methods.

Computed from Table No. 6 dated Dec. 3/69 from March 1 to Nov. 4

" " " " " " " "

" " " " " " " "

Total discharge 2,475·88 cfs-days

Accuracy

Maximum instantaneous ~~daily~~ gauge height, 9·25 ft at 06:50 on April 7

Minimum ~~instantaneous~~ daily gauge height, 3·06 ft at various times - during March

	January to		March to October		to December		Summary
	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	
Computed by Date			R. J. Blake Dec. 9/69				
Checked by Date			U.S.G.S. Engineers Memo Jan 16, 1970				

APPROVED: R. D. Mace Dist. Engr. for Dir. Inland Waters

Approved by

Date

George M. Cole District Chief U.S.G.S.

R79 (Dec 67)

DEPARTMENT OF ENERGY, MINES AND RESOURCES
INLAND WATERS BRANCH WATER SURVEY OF CANADA

STAGE AND CONTENTS

MIDDLE CREEK RESERVOIR 11AB080

69

October 68	3377.92 E	7,100		
69	Winter	Storage	+ 150	
	3378.06 E	7,250		
	3378.10	7,290	+ 40	+ 0.65
	3382.00	11,820	+4530	+ 76.1
	3381.64	11,380	- 440	- 7.2
	3380.63	10,160	-1220	- 20.5
	3380.27	9,730	- 430	- 7.0
	3379.62	8,980	- 750	- 12.2
	3378.61	7,840	-1140	- 19.2
	3378.23	7,430	- 410	- 6.7
			+ 180	+ 0.37

		March 1	October 31
	3382.03	May 2	11,860
observed	3378.06	March 4	7,250

E - Estimated

APPROVED: R D May
Hydr. Engr. Div. of Canada

George M Cole
District Chief U.S.G.S.

Compiled by	Checked by
K. S. Clarke	S. G. S. Engineers
Date Nov. 21, 1969	Date Jan. 13, 1970

DAILY DISCHARGES

DEPARTMENT OF ENERGY, MINES AND RESOURCES
INLAND WATERS BRANCH – WATER SURVEY OF CANADA

Station Name *Middle Creek near Battle Creek* Station No. *11AB087*

Daily Gauge Heights in Feet and Daily Discharges in Cubic Feet per Second for the Year 19*69*

Drainage Area square miles Type of Gauge Manual ☐ Recording ☒

Day	January Gauge Height	January Discharge	February Gauge Height	February Discharge	March Gauge Height	March Discharge	April Gauge Height	April Discharge	May Gauge Height	May Discharge	June Gauge Height	June Discharge
1									2.90	1.5	2.74	0.66
2									2.88	1.4	2.72	0.57
3									2.88	1.4	2.70	0.50
4									2.84	1.1	2.69	0.47
5									2.81	0.97	2.66	0.39
6									2.78	0.85	2.67	0.42
7									2.78	0.82	2.69	0.47
8									2.77	0.80	2.71	0.56
9									2.77	0.76	2.70	0.51
10									2.76	0.75	2.71	0.54
11									2.77	0.77	2.70	0.51
12									2.76	0.74	2.72	0.55
13									2.75	0.69	2.70	0.48
14									2.77	0.78	2.69	0.43
15									2.82	1.0	2.67	0.37
16									2.80	0.92	2.66	0.35
17									2.82	1.0	2.66	0.35
18							2.96	1.8 A	2.82	1.0	2.66	0.33
19							2.90	1.5	2.79	0.86	2.66	0.32
20							2.86	1.3	2.79	0.87	2.73	0.55
21							2.85	1.2	2.79	0.88	2.79	0.75
22							2.85	1.2	2.77	0.77	2.79	0.76
23							2.85	1.2	2.77	0.77	2.78	0.73
24							2.85	1.2	2.78	0.83	2.75	0.56
25							2.84	1.1	2.78	0.83	2.83	0.91
26							2.84	1.2	2.77	0.76	2.83	0.90
27							2.82	1.0	2.75	0.71	2.77	0.64
28							2.82	1.0	2.78	0.83	2.76	0.60
29							2.82	1.0	2.74	0.67	2.77	0.64
30							2.85	1.2	2.72	0.58	2.76	0.57
31									2.77	0.77		
total										27.38		16.38
mean										0.88		0.55
ac-ft										54.3		32.5
max										1.5		0.91
min										0.58		0.32

Day	July Gauge Height	July Discharge	August Gauge Height	August Discharge	September Gauge Height	September Discharge	October Gauge Height	October Discharge	November Gauge Height	November Discharge	December Gauge Height	December Discharge
1	2.83	0.85	2.74	0.37	2.74	0.43	2.78	0.59	2.84	0.92		
2	2.75	0.52	2.74	0.35	2.74	0.42	2.78	0.60	2.83	0.89		
3	2.76	0.53	2.73	0.35	2.74	0.43	2.83	0.77	2.83	0.94		
4	2.76	0.55	2.72	0.32	2.77	0.53	2.88	1.0	2.83	0.96		
5	2.80	0.71	2.75	0.39	2.77	0.51	2.83	0.80				
6	3.00	1.8	2.72	0.32	2.78	0.55	2.81	0.68				
7	2.90	1.2	2.72	0.32	2.78	0.54	2.79	0.61				
8	2.87	0.97	2.74	0.38	2.77	0.52	2.79	0.64				
9	2.80	0.66	2.72	0.31	2.77	0.53	2.81	0.69				
10	2.78	0.56	2.69	0.25	2.76	0.48	2.80	0.68				
11	2.76	0.50	2.72	0.31	2.76	0.49	2.81	0.69				
12	2.73	0.41	2.74	0.38	2.76	0.48	2.81	0.70				
13	2.74	0.42	2.75	0.41	2.75	0.47	2.81	0.69				
14	2.74	0.42	2.75	0.40	2.73	0.41	2.81	0.54				
15	2.74	0.41	2.75	0.40	2.75	0.45	3.43	6.4				
16	2.77	0.49	2.73	0.36	2.76	0.50	3.68	9.3				
17	2.77	0.50	2.73	0.36	2.77	0.52	3.69	9.4				
18	2.78	0.52	2.73	0.36	2.77	0.52	3.68	9.3				
19	2.78	0.50	2.74	0.39	2.76	0.51	3.65	8.7				
20	2.77	0.47	2.71	0.31	2.77	0.55	3.66	8.9				
21	2.77	0.46	2.71	0.29	3.00	1.8	3.68	9.3				
22	2.76	0.43	2.68	0.23	2.83	0.78	3.68	9.3				
23	2.76	0.43	2.70	0.28	2.80	0.68	3.61	8.0				
24	2.77	0.45	2.70	0.28	2.80	0.65	3.46	5.9				
25	2.76	0.41	2.67	0.23	2.78	0.57	3.21	3.2				
26	2.81	0.58	2.67	0.22	2.78	0.58	3.00	1.6				
27	2.79	0.52	2.69	0.26	2.78	0.59	2.92	1.1				
28	2.76	0.43	2.70	0.28	2.78	0.60	2.85	0.84				
29	2.76	0.42	2.72	0.34	2.78	0.59	2.87	0.95				
30	2.76	0.42	2.74	0.41	2.79	0.61	2.86	0.94				
31	2.77	0.45	2.75	0.44			2.85	0.94				
total		17.99		10.30		17.29		103.75				
mean		0.58		0.33		0.58		3.35				
ac-ft		35.7		20.4		34.3		206				
max		1.8		0.44		1.8		9.4				
min		0.41		0.22		0.41		0.54				

~~For the Year~~ For the Period (*May 1* to *October 31*)

Maximum ~~instantaneous~~ daily discharge, *9.4* cfs at G.H. *3.69* *-0.41 sh.* ft at on *October 17*

Minimum ~~instantaneous~~ daily discharge, *0.22* cfs at G.H. *2.67* *-0.07 sh.* ft at on *August 26*

Mean discharge, *1.05* cfs Total discharge, *383* ac-ft

A - Manual gauge reading

Ice conditions, October 13 to November 4

All data processed by computer and pencil follower methods

Computed from Table No. *5* dated *Dec 8/66* from *April 19* to *Nov. 4*

Total discharge *193.09* cfs-days

Accuracy *Records good*

Maximum instantaneous daily gauge height, ft at on

Minimum instantaneous daily gauge height, ft at on

	January to		*May* to *October*		to December		Summary
	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	
Computed by Date			*K. J. Clarke* *Dec. 11, 1969*				
Checked by Date			U. S. G. S. Engineers *Jan. 14, 1970*				

Approved by APPROVED: R. D. May, Dist. Eng., W. S. of Canada

[signature] District Chief U.S.G.S.

Date

R79 (Dec 67)

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STAGE AND CONTENTS

Station Name Mitchell Reservoir Station No. 11AB099

Elevations ~~Gauge Heights~~ in Feet and ~~—~~ Total Contents in Acre-Feet for the Year 1969

Month	Elevation ~~Gauge Height~~ at End of Month	Contents at End of Month	Change in Contents During Month	Equivalent in cfs
~~December~~ Oct 1968	104.3	35		
January 1969			0	
February	104.3 E	35		
March	104.3 E	35	0	
April	115.4	893	+ 858	14.4
May	114.3	710	− 183	3.0
June	112.3	452	− 258	4.3
July	110.3	274	− 178	2.9
August	108.2	14.4	− 130	2.1
September	106.3	75.2	− 68.8	1.2
October	104.6	39.9	− 35.3	0.57
November				
December				
Change in Contents ~~during the Year~~ Period			+ 49	0.10

Summary ~~for the Year~~ (for the Period March to October)

Maximum ~~instantaneous~~ daily ~~elevation~~ ~~gauge height~~ 115.62 ft. on April 22 Contents 932 ac-ft

Minimum ~~instantaneous~~ daily ~~elevation~~ ~~gauge height~~ 104.26 E ft. on March 1 Contents 34.5 ac-ft

Elevations from graph of observed readings.

Computed by	Checked by
LTH	[illegible]
Date Dec 3, 69	Date Dec. 3/69

R/43 (Dec 67)

DAILY DISCHARGES

DEPARTMENT OF ENERGY, MINES AND RESOURCES
INLAND WATERS BRANCH – WATER SURVEY OF CANADA

Station Name *Squaw Coulee near Willow Creek* Station No. *11AB103*

Daily Gauge Heights in Feet and Daily Discharges in Cubic Feet per Second for the Year 19*69*

Drainage Area ______ square miles Type of Gauge Manual ☐ Recording ☒

Day	January Gauge Height	January Discharge	February Gauge Height	February Discharge	March Gauge Height	March Discharge	April Gauge Height	April Discharge	May Gauge Height	May Discharge	June Gauge Height	June Discharge
1									0.86	0.03		3.5 E
2									V	18.6	1.80	6.9 A
3									V	5.5	1.79	6.9
4									1.69	5.6	1.77	6.6
5									1.55	4.0	1.58	4.4
6									1.46	3.2	1.58	4.3
7									1.33	2.2	1.68	5.4
8									1.20	1.4	1.64	5.0
9									1.10	0.88	1.54	4.0
10									1.02	0.54	1.37	2.5
11									0.97	0.31	1.22	1.5
12									0.91	0.10	1.13	1.0
13									0.88	0.04	1.07	0.77
14									0.85	0.03	1.03	0.55
15									0.82	0.01	0.98	0.35
16									0.79	0	0.94	0.18
17										0	0.90	0.05
18										0	0.86	0.03
19										0	V	1.3
20										0	2.07	11.1
21										0	2.09	11.8
22										0	2.07	11.1
23							V	0.04		0	1.86	6.4
24							0.88	0.07		0	1.69	4.4
25							0.97	0.31		0	1.62	3.9
26							0.94	0.21		0	1.60	3.7
27							0.91	0.08		0	1.44	2.5
28							0.89	0.04		0	1.30	1.6
29							0.87	0.03		0	1.22	1.2
30							0.85	0.03		0	1.15	0.95
31										0		
total										42.44		113.88
mean										1.4		3.80
ac-ft										84.2		226
max										18.6		11.8
min										0		0.03

Day	July Gauge Height	July Discharge	August Gauge Height	August Discharge	September Gauge Height	September Discharge	October Gauge Height	October Discharge	November Gauge Height	November Discharge	December Gauge Height	December Discharge
1	1.10	0.76		0		0		0				
2	1.06	0.65		0		"		"				
3	1.03	0.54		0		"		"				
4	0.99	0.37		0		"		"				
5	0.96	0.29		0		"		"				
6	0.96	0.26		0		"		"				
7	0.97	0.29		0		"		"				
8	0.96	0.25		0		"		"				
9	0.93	0.15		0		"		"				
10	0.90	0.06		0		"		"				
11	0.86	0.03		0		"		"				
12	0.82	0.01		0		"		"				
13	0.77	0		0		"		"				
14		0		0		"		"				
15		0		0		"		"				
16		0		0		"		"				
17		0		0		"		"				
18		0		0		"		"				
19		0		0		"		"				
20		0	V	1.3		"		"				
21		0	1.22	1.5 A		"		"				
22		0	1.15	1.2 A		"		"				
23		0	1.09	0.85		"		"				
24		0	1.04	0.62		"		"				
25		0	1.02	0.50		"		"				
26		0	1.00	0.40		"		"				
27		0	0.96	0.28		"		"				
28		0	0.92	0.11		"		"				
29		0	0.87	0.03		"		"				
30		0	0.83	0.01		"		"				
31		0	0.79	0				"				
total		3.66		6.80		0		0				
mean		0.12		0.22		0		0				
ac-ft		7.3		13.5		0		0				
max		0.76		1.5		0		0				
min		0		0		0		0				

~~Calendar Year~~ For the Period (*May 1* to *October 31*)

Maximum ~~instantaneous~~ daily discharge, *18.6* cfs at G.H. *V* ft at on *May 2*

Minimum instantaneous daily discharge, cfs at G.H. ft at on

Mean discharge, cfs | Total discharge, *331* ac-ft

A – Manual gauge
E – Estimated

V – Subdivided

All data processed by computer and pencil follower methods.

Computed from Table No. *3* dated *Dec 8/69* from *April 23* to *October 31*

" " " " ______ " ______ " ______ " ______

" " " " ______ " ______ " ______ " ______

Total discharge *166.78* cfs-days

Accuracy

Maximum instantaneous daily gauge height, ft at on

Minimum instantaneous daily gauge height, ft at on

	January to		*May* to *October*		to December		Summary
	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	
Computed by			*V. G. Clarke*				
Date			*Dec 17, 1969*				
Checked by			U. S. G. S. Engineers				
Date			*Memo Jan 16, 1970*				

Approved by
Date

R79 (Dec 67)

Department of Energy, Mines and Resources
Inland Waters Branch
Water Survey of Canada Division

Miscellaneous Diversions Made in Lodge Creek (Alberta) Tributary Basin, in 1969

Ditch Owner	Location	Diverting From	Approximate Acre-feet Diverted

Mr. R. Donkin, Officer-in-charge of the Calgary office of the Alberta Water Resources Branch, reports that ungauged minor diversions in the Lodge Creek Basin in Alberta accounted for 435 acre-feet during 1969.

Department of Energy, Mines and Resources
Inland Waters Branch
Water Survey of Canada Division

Miscellaneous Diversions Made in Lodge Creek (Saskatchewan) Tributary Basin, in 1969
E - Estimated by Water Survey of Canada engineer
D - Diverted during spring runoff

Ditch Owner	Location	Diverting From	Approximate Acre-feet Diverted
Arnold, Joe	NE 30-3-28-3	An unnamed coulee	0E
Buchanan, Gary & Howard L.	SE 36-1-30-3	An unnamed coulee	10
Buchanan, H.	NE 4-3-29-3	Middle Creek	40D
Buchanan, H. L.	SW 10-3-29-3	An unnamed coulee	5
Eremenko, Earl	SW 10-2-29-3	An unnamed coulee	0
Jones, A. L.	SW 36-4-29-3	An unnamed coulee	7D
Jones, A. L.	R/A between SW 26 & NW26 NW 27 & NE 27-3-30-3	An unnamed coulee	35E
Jones, A. L.	SW 25 and re-diverted SE 26-3-30-3	An unnamed coulee	6E
Jones, A. L. Jr.	NE 32-4-29-3	An unnamed coulee	6E
Jones, Arthur, J.	SW 29-4-29-3	Middle Creek	7
McInerney, Tim	SW 10-2-29-3	An unnamed coulee	0E
Mitchell Brothers	SW 25 & SE 26-5-30-3	Wright Coulee	50D
Mitchell Ranching Co.	SE 25-4-30-3	An unnamed coulee	0
William J. & Davis R. Paterson	NE 4-4-29-3	Middle Creek	18D
Pedersen, Lewis	SW 22-2-29-3	An unnamed coulee	15D
Pedersen, Lewis	S½ 22-2-29-3	An unnamed coulee	19D
Pedersen, Lewis	NE 15-2-29-3	An unnamed coulee	7D

Department of Energy, Mines and Resources
Inland Waters Branch
Water Survey of Canada Division

Miscellaneous Diversions Made in Lodge Creek (Saskatchewan) Tributary Basin, in 1969
E - Estimated by Water Survey of Canada engineer
D - Diverted during spring runoff

Ditch Owner	Location	Diverting From	Approximate Acre-feet Diverted
Saville, Joe M.	NW 16 & SW 21-3-30-3	An unnamed coulee	40E
Stirling, Stewart & Winnifred	NW 4-4-28-3	An unnamed coulee	3D
Stokke, Sigurd	SE 20-2-29-3	Middle Creek	80E
Trumpour, E. S.	NW 24-3-29-3	Trumpour Coulee	4D
Trumpour, E. S.	SW 24-3-29-3	An unnamed coulee	5D
Trumpour, E. S.	NW 24-3-29-3	Trumpour Coulee	2D
Trumpour, E. S.	SW 28-2-29-3	An unnamed coulee	4D
Trumpour, E. S.	NW 24-3-29-3	Trumpour Coulee	4
		Total Use in Saskatchewan	367

Montana Special

9-196

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Daily Gage Height, in Feet, and Discharge, in Second-Feet, of *Battle* ~~River~~ Creek

At ~~Near~~ *international boundary* for the Year ~~Ending September 30~~, 1969

Drainage Area ..... Square Miles. Water-Stage Recorder *Stevens A-35 Fischer-Porter digital* Ratio *1 : 6*

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

File Number { Washington *06-1895.00* / District .....

Used rating table ~~dated~~ *No 3*

Gage Read to — Once / Twice a Day by —

Gage heights used to ~~half tenths between~~ ..... and ..... feet; hundredths ~~below and tenths above these limits~~.

Max. Disch. *1820* Sec.-ft. at *02:45* on *April 6* (G.H. *7.29*) ft. *14.47* ft. at *10:30* on *April 4*

Min. Disch. *No flow* Sec.-ft. on *at times* (G.H. ..... ft.) Min. G.H. ..... ft. on

* Discharge measurement at observation of zero flow made on this date

Discharge estimated. Stage-discharge relation affected by ice. Partially estimated gage height record.

Height recorded by shaft-gage reading

Day	January Gage height	January Discharge	February Gage height	February Discharge	March Gage height	March Discharge	April Gage height	April Discharge	May Gage height	May Discharge	June Gage height	June Discharge
1						a 5	4.62	b 53	2.87	51	2.31	9.9
2						5	4.82	77	2.75	38	2.22	7.0
3						a 5	5.87	180	2.94	59	2.16	5.6
4					h 3.86	b* 5	6.81	524	2.97	64	2.38	13
5						a 5	6.10	b* 798	2.94	60	2.70	32
6						5	5.91	* 955	2.91	* 56	2.71	32
7						5	6.21	1,110	2.98	64	2.55	21
8						5	5.73	868	2.90	55	2.43	15
9						5	4.53	* 387	2.76	39	2.43	15
10						5	3.89	202	2.72	36	2.53	20
11						5	3.66	152	2.82	46	2.51	19
12						5	3.56	132	2.76	40	2.48	18
13						5	3.59	107	2.70	35	2.36	11
14						5	3.46	117	2.68	33	2.31	9.5
15						5	3.17	* 77	2.66	* 32	2.25	7.5
16						5	3.20	91	2.64	30	2.15	* 5.2
17						5	3.16	77	2.63	29	2.07	3.5
18						5	3.13	74	2.64	29	2.00	2.5
19						6	3.06	67	2.62	28	1.95	2.0
20						7	2.96	56	2.61	27	2.05	3.2
21						a 8	2.88	48	2.61	26	2.18	5.6
22					h 4.11	b 8.2	2.90	51	2.59	25	2.16	5.4
23					4.18	11	2.88	49	2.72	35	2.21	6.4
24					4.17	9.9	2.84	47	2.66	30	2.22	6.6
25					4.13	8.5	2.77	39	2.54	21	2.30	9.3
26					4.18	* 10	2.75	* 39	2.64	* 23	2.40	13
27					4.22	12	2.64	29	2.38	13	2.39	14
28					4.09	8.9	2.66	31	2.36	12	2.36	12
29					4.19	16	2.93	59	2.40	14	2.42	15
30					3.96	7.8	2.89	54	2.34	11	2.44	17
31					4.17	b* 17			2.37	12		
Total						2203		6,550		1,073		3564
Mean						7.18		218		34.6		11.9
Runoff in inches						437		12,990		2,130		707
Maximum						17		1,110		64		32
Minimum						5.0		29		11		2.0

Day	July Gage height	July Discharge	August Gage height	August Discharge	September Gage height	September Discharge	October Gage height	October Discharge	November Gage height	November Discharge	December Gage height	December Discharge
1	2.40	14	1.74	0.50				0	f 2.29	* 8.9		
2	2.38	13	1.74	.50				0				
3	2.40	14	1.90	1.7				0				
4	2.42	16	S	26				0				
5	2.43	16	2.68	31				0				
6	2.46	17	2.67	30				0				
7	2.51	* 19	2.64	27				0				
8	2.48	18	2.59	23				0				
9	2.49	19	2.53	20				0				
10	2.56	22	2.65	26				0				
11	2.51	20	2.53	19				0				
12	2.48	18	2.39	11				0				
13	2.43	15	2.27	7.0				0				
14	2.35	11	2.34	9.2				0				
15	2.27	* 8.2	2.25	* 6.2				0				
16	2.20	6.0	2.13	3.4				* 0				
17	2.11	4.3	S	3.2				0				
18	2.03	3.0	2.18	3.6				0				
19	1.96	2.1	2.08	2.0				0				
20	1.91	1.7	2.01	1.1				0				
21	1.87	1.3	1.97	.70				0				
22	1.83	.80	1.95	5.0				0				
23	1.79	.60	1.93	.30			2.25	6.9				
24	1.77	.60	1.94	.20			2.46	16				
25	1.72	.30	f 1.90	0			2.39	12				
26	S	* 9.0		0			2.35	10				
27	2.26	8.2		0			2.35	* 10				
28	2.12	4.7		0			2.33	9.6				
29	1.98	2.4		0			2.32	9.3				
30	1.86	1.2		0			2.31	9.0				
31	1.79	.70		0			2.32	9.1				
Total		206.10		253.10		0		91.9				
Mean		9.23		8.16		0		2.96				
Runoff in inches		5.67		50.2		0		18.2				
Maximum		22		31		0		16				
Minimum		.30		0		0		0				

Quarter: Fourth / Third / Second / First — Computed / Checked / Date

Quarter: Fourth / Third / Second / First — Disch. applied / Disch. checked / Date

Quarter: Fourth / Third / Second / First — G. H. copied / G. H. checked / Date

Period ~~Month~~ 88305

APPROVED: R. D. Mann, District Chief, WS of Canada

District Chief U.S.G.S.

Nov. 27, 1970

GPO 822-820

DEPARTMENT OF ENERGY, MINES AND RESOURCES
INLAND WATERS BRANCH - WATER SURVEY OF CANADA

STAGE AND CONTENTS

Station Name: Adams Lake Station No. 11AB095

Elevations in Feet and Contents in Acre-Feet for the Year 1969

Month	Elevation at End of Month	Contents at End of Month	Change in Contents During Month	Evaporation in Ft.
Oct ~~December~~ 1968	3896.9	576		
January 1969			0	
February	3896.9	576		
March	3896.9	576	0	0
April	3897.3	629	+ 53	0.89
May	3897.3	629	0	0
June	3897.3	629	0	0
July	3896.9	576	- 53	0.86
August	3896.3	499	- 77	1.3
September	3896.5	524	+ 25	0.42
October	3897.3	629	+ 105	1.7
November				
December				
Change in Contents During ~~Year~~ Period			+ 53	0.11

~~Season~~ March to October

Maximum ~~instantaneous~~ daily ~~elevation~~ ~~gauge height~~ Contents ac-ft

Minimum ~~instantaneous~~ daily ~~elevation~~ ~~gauge height~~ Contents ac-ft

Elevations from graph

Computed by	Checked by
LTH	[illegible]
Date Dec 9, 69	Date Dec 9.69

DEPARTMENT OF ENERGY, MINES AND RESOURCES
INLAND WATERS BRANCH – WATER SURVEY OF CANADA

STAGE AND CONTENTS

Station Name: Reesor Reservoir Station No. 11AB090

Elevations ~~Gauge Heights~~ in Feet and ~~Total~~ Contents in Acre-Feet for the Year 1969

Month	Elevation or Gauge Height End of Month	Contents at End of Month	Change in Contents During Month	Equivalent in cfs
~~December~~ Oct 1968	4021.6	1060		
January 1969			- 10	
February	4021.45	1050		
March	4021.45	1050	0	0
April	4021.50	1050	0	0
May	4021.15	1010	- 40	0.65
June	4021.80	1090	+ 80	1.3
July	4022.50	1170	+ 80	1.3
August	4021.95	1100	- 70	1.1
September	4021.50	1050	- 50	0.84
October	4022.75	1200	+ 150	2.4
November				
December				
Change in Contents during the Year or Period			+ 150	0.31

Summary ~~for the year~~ or for the Period March to October

Maximum ~~instantaneous~~ daily ~~gauge height~~ elevation 4022.75 ft at Oct 31 Contents 1200 ac-ft

Minimum ~~instantaneous~~ daily ~~gauge height~~ elevation 4021.15 ft at June 3 Contents 1010 ac-ft

Month end readings from graph of engineer's readings.

Computed by	Checked by
LTH	RBB
Date Dec 1, 69	Date Dec 1/69

8233 (Dec 67)

DAILY DISCHARGES

DEPARTMENT OF ENERGY, MINES AND RESOURCES
INLAND WATERS BRANCH – WATER SURVEY OF CANADA

Station Name Cypress Lake West Inflow Canal Station No. 11AB078

Daily Gauge Heights in Feet and Daily Discharges in Cubic Feet per Second for the Year 1969

Drainage Area square miles Type of Gauge Manual ☐ Recording ☒

Day	January Gauge Height	January Discharge	February Gauge Height	February Discharge	March Gauge Height	March Discharge	April Gauge Height	April Discharge	May Gauge Height	May Discharge	June Gauge Height	June Discharge
1						0	3.05	0	2.82	23.2	1.81	0.62
2						"	3.00	0	2.82	23.4	1.83	0.69
3						"	9.03	41.0	2.82	23.7	1.82	0.69
4						"	9.26	180	2.80	22.4	1.83	0.73
5						"	8.49	249	2.78	21.2	1.85	0.82
6						"	7.61	333	2.79	21.8	1.82	0.70
7						"	6.98	471	2.65	15.8	1.81	0.66
8						"	7.10	515	2.19	0.56	1.83	0.74
9						"	6.57	440	2.15	0.41	1.82	0.70
10						"	5.41	298	2.17	0.49	1.81	0.68
11						"	6.29	443	2.18	0.50	1.82	0.72
12						"	6.29	439	2.16	0.43	1.83	0.73
13						"	5.23	275	2.14	0.38	1.83	0.73
14						"	5.02	243	2.16	0.44	1.82	0.71
15						"	4.41	166	2.17	0.49	1.79	0.60
16						"	4.01	121	2.15	0.42	1.77	0.50
17						"	3.84	104	2.14	0.38	1.75	0.46
18						"	3.72	92.5	2.11	0.29	1.74	0.42
19						"	3.60	81.7	2.12	0.30	1.74	0.43
20						"	3.47	70.9	1.91	0.41	1.78	0.58
21						"	3.35	61.1	1.79	0.42	1.80	0.66
22						"	3.24	52.7	1.78	0.40	1.80	0.68
23						"	3.17	47.4	1.78	0.40	1.79	0.65
24						"	3.06	39.4	1.78	0.42	1.78	0.58
25						"	2.98	33.9	1.79	0.43	1.78	0.61
26						"	2.65	13.8	1.79	0.44	1.78	0.61
27						"	2.59	10.5	1.79	0.46	1.78	0.59
28						"	2.66	14.1	1.80	0.50	1.79	0.63
29						"	2.79	21.7	1.82	0.62	1.78	0.61
30						"	2.80	22.3	1.82	0.62	1.78	0.63
31						"			1.82	0.64		
total						0		4,880.0		162.35		19.16
mean						0		163		5.2		0.64
ac-ft						0		9,680		322		38.0
max						0		515		23.7		0.82
min						0		0		0.29		0.42

Day	July Gauge Height	July Discharge	August Gauge Height	August Discharge	September Gauge Height	September Discharge	October Gauge Height	October Discharge	November Gauge Height	November Discharge	December Gauge Height	December Discharge
1	1.77	0.59	1.86	1.3		0		0				
2	1.77	0.60	1.85	1.2		"		"				
3	1.78	0.61	1.84	1.2		"		"				
4	1.80	0.70	1.85	1.2		"		"				
5	1.83	0.85	1.84	1.2		"		"				
6	1.86	0.99	1.84	1.2		"		"				
7	1.82	0.78	1.85	1.2		"		"				
8	2.20	9.6	1.84	1.1		"		"				
9	2.92	28.6	1.84	1.2		"		"				
10	2.87	25.0	1.84	1.1		"		"				
11	2.74	16.9	2.48	22.7		"		"				
12	2.64	11.5	2.27 ±	8.7		"		"				
13	2.64	11.5	1.81	0.80		"		"				
14	2.63	11.3	1.52	0.06		"		"				
15	2.62	10.9		0		"		"				
16	2.54	11.3		0		"		"				
17	2.02	2.6		0		"		"				
18	1.91	1.8		0		"		"				
19	1.88	1.5		0		"		"				
20	1.88	1.5		0		"		"				
21	1.89	1.6		0		"		"				
22	1.89	1.6		0		"		"				
23	1.89	1.6		0		"		"				
24	1.88	1.6		0		"		"				
25	1.89	1.6		0		"		"				
26	1.93	1.9		0		"		"				
27	1.89	1.6		0		"		"				
28	1.88	1.5		0		"		"				
29	1.87	1.4		0		"		"				
30	1.86	1.3		0		"		"				
31	1.86	1.3		0				"				
total		166.12		44.16		0		0				
mean		5.4		1.4		0		0				
ac-ft		329		87.6		0		0				
max		28.6		22.7		0		0				
min		0.59		0		0		0				

~~Calendar Year~~ For the Period (March 1 to October 31)

Maximum ~~instantaneous~~ daily discharge, 515 cfs at G.H. 7.10 ft at on April 8

Minimum instantaneous daily discharge, cfs at G.H. ft at on

Mean discharge, cfs Total discharge, 10,460 ac-ft

Ice conditions March 1 to April 9

Data from April 2 to August 14 by pencil follower and computer methods.

Computed from Table No. 4 dated Sept. 23/69 from March 1 to October 31

Total discharge 5,271.79 cfs-days

Accuracy Records Fair

Maximum instantaneous ~~daily~~ gauge height, 9.44 ft at 21:20 on April 3

Minimum instantaneous daily gauge height, ft at on

	January to		March 1 to October 31		to December		Summary
	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	
Computed by / Date			K. J. Clarke / Nov. 27, 1969				
Checked by / Date			U.S.G.S. Engineers / Jan 9, 70				

Approved by R. D. May [signature] Date

R79 (Dec 67)

DAILY DISCHARGES

DEPARTMENT OF ENERGY, MINES AND RESOURCES
INLAND WATERS BRANCH – WATER SURVEY OF CANADA

Station Name *Cypress Lake West Inflow Canal Drain* Station No. *11AB085*

Daily Gauge Heights in Feet and Daily Discharges in Cubic Feet per Second for the Year 19*69*

Drainage Area square miles Type of Gauge Manual ☐ Recording ☒

Day	January Gauge Height	January Discharge	February Gauge Height	February Discharge	March Gauge Height	March Discharge	April Gauge Height	April Discharge	May Gauge Height	May Discharge	June Gauge Height	June Discharge
1						0		0	0.84	0.01	2.49	22.8
2						"		0	0.84	0.01	2.44	19.8
3						"		0.05	0.85	0.01	2.42	18.8
4						"		0.05	0.84	0.01	2.39	16.8
5						"		0.05	0.85	0.01	2.42	18.5
6						"		0.05	0.86	0.01	2.38	16.6
7						"		0.05	0.87	0.01	2.33	14.6
8						"		0.05	0.88	0.02	1.68	5.8
9						"		0.05	0.88	0.02	1.23	0.11
10						"		0.05	0.88	0.02	1.22	0.11
11						"	1.34	0.05	0.89	0.02	1.21	0.12
12						"	1.26	0.04	0.90	0.02	1.20	0.13
13						"	1.22	0.04	0.89	0.02	1.19	0.14
14						"	1.19	0.05	0.90	0.02	1.19	0.15
15						"	1.13	0.05	0.91	0.02	1.19	0.17
16						"	1.10	0.05	0.91	0.03	1.19	0.19
17						"	1.07	0.05	0.92	0.03	1.18	0.20
18						"	1.02	0.04	0.91	0.03	1.18	0.22
19						"	.92	0.01	0.93	0.03	1.18	0.25
20						"	.83	0	2.28	33.3	1.18	0.27
21						"	.82	0	2.88	51.1	1.17	0.28
22						"	.83	0.01	2.85	50.0	1.16	0.28
23						"	.82	0	2.82	48.9	1.15	0.29
24						"	.83	0.01	2.79	47.4	1.14	0.29
25						"	.84	0.01	2.68	38.2	1.12	0.27
26						"	.85	0.01	2.61	33.2	1.12	0.25
27						"	.84	0.01	2.62	33.2	1.11	0.24
28						"	.84	0.01	2.52	25.4	1.11	0.23
29						"	.84	0.01	2.56	27.7	1.11	0.22
30						"	.84	0.01	2.51	24.6	1.11	0.21
31						"			2.50	23.7		
total						0		0.86		437.05		138.32
mean						0		0.03		14.1		4.61
ac-ft						0		1.7		867		274
max						0		0.05		51.1		22.8
min						0		0		0.01		0.11

Day	July Gauge Height	July Discharge	August Gauge Height	August Discharge	September Gauge Height	September Discharge	October Gauge Height	October Discharge	November Gauge Height	November Discharge	December Gauge Height	December Discharge
1	1.11	0.20	1.53	1.5		0		0				
2	1.10	0.17	1.53	1.4		"		"				
3	1.10	0.16	1.52	1.4		"		"				
4	1.10	0.15	1.51	1.3		"		"				
5	1.09	0.14	1.51	1.3		"		"				
6	1.08	0.13	1.49	1.2		"		"				
7	1.07	0.11	1.50	1.2		"		"				
8	1.06	0.10	1.49	1.1		"		"				
9	1.07	0.10	1.48	1.1		"		"				
10	1.06	0.09	1.47	1.1		"		"				
11	1.05	0.09	2.06	22.4		"		"				
12	1.05	0.09	2.03	8.9		"		"				
13	1.04	0.08	1.47	1.0		"		"				
14	1.04	0.08	1.09	0.07		"		"				
15	1.05	0.09		0		"		"				
16	1.05	0.09		0		"		"				
17	1.05	0.09		0		"		"				
18	1.05	0.08		0		"		"				
19	1.04	0.08		0		"		"				
20	1.05	0.08		0		"		"				
21	1.52	5.0		0		"		"				
22	1.61	2.2		0		"		"				
23	1.60	2.1		0		"		"				
24	1.59	2.0		0		"		"				
25	1.58	2.0		0		"		"				
26	1.62	2.2		0		"		"				
27	1.56	1.8		0		"		"				
28	1.56	1.8		0		"		"				
29	1.54	1.6		0		"		"				
30	1.53	1.5		0		"		"				
31	1.54	1.5		0				"				
total		25.90		44.97		0		0				
mean		0.84		1.45		0		0				
ac-ft		51.4		89.2		0		0				
max		5.0		22.4		0		0				
min		0.08		0		0		0				

~~For the Year or~~ For the Period (*March 1* to *October 31*)

Maximum ~~instantaneous~~ *daily* discharge, *51.1* cfs at G.H. *2.88* *−0.21 shift* ft at on *May 21*

Minimum instantaneous daily discharge, cfs at G.H. ft at on

Mean discharge, cfs Total discharge, *1,280* ac-ft

Ice conditions, March 1 to April 14

Data from April 12 to August 14 by pencil follower and computer methods.

Computed from Table No. *4* dated *Nov 22/68* from *March 1* to *October 31*

" " " " — " — " — " —

" " " " — " — " — " —

Total discharge *647.10* cfs-days

Accuracy

Maximum instantaneous *daily* gauge height, ft at on

Minimum instantaneous daily gauge height, ft at on

	January to		*March* to *October*		to December		Summary
	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	
Computed by / Date			*H. G. Clarke* / *Dec. 1, 1969*				
Checked by / Date			U. S. G. S. Engineers / *Memo - Jan. 12, 1970*				

APPROVED: *R. D. [illegible]* Dist. Eng. *[illegible signature]* Dist.

Approved / Date

R79 (Dec 67)

DAILY DISCHARGES

DEPARTMENT OF ENERGY, MINES AND RESOURCES
INLAND WATERS BRANCH – WATER SURVEY OF CANADA

Station Name *Cypress Lake West Outflow Canal* Station No. *11AB077*

Daily Gauge Heights in Feet and Daily Discharges in Cubic Feet per Second for the Year 19*69*

Drainage Area square miles Type of Gauge Manual ☐ Recording ☒

Day	January Gauge Height	January Discharge	February Gauge Height	February Discharge	March Gauge Height	March Discharge	April Gauge Height	April Discharge	May Gauge Height	May Discharge	June Gauge Height	June Discharge
1						0		0.10	1.10	9.5	2.82	115
2						"		0.10	1.06	8.3	2.58	97.2
3						"		0.20	1.06	8.1	2.02	51.6
4						"		0.20	1.21	15.4	1.69	23.5
5						"		0.30	1.27	17.7	1.70	24.1
6						"		0.30	0.94	4.7	1.65	21.9
7						"		0.40	0.91	4.0	1.01	6.2
8						"		0.40	0.90	3.7	1.00	6.0
9						"		0.50	0.88	3.3	0.93	4.5
10						"		0.50	0.85	2.7	0.67	0.14
11						"		27.2	0.85	3.0	0.65	0.11
12						"	1.58	26.3	0.84	2.8	0.64	0.09
13						"	1.53	31.0	0.83	2.6	0.64	0.09
14						"	1.52	30.1	0.83	2.5	0.64	0.08
15						"	1.43	24.8	0.91	4.4	0.64	0.08
16						"	1.41	23.0	0.90	4.0	0.63	0.07
17						"	1.35	20.4	0.88	3.6	0.64	0.09
18						"	1.28	16.9	0.89	3.7	0.64	0.08
19						"	1.24	14.8	0.85	3.0	0.66	0.10
20						"	1.21	13.3	1.57	43.3	0.69	0.15
21						"	1.15	10.9	1.97	67.4	0.72	0.18
22						"	1.12	9.6	2.27	80.8	0.73	0.19
23						"	1.06	7.5	2.45	88.5	0.82	1.2
24						"	1.04	6.9	2.43	87.2	0.94	3.0
25						"	1.08	8.3	2.41	85.3	0.98	4.1
26						"	1.09	8.7	2.39	84.4	0.97	3.9
27						"	1.13	10.1	2.39	83.9	0.92	2.9
28						"	1.10	9.3	2.41	85.4	0.91	3.0
29						"	1.08	8.4	2.83	116	0.96	4.2
30			X	X		"	1.09	9.0	2.81	114	0.98	5.1
31			X	X		"	X	X	2.81	114	X	X
total						0		319.50		1157.2		378.85
mean						0		10.7		37.3		12.6
ac-ft						0		634		2300		751
max						0		31.0		116		115
min						0		0.10		2.5		0.07

Day	July Gauge Height	July Discharge	August Gauge Height	August Discharge	September Gauge Height	September Discharge	October Gauge Height	October Discharge	November Gauge Height	November Discharge	December Gauge Height	December Discharge
1	0.99	5.4	3.09	146		0	0.61	0.02				
2	1.00	5.8	3.04	143		0	0.62	0.04				
3	0.99	5.9	3.00	140		0	0.67	0.14				
4	1.01	6.8	2.69	118		0	0.67	0.15				
5	1.00	6.7	2.34	91.8		0	0.66	0.12				
6	1.04	8.4	2.12	75.8		0	0.65	0.10				
7	1.04	8.5	1.59	39.0		0	0.65	0.09				
8	0.98	6.6	1.20	13.7		0	0.65	0.10				
9	0.90	4.2	1.04	8.8		0	0.64	0.09				
10	0.81	2.2	0.68	0.17		0	0.65	0.10				
11	0.76	1.2	0.66	0.12		0	0.64	0.09				
12	0.73	0.77	0.64	0.08		0	0.64	0.08				
13	0.72	0.50	0.62	0.03		0	0.64	0.08				
14	0.71	0.30	0.61	0.02		0	0.64	0.08				
15	0.70	0.22		0		0	0.64	0.08				
16	0.70	0.19		0		0	0.64	0.07				
17	0.70	0.20		0		0	0.63	0.06				
18	1.26	26.8		0		0	0.63	0.07				
19	1.66	46.2		0	0.54	0	0.63	0.07				
20	1.65	45.5		0	V	0.01	0.64	0.08				
21	2.61	114		0	0.66	0.13	0.64	0.08				
22	3.27	160		0	0.65	0.09	0.64	0.08				
23	3.31	163		0	0.64	0.08	0.64	0.07				
24	3.29	161		0	0.62	0.03	0.65	0.10				
25	3.25	159		0	0.60	0	0.64	0.09				
26	3.20	155		0	0.60	0.01	0.63	0.07				
27	3.22	157		0	0.61	0.02	0.63	0.07				
28	3.21	156		0	0.61	0.02	0.63	0.06				
29	3.19	154		0	0.61	0.02	0.63	0.05				
30	3.14	150		0	0.61	0.03		0.05E				
31	3.12	149		0	X	X		0.05E	X	X		
total		1860.38		776.52		0.44		2.48				
mean		60.0		25.0		0.01		0.08				
ac-ft		3690		1540		0.87		4.9				
max		163		146		0.13		0.15				
min		0.19		0		0		0.02				

~~For the Year~~ For the Period (*March 1* to *October 31*)

Maximum ~~instantaneous~~ daily discharge, *163* cfs at G.H. *3.31* ft at on *July 23*

Minimum instantaneous daily discharge, cfs at G.H. ft at on

Mean discharge, cfs Total discharge, *8,920* ac-ft

Ice conditions March 1 – April 12
E – Estimated
V – Subdivided (Flow for only part of the day)

Data from April 13 to October 29 by pencil follower and computer methods.

Computed from Table No. *11* dated *Nov. 21/69* from *March 1* to *October 31*

Total discharge *4,495.37* cfs-days

Accuracy *Records good*

Maximum instantaneous daily gauge height, ft at on

Minimum instantaneous daily gauge height, ft at on

	January to		*March* to *October*		to December		Summary
	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	
Computed by / Date			*K. G. Clarke* *Dec 5, 1969*				
Checked by / Date			U. S. G. S. Engineers *Memo Jan 13, 1970*				

APPROVED: *R. D. May* Dist. Engr. WS of Canada
Approved *George M. Cole* District Chief U.S.G.S.
Date

R79 (Dec 67)

DAILY DISCHARGES

DEPARTMENT OF ENERGY, MINES AND RESOURCES
INLAND WATERS BRANCH – WATER SURVEY OF CANADA

38

Station Name *Vidora Ditch near Consul* Station No. *11AB084*

Daily Gauge Heights in Feet and Daily Discharges in Cubic Feet per Second for the Year 19*69*

Drainage Area square miles Type of Gauge Manual ☐ Recording ☒

Day	January Gauge Height	January Discharge	February Gauge Height	February Discharge	March Gauge Height	March Discharge	April Gauge Height	April Discharge	May Gauge Height	May Discharge	June Gauge Height	June Discharge
1						0		0		0	3.65	52.0
2						"		"		0	3.09	34.0
3						"		"		0	2.05	11.4
4						"		"		0	1.29	0.17
5						"		"		0	1.25	0
6						"		"		0		0
7						"		"		0		0
8						"		"		0		0
9						"		"		0		0
10						"		"		0		0
11						"		"		0		0
12						"		"		0		0
13						"		"		0		0
14						"		"		0		0
15						"		"		0		0
16						"		"		0		0
17						"		"		0		0
18						"		"		0		0
19						"		"		0		0
20						"		"	2.71	33.3		0
21						"		"	3.68	57.9		0
22						"		"	3.79	60.7		0
23						"		"	3.75	58.1		0
24						"		"	3.75	57.3		0
25						"		"	3.76	56.7		0
26						"		"	3.77	56.6		0
27						"		"	3.78	57.0		0
28						"		"	3.77	56.6		0
29						"		"	3.61	50.8		0
30						"		"	3.59	49.8		0
31						"			3.60	50.2		
total						0		0		645.0		97.57
mean						0		0		20.8		3.25
ac-ft						0		0		1280		194
max						0		0		60.7		52.0
min						0		0		0		0

Day	July Gauge Height	July Discharge	August Gauge Height	August Discharge	September Gauge Height	September Discharge	October Gauge Height	October Discharge	November Gauge Height	November Discharge	December Gauge Height	December Discharge
1		0	3.88	53.7		0		0				
2		0	3.88	53.6		"		"				
3		0	3.87	53.2		"		"				
4		0	3.45	41.1		"		"				
5		0	3.02	29.4		"		"				
6		0	2.97	28.7		"		"				
7		0	2.22	14.9		"		"				
8		0	1.20	0		"		"				
9		0		0		"		"				
10		0		0		"		"				
11		0		0		"		"				
12		0		0		"		"				
13		0		0		"		"				
14		0		0		"		"				
15		0		0		"		"				
16		0		0		"		"				
17		0		0		"		"				
18	2.50	23.2		0		"		"				
19	3.66	45.6		0		"		"				
20	3.67	45.9		0		"		"				
21	3.93	55.6		0		"		"				
22	4.10	62.3		0		"		"				
23	4.09	61.6		0		"		"				
24	3.95	56.3		0		"		"				
25	3.94	56.1		0		"		"				
26	3.94	56.0		0		"		"				
27	3.95	56.2		0		"		"				
28	3.94	56.0		0		"		"				
29	3.92	55.4		0		"		"				
30	3.90	54.5		0		"		"				
31	3.90	54.4		0				"				
total		739.1		274.6		0		0				
mean		23.8		8.86		0		0				
ac-ft		1470		545		0		0				
max		62.3		53.7		0		0				
min		0		0		0		0				

~~For the Year~~ For the Period (*March 1* to *October 31*)

Maximum ~~instantaneous~~ daily discharge, *62.3* cfs at G.H. *4.10* *-0.22 shift* ft at on *July 22*

Minimum instantaneous daily discharge, cfs at G.H. ft at on

Mean discharge, cfs Total discharge, *3,480* ac-ft

Data by pencil follower and computer methods.

Computed from Table No. *7* dated *Sept 30/66* from *March 1* to *October 31*

Total discharge *1756.27* cfs-days

Accuracy *Records good*

Maximum instantaneous daily gauge height, ft at on

Minimum instantaneous daily gauge height, ft at on

	January to		*March* to *October*		to December		Summary
	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	
Computed by			*N. G. Clarke*				
Date			*Dec. 3, 1969*				
Checked by			U. S. G. S. Engineers				
Date			*Memo Jan. 13, 1970*				

APPROVED: *R. D. May* Dist. Engr. W.S. of Canada *[signature]* District Chief U.S.G.S.

Approved Date

R79 (Dec 67)

DAILY DISCHARGES

DEPARTMENT OF ENERGY, MINES AND RESOURCES
INLAND WATERS BRANCH – WATER SURVEY OF CANADA

Station Name *Richardson Ditch near Consul* Station No. *11AB058*

Daily Gauge Heights in Feet and Daily Discharges in Cubic Feet per Second for the Year 1969

Drainage Area square miles Type of Gauge Manual ☐ Recording ☒

Day	January		February		March		April		May		June	
	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge
1						0		0.01	1.63	0.03	2.33	30.3
2						"		0.01	1.63	0.03	2.25	25.6
3						"		0.01	1.63	0.03	2.05	12.7
4						"		0.01	1.62	0.02	2.21	14.0
5						"		0.01	1.63	0.03	2.11	9.9
6						"		0.02	1.62	0.02	2.00	6.5
7						"		0.02	1.61	0.02	1.79	3.1
8						"		0.02	1.61	0.01	1.52	0.08
9						"		0.02	1.60	0.01	1.50	0.06
10						"		0.02	1.60	0.01	1.48	0.05
11						"		0.02	1.60	0.01	1.47	0.04
12						"		0.02	1.60	0.01	1.46	0.04
13						"		0.02	1.59	0.01	1.45	0.03
14						"		0.02	1.60	0.02	1.44	0.02
15						"		0.02	1.60	0.02	1.43	0.02
16						"	1.81	0.02	1.60	0.02	1.42	0.01
17						"	1.71	0.02	1.60	0.02	1.41	0.01
18						"	1.69	0.02	1.60	0.02	1.40	0
19						"	1.66	0.02	1.60	0.02		0
20						"	1.64	0.01	1.60	0.02		0
21						"	1.62	0.01	2.30	32.1		0
22						"	1.62	0.02	2.53	40.8		0
23						"	1.61	0.01	2.59	43.9		0
24						"	1.61	0.01	2.59	44.0		0
25						"	1.62	0.02	2.57	42.6		0
26						"	1.61	0.01	2.52	39.7		0
27						"	1.62	0.02	2.46	37.2		0
28						"	1.62	0.02	2.42	35.9		0
29						"	1.62	0.02	2.42	35.7		0
30						"	1.63	0.03	2.41	35.1		0
31						"			2.38	33.5		
total						0		0.51		420.88		102.46
mean						0		0.02		13.6		3.42
ac-ft						0		1.0		835		203
max						0		0.03		44.0		30.3
min						0		0.01		0.01		0

Day	July		August		September		October		November		December	
	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge
1		0	2.46	39.4		0		0				
2		0	2.41	36.1		"		"				
3		0	2.40	36.0		"		"				
4		0	2.28	26.6		"		"				
5	1.30	0	2.16	17.5		"		"				
6	1.30	0.01	2.12	15.7		"		"				
7	1.30	0.01	2.10	14.3		"		"				
8	1.30	0.02	2.00	10.6		"		"				
9	1.30	0.02	1.74	4.6		"		"				
10	1.29	0.01	1.51	0.15		"		"				
11	1.29	0.01	1.49	0.09		"		"				
12	1.28	0	1.46	0.06		"		"				
13		0	1.44	0.04		"		"				
14		0	1.42	0.02		"		"				
15		0	1.41	0.01		"		"				
16		0	1.40	0.01		"		"				
17		0	1.39	0.01		"		"				
18		0	1.38	0.01		"		"				
19		0	1.36	0.01		"		"				
20		0	1.35	0		"		"				
21	1.18	0		0		"		"				
22	2.34	38.4		0		"		"				
23	2.74	53.8		0		"		"				
24	2.81	57.1		0		"		"				
25	2.74	54.1		0		"		"				
26	2.70	52.0		0		"		"				
27	2.70	51.8		0		"		"				
28	2.71	52.4		0		"		"				
29	2.66	50.2		0		"		"				
30	2.57	45.6		0		"		"				
31	2.52	42.8		0				"				
total		498.28		201.21		0		0				
mean		16.1		6.49		0		0				
ac-ft		988		399		0		0				
max		57.1		39.4		0		0				
min		0		0		0		0				

~~For the Year~~ For the Period (March 1 to October 31)

Maximum ~~instantaneous~~ daily discharge, 57.1 cfs at G.H. 2.81 ft at on July 24

Minimum instantaneous daily discharge, cfs at G.H. ft at on

Mean discharge, cfs Total discharge, 2,430 ac-ft

Ice conditions, March 1 to April 20

Data by pencil follower and computer methods.

Computed from Table No. 8 dated Nov 28/69 from March 1 to October 31

" " " " " " " "

Total discharge 1223.34 cfs-days

Accuracy Records Fair

Maximum instantaneous daily gauge height, ft at on

Minimum instantaneous daily gauge height, ft at on

	January to		March to October		to December		Summary
	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	
Computed by Date			K. F. Clarke Dec. 4 1969				
Checked by Date			U. S. G. S. Engineers Memo Jan 13, 1970				

APPROVED: R. D. Mace
Dist. Engr. Water Survey
District Chief U.S.G.S.

Approved
Date

R79 (Dec 67)

DAILY DISCHARGES

DEPARTMENT OF ENERGY, MINES AND RESOURCES
INLAND WATERS BRANCH - WATER SURVEY OF CANADA

Station Name *McKinnon Ditch near Consul* Station No. *11AB044*

Daily Gauge Heights in Feet and Daily Discharges in Cubic Feet per Second for the Year 19*69*

Drainage Area square miles Type of Gauge Manual ☐ Recording ☒

Day	January Gauge Height	January Discharge	February Gauge Height	February Discharge	March Gauge Height	March Discharge	April Gauge Height	April Discharge	May Gauge Height	May Discharge	June Gauge Height	June Discharge
1						0		0		0	4.46	43.6
2						"		"		0	4.39	41.4
3						"		"		0	4.26	37.5
4						"		"		0	4.06	31.6
5						"		"		0	3.91	27.3
6						"		"		0	3.70	21.5
7						"		"		0	3.50	16.0
8						"		"		0	3.37	12.9
9						"		"		0	3.28	10.6
10						"		"		0	3.09	6.3
11						"		"		0	3.02	4.8
12						"		"		0	3.00	4.5
13						"		"		0	2.82	2.4
14						"		"		0	2.58	0.02
15						"		"		0	2.52	0.01
16						"		"		0	2.40	0
17						"		"		0		0
18						"		"		0		0
19						"		"		0		0
20						"		"		0		0
21						"		"		0		0
22						"		"	V	20.1		0
23						"		"	3.96	28.9		0
24						"		"	3.97	29.1		0
25						"		"	3.97	29.2		0
26						"		"	4.00	30.0		0
27						"		"	3.99	29.6		0
28						"		"	3.95	28.5		0
29						"		"	3.89	26.8		0
30						"		"	4.18	35.2		0
31						"			4.34	39.9		
total						0		0		297.3		260.43
mean						0		0		9.59		8.68
ac-ft						0		0		590		517
max						0		0		39.9		43.6
min						0		0		0		0

Day	July Gauge Height	July Discharge	August Gauge Height	August Discharge	September Gauge Height	September Discharge	October Gauge Height	October Discharge	November Gauge Height	November Discharge	December Gauge Height	December Discharge
1		0	4.60	44.6		0		0				
2		0	4.60	44.4		"		"				
3		0	4.59	44.0		"		"				
4		0	4.59	43.8		"		"				
5		0	4.14	32.8		"		"				
6		0	3.53	16.8		"		"				
7		0	3.39	13.3		"		"				
8		0	3.14	7.3		"		"				
9		0	3.14	7.2		"		"				
10		0	2.77	2.3		"		"				
11		0	2.54	0.01		"		"				
12		0	2.50	0		"		"				
13		0		0		"		"				
14		0		0		"		"				
15		0		0		"		"				
16		0		0		"		"				
17		0		0		"		"				
18		0		0		"		"				
19		0		0		"		"				
20		0		0		"		"				
21		0		0		"		"				
22		0		0		"		"				
23	V	24.3		0		"		"				
24	4.39	39.5		0		"		"				
25	4.54	43.9		0		"		"				
26	4.55	44.3		0		"		"				
27	4.56	44.7		0		"		"				
28	4.58	45.0		0		"		"				
29	4.60	45.6		0		"		"				
30	4.62	45.6		0		"		"				
31	4.61	45.1		0				"				
total		378.0		256.51		0		0				
mean		12.2		8.27		0		0				
ac-ft		750		509		0		0				
max		45.6		44.6		0		0				
min		0		0		0		0				

~~For the Year or~~ For the Period (*March 1* to *October 31*)

Maximum ~~instantaneous~~ daily discharge, *45.6* cfs at G.H., ft at on *July 29 and 30*

Minimum instantaneous daily discharge, cfs at G.H. ft at on

Mean discharge, cfs Total discharge, *2,370* ac-ft

V - Subdivided (Flow for only part of the day)

All data processed by computer and pencil follower methods.

Computed from Table No. *6* dated *Nov 25/69* from *March 1* to *October 31*

Total discharge *1,192.24* cfs-days

Accuracy *Records good*

Maximum instantaneous daily gauge height, ft at on

Minimum instantaneous daily gauge height, ft at on

	January to		*March* to *October*		to December		Summary
	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	
Computed by / Date			*K. G. Clarke* / *Dec. 8/69*				
Checked by / Date			U. S. G. S. Engineers / *Memo Jan 13/70*				

APPROVED: *R. D. May* Dist. Engr. WS of C

[signature] District Chief U.S.G.S.

Approved by / Date

R79 (Dec 67)

DAILY DISCHARGES

DEPARTMENT OF ENERGY, MINES AND RESOURCES
INLAND WATERS BRANCH – WATER SURVEY OF CANADA

41

Station Name *Stirling and Nash Ditch near Consul* Station No. *11AB01B*

Daily Gauge Heights in Feet and Daily Discharges in Cubic Feet per Second for the Year 1969 Drainage Area square miles Type of Gauge Manual ☐

Day	January Gauge Height	January Discharge	February Gauge Height	February Discharge	March Gauge Height	March Discharge	April Gauge Height	April Discharge	May Gauge Height	May Discharge	June Gauge Height	June Discharge
1						0		0		0	4.42	27.1
2						"		0		0	3.22	3.4
3						"		0		0	2.88	0.41
4						"		0		0	2.78	0.08
5						"		0		0	2.71	0
6						"		0		0		0
7						"		0		0		0
8						"	2.70	0		0		0
9						"	V	10.8		0		0
10						"	4.54	30.5		0		0
11						"	4.68	34.6		0		0
12						"	4.67	34.2		0		0
13						"	4.66	33.4		0		0
14						"	4.57	30.5		0		0
15						"	4.54	29.4		0		0
16						"	4.51	28.7		0		0
17						"	4.14	19.8		0		0
18						"	4.07	18.1		0		0
19						"	4.11	19.0		0		0
20						"	4.11	19.1		0		0
21						"	4.07	18.0		0		0
22						"	4.03	17.0		0		0
23						"	4.04	17.2		0		0
24						"	4.05	17.4	V	2.1		0
25						"	4.03	16.8	4.33	24.8		0
26						"	3.61	9.5	4.41	26.5		0
27						"	2.86	0.35	4.43	27.2		0
28						"	2.78	0.05	4.42	26.9		0
29						"	2.75	0.01	4.41	26.4		0
30						"	2.72	0	4.37	25.2		0
31						"			4.46	28.0		
total						0	404.41		187.1		30.99	
mean						0	13.5		6.04		1.03	
ac-ft						0	802		371		61.5	
max						0	34.6		28.0		27.1	
min						0	0		0		0	

Day	July Gauge Height	July Discharge	August Gauge Height	August Discharge	September Gauge Height	September Discharge	October Gauge Height	October Discharge
1		0	5.07	24.4		0		0
2		0	3.79	10.8		"		0
3		0	2.97	1.1		"		0
4		0	2.76	0.01		"		0
5		0		0		"		0
6		0		0		"		0
7		0		0		"		0
8		0		0		"		0
9		0		0		"		0
10		0		0		"		0
11		0		0		"		0
12		0		0		"		0
13		0		0		"		0
14		0		0		"	V	8.2
15		0		0		"	4.18	16.9
16		0		0		"	3.65	8.0
17		0		0		"	2.84	0.25
18		0		0		"	2.73	0
19		0		0		"		0
20		0		0		"		0
21		0		0		"		0
22		0		0		"		0
23	2.31	0		0		"		0
24	V	1.4		0		"		0
25	4.33	20.2		0		"		0
26	4.52	19.5		0		"		0
27	4.87	20.6		0		"		0
28	4.95	20.5		0		"		0
29	5.05	23.4		0		"		0
30	5.07	24.2		0		"		0
31	5.10	24.8		0				0
total		154.6		36.31		0		33.35
mean		4.99		1.17		0		1.08
ac-ft		307		72.0		0		66.1
max		24.8		24.4		0		16.9
min		0		0		0		0

~~For the Year~~ For the Period (*March 1* to *October 31*)

Maximum ~~instantaneous~~ daily discharge, *34.6* cfs at G.H. *4.68* ft at on *April 11*

Minimum instantaneous daily discharge, cfs at G.H. ft at on

Mean discharge, cfs | Total discharge, *1,680* ac-ft

Computed from Table No. *8* dated *Dec. 5/68* from *March 1* to *October 31*

" " " " " " " "

Total discharge *846.76*

Accuracy *Records Fair*

Maximum instantaneous daily gauge height, ft at on

Minimum instantaneous daily gauge height, ft at on

Ice Conditions, March 1 to April 8

V - Subdivided (Flow for only part of the day)

All data processed by computer and pencil follower methods

	January to Gauge Height	January to Discharge	March to October Gauge Height	March to October Discharge	to December Gauge Height	to December Discharge	Summary
Computed by Date			*K. F. Clarke Dec. 5, 1969*				
Checked by Date			*U. S. G. S. Engineers Memo Jan 13, 1970*				

Approved by APPROVED

Date

R79 (Dec 67)

Montana Special

Daily Gage Height, in Feet, and Discharge, in Second-Feet, of Woodpile Coulee

* Near international boundary for the Year ~~Ending September 30~~ 1969

Drainage Area ____ Square Miles Water-Stage Recorder Stevens A35 Ratio 1 : 6

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

File Number Washington 96 - 1500.00 District ____

Used rating table ~~dated~~ No. 5

Gage Read to ____ Once / Twice a Day by ____

Gage heights used to ~~half tenths between~~ ____ and ____ feet; hundredths ~~below and tenths above these limits~~.

Day	Jan. Gage height	Jan. Discharge	Feb. Gage height	Feb. Discharge	Mar. Gage height	Mar. Discharge	Apr. Gage height	Apr. Discharge	May Gage height	May Discharge	June Gage height	June Discharge	July Gage height	July Discharge	Aug. Gage height	Aug. Discharge	Sept. Gage height	Sept. Discharge	Oct. Gage height	Oct. Discharge	Nov. Gage height	Nov. Discharge	Dec. Gage height	Dec. Discharge
1								0	1.87	0.01														
2							S	19	1.86	.01														
3							S	190	1.88	.02														
4							S	* 251	1.87	.01														
5							S	327	1.85	0														
6							S	* 518		0 •														
7							S	244		0														
8							3.13	* 34		0														
9							2.80	8.2		0														
10							S	* 25		0														
11							S	4.8		0														
12							2.46	1.7		0														
13							2.38	12		0														
14							2.24	.67		0														
15							2.16	.42		0														
16							2.05	.22		0														
17							1.96	** .09		0														
18							S	1.1		0														
19							2.50	2.0		0														
20							2.42	1.4		0														
21							2.34	1.1		0														
22							2.23	.93		0														
23							2.27	* .70		0														
24							2.19	.48		0														
25							2.10	.30		0														
26							2.03	.19		0														
27							1.98	.12		0														
28							1.93	.06		0														
29							1.21	.02		0														
30							1.87	.01		0														
31										0														
Total					0			1633.70		.05		0		0		0		0		0				
Mean					0			54.5		.002		0		0		0		0		0				
Second-feet per square mile																								
Runoff in inches																								
Runoff in acre-feet					0			3240		.10		0		0		0		0		0				
Maximum					0			518		.02		0		0		0		0		0				
Minimum					0			0		0		0		0		0		0		0				

Max. Disch. 925 Dec. 11 at 0300 on Apr 6

Min. Disch. No flow Aug. 11 to Sept. 11 inc. most of season

* Discharge measurement or observation of no flow made on this day. ** Field estimate made on this day. Subject to revision

APPROVED: R. D. Wade Dist. Engineer, U.S. Geological Survey

Dist. Engineer, U.S. Geological Survey

Quarter: First / Second / Third / Fourth

Computed: Checked: Date

Cannadine Engineers JAN 6 1970

Cannadine Engineers JAN 6 1970

Cannadine Engineers JAN 6 1970

Cannadine Engineers JAN 6 1970

Cannadine Engineers JAN 6 1970

Period Year

3,240

Montana Special

9-196

Daily Gage Height, in Feet, and Discharge, in Second-Feet, of *East Fork Battle* Creek

*Near *international boundary* for the Year ~~Ending September 30~~, 1969

Drainage Area 89.5 Square Miles. Water-Stage Recorder *Stevens A35* Ratio 1 : 6

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

File Number { Washington 06-1505.00 / District

Used rating table dated No. 05

Gage heights used to ~~half tenths between~~ and feet; hundredths ~~below and tenths above these limits~~.

Gage Read to — Once / Twice a Day by —

Max. Disch. 923 Sec.-ft. at 0030 on April 6 (G. H. 8.20 ft.) Max. G. H. Same (G. H.) Min. G. H. **-.30 Shift

Min. Disch. No flow (Sec.-ft. on) at times (G. H.) Min. G. H. **

*Discharge measurement or observation of no flow made on this day. **Field estimate made on this day. S Subdivided day. V Variable shift

Day	Jan. Gage height	Jan. Discharge	Feb. Gage height	Feb. Discharge	March Gage height	March Discharge	April Gage height	April Discharge	May Gage height	May Discharge	June Gage height	June Discharge
1								0	2.47	0.14		
2								0	2.46	.12		
3								0	2.58	.52		
4							S	V *374	2.72	1.8		
5							S	V 619	2.63	.87		
6							S	V *469	2.54	.44		
7							S	V 187	2.51	.24		
8							S	23	2.47	.14		
9							2.79	* 7.3	2.58	.52		
10							2.71	4.5	2.52	.28		
11							2.75	4.9	S	.84		
12							2.73	4.5	2.64	.96		
13							2.78	5.8	2.57	.48		
14							2.75	4.5	2.50	.20		
15							2.63	1.7	2.46	.10		
16							2.59	1.1	2.40	0		
17							2.54	* .49	2.37	0		
18							2.50	.48	2.36	0		
19							2.48	.36	2.34	0		
20							2.45	.32	2.33	0		
21							2.44	.20	2.29	0		
22							2.43	.12	2.27	* 0		
23							2.40	.04		0		
24							2.38	0		0		
25							2.37	0		0		
26							2.44	0.08		0		
27							2.45	** .10		0		
28							2.42	.04		0		
29							2.48	.16		0		
30							2.45	.10		0		
31										0		
Total						0		1788.99		7.65		0
Mean						0		57.0		.247		0
Second-feet per square mile												
Runoff in inches												
Runoff in acre-feet						0		3390		15		0
Maximum						0		619		1.8		0
Minimum						0		0		0		0

Day	July Gage height	July Discharge	Aug. Gage height	Aug. Discharge	Sept. Gage height	Sept. Discharge	Oct. Gage height	Oct. Discharge	Nov. Gage height	Nov. Discharge	Dec. Gage height	Dec. Discharge
1												
2												
3												
4												
5												
6												
7												
8												
9												
10		*										
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												
31												
Total		0		0		0		0				
Mean		0		0		0		0				
Second-feet per square mile												
Runoff in inches												
Runoff in acre-feet		0		0		0		0				
Maximum		0		0		0		0				
Minimum		0		0		0		0				

APPROVED: District Chief, U.S.G.S.

Q. Y. Y. Disch.

Computed Canadian Engineers JAN 7 1970

Checked Canadian Engineers JAN 7 1970

Gth. Appd. Canadian Engineers JAN 7 1970

G. H. Checked Canadian Engineers JAN 7 1970

Prepared Year

3405

43

9-199-a. July 1937

44

Daily Gage Height, in Feet, and Discharge, in Second-Feet, of Lyons ~~River~~ Creek

At ~~near~~ international boundary for the Year 1969

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

Washington 06A1510.00

File Number

Drainage Area 66.7 Square Miles. Water-Stage Recorder Stevens A35 Datum 1 : 6

Used rating curve ~~since~~ No.5

Gage Read to hundredths ~~Once~~ Weekly ~~Twice~~ at ~~Day~~ By John Popich

Gage heights are all on ~~bottom-hole arrivers~~ and ~~feet~~ hundredths ~~hours and tenths above that hour~~

Max. Disch. 555 Sec-ft. at 0900 on Apr. 7 (G. H. 4.77 ft.) Max. G. H. 7.03 ft. Same at

Min. Disch. No flow Sec-ft. on at times (G. H. ft.) Min. G. H. ft.

*Discharge measurement or observation of no flow made on this day.

S Subdivided day.

Day	January Gage height	January Discharge	February Gage height	February Discharge	March Gage height	March Discharge	April Gage height	April Discharge	May Gage height	May Discharge	June Gage height	June Discharge	July Gage height	July Discharge	August Gage height	August Discharge	September Gage height	September Discharge	October Gage height	October Discharge	November Gage height	November Discharge	December Gage height	December Discharge
1								0	2.22	0.80														
2								0	2.21	.60														
3							S	33	2.24	1.0														
4							S	111	2.28	1.8														
5							S	202	2.25	1.2														
6							S	217	2.23	.90														
7							S	368	2.21	.60														
8							S	81	2.18	.30														
9							2.63	21	2.17	.20														
10							2.69	26	2.14	.10														
11							2.61	20	2.12	0														
12							2.44	8.0	2.10	0														
13							2.34	3.6	2.08	0														
14							2.29	2.0	2.06	0														
15							2.27	1.6	2.02	0														
16							S	5.7		0														
17							2.35	40		0														
18							2.31	26		0														
19							2.36	44		0														
20							2.38	5.2		0														
21							2.38	5.2		0														
22							2.62	21		0														
23							2.49	26		0														
24							S	13		0														
25							2.40	6.0		0														
26							2.37	4.8		0														
27							2.31	2.6		0														
28							2.28	1.8		0														
29							2.26	1.4		0														
30							2.23	.90		0														
31										0														
Totals				0				1198.8		7.5		0		0		0		0		0				
Mean				0				40.0		.24		0		0		0		0		0				
Second feet per square mile																								
Run-off in inches																								
Run-off in acre-feet				0				2,380		15		0		0		0		0		0				
Maximum				0				368		1.8		0		0		0		0		0				
Minimum				0				0		0		0		0		0		0		0				

2,395

APPROVED: R. D. Nye
District Engineer

Canadian Engineer

Department of Energy, Mines and Resources
Inland Waters Branch
Water Survey of Canada Division

Miscellaneous Diversions Made in Battle Creek Tributary Basin, in 1969

E - Estimated by Water Survey of Canada engineer
D - Diverted during spring runoff

Ditch Owner	Location	Diverting From	Approximate Acre-feet Diverted
Anderson, A. & E. H.	SE & NE 7-5-25-3	An unnamed coulee	23D
Backman, L. C.	SE 16-5-26-3	An unnamed coulee	12D
Backman, Lewis C.	SE 15-5-26-3	An unnamed coulee	15D
Backman, Lewis C.	SW 15-5-26-3	An unnamed coulee	38D
Battle Creek Ranch Ltd.	NE 9-6-29-3	Battle Creek	100
Behrman, W.	NW 23-4-26-3	Bushy Coulee	0
Behrman, William	SE 23-4-26-3	An unnamed slough	30D
Behrman, Willie	SE 22-4-26-3	Bushy Coulee	75D
Bellamy, R.K. & Harmon C. & Halyung, J. R. Jr.	SE 20-2-25-3	Bellamy Coulee	15E
Berg, Gunner	NW 18-4-25-3	An unnamed coulee	15D
Black, J. R.	NW 1-7-29-3	An unnamed coulee	58D
Black, J. R.	NE 6-7-28-3	Six Mile Coulee	200
Black, R.	SW 12-7-28-3	Spangler Coulee	14D
Black, R.	NW 3-7-28-3	Halfway Coulee	13D
Black, R.	NE 10 & SW 11-7-28-3	Dorval Coulee	13D
Black, R.	NE 3-7-28-3	Menin Coulee	13D
Davis, Lloyd	NE 23-3-26-3	An unnamed coulee	10E
Demchenko, Samuel R.	NW 8-7-28-3	An unnamed coulee	5
Dolosky, John	NE 5-3-25-3	Fothergill Coulee	10
Eccles, Robert Sr.	SE 15-4-27-3	An unnamed coulee	3E

Department of Energy, Mines and Resources
Inland Waters Branch
Water Survey of Canada Division

Miscellaneous Diversions Made in Battle Creek Tributary Basin, in 1969

E - Estimated by Water Survey of Canada engineer
D - Diverted during spring runoff

Ditch Owner	Location	Diverting From	Approximate Acre-feet Diverted
Funk, Ben	SE 4-3-26-3	An unnamed coulee	18
Funk, Ben	NE 20-3-26-3	An unnamed coulee	34
Funk, Ben	SE 4-3-26-3	An unnamed coulee	25
Funk, Ben	NE 6 & SE 7-3-26-3	Stenhouse Coulee	75
Funk, Ben	NE 4-3-26-3	An unnamed coulee	13
Gaff, E. & Schaefer, S.	NW 25-5-29-3	An unnamed coulee	0E
Gaff, E. & Schaefer, S.	NE 26-5-29-3	An unnamed coulee	0E
Gaff, Eva & Schaefer, Stephen	R/A W of NW 34-5-29-3	Battle Creek	100
Gaff, N. A.	SW 27-5-29-3	An unnamed coulee	3D
Gaff, Mrs. V.M.; Gaff, L. A.; & Gaff, N. Q.	R/A W of NW 34-5-29-3	Battle Creek	150
Gaff, Mrs. V. M.; Gaff, L. A.; Gaff, N. Q.	R/A between NW 34 & NE 35-5-29-3	Battle Creek	200E
Glagau, O. M.	NE 5-5-26-3	Swan Coulee	0
Glagau, Otto M.	NE 5-5-26-3	Swan Coulee	0
Glagau, Otto M.	NE 1-5-27-3	An unnamed coulee	2D
Hansen, Vernon L.	25-2-27-3	Coulee No. 1	0E
Hansen, Vernon L.	SE 36 & N½ 25-2-27-3	Coulee No. 2	60
Harmon, Carl	2 points SE 19-2-25-3	An unnamed coulee	25E
Harmon, Carl	NE 19-2-25-3	An unnamed coulee	15E
Heglund, Lloyd W.	NW 19-4-26-3	An unnamed coulee	3
Huery, John & Fred Sr.	SW 33-2-25-3	An unnamed coulee	12
Johnson, E. B.	W½ 5-5-25-3	An unnamed coulee	0E

Department of Energy, Mines and Resources
Inland Waters Branch
Water Survey of Canada Division

Miscellaneous Diversions Made in Battle Creek Tributary Basin, in 1969

E - Estimated by Water Survey of Canada engineer
D - Diverted during spring runoff

Ditch Owner	Location	Diverting From	Approximate Acre-feet Diverted
Kisell, Jos. Jr.	SE 16-3-27-3	Kompan Coulee	22
Kisell, Jos. Jr.	NW 15-3-27-3	Battle Creek	0
Kisell, Joseph Jr.	SW 16-3-27-3	Kisell Coulee	4
Latton, Kenneth	SW 26-3-26-3	An unnamed coulee	5E
Leslie Brothers	NE 13-8-29-3	Herington Coulee	6
Leslie, John	SE 11 & SW 12-8-29-3	Six Mile Coulee	55
Lotton, Ken	NW 23-3-26-3	An unnamed coulee	10E
McConnel, John E.	SW 22-5-26-3	An unnamed coulee	5D
McConwell, Julie	NW 23-3-27-3	An unnamed coulee	10E
McCuaig, D. J.	SW 2-4-27-3	An unnamed coulee	9D
McCuaig, D. J.	E½ 3-4-27-3	An unnamed coulee	12D
McCuaig, Duncan J.	E½ 1-4-27-3	An unnamed coulee	20D
Neitz, P.	2 points SW 18-6-27-3	Rough Coulee	33D
Neitz, Paul	NW 18-5-27-3	An unnamed coulee	3D
Noble, Elmer	NE 5-4-26-3	An unnamed coulee	5E
Noble, Elmer	SE 8-4-26-3	An unnamed coulee	5E
Olson, Harry (Estate)	NW 10-5-25-3	An unnamed coulee	5
Olson, Harry (Estate)	NW 10-5-25-3	An unnamed coulee	13
Ormiston, George	NW 7-4-26-3	Battle Creek	10E

Department of Energy, Mines and Resources
Inland Waters Branch
Water Survey of Canada Division

Miscellaneous Diversions Made in Battle Creek Tributary Basin, in 1969

E- Estimated by Water Survey of Canada engineer
D- Diverted during spring runoff

Ditch Owner	Location	Diverting From	Approximate Acre-feet Diverted
Palmer, James	NE 26-4-26-3	An unnamed coulee	12D
Parr, Edward B.	NW 33-5-29-3	Battle Creek	16
Parsonage Brothers	NE 28-5-28-3	Battle Creek	35
Parsonage Ranching Co.	SW 33-6-29-3	Battle Creek	0
Parsonage, G. C.	SE 14-7-29-3	Mull Creek	48
Parsonage, Graham	NW 11, SW 2 & NE 28-6-29-3	Mull Creek	35
Paterson, W. J.	SE 4-6-29-3	Battle Creek	40
Pedersen, Lenard & Willis	SW 24-5-26-3	An unnamed coulee	8E
Pedersen, Lenard & Willis	SW 13-5-26-3	An unnamed coulee	15E
Pellyjohn, Gordon	SW 18-6-28-3	An unnamed coulee	4
Pridmore, Jas.	NE 29-5-27-3	An unnamed coulee	12D
Pridmore, James E.	NW 28-5-27-3	An unnamed coulee	12D
Rabe, Marvin	NW 31-4-25-3	An unnamed coulee	8D
Rabe, Richard	NE 36-4-26-3	An unnamed coulee	5D
Rabe, R.	NE & SW 36-4-26-3	An unnamed coulee	15D
Reamer, Raymond	NE 21-3-26-3	An unnamed coulee	11
Reamer, Raymond	NE 16-3-26-3	An unnamed coulee	11
Reynolds, A. E.	NE 35-3-28-3	An unnamed coulee	5E
Reynolds, Reginald H.	SE 35-3-28-3	An unnamed coulee	5E
Reynolds, William	NE 36-3-28-3	An unnamed coulee	5E
Sawden, Edna H.	SE 34-2-27-3	An unnamed coulee	10E
Sawden, Edna	NW 34-2-27-3	An unnamed coulee	75E
Sawden, Larry	SW 2-3-27-3	Battle Creek	10E

Department of Energy, Mines and Resources
Inland Waters Branch
Water Survey of Canada Division

Miscellaneous Diversions Made in Battle Creek Tributary Basin, in 1969
E - Estimated by Water Survey of Canada engineer
D - Diverted during spring runoff

Ditch Owner	Location	Diverting From	Approximate Acre-feet Diverted
Sawden, Edna H. & Rothem, Arthur	NW 3-3-27-3	Swede Coulee	60E
Schmidt, S. F.	SE 5-3-26-3 NW 32-2-26-3	An unnamed coulee	10D
Schmidt, S. F.	S½ 31-2-26-3	Battle Creek	20D
Schmidt, Stanley	SE 31-2-26-3	Battle Creek	0
Schmidt, Stanley F.	NW 32-2-26-3	Coulee No. 1	12D
Schmidt, Stanley F.	NE 32 & SE 32-2-26-3	An unnamed coulee	1D
Schmidt, Stanley F.	NW 32-2-26-3	Coulee No. 3	4D
Schmidt, Stanley F.	NW 32-2-26-3	Coulee No. 2	4D
Schmidt, Stanley F.	NE 31-2-26-3	An unnamed coulee	5D
Schmidt, Stanley F.	NW 31-2-26-3	Stenhouse Coulee	0
Shepard, John C.	NW 34-5-28-3	Halfway Coulee	33D
Shepard, John C.	SW 29-5-28-3	Battle Creek	0
Stetar, Thomas	NE 16-3-27-3	An unnamed coulee	10
Stetar, Thomas	SW 21-3-27-3	An unnamed coulee	13D
Stetar, Thomas	NE 16-3-27-3	Kompan Coulee	13D
Sterling, Raymond	SW 23-3-27-3	An unnamed coulee	6D
Sterling, Raymond	SW 20-3-27-3	An unnamed coulee	7D
Sterling, R.	NW 15-2-27-3	Battle Creek	9
Swift, Leroy J.	NE 15-3-26-3	An unnamed coulee	3E
Swift, Leroy	SW 18-3-25-3	Rangeview Coulee	0E
Swihart, J. W. & P.	SE 17-3-26-3	An unnamed coulee	7D
Sveund, Mrs. Emma	SE 9-5-25-3	An unnamed coulee	5E
Sveund, Mrs. Emma	SW 9-5-25-3	An unnamed coulee	10
Sveund, Emma C.	SW 9-5-25-3	An unnamed coulee	8

Department of Energy, Mines and Resources
Inland Waters Branch
Water Survey of Canada Division

Miscellaneous Diversions Made in Battle Creek Tributary Basin, in 1969

E - Estimated by Water Survey of Canada engineer
D - Diverted during spring runoff

Ditch Owner	Location	Diverting From	Approximate Acre-feet Diverted
Sveund, Emma C.	NE 9-5-25-3	An unnamed coulee	5
Sveund, Emma C.	SE 9-5-25-3	An unnamed coulee	6
Teigen, Gordon	NW 17-5-25-3	An unnamed coulee	19
Tenborg, N. H. & L. D.	NE 28-3-27-3	Battle Creek	10
Tenborg, N. H. & L. D.	NE 28-3-27-3	An unnamed coulee	18D
Tenborg, N. H. & L. D.	NE 36-2-28-3	An unnamed coulee	5D
Tenborg, L. D.	SW 33-3-27-3	An unnamed coulee	1D
Tittle, S.	NW 30-2-26-3	An unnamed coulee	0E
Von Hagen, H. D.	NW 17-5-26-3	An unnamed coulee	10E
Von Hagen, O.	SE 18-5-26-3	Swan Coulee	5E
Watson, Robert R.	NW 35-2-26-3	An unnamed coulee	12
Wenzel, Ken	SW 30-5-26-3	An unnamed coulee	5E
Wilson, John W. S.	NW 1-6-28-3	An unnamed coulee	111
		Total Use	2473

Montana Special

9-102

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Daily Gage Height, in Feet, and Discharge, in Second-Feet, of Whitewater Creek

Near international boundary for the Year 1969

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

File Number Washington 06A-1560.00
District

Used rating table dated No.1

Gage heights used to half tenths between and feet; hundredths below and tenths above these limits.

Drainage Area 458 Square Miles. Water-Stage Recorder Stevens A35 Ratio 1 : 6

Gage Read to — Once Twice a Day by —

Max. Disch. 2.33 Sec-ft. at 2230 on Apr. 7 (G. H. 3.38 ft.). Max G. H. Same ft. at on
Min. Disch. No flow Sec-ft. on at times (G. H. ft.). Min. G. H. ft. on

*Discharge - measurement or V-notch weir reading or observation of no flow made on this day.
a No gage-height record; discharge estimated b Stage-discharge relation affected by ice
Partially estimated gage-height record. Staff gage reading Subdivided day.

Day	January Gage height	January Discharge	February Gage height	February Discharge	March Gage height	March Discharge	April Gage height	April Discharge	May Gage height	May Discharge	June Gage height	June Discharge
1						0		a 0.30	2.00 n	21	1.12	0.13
2						0	f 2.40	b 25	1.89 n	8.0	1.12	.12
3						0		a 14	1.81	3.8	1.11	.11
4						0		a 10	1.76	3.1	1.10	.10
5						0		a 8.0	1.65	2.2	1.08	.07
6						0	2.04	b 5.0	1.55	1.6	1.06	.06
7						0	S	b 102	1.48	1.8	1.06	.05
8						0	2.30	b 114	1.44	1.1	1.06	.05
9						0	2.41	b 43	1.41	.97	1.08	.06
10						0	2.21	b 15	1.36	.80	1.07	.05
11						0	2.07	10	1.34	.71	1.07	.05
12						0	1.92	5.6	1.33	.68	1.07	.05
13						0	1.77	2.6	1.31	.60	1.07	.05
14						0	1.70	2.1	1.30	.58	1.07	.05
15						0	1.61	1.6	1.29	.55	1.08	.06
16						0	1.51	1.2	1.28	.50	1.09	.07
17						0	1.45	.94	1.28	.50	1.10	.07
18						0	1.43	.87	1.27	.46	1.10	.07
19						0	1.39	.74	1.27	.46	1.10	.07
20						0	1.37	.68	1.26	.48	1.13	.10
21						0	1.33	.60	1.24	.41	1.17	.14
22						0	1.31	.58	1.25	.39	1.20	.18
23						0	1.29	.55	1.25	.37	1.22	.20
24						a .40	1.28	.55	1.23	.33	1.22	.20
25						a .50	S	.81	1.20	.28	1.23	.22
26						a .50	S	6.6	1.18	.23	1.35	.42
27						a .50	1.84	4.5	1.16	.20	1.44	.66
28						a .30	1.66	2.3	1.14	.16	1.52	.90
29						a .30	1.55	1.7	1.13	.15	1.66	1.5
30						a .34	S	22	1.13	.15	1.74	1.8
31						a .30			1.12	.13		
Total						9.14		402.82		52.19		7.67
Mean, Second-feet per square mile						.101		13.4		1.68		.256
Run-off in inches						6.2		799		1.04		15
Run-off in acre-feet												
Maximum						.50		114		21		1.8
Minimum						0.		.30		.13		.05

Day	July Gage height	July Discharge	August Gage height	August Discharge	September Gage height	September Discharge	October Gage height	October Discharge	November Gage height	November Discharge	December Gage height	December Discharge
1	1.74	1.8	1.11	0.07		0	1.06	0.04				
2	1.68	1.5	1.06	.04		0	1.04	.03				
3	1.65	1.4	1.03	.02		0	1.15	.11				
4	1.66	1.5	1.01	.02		0	1.18	.14				
5	1.66	1.5	1.00	.01		0	1.16	.12				
6	1.67	1.5	.99	.01		0	1.15	.12				
7	1.67	1.5	.97	.00		0	1.11	.08				
8	1.65	1.4		0		0	1.11	.08				
9	1.65	1.4		0		0	1.12	.09				
10	1.61	1.2		0	h 0.90	0	1.15	.12				
11	1.57	1.1		0	.90	0	1.17	.14				
12	1.53	.94		0	.91	0	1.16	.13				
13	1.49	.80		0	.92	0	1.17	.14				
14	1.46	.71		0	.91	0	1.16	.13				
15	1.45	.68		0	.91	0	1.15	.12				
16	1.43	.63		0	.93	0	1.14	.11				
17	1.42	.60		0	.94	.01	1.14	.11				
18	1.42	.60		0	.97	.01	1.13	.10				
19	1.41	.60		0	.98	.01	1.13	.10				
20	1.44	.66		0	1.00	.02	1.13	.10				
21	1.44	.66		0	1.10	.07	1.13	.10				
22	1.42	.60		0	1.06	.04	1.13	.10				
23	1.40	.55		0	1.05	.04	1.13	.10				
24	1.40	.55		0	1.05	.04	1.13	.10				
25	1.39	.52		0	1.05	.04	1.13	.10				
26	1.42	.58		0	1.06	.04	1.13	.10				
27	1.39	.55		0	1.06	.04	1.13	.10				
28	1.37	.22		0	1.06	.04	1.13	.10				
29	1.40	.13		0	1.06	.04	1.12	.09				
30	8x1.40 7x1.30	.20		0	1.05	.04		.09				
31	1.18	.13		0				.09				
Total		26.57		.17		.48		3.18				446.22
Mean, Second-feet per square mile		.857		.005		.016		.103				
Run-off in inches												
Run-off in acre-feet		53		.3		1.0		6.3				984.5
Maximum		1.8		.07		.07		.14				
Minimum		.13		0		0		.03				

APPROVED: R. P. Wells
Director

Canadian Engineers
JAN 1 5 1970

Canadian Engineers
JAN 1 5 1970

Canadian Engineers
JAN 1 5 1970

Fourth Quarter | Third Quarter | Second Quarter | First Quarter | Computed | Checked | Date | Disch. applied | Disch. checked | Date | G. H. copied | G. H. checked | Date | Period Year

GPO 843-586

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STAGE AND CONTENTS

Reservoir Name: Eastend Reservoir Station No. 11AC055

Elevation ~~Gauge Height~~ in Feet and ~~Contents~~ Contents in Acre/Feet for the Year 1969

Month	Elevation ~~or Gauge Height~~ End of Month	~~Contents at~~ End of Month	Change in Contents During Month	Equivalent in cfs
~~December~~ Oct 1968	3003.49	70.8		
January 1969			+ 19.8	
February	3003.79	90.6		
March	3003.67	82.9	- 7.7	0.13
April	3012.12	1800	+1717	28.9
May	3011.13	1480	- 320	5.2
June	3009.33	990	- 490	8.2
July	3012.08	1790	+ 800	13.0
August	3005.70	260	-1530	24.9
September	3005.60	248	- 12	0.20
October	3003.52	72.6	- 175	2.8
November				
December				
Change in Contents During the Year to Date			- 17.7	0.04

Summary ~~———~~ For the Period March to October

Maximum ~~———~~ ~~elevation~~ ~~gauge height~~ observed 3012.50 ft on May 3 Contents 1930 ac-ft

Minimum ~~———~~ ~~elevation~~ ~~gauge height~~ 3003.50 ft on Oct 29+30 Contents 71.4 ac-ft

Month end elevations from graph of observed readings

APPROVED: R.D. May
Dist. Engr. WS of Canada

George M Oke
District Engr. U.S.B.R.

Computed by	Checked by
LTH	RWW
Date Nov 25, 69	Date Nov 25/69

DAILY DISCHARGES

DEPARTMENT OF ENERGY, MINES AND RESOURCES
INLAND WATERS BRANCH – WATER SURVEY OF CANADA

Station Name *Frenchman River below Eastend Reservoir* Station No. *11AC001*

Daily Gauge Heights in Feet and Daily Discharges in Cubic Feet per Second for the Year 19*69* Drainage Area square miles Type of Gauge Manual ☐ Recording ☒

Day	January		February		March		April		May		June	
	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge
1					1.40	15.6	1.51	38.7	1.72	98.6	0.94	4.1
2					1.42	16.6	1.63	45.4	1.67	92.1	0.93	3.6
3					1.43	16.6	1.87	56.8	1.72	99.5	0.94	3.9
4					1.44	16.6	3.04	187	1.73	101	0.94	3.5
5					1.44	15.6	3.80	252	1.81	113	0.94	3.5
6					1.43	13.6	7.81	772	1.62	85.3	0.94	3.6
7					1.44	13.6	14.17	2240	1.52	71.8	0.94	3.7
8					1.45	13.6	11.13	1650	1.48	66.8	0.94	3.7
9					1.47	14.6	2.83	239	1.40	56.8	0.93	3.6
10					1.47	13.6	1.98	132	1.37	52.3	0.92	3.4
11					1.48	13.6	3.50	375	1.37	53.2	0.92	3.3
12					1.48	12.7	3.71	407	1.38	54.6	0.92	3.2
13					1.50	13.6	2.58	231	1.38	55.0	0.92	3.2
14					1.49	13.6	3.05	307	1.38	54.3	0.91	3.1
15					1.48	13.6	2.05	158	1.38	53.1	0.91	3.0
16					1.46	12.7	1.68	102	1.37	50.8	0.91	3.1
17					1.46	14.6	1.53	78.9	1.35	45.9	0.91	3.0
18					1.42	12.7	1.52	74.6	1.25	33.8	0.90	2.8
19					1.41	12.7	1.47	67.3	1.26	33.5	0.90	2.8
20					1.49	22.0	1.53	73.3	1.27	33.7	0.90	2.7
21					1.46	20.9	1.48	64.4	1.26	32.1	0.90	2.7
22					1.40	16.6	1.42	55.4	1.26	32.0	0.90	2.7
23					1.37	14.6	1.42	54.5	1.22	27.7	0.90	2.5
24					1.35	13.6	1.42	55.1	1.15	20.1	0.90	2.6
25					1.36	16.6	1.42	55.7	1.07	12.6	0.91	2.7
26					1.39	20.9	1.56	74.8	1.01	8.3	0.91	2.7
27			1.35	11.9	1.39	23.2	1.57	75.7	0.94	5.1	0.89	2.3
28			1.38	14.6	1.40	26.5	1.54	71.7	0.92	4.2	0.90	2.4
29					1.34	19.8	1.50	67.4	0.90	3.5	0.90	2.6
30					1.33	18.7	1.56	75.1	0.92	3.9	0.91	2.7
31					1.38	24.3			0.95	4.4		
total						507.5		8,136.8		1,459.0		92.7
mean						16.4		271		47.1		3.1
ac-ft						1,010		16,100		2,890		184
max						26.5		2,240		113		4.1
min						12.7		38.7		3.5		2.3

Day	July		August		September		October		November		December	
	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge
1	0.92	2.8	1.03	6.9	1.00	5.4	1.08	8.4	1.27	23.2 A		
2	0.93	3.2	1.02	6.5	1.00	5.4	1.17	16.3				
3	0.93	3.1	0.98	5.1	1.00	5.4	1.28	27.9				
4	0.90	2.4	0.86	1.8	1.00	5.3	1.28	27.7				
5	0.98	4.4	0.93	3.4	1.00	5.3	1.28	27.6				
6	1.00	5.3	0.85	1.6	1.00	5.3	1.30	30.1				
7	1.10	10.3	0.90	2.5	1.00	5.3	1.36	37.3				
8	1.15	14.5	0.90	2.7	1.00	5.3	1.43	44.9				
9	1.17	16.9	0.90	2.6	1.01	5.4	1.40	41.4				
10	1.25	26.1	0.90	2.7	1.01	5.4	1.35	35.6				
11	1.33	34.3	0.90	2.7	1.01	5.5	1.32	32.3				
12	1.27	28.3	0.90	2.7	1.01	5.5	1.31	31.1				
13	1.19	19.3	0.91	2.7	1.01	5.6	1.31	30.7				
14	1.12	12.1	0.91	2.7	1.01	5.6	1.30	30.0				
15	1.07	8.8	0.90	2.6	1.01	5.3	1.32	31.8				
16	1.05	7.6	0.90	2.7	1.01	5.5	1.30	30.3				
17	1.00	5.4	0.90	2.7	1.01	5.4	1.27	26.2				
18	0.97	4.3	0.90	2.7	1.01	5.4	1.26	24.9				
19	0.98	4.6	0.90	2.7	1.01	5.3	1.25	23.5				
20	1.07	9.6	0.89	2.4	1.01	5.3	1.25	23.2				
21	1.24	25.2	0.90	2.6	1.02	5.5	1.27	24.9				
22	1.32	34.4	0.90	2.6	1.02	5.5	1.26	24.1				
23	1.29	30.8	0.90	2.6	0.98	4.2	1.25	22.3				
24	1.22	23.6	0.90	2.6	0.83	0.77	1.26	23.4				
25	1.17	17.5	0.91	2.9	0.81	0.47	1.28	25.8				
26	1.15	15.2	1.00	5.7	1.01	5.3	1.27	24.7				
27	1.17	17.3	1.01	5.7	1.04	6.2	1.28	24.8				
28	1.10	11.9	1.01	5.8	1.04	6.2	1.27	23.7				
29	1.05	7.7	1.01	5.7	1.05	6.7	1.24	20.2				
30	1.05	7.8	1.01	5.6	1.08	8.2	1.26	22.6				
31	1.04	7.3	1.01	5.6			1.24	20.1				
total		422.0		109.8		156.94		837.8				
mean		13.6		3.5		5.2		27.0				
ac-ft		837		218		311		1,660				
max		34.4		6.9		8.2		44.9				
min		2.4		1.6		0.47		8.4				

For the Year or For the Period (*March* to *October*)

Maximum instantaneous ~~daily~~ discharge, *2520* cfs at G.H. *14.98* (-2.00 BW) ft at *2120 MST* on *Apr. 7*

Minimum instantaneous ~~daily~~ discharge, *0* cfs at G.H. *0.77* (-0.55 BW) ft at *1330 MST* on *Sept. 25*

Mean discharge, *47.8* cfs Total discharge, *23,200* ac-ft

A Partial day of record

Ice conditions February 27 to April 7.

Data April 8 to October 31 processed by computer and pencil follower methods.

Computed from Table No. *6* dated *Nov. 22/65* from *Feb. 27* to *Nov. 1*

" " " " — " — " — "

" " " " — " — " — "

Total discharge *11,722.54* cfs-days

Accuracy

Maximum instantaneous ~~daily~~ gauge height, *14.98* ft at *2120 MST* on *April 7*

Minimum instantaneous ~~daily~~ gauge height, *0.77* ft at *1330 MST* on *September 25*

	January to		Feb. 27 to Nov. 1		to December		Summary
	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	
Computed by Date			*RWW* *Dec. 29/69*				*RWW* *Dec. 29/69*
Checked by Date							

APPROVED: *R. D. Wax*
Dist. Eng.

George M. Cree
District Chief U.S.G.D.

Approved
Date

R79 (Dec 67)

DAILY DISCHARGES

DEPARTMENT OF ENERGY, MINES AND RESOURCES
INLAND WATERS BRANCH – WATER SURVEY OF CANADA

Station Name *Frenchman River below Eastend Irrigation Project* Station No. *11AC057*

Daily Gauge Heights in Feet and Daily Discharges in Cubic Feet per Second for the Year 19*69*

Drainage Area ______ square miles Type of Gauge Manual ☐ Recording ☑

Day	January Gauge Height	January Discharge	February Gauge Height	February Discharge	March Gauge Height	March Discharge	April Gauge Height	April Discharge	May Gauge Height	May Discharge	June Gauge Height	June Discharge
1									3.11	97.8	2.12	12.9
2									3.30	120	2.13	13.6
3									3.27	116	2.14	14.1
4									3.34	124	2.15	14.5
5									3.36	127	2.13	13.1
6									3.36	128	2.13	13.1
7									3.05	89.7	2.15	13.7
8									2.93	76.8	2.17	14.5
9									2.88	70.6	2.16	13.6
10									2.73	56.4	2.15	12.7
11									2.69	53.0	2.15	12.4
12									2.70	53.7	2.16	12.7
13									2.69	53.3	2.18	13.2
14									2.69	53.2	2.20	13.9
15									2.70	53.6	2.22	14.6
16							3.57	153	2.68	52.4	2.22	14.3
17							3.22	110	2.67	51.5	2.18	12.8
18							3.05	89.8	2.63	42.8	2.12	10.2
19							3.01	85.0	2.49	36.1	2.11	9.8
20							2.97	81.2	2.49	36.1	2.15	11.7
21							3.00	84.0	2.51	37.7	2.21	14.6
22							2.92	75.1	2.50	37.0	2.23	15.8
23							2.83	66.2	2.49	36.1	2.27	18.0
24							2.84	67.4	2.44	32.4	2.37	24.1
25							2.84	66.5	2.36	26.7	2.42	28.0
26							2.84	66.6	2.27	20.9	2.46	30.7
27							3.12	98.6	2.22	18.2	2.39	26.3
28							3.05	90.1	2.16	15.2	2.26	18.4
29							2.99	82.7	2.16	15.1	2.28	20.0
30			X	X			2.95	78.9	2.14	13.8	2.22	16.4
31			X	X			X	X	2.12	13.2	X	X
total										1763.3		473.7
mean										56.9		15.8
ac-ft										3500		940
max										128		30.7
min										13.2		9.8

Day	July Gauge Height	July Discharge	August Gauge Height	August Discharge	September Gauge Height	September Discharge	October Gauge Height	October Discharge	November Gauge Height	November Discharge	December Gauge Height	December Discharge
1	2.15	13.2	2.25	14.0	2.39	18.0	2.28	14.5				
2	2.11	11.6	2.22	12.3	2.33	14.9	2.38	20.5				
3	2.22	17.8	2.21	11.8	2.32	14.6	2.51	29.0				
4	2.47	33.6	2.19	10.6	2.29	13.4	2.66	41.0				
5	2.33	24.0	2.15	9.1	2.25	11.9	2.63	39.0				
6	2.93	78.4	2.05	5.5	2.24	11.2	2.62	38.6				
7	2.82	65.6	1.97	2.9	2.25	11.4	2.58	35.3				
8	2.59	44.4	1.95	2.5	2.26	11.8	2.60	37.9				
9	2.89	72.8	1.92	1.7	2.24	11.2	2.72	48.1				
10	2.73	56.0	1.92	1.6	2.27	12.6	2.66	42.8				
11	2.62	45.6	2.00	3.6	2.27	12.5	2.56	35.7				
12	2.67	49.9	2.03	4.3	2.24	11.2	2.49	30.2				
13	2.58	41.4	2.05	4.5	2.23	10.9	2.46	28.8				
14	2.47	32.4	2.09	5.8	2.22	10.6	2.45	27.9				
15	2.39	26.3	2.18	9.1	2.18	9.2	2.43	27.4				
16	2.27	18.4	2.18	8.9	2.19	9.8	2.43	27.6				
17	2.22	15.4	2.21	10.1	2.23	11.3	2.46	29.4				
18	2.23	15.6	2.20	9.7	2.23	11.3	2.37	23.7				
19	2.24	15.7	2.25	11.6	2.26	12.9	2.34	22.1				
20	2.48	38.7	2.28	12.9	2.29	14.4	2.31	20.5				
21	2.39	24.0	2.23	10.6	2.34	16.9	2.31	20.5				
22	2.44	27.1	2.28	12.2	2.35	17.5	2.30	20.2				
23	2.70	45.6	2.22	9.6	2.34	16.9	2.38	25.1				
24	2.65	41.5	2.16	7.5	2.34	17.1	2.35	23.5				
25	2.53	32.5	2.16	7.2	2.32	16.1	2.36	24.1				
26	2.48	28.7	2.13	6.5	2.28	14.5	2.38	26.1				
27	2.47	27.5	2.13	6.5	2.20	10.4	2.38	26.1				
28	2.46	26.4	2.17	8.0	2.06	5.3	2.39	26.8				
29	2.46	26.7	2.32	14.2	1.98	3.1	2.37	25.4				
30	2.35	19.7	2.32	14.2	2.07	6.4	2.36	25.5				
31	2.29	15.9	2.37	16.8	X	X	2.35	25.1	X	X		
total		1032.4		265.8		368.8		888.4				
mean		33.3		8.6		12.3		28.7				
ac-ft		2050		527		732		1760				
max		78.4		16.8		18.0		48.1				
min		11.6		1.6		3.1		14.5				

~~Calendar Year~~ For the Period (*May* to *October*)

Maximum instantaneous ~~daily~~ discharge, *149* cfs at G.H. *3.61* ft at *1819 MST* on *July 20*

Minimum instantaneous ~~daily~~ discharge, *1.4* cfs at G.H. *1.91* ft at *03.55 MST* on *August 10*

Mean discharge, *26.0* cfs Total discharge, *9510* ac-ft

Data processed by computer and Pencil Follower methods

Computed from Table No. *5* dated *Jan. 5/70* from *April 16* to *Oct. 31*

Total discharge *4792.4* cfs-days

Accuracy

Maximum instantaneous ~~daily~~ gauge height, *3.61* ft at *1819 MST* on *July 20*

Minimum instantaneous ~~daily~~ gauge height, *1.91* ft at *03.55 MST* on *August 10*

	January to ______ Gauge Height	Discharge	*April 16* to *Oct 31* Gauge Height	Discharge	______ to December Gauge Height	Discharge	Summary
Computed by / Date			*LTH* *Jan 9/70*				*LTH* *Jan 9/70*
Checked by / Date			U.S.G.S. Engineers *Jan 21, 1970*				U.S.G.S. Engineers *Jon 21, 1970*

APPROVED: *R. D. May* Dist. Engr., WS of Canada

Approved *George M. Ahle* District ...

Date

R79 (Dec 67)

DEPARTMENT OF ENERGY, MINES AND RESOURCES
INLAND WATERS BRANCH – WATER SURVEY OF CANADA

STAGE AND CONTENTS

Station Name Val Marie West Reservoir Station No. 11AC063

Elevations ~~Gauge Heights~~ in Feet and ~~Live~~ Total Contents in Acre-Feet for the Year 1969

Month	Elevation at ~~Gauge Height~~ End of Month	Contents at End of Month	Change in Contents During Month	Equivalent in cfs
Oct ~~December~~ 1968	2671.49	1270		
January 1969			- 60	
February	2671.31	1210		
March	2672.64	1730	+ 520	8.5
April	2677.01	3910	+2180	36.6
May	2676.12	3420	- 490	8.0
June	2673.53	2110	-1310	22.0
July	2676.46	3610	+1500	24.4
August	2670.72	1010	-2600	42.3
September	2670.89	1060	+ 50	0.84
October	2674.32	2490	+1430	23.9
November				
December				
Change in Contents during the Year or Period			+1280	2.6

Summary For the Year or For the Period (March to October)

Maximum instantaneous ~~daily~~ elevation ~~gauge height~~, 2677.46 ft at 0900 on April 8 ; Contents, 4160 ac-ft

Minimum instantaneous ~~daily~~ elevation ~~gauge height~~, 2670.37 ft at 1600 MST on Sept 5 to 1200 MST on Sept 6 ; Contents, 902 ac-ft

APPROVED: R.D. May
Dist. Engr.

George M. Ogle
District Chief

Computed by	Checked by
LTH	
Date Nov 20, 69	Date Jan 19-70

R243 (Dec 67)

DEPARTMENT OF ENERGY, MINES AND RESOURCES
INLAND WATERS BRANCH – WATER SURVEY OF CANADA

STAGE AND CONTENTS

Station Name: Val Marie Reservoir Station No. 11AC056

~~Gauge Height~~ Elevations in Feet and ~~—~~ Total Contents in Acre-Feet for the Year 1969

Month	Elevation at Gauge Height End of Month	Contents at End of Month	Change in Contents During Month	Equivalent in cfs
~~December~~ Oct 1968	2627.29	1780		
January 1969			+820	
February	2628.71	2600		
March	2628.83	2680	+ 80	1.3
April	2635.94	9830	+ 7150	120
May	2635.45	9140	- 690	11.2
June	2632.95	6160	-2980	50.1
July	2632.87	6080	- 80	1.3
August	2629.17	2910	-3170	51.6
September	2628.36	2370	- 540	9.1
October	2627.79	2040	- 330	5.4
November				
December				
Change in Contents During ——— Period			-560	-1.2

Summary ——— Period March 1 to October 31

Maximum ——— daily ——— Elevation 2636.48 at 1230 M.S.T. May 2 Contents 10,600 ac-ft

Minimum ——— daily ——— Elevation 2627.79 at 2400 M.S.T. Oct. 31 Contents 2040 ac-ft

APPROVED: R.D. May
Dist. Engr. WS of Canada

George M. Pike
District

Computed by	Checked by
LTH	U.S.G.S. Engineers
Date Nov 28, 69	Date JAN 16 1970

DAILY DISCHARGES

DEPARTMENT OF ENERGY, MINES AND RESOURCES
INLAND WATERS BRANCH – WATER SURVEY OF CANADA

Station Name *Frenchman River below Val Marie* Station No. *11AC051*

Daily Gauge Heights in Feet and Daily Discharges in Cubic Feet per Second for the Year 19*62*

Drainage Area ______ square miles Type of Gauge Manual ☐ Recording ☑

Day	January Gauge Height	January Discharge	February Gauge Height	February Discharge	March Gauge Height	March Discharge	April Gauge Height	April Discharge	May Gauge Height	May Discharge	June Gauge Height	June Discharge
1								3.0 B	4.35	94.0	3.63	36.0
2								3.0 B	5.91	229	3.75	46.7
3								3.0 B	7.35	335	3.66	38.8
4								75.0 B	8.04	384	3.77	49.0
5								147 B	8.14	391	3.80	51.1
6							7.32	299 B	7.97	380	3.80	51.2
7							V	905 B	7.53	348	3.80	51.9
8							V	1430	6.61	284	3.82	53.8
9							11.39	673	4.62	122	3.88	58.6
10							V	1810	4.28	90.2	3.84	55.6
11							15.70	2450	4.23	86.2	3.78	50.8
12							14.85	1330	4.19	83.5	3.77	49.2
13							13.69	977	4.18	82.6	3.73	45.9
14							9.43	498	4.17	82.0	3.75	48.0
15							6.94	308	4.16	81.7	3.74	47.1
16							5.36	190	4.14	80.6	3.72	45.2
17							7.19	325	4.14	80.5	3.66	39.5
18							8.85	446	4.13	79.9	3.59	34.0
19							8.18	397	4.12	79.7	3.56	31.6
20							6.10	249	4.12	79.6	3.64	37.5
21							5.48	204	4.11	78.8	3.71	43.2
22							4.81	139	3.74	43.8	3.70	42.6
23							4.55	114	3.59	30.9	3.70	42.1
24							4.43	102	3.58	30.1	3.62	35.6
25							4.01	66.2	3.57	29.9	3.59	32.5
26							4.08	71.8	3.57	30.2	3.63	36.0
27							4.06	69.3	3.56	29.9	3.55	29.6
28							4.20	81.1	3.53	27.6	3.51	26.3
29							4.12	73.8	3.50	25.8	3.55	29.3
30							4.13	74.4	3.50	25.8	3.51	26.6
31									3.52	27.0		
total								13513.6		3853.3		1265.3
mean								450		124		42.2
ac-ft								26,800		7640		2510
max								2450		391		58.6
min								3.0		25.8		26.3

Day	July Gauge Height	July Discharge	August Gauge Height	August Discharge	September Gauge Height	September Discharge	October Gauge Height	October Discharge	November Gauge Height	November Discharge	December Gauge Height	December Discharge
1	3.44	22.1	3.28	13.5	3.23	14.3	3.19	8.0				
2	3.41	20.4	3.28	13.6	3.22	14.1	3.31	11.0				
3	3.52	28.4	3.28	13.8	3.20	13.3	3.52	20.0				
4	3.44	22.4	3.30	14.7	3.19	12.7	3.51	18.5				
5	3.44	22.7	3.44	22.6	3.17	11.9	3.45	15.9				
6	3.43	22.6	3.45	22.9	3.16	11.3	3.40	13.7				
7	3.44	22.8	3.56	31.1	3.15	11.0	3.35	11.4				
8	3.45	23.9	3.58	33.7	3.18	11.8	3.36	11.7				
9	3.45	23.8	3.65	40.1	3.17	11.5	3.36	11.5				
10	3.40	21.2	3.61	37.1	3.16	11.1	3.40	12.7				
11	3.38	19.7	3.61	37.4	3.16	11.1	3.39	11.9 A				
12	3.37	19.1	3.60	37.1	3.16	11.1		12.0 E				
13	3.36	18.5	3.58	35.8	3.17	11.4		11.6 E				
14	3.36	18.2	3.55	34.4	3.15	10.9		11.2 E				
15	3.37	18.5	3.53	33.3	3.15	10.8		10.9 E				
16	3.36	17.7	3.55	34.9	3.15	11.0		10.5 E				
17	3.35	17.3	3.54	35.4	3.11	9.7	3.36	10.1 A				
18	3.36	17.5	3.59	39.3	3.04	8.0	3.34	9.6				
19	3.35	16.9	3.55	36.4	2.99	6.8	3.35	9.6				
20	3.35	16.6	3.59	39.1	2.96	6.1	3.35	9.7				
21	3.36	17.1	3.60	39.6	3.06	6.3	3.33	9.1				
22	3.34	16.0	3.57	37.6	3.07	6.1	3.35	9.5				
23	3.30	14.3	3.49	30.4	3.03	5.5	3.41	11.0				
24	3.33	15.1	3.44	26.4	3.04	5.7	3.39	10.3				
25	3.32	14.5	3.47	28.7	3.04	5.6	3.40	10.7 A				
26	3.32	14.4	3.57	36.6	3.08	6.2		10.4 E				
27	3.31	13.9	3.48	29.0	3.12	6.9		10.2 E				
28	3.30	13.5	3.41	23.9	3.12	6.9		10.0 E				
29	3.31	13.9	3.32	18.6	3.14	7.3		9.7 E				
30	3.31	13.9	3.21	13.7	3.14	7.1		9.5 E				
31	3.31	14.1	3.22	14.1				9.2 E				
total		571.0		904.8		283.5		351.1				
mean		18.4		29.2		9.5		11.3				
ac-ft		1130		1790		562		696				
max		28.4		40.1		14.3		20.0				
min		13.5		13.5		5.5		8.0				

For the Year or For the Period (*April* to *October*)

Maximum instantaneous ~~daily~~ discharge, *2510* cfs at G.H. *15.93 (-.20 B.S.)* ft at *1855* on *April 7*

Minimum ~~instantaneous~~ daily discharge, *3.0* cfs at G.H. ______ ft at ______ on *April 1 to 3*

Mean discharge, *96.9* cfs Total discharge, *41,100* ac-ft

A Partial day of record or manual gauge readings
B Ice conditions
V Subdivided

Data April 8 to October 10, October 18 to 24 processed by computer and pencil follower methods

Computed from Table No. *8* dated *Oct. 29/62* from *April 1* to *Oct. 31*

Total discharge *20,742.6* cfs-days

Accuracy

Maximum instantaneous ~~daily~~ gauge height, *15.93* ft at *1855 MST* on *April 7*

Minimum instantaneous ~~daily~~ gauge height, *2.93* ft at *0300 MST* on *September 20*

	January to		*April* to *October*		to December		Summary
	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	
Computed by Date			*L.W.W.* *Dec. 15/69*				*L.W.W.* *Dec. 18/69*
Checked by Date			U. S. G. S. Engineers *Jan 20, 70*				U. S. G. S. Engineers *Jan 20, 70*

APPROVED: *R. D. Way* Dist. Eng. Date

Approved *George McCabe* District Chief Date

R79 (Dec 67)

DAILY DISCHARGES

DEPARTMENT OF ENERGY, MINES AND RESOURCES
INLAND WATERS BRANCH – WATER SURVEY OF CANADA

Station Name *Frenchman River at International Boundary* Station No. *11AC041*

Daily Gauge Heights in Feet and Daily Discharges in Cubic Feet per Second for the Year 19*62*

Drainage Area ____ square miles Type of Gauge Manual ☐ Recording ☑

Day	January Gauge Height	January Discharge	February Gauge Height	February Discharge	March Gauge Height	March Discharge	April Gauge Height	April Discharge	May Gauge Height	May Discharge	June Gauge Height	June Discharge
1						5.0		13.0	5.48	394	3.74	28.3
2						5.0	4.16	37.8	6.02	535	3.74	28.4
3						5.3	4.99	67.9	5.34	357	3.82	37.0
4						5.0	5.60	253	5.23	327	3.91	47.3
5						5.0	7.07	715	5.36	367	3.85	40.5
6						5.0	8.66	1,200	5.40	379	3.92	48.3
7						5.0	10.41	1,700	5.41	380	3.94	51.1
8						5.0	10.91	1,850	5.38	371	3.94	51.7
9						5.0	8.95	1,280	5.23	329	3.95	52.6
10						5.0	8.29	1,100	4.85	226	3.98	55.8
11						5.0	8.54	1,170	4.31	110	3.99	58.1
12						5.0	8.61	1,180	4.24	97.9	3.98	55.9
13						6.0	8.37	1,120	4.22	93.7	3.95	51.8
14						6.0	9.44	1,410	4.20	90.4	3.94	50.6
15						7.0	9.75	1,500	4.19	89.0	3.92	47.8
16						7.0	8.82	1,240	4.18	87.3	3.93	49.3
17						8.0	6.48	648	4.17	85.8	3.92	48.9
18						8.0	5.02	267	4.17	85.0	3.91	47.2
19						8.5	5.34	360	4.16	83.9	3.87	42.3
20						9.0	5.63	438	4.16	83.5	3.83	37.8
21						10.0	5.41	379	4.15	82.6	3.81	35.5
22						12.0	4.86	225	4.15	81.9	3.85	39.8
23						14.0	4.61	168	4.12	77.2	3.90	45.7
24						16.0	4.38	123	3.90	46.1	3.90	45.6
25						16.8	4.40	126	3.84	39.4	3.90	46.4
26						17.0	5.34	358	3.83	37.3	3.88	43.5
27						18.0	5.97	522	3.81	35.8	3.89	44.4
28						16.0	5.25	330	3.79	33.6	3.92	48.2
29						14.0	4.86	227	3.78	32.6	3.97	54.5
30						11.9	4.98	261	3.76	30.8	3.97	55.0
31						12.0			3.74	28.7		
total						277.5		20,268.7		5097.5		1389.3
mean						9.0		676		164		46.3
ac-ft						550		40,200		10,100		2760
max						18.0		1,850		535		58.1
min						5.0		13.0		28.7		28.3

Day	July Gauge Height	July Discharge	August Gauge Height	August Discharge	September Gauge Height	September Discharge	October Gauge Height	October Discharge	November Gauge Height	November Discharge	December Gauge Height	December Discharge
1	3.86	41.2	3.33	3.3	3.64	17.0	3.22	1.6	3.48	9.6		
2	3.82	37.4	3.44	7.5	3.54	11.2	3.26	2.4	3.46	8.2		
3	4.58	168	3.52	11.0	3.51	10.0	3.31	3.7	3.45	8.0		
4	3.96	53.2	3.58	14.0	3.54	11.6	3.57	16.7				
5	3.83	36.7	3.52	10.4	3.54	11.6	3.75	29.4				
6	3.80	33.7	3.50	9.7	3.52	10.4	3.67	22.6				
7	3.80	33.1	3.50	9.8	3.53	11.0	3.59	16.4				
8	3.92	46.5	3.62	16.6	3.50	10.0	3.53	12.6				
9	3.83	35.7	3.70	22.7	3.46	8.1	3.48	10.0				
10	3.81	33.8	3.76	27.4	3.46	8.5	3.49	10.6				
11	3.78	30.7	3.83	34.2	3.45	8.0	3.53	13.1				
12	3.71	24.2	3.85	37.0	3.43	7.0	3.67	22.4				
13	3.67	20.6	3.84	35.5	3.42	6.6	3.53	13.0				
14	3.65	19.1	3.83	34.7	3.40	5.9	3.48	9.9				
15	3.64	18.3	3.82	33.1	3.38	5.1	3.45	8.6				
16	3.64	18.3A	3.81	32.6	3.38	5.2	3.44	8.0				
17	3.65	18.3E	3.79	30.7	3.37	4.9	3.43	7.5				
18	3.64	17.6A	3.78	29.3	3.34	3.9	3.42	7.1				
19	3.81	32.6A	3.82	32.9	3.33	3.7	3.43	7.4				
20	3.71	22.7	3.85	35.6	3.35	4.2	3.44	7.8				
21	3.63	16.5	3.82	32.5	3.39	5.6	3.44	8.1				
22	3.61	15.6	3.82	33.0	3.36	4.8	3.44	8.1				
23	3.60	15.0	3.84	34.3	3.34	4.1	3.44	7.6				
24	3.60	14.7	3.83	33.7	3.33	4.2	3.43	7.5				
25	3.60	14.6	3.78	29.0	3.39	6.1	3.44	7.5				
26	3.61	15.7	3.73	24.2	3.35	5.0	3.44	7.5				
27	3.61	15.6	3.71	23.0	3.32	3.9	3.46	8.4				
28	3.62	15.9	3.79	29.5	3.28	3.0	3.46	8.4				
29	3.59	14.6	3.79	30.2	3.25	2.3	3.45	8.3				
30	3.42	6.3	3.71	22.9	3.24	1.9	3.45	8.3				
31	3.28	2.4	3.69	21.4			3.50	10.2				
total		888.6		781.7		204.8		320.7				
mean		28.7		25.2		6.8		10.3				
ac-ft		1760		1550		406		636				
max		168		37.0		17.0		29.4				
min		2.4		3.3		1.9		1.6				

For the Year or For the Period (*March* to *October*)

Maximum instantaneous ~~daily~~ discharge, *2,000* cfs at G.H. *11.40* ft at *0600* on *April, 8*

Minimum instantaneous ~~daily~~ discharge, *1.2* cfs at G.H. *3.22* ft at *1600* on *July 31*

Mean discharge, *119* cfs Total discharge, *58,000* ac-ft

Ice conditions March 1 to April, 5

A Manual gauge reading or partial day of record.

E Estimated

Data from April 2 to Nov. 4 by pencil follower and computer methods.

Computed from Table No. *7* dated *Nov. 12/69* from *March* to *Nov. 3*

Total discharge *29,228.8* cfs-days

Accuracy *Records good during the open water period and poor during the ice period.*

Maximum instantaneous ~~daily~~ gauge height, *11.40* ft at *0600 MST* on *April, 8*

Minimum instantaneous ~~daily~~ gauge height, *3.21* ft at *2340 MST* on *October 1*

	January to ____ Gauge Height	Discharge	*Mar. 1* to *Nov. 3* Gauge Height	Discharge	____ to December Gauge Height	Discharge	Summary
Computed by / Date			*LWW* *Nov. 26/69*	*LWW* *Nov. 26/69*			*RWW* *Dec. 1/69*
Checked by / Date			U.S.G.S. Engineers				U.S.G.S. Engineers

APPROVED: *R.D. Way* Dist. Engr. WS of Canada
George M Cole District Chief U.S.G.S.
Approved Date

R79 (Dec 67)

DAILY DISCHARGES

DEPARTMENT OF ENERGY, MINES AND RESOURCES
INLAND WATERS BRANCH – WATER SURVEY OF CANADA

Station Name Belanger Creek Diversion to Cypress Lake Station No. 11AC064

Daily Gauge Heights in Feet and Daily Discharges in Cubic Feet per Second for the Year 1969

Drainage Area square miles Type of Gauge Manual ☐ Recording ☑

Day	January Gauge Height	January Discharge	February Gauge Height	February Discharge	March Gauge Height	March Discharge	April Gauge Height	April Discharge	May Gauge Height	May Discharge	June Gauge Height	June Discharge
1						0		0		22.8		0
2						"		0		17.5		0
3						"		0		21.2		0
4						"		79.9		29.4		0
5						"		202		18.0		0
6						"		484		9.7		0
7						"		474		5.3		0
8						"		177		3.5		0
9						"		109		2.0		0
10						"		149		1.2		0
11						"		211		0.55		0.18
12						"		131		0.25		1.4
13						"		148		0.15		1.5
14						"		100		0.10		1.6
15						"		56.3		0.24		1.2
16						"		38.7		1.1		1.1
17						"		24.1		0.35		1.1
18						"		15.0		1.9		0.67
19						"		13.3		5.2		0.82
20						"		9.2		4.4		2.0
21						"		4.0		4.0		2.2
22						"		2.2		3.3		2.7
23						"		1.6		3.0		2.2
24						"		2.1		2.5		1.1
25						"		1.7		1.9		0
26						"		1.2		1.6		0.01
27						"		2.9		0.01		0
28						"		7.5		0		0
29						"		31.2		0		0
30						"		30.3		0		0
31						0				0		
total						0		2,506.2		161.15		19.78
mean						0		83.5		5.2		0.66
ac-ft						0		4,970		320		39.2
max						0		484		29.4		2.7
min						0		0		0		0

Day	July Gauge Height	July Discharge	August Gauge Height	August Discharge	September Gauge Height	September Discharge	October Gauge Height	October Discharge	November Gauge Height	November Discharge	December Gauge Height	December Discharge
1		0		0		0		0				
2		0		"		"		"				
3		0		"		"		"				
4		0		"		"		"				
5		0		"		"		"				
6		0		"		"		"				
7		0.19		"		"		"				
8		4.0		"		"		"				
9		3.4		"		"		"				
10		0.09		"		"		"				
11		0		"		"		"				
12		"		"		"		"				
13		"		"		"		"				
14		"		"		"		"				
15		"		"		"		"				
16		"		"		"		"				
17		"		"		"		"				
18		"		"		"		"				
19		"		"		"		"				
20		"		"		"		"				
21		"		"		"		"				
22		"		"		"		"				
23		"		"		"		"				
24		"		"		"		"				
25		"		"		"		"				
26		"		"		"		"				
27		"		"		"		"				
28		"		"		"		"				
29		"		"		"		"				
30		"		"		0		"				
31		0		0				0				
total		7.68		0		0		0				
mean		0.25		0		0		0				
ac-ft		15.2		0		0		0				
max		4.0		0		0		0				
min		0		0		0		0				

For the Year or For the Period (March to October)

Maximum ~~instantaneous~~ daily discharge, 484 cfs at G.H. ft at on April 6

Minimum instantaneous daily discharge, cfs at G.H. ft at on

Mean discharge, 11.0 cfs Total discharge, 5,350 ac-ft

Ice conditions March 1 to April 8

Data from April 9 to July 31 by pencil follower and computer methods.

Computed from Table No. 6 dated Nov. 26/69 from March to October

" " " " " " " " " "

" " " " " " " " " "

Total discharge 2,694.81 cfs-days

Accuracy

Maximum instantaneous daily gauge height, ft at on

Minimum instantaneous daily gauge height, ft at on

	January to Gauge Height	January to Discharge	March 1 to October 31 Gauge Height	March 1 to October 31 Discharge	to December Gauge Height	to December Discharge	Summary
Computed by Date			LWW Dec. 4/69	LWW Dec. 4/69			LWW Dec. 4/69
Checked by Date			U. S. G. S. Engineers				U. S. G. S. Engineers

APPROVED: R. D. Mann Dist. Engr. WS of Canada
Approved by
Date
George M. Cole District Chief U.S.G.S.

R79 (Dec 67)

STAGE AND CONTENTS

Station Name: Cypress Lake Station No. 11AC037

Elevations: ~~Gauge Heights~~ in Feet and — Contents in Acre-Feet for the Year 1969

Month	Elevation ~~Gauge Height~~ End of Month	Contents at End of Month	Change in Contents During Month	Equivalent in cfs
Oct ~~December~~ 1968	3197.59	84000		
January 1969			+ 800	
February	3197.73 E	84800		
March	3197.82	85300	+ 500	8.1
April	3201.17	104000	+18700	314
May	3200.54	101000	- 3000	48.8
June	3199.91	97200	- 3800	63.9
July	3199.10	92600	- 4600	74.8
August	3198.25	87700	- 4900	79.7
September	3197.88	85600	- 2100	35.3
October	3197.86	85500	- 100	1.6
November				
December				
Change in Contents during the — Period			+ 700	1.4

— March to October

Maximum — daily 3201.24 May 6 Contents 105000 ac-ft

Minimum — daily 3197.70 March 11 Contents 84600 ac-ft

E - Estimated

APPROVED: R.D. May
Dist. Engr.

George M. Pike
District Chief U.S.G.S.

Computed by	Checked by
LT H	RBB
Date Dec 2, 69	Date Dec 2, 69

DAILY DISCHARGES

DEPARTMENT OF ENERGY, MINES AND RESOURCES
INLAND WATERS BRANCH – WATER SURVEY OF CANADA

Station Name *Cypress Lake East Outflow Canal* Station No. *11AC060*

Daily Gauge Heights in Feet and Daily Discharges in Cubic Feet per Second for the Year 19*69*

Drainage Area ____ square miles   Type of Gauge Manual ☐ Recording ☑

Day	January Gauge Height	January Discharge	February Gauge Height	February Discharge	March Gauge Height	March Discharge	April Gauge Height	April Discharge	May Gauge Height	May Discharge	June Gauge Height	June Discharge
1						0.50		0.60		13.2		5.3
2						0.50		0.70		13.5		5.9
3						0.50		0.80		13.0		5.7
4						0.50		0.80		13.4		5.8
5						0.50		20.9		13.6		7.9
6						0.50		60.0		13.7		8.6
7						0.50		44.4		14.8		7.7
8						0.50		29.1		14.8		7.1
9						0.50		12.9		14.7		6.3
10						0.50		9.0		15.3		5.3
11						0.50		8.0		15.1		4.3
12						0.50		6.5		14.8		3.6
13						0.50		5.8		11.0		3.5
14						0.50		5.1		10.3		3.5
15						0.50		4.7		10.1		3.4
16						0.50		6.3		11.4		2.9
17						0.50		11.6		13.1		2.2
18						0.50		8.5		10.0		1.6
19						0.71		7.9		9.4		0.82
20						0.93		7.3		9.3		5.4
21						1.1		7.4		8.9		21.9
22						1.4		9.1		10.4		22.7
23						1.6		9.2		12.8		22.9
24						1.8		11.0		8.5		24.2
25						1.5		12.6		7.7		34.3
26						0.50		13.3		7.6		41.1
27						0.50		12.6		4.8		42.5
28						0.50		12.2		4.6		42.5
29						0.50		12.3		4.2		41.6
30						0.50		12.8		4.2		41.4
31						0.50				4.6		
total						21.04		363.40		332.8		431.92
mean						0.68		12.1		10.7		14.4
ac-ft						41.7		721		660		857
max						1.8		60.0		15.3		42.5
min						0.50		0.60		4.2		0.82

Day	July Gauge Height	July Discharge	August Gauge Height	August Discharge	September Gauge Height	September Discharge	October Gauge Height	October Discharge	November Gauge Height	November Discharge	December Gauge Height	December Discharge
1		40.8		0		0		0				
2		40.4		0.07		"		"				
3		40.7		0.07		"		"				
4		28.6		0.04		"		"				
5		0.88		0.05		"		"				
6		0		0		"		"				
7		0.09		"		"		"				
8		0.30		"		"		"				
9		0.24		"		"		"				
10		0.16		"		"		"				
11		0		"		"		"				
12		0		"		"		"				
13		0		"		"		"				
14		1.4		"		"		"				
15		0.24		"		"		"				
16		0.18		"		"		"				
17		0.25		"		"		"				
18		1.1		"		"		"				
19		1.1		"		"		"				
20		1.0		"		"		"				
21		1.0		"		"		"				
22		2.5		"		"		0				
23		0.28		"		"		1.2 E				
24		0		"		"		1.2 E				
25		0		"		"		1.1 E				
26		0.14		"		"		1.0 E				
27		0.24		"		"		1.1 E				
28		0		"		"		1.0 E				
29		0		"		"		0.90E				
30		0		"		0		0.80E				
31		0		0				0.70E				
total		161.60		0.23		0		9.00				
mean		5.2		0.01		0		0.29				
ac-ft		321		0.46		0		17.9				
max		40.8		0.07		0		1.2				
min		0		0		0		0				

For the Year or For the Period (*March* to *October*)

Maximum ~~instantaneous~~ daily discharge, *60.0* cfs at G.H. ____ ft at ____ on *April 6*

Minimum instantaneous daily discharge, ____ cfs at G.H. ____ ft at ____ on ____

Mean discharge, ____ cfs   Total discharge, *2,620* ac-ft

A Manual gauge reading or partial day of record
E Estimated

Data from April 8 to August 5 processed by computer and pencil follower methods.

Computed from Table No. *3* dated *Dec.19/61* from *March* to *October*
" " " " ____ " ____ " ____ " ____
" " " " ____ " ____ " ____ " ____

Total discharge *1,319.99* cfs-days

Accuracy

Maximum instantaneous daily gauge height, ____ ft at ____ on ____

Minimum instantaneous daily gauge height, ____ ft at ____ on ____

	January to		*March* to *October*		to December		Summary
	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	
Computed by / Date				*LWW* *Dec.12/69*			*LWW* *Dec.12/69*
Checked by / Date			U. S. G. S. Engineers				U. S. G. S. Engineers

APPROVED: *R. D. May* Dist. Engr. W.S. of Canada
Approved by *[signature]* District Chief U.S.G.S.
Date

R79 (Dec 67)

DAILY DISCHARGES

DEPARTMENT OF ENERGY, MINES AND RESOURCES
INLAND WATERS BRANCH – WATER SURVEY OF CANADA

Station Name *Eastend Canal* Station No. *11AC052*

Daily Gauge Heights in Feet and Daily Discharges in Cubic Feet per Second for the Year 19*69*

Drainage Area square miles Type of Gauge Manual ☐ Recording ☑

Day	January		February		March		April		May		June	
	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge
1						0		0		0.02		54.9
2						"		0		0.02		54.9
3						"		0		0.02		54.1
4						"		0		0.02		52.2
5						"		0		0.01		52.0
6						"		0		0.01		50.7
7						"		0		0.01		47.3
8						"		0		0.01		45.7
9						"		0		0.01		47.4
10						"		0		0.01		46.7
11						"		0		0.01		46.1
12						"		0		0.01		45.4
13						"		0		0.01		45.2
14						"		0		0.01		44.5
15						"		0.02		0.01		43.6
16						"		0.02		0.01		42.9
17						"		0.02		0.01		42.4
18						"		0.02		0.01		41.8
19						"		0.02		0.01		41.0
20						"		0.02		5.6		40.3
21						"		0.02		8.7		39.9
22						"		0.02		8.7		40.1
23						"		0.02		19.2		37.5
24						"		0.02		23.4		21.5
25						"		0.02		23.6		12.6
26						"		0.02		37.7		10.9
27						"		0.02		48.2		9.8
28						"		0.02		50.8		6.5
29						"		0.02		53.4		0
30						"		0.02		55.3		0
31						0				55.0		
total						0		0.32		389.83		1,117.9
mean						0		0.01		12.6		37.3
ac-ft						0		0.63		773		2,220
max						0		0.02		55.2		54.9
min						0		0		0.01		0

Day	July		August		September		October		November		December	
	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge
1		0		0.13		9.8		0				
2		0		0.16		2.2		"				
3		0		0.17		0		"				
4		0		0.20		"		"				
5		0.02		0.23		"		"				
6		0.05		17.3		"		"				
7		0.03		29.5		"		"				
8		0.05		40.8		"		"				
9		0.05		43.3		"		"				
10		0.05		42.9		"		"				
11		0.02		46.2		"		"				
12		0		47.3		"		"				
13		0		46.4		"		"				
14		0		45.9		"		"				
15		0		43.9		"		"				
16		0		41.4		"		"				
17		0.02		41.1		"		"				
18		0		40.7		"		"				
19		0		36.4		"		"				
20		0.01		33.7		"		"				
21		0		29.6		"		"				
22		0		27.6		"		"				
23		0		25.2		"		"				
24		0.03		23.1		"		"				
25		0.08		22.6		"		"				
26		0.06		22.0		"		"				
27		0.09		21.8		"		"				
28		0.09		21.4		"		"				
29		0.12		20.4		"		"				
30		0.16		14.7		0		"				
31		0.17		11.0				0				
total		1.10		837.09		12.0		0				
mean		0.04		27.0		0.40		0				
ac-ft		2.20		1,660		23.8		0				
max		0.17		47.3		9.8		0				
min		0		0.13		0		0				

For the Year or For the Period (*March* to *October*)

Maximum ~~instantaneous~~ daily discharge, *55.0* cfs at G.H. ft at on *May 30*

Minimum instantaneous daily discharge, cfs at G.H. ft at on

Mean discharge, cfs Total discharge, *4,680* ac-ft

Computed from Table No. *4* dated *Dec. 5, 69* from *March* to *October*

" " " " " " " "

" " " " " " " "

Total discharge *2,358.24* cfs-days

Accuracy

Maximum instantaneous daily gauge height, ft at on

Minimum instantaneous daily gauge height, ft at on

	January to		*March* to *October*		to December		Summary
	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	
Computed by Date				*LWW Dec. 11/69*			*LWW Dec. 11/69*
Checked by Date			U. S. G. S. Engineers			U. S. G. S. Engineers	

Data May 20 to September 4 processed by computer and pencil follower methods.

APPROVED: R. D. Mace
Dist. Engr. WS of Canada
Approved
Date

George M. Pike
District Chief U.S.G.S.

R79 (Dec 67)

DAILY DISCHARGES

DEPARTMENT OF ENERGY, MINES AND RESOURCES
INLAND WATERS BRANCH – WATER SURVEY OF CANADA

Station Name *Val Marie West Pumping Canal* Station No. *11AC066*

Daily Gauge Heights in Feet and Daily Discharges in Cubic Feet per Second for the Year 19*69*

Drainage Area square miles Type of Gauge Manual ☐ Recording ☑

Day	January Gauge Height	January Discharge	February Gauge Height	February Discharge	March Gauge Height	March Discharge	April Gauge Height	April Discharge	May Gauge Height	May Discharge	June Gauge Height	June Discharge
1						0		0		0		25.3
2						"		"		0		25.2
3						"		"		0		22.2
4						"		"		0		22.1
5						"		"		0		19.6
6						"		"		0		19.1
7						"		"		0		24.7
8						"		"		0		24.6
9						"		"		0		24.5
10						"		"		0		24.4
11						"		"		0		21.3
12						"		"		0		24.2
13						"		"		0		24.1
14						"		"		0		24.0
15						"		"		0		24.0
16						"		"		0		23.9
17						"		"		0		23.9
18						"		"		0		20.7
19						"		"		0		23.8
20						"		"		0		23.3
21						"		"		0		23.7
22						"		"		0		23.7
23						"		"		0		21.4
24						"		"		0		12.7
25						"		"		0		5.3
26						"		"		0		0
27						"		"		0		0
28						"		"		0		0
29						"		"		2.1		0
30						"		0		25.5		0
31						0				25.4		
total						0		0		53.0		551.7
mean						0		0		1.7		18.4
ac-ft						0		0		105		1090
max						0		0		25.5		25.3
min						0		0		0		0

Day	July Gauge Height	July Discharge	August Gauge Height	August Discharge	September Gauge Height	September Discharge	October Gauge Height	October Discharge	November Gauge Height	November Discharge	December Gauge Height	December Discharge
1		0		0		22.6		0		0		
2		"		0		14.7		0		0		
3		"		0		8.0		0		0		
4		"		0		0		0		0		
5		"		3.2		0		0				
6		"		25.4		0		0				
7		"		23.8		0		0				
8		"		25.2		0		0				
9		"		24.0		0		0				
10		"		22.0		0		0				
11		"		24.7		0		0				
12		"		24.6		0		0				
13		"		24.4		0		0				
14		"		24.3		0		0				
15		"		22.7		0		0				
16		"		24.0		0		0				
17		"		23.8		0		0				
18		"		23.7		0		0				
19		"		23.6		0		0				
20		"		23.5		0		2.0				
21		"		22.5		0		1.6				
22		"		23.3		0		0				
23		"		22.8		0		0				
24		"		23.1		0		0				
25		"		23.1		0		0				
26		"		23.0		0		0				
27		"		22.9		0		0				
28		"		22.9		0		0				
29		"		22.8		0		0				
30		"		22.7		0		0				
31		0		22.7				0				
total		0		614.7		45.3		3.6				
mean		0		19.8		1.5		.12				
ac-ft		0		1220		89.9		7.1				
max		0		25.4		22.6		2.0				
min		0		0		0		0				

~~For the Year~~ For the Period (*March* to *October*)

Maximum ~~instantaneous~~ daily discharge, *25.5* cfs at G.H. ft at on *May 30*

Minimum instantaneous daily discharge, cfs at G.H. ft at on

Mean discharge, cfs Total discharge, *2520* ac-ft

A head and number of pumps operating relationship was used to determine daily discharge

Computed from Table No. *3* dated *Jan. 8, 70* from *March 1* to *oct. 31*

Total discharge *1268.3* cfs-days

Accuracy

Maximum instantaneous daily gauge height, ft at on

Minimum instantaneous daily gauge height, ft at on

	January to		*March 1* to *October 31*		to December		Summary
	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	
Computed by Date				*JOL Jan 9, 70*			*JOL Jan 9, 70*
Checked by Date				*MB Jan 15, 70*			*MB Jan 15, 70*

APPROVED: *R.D. Mar[illegible]* Dist. Eng. WS of Canada *[signature]*

Approved Date

R79 (Dec 67)

DAILY DISCHARGES

DEPARTMENT OF ENERGY, MINES AND RESOURCES
INLAND WATERS BRANCH – WATER SURVEY OF CANADA

Station Name *Val Marie West Gravity Canal* Station No. *11AC065*

Daily Gauge Heights in Feet and Daily Discharges in Cubic Feet per Second for the Year 19*69*

Drainage Area square miles Type of Gauge Manual ☐ Recording ☑

Day	January Gauge Height	January Discharge	February Gauge Height	February Discharge	March Gauge Height	March Discharge	April Gauge Height	April Discharge	May Gauge Height	May Discharge	June Gauge Height	June Discharge
1						0		0		0		40.2
2						"		"		"		41.7
3						"		"		"		41.2
4						"		"		"		40.4
5						"		"		"		39.6
6						"		"		"		39.0
7						"		"		"		38.1
8						"		"		"		37.4
9						"		"		"		34.5
10						"		"		"		36.5
11						"		"		"		29.7
12						"		"		"		17.8
13						"		"		"		5.6
14						"		"		"		3.3
15						"		"		"		0
16						"		"		"		"
17						"		"		"		"
18						"		"		"		"
19						"		"		"		"
20						"		"		"		"
21						"		"		"		"
22						"		"		"		"
23						"		"		"		"
24						"		"		"		"
25						"		"		"		"
26						"		"		"		"
27						"		"		"		"
28						"		"		"		"
29						"		"		1.3		"
30						"		0		33.9		0
31						0				36.5		
total						0		0		71.7		445.0
mean						0		0		2.3		14.8
ac-ft						0		0		142		883
max						0		0		36.5		41.7
min						0		0		0		0

Day	July Gauge Height	July Discharge	August Gauge Height	August Discharge	September Gauge Height	September Discharge	October Gauge Height	October Discharge	November Gauge Height	November Discharge	December Gauge Height	December Discharge
1		0		0		0		0				
2		"		0		"		"				
3		"		0		"		"				
4		"		0		"		"				
5		"		4.3		"		"				
6		"		36.4		"		"				
7		"		40.9		"		"				
8		"		45.4		"		"				
9		"		48.0		"		"				
10		"		47.2		"		"				
11		"		45.5		"		"				
12		"		45.3		"		"				
13		"		44.7		"		"				
14		"		43.6		"		"				
15		"		41.6		"		"				
16		"		34.9		"		"				
17		"		34.0		"		"				
18		"		33.1		"		"				
19		"		22.6		"		"				
20		"		18.2		"		"				
21		"		17.8		"		"				
22		"		13.9		"		"				
23		"		0		"		"				
24		"		0		"		"				
25		"		0		"		"				
26		"		0		"		"				
27		"		0		"		"				
28		"		0		"		"				
29		"		0		"		"				
30		"		0		0		"				
31		0		0				0				
total		0		617.4		0		0				
mean		0		19.9		0		0				
ac-ft		0		1220		0		0				
max		0		48.0		0		0				
min		0		0		0		0				

For the Year or For the Period (*March* to *October*)

Maximum ~~instantaneous~~ daily discharge, *48.0* cfs at G.H. ft at on *August 9*

Minimum instantaneous daily discharge, cfs at G.H. ft at on

Mean discharge, cfs Total discharge, *2,250* ac-ft

Discharges were computed using a net head – gate opening relationship.

Computed from Table No. *4* dated *Dec. 9/69* from *Mar. 1* to *Oct. 31*

" " " " " " " "

" " " " " " " "

Total discharge *1,134.1* cfs-days

Accuracy

Maximum instantaneous daily gauge height, ft at on

Minimum instantaneous daily gauge height, ft at on

	January to		*March* to *October*		to December		Summary
	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	
Computed by / Date				*LWW* *Dec. 10/69*			*LWW* *Dec. 10/69*
Checked by / Date							

U. S. G. S. Engineers

U. S. G. S. Engineers

APPROVED Dist. E. *R. D. May* *[signature]* District Chief U.S.G.S.

Approved by

Date

R79 (Dec 67)

VAL MARIE WEST

Year - 1969

Electric Pump No. 1

Period	Meter Reading	Time	Date	Est. Rdg. at Midnite	Date	Kwh used Period	C.F.S.	Days
Feb. 26-Mar 7	1886	1615	Oct. 22/68	1886	Mar 7	0	KWH per CFS Day	0
Mar. 8-17				1886	Mar. 17	0		0
Mar. 18-28				1886	Mar. 28	0		0
Mar. 29-Apr. 7				1886	Apr 7	0		0
Apr. 8-17				1886	Apr. 17	0		0
Apr. 18-27				1886	Apr. 27	0		0
Apr. 28-May 7	1886	1230	Apr. 29	1886	May 7	0		0
May 8-17				1886	May 17	0		0
May 18-28	1886	1000	May 21	1886	May 28	0		0
May 29-June 7				3356	June 7	1470	70	21
June 8-17	3630	1510	June 9	5173	June 17	1817	70	26
June 18-27	5260	1225	June 18	5939	June 27	766	70	11
June 28-July 7				5939	July 7	0		0
July 8-17				5939	July 17	0		0
July 18-28				5939	July 28	0		0
July 29-Aug. 7				5939	Aug. 7	0		0
Aug. 8-17	6589	0915	Aug. 11	7775	Aug. 17	1836	74	25
Aug. 18-28	7873	1210	Aug. 18	8023	Aug. 28	248	62	4
Aug. 29-Sept 7	8023	0840	Aug. 29	8023	Sept 7	0		0
Sept 8-17	8023		Sep. 10	8023	Sept 17	0		0
Sept 18-27				8023	Sept 27	0		0
Sept 28-Oct 7	APPROVED:	R. D. May		8023	Oct. 7	0		0
8-17		Dist. Engr. WS of Canada		8023	Oct. 17	0		0
Oct 18-28		George M. Cole		8023	Oct. 28	0		0
		District Chief			Totals			87

Computed LWW Checked _____ Acre Feet = 173

VAL MARIE WEST

Year - 1969

Electric Pump No. 2

11AC069

Period	Meter Reading	Time	Date	Est. Rdg. at Midnite	Date	Kwh used Period	C.F.S. Days	
Feb. 26-Mar 7	6658	1620	Oct. 22/68	6658	Mar 7	0	KWH per cfs Day	0
Mar. 8-17				6658	Mar. 17	0		0
Mar. 18-28				6658	Mar. 28	0		0
Mar. 29-Apr. 7				6658	Apr. 7	0		0
Apr. 8-17				6658	Apr. 17	0		0
Apr. 18-27				6658	Apr. 27	0		0
Apr. 28-May 7	6658	1235	Apr. 29	6658	May 7	0		0
May 8-17				6658	May 17	0		0
May 18-28				6658	May 28	0		0
May 29-June 7				7799	June 7	1141	58	20
June 8-17	8032	1442	Jun. 9	8743	June 17	944	58	16
June 18-27	8743	1220	Jun. 18	8743	June 27	0		0
June 28-July 7				8743	July 7	0		0
July 8-17				8743	July 17	0		0
July 18-28				8743	July 28	0		0
July 29-Aug. 7				8743	Aug. 7	0		0
Aug. 8-17	9398	0945	Aug. 11	0460	Aug. 17	1717	310	6
Aug. 18-28	0521	1315	Aug. 18	1853	Aug. 28	1393	120	12
Aug. 29-Sept 7	1853	0845	Aug. 29	1853	Sept. 7	0		0
Sept 8-17	1853		Sep. 10	1853	Sept 17	0		0
Sept 18-27				1853	Sept 27	0		0
Sept 28-Oct 7	APPROVED:	R. D. Nay		1853	Oct. 7	0		0
Oct 8-17		Dist. Engr.		1853	Oct. 17	0		0
Oct 18-28		George M. Pike		1853	Oct. 28	0		0
		District C			Totals			54

Acre Feet = 107

Computed LWW

Checked U.S.B.R. Engineers

DAILY DISCHARGES

DEPARTMENT OF ENERGY, MINES AND RESOURCES
INLAND WATERS BRANCH – WATER SURVEY OF CANADA

Station Name Val Marie Main Canal Station No. 11AC054

Daily Gauge Heights in Feet and Daily Discharges in Cubic Feet per Second for the Year 1969

Drainage Area square miles Type of Gauge Manual ☐ Recording ■

Day	January		February		March		April		May		June	
	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge
1						0		0		0		91.3
2						"		"		0		98.3
3						"		"		0		97.3
4						"		"		0		98.3
5						"		"		0		101
6						"		"		0		95.9
7						"		"		0		91.8
8						"		"		0		87.8
9						"		"		0		85.5
10						"		"		0		81.4
11						"		"		0		75.9
12						"		"		0		75.3
13						"		"		0		74.6
14						"		"		0		72.2
15						"		"		0		69.4
16						"		"		0		56.6
17						"		"		0		37.6
18						"		"		0		32.8
19						"		"		0		32.5
20						"		"		0		36.8
21						"		"		0		34.5
22						"		"		0		30.0
23						"		"		0		24.0
24						"		"		0		18.7
25						"		"		0		9.6
26						"		"		0		2.2
27						"		"		0		0
28						"		"		0		0
29						"		"		0		0
30						"		0		160		0
31						0				67.7		
total						0		0		83.7		16063
mean						0		0		2.7		53.5
ac-ft						0		0		166		3190
max						0		0		67.7		101
min						0		0		0		0

Day	July		August		September		October		November		December	
	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge
1		0		0		11.6		0				
2		"		0		11.5		"				
3		"		1.6		9.4		"				
4		"		50.7		7.9		"				
5		"		76.0		7.9		"				
6		"		87.7		7.8		"				
7		"		92.2		7.8		"				
8		"		92.4		7.8		"				
9		"		91.3		7.8		"				
10		"		90.3		7.7		"				
11		"		89.2		7.7		"				
12		"		90.8		7.7		"				
13		"		90.9		7.7		"				
14		"		89.8		7.6		"				
15		"		88.7		7.6		"				
16		"		87.6		3.8		"				
17		"		86.3		0		"				
18		"		85.1		0		"				
19		"		83.9		0		"				
20		"		82.7		0		"				
21		"		70.5		0		"				
22		"		54.9		0		"				
23		"		50.4		0		"				
24		"		49.8		0		"				
25		"		48.4		0		"				
26		"		33.8		0		"				
27		"		29.8		0		"				
28		"		15.6		0		"				
29		"		11.6		0		"				
30		"		11.6		0		"				
31		0		11.6				0				
total		0		1845.2		129.3		0				
mean		0		59.5		4.3		0				
ac-ft		0		3660		256		0				
max		0		924		11.6		0				
min		0		0		0		0				

~~Rating Curve~~ For the Period (March to October)

Maximum ~~instantaneous~~ daily discharge, 101 cfs at G.H, ft at on June 5

Minimum instantaneous daily discharge, cfs at G.H. ft at on

Mean discharge, cfs Total discharge, 7270 ac-ft

Discharges were computed using a net head gate opening relationship

Computed from Table No. 4 V29h dated Oct. 30, 68 from March 1 to Oct 31
" " " " 5 Ca " Dec. 12 69 " May 30 " Aug 3
" " " " 5A Ca " Dec. 16, 69 " Aug 4 " Sept 3
" " " " " Sept 4 " Sept 16

Total discharge 3664.5 cfs-days

~~Accuracy~~

Maximum instantaneous daily gauge height, ft at on

Minimum instantaneous daily gauge height, ft at on

	January to		March to October		to December		Summary
	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	
Computed by Date				JdL Dec 16, 69			JdL Dec 16, 69
Checked by Date						U. S. G. S. Engineers	

Approved APPROVED: R. D. Mans Dist. Engineer
Date
District Chief

R79 (Dec 67)

DAILY DISCHARGES

DEPARTMENT OF ENERGY, MINES AND RESOURCES
INLAND WATERS BRANCH – WATER SURVEY OF CANADA

Station Name *Denniel Creek near Val Marie* Station No. *11AC025*

Daily Gauge Heights in Feet and Daily Discharges in Cubic Feet per Second for the Year 19*69*

Drainage Area square miles Type of Gauge Manual ☐ Recording ☑

Day	January Gauge Height	January Discharge	February Gauge Height	February Discharge	March Gauge Height	March Discharge	April Gauge Height	April Discharge	May Gauge Height	May Discharge	June Gauge Height	June Discharge
1								0.10B	5.81	124	3.85	0.39
2								0.10B	6.25	151	3.85	0.36
3								0.10B	5.22	66.8	3.84	0.29
4								25.0 B	4.91	45.3	3.83	0.23
5							9.01	148 B	4.68	30.4	3.85	0.23
6							10.95	746 B	4.45	15.2	3.84	0.18
7							11.06	910 B	4.32	8.0	3.83	0.12
8							7.48	299	4.24	5.4	3.84	0.11
9							6.32	162	4.18	4.0	3.84	0.09
10							7.07	251	4.13	3.3	3.85	0.10
11							6.94	231	4.10	2.9	3.85	0.09
12							6.07	130	4.07	2.6	3.85	0.08
13							6.56	180	4.05	2.3	3.85	0.09
14							6.58	182	4.02	2.0	3.85	0.09
15							5.71	101	4.01	1.9	3.85	0.07
16							5.10	58.0	3.99	1.8	3.84	0.07
17							4.81	38.5	3.98	1.7	3.84	0.06
18							4.59	23.9	3.96	1.6	3.83	0.04
19							4.45	14.6	3.96	1.5	3.81	0.03
20							4.42	13.4	3.95	1.5	3.82	0.05
21							4.52	19.3	3.94	1.4	3.86	0.10
22							4.28	6.8	3.92	1.3	3.90	0.18
23							4.19	4.2	3.92	1.2	3.93	0.25
24							4.12	3.3	3.91	1.1	3.93	0.25
25							4.11	3.0	3.89	0.98	3.93	0.27
26							4.26	6.5	3.88	0.88	3.96	0.34
27							4.78	36.6	3.87	0.78	3.96	0.34
28							4.61	26.0	3.86	0.66	3.96	0.35
29							4.43	13.9	3.85	0.59	3.97	0.40
30							4.40	12.1	3.86	0.55	3.95	0.36
31									3.85	0.47		
total								3,645.4		483.11		5.61
mean								122		15.6		0.19
ac-ft								7,230		958		11.1
max								910		151		0.40
min								0.10		0.47		0.03

Day	July Gauge Height	July Discharge	August Gauge Height	August Discharge	September Gauge Height	September Discharge	October Gauge Height	October Discharge	November Gauge Height	November Discharge	December Gauge Height	December Discharge
1	3.94	0.35		0		0		0				
2	3.93	0.32		"		"		0				
3	3.96	0.43		"		"		0				
4	3.96	0.45		"		"		0				
5	3.96	0.47		"		"		0				
6	3.94	0.40		"		"	3.91	0.01				
7	3.93	0.39		"		"	3.94	0.03				
8	3.94	0.43		"		"	3.94	0.03				
9	3.94	0.45		"		"	3.93	0.02				
10	3.92	0.39		"		"	3.95	0.05				
11	3.90	0.32		"		"	3.97	0.07				
12	3.90	0.30		"		"	3.97	0.07				
13	3.89	0.26		"		"	3.96	0.06				
14	3.88	0.23		"		"	3.96	0.05				
15	3.87	0.20		"		"	3.95	0.04				
16	3.88	0.20		"		"	3.95	0.03				
17	3.88	0.19		"		"	3.94	0.03				
18	3.89	0.20		"		"	3.95	0.03				
19	3.90	0.20		"		"	3.94	0.03				
20	3.88	0.15		"		"	3.93	0.01				
21	3.87	0.11		"		"	3.94	0.02				
22	3.86	0.10		"		"	3.95	0.03				
23	3.85	0.07		"		"	3.97	0.05				
24	3.83	0.04		"		"	3.98	0.06				
25	3.81	0.01		"		"	3.97	0.06				
26	3.81	0		"		"	3.97	0.05				
27	3.81	0		"		"	3.97	0.05				
28	3.83	0		"		"	3.95	0.03				
29	3.84	0.01		"		"		0.02 A				
30	3.83	0		"		0		0.02 E				
31	3.83	0		0				0.02 E				
total		6.67		0		0		0.97				
mean		0.22		0		0		0.03				
ac-ft		13.2		0		0		1.9				
max		0.47		0		0		0.07				
min		0		0		0		0				

For the Year or For the Period (*April* to *October*)

Maximum instantaneous ~~daily~~ discharge, *1,200* cfs at G.H. *12.20 (-44B-H)* ft at *0030MST* on *April 7*

Minimum instantaneous daily discharge, *0* cfs at G.H. ft at *various times*

Mean discharge, *19.4* cfs Total discharge, *8,210* ac-ft

A Manual gauge
B Ice conditions
E Estimated

Data April 8 to October 28 processed by computer and pencil follower methods.

Computed from Table No. *3* dated *Dec.22/69* from *April 1* to *October 31*

Total discharge *4,141.76* cfs-days

Accuracy

Maximum instantaneous ~~daily~~ gauge height, *12.20* ft at *0030 MST* on *April 7*

Minimum instantaneous daily gauge height, ft at on

	January to		*April 1* to *Oct. 31*		to December		Summary
	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	
Computed by / Date			*LCW* *Dec.23/69*				*DBB* *Dec 24.69*
Checked by / Date			U. S. G. S. Engineers			U. S. G. S. Engineers	

APPROVED: *R. D. May* Dist. Engr. WS of Canada *George M Cole* District

Approved / Date

R79 (Dec 67)

Department of Energy, Mines and Resources
Inland Waters Branch
Water Survey of Canada Division

Miscellaneous Diversions Made in Frenchman River Tributary Basin, in 1969
E - Estimated by Water Survey of Canada engineer
D - Diverted during spring runoff

Ditch Owner	Location	Diverting From	Approximate Acre-feet Diverted
Agar, Roland	NW 20-7-24-3	An Unnamed coulee	10E
Alie, Lucien	NW 24-3-13-3	An unnamed coulee	0E
Archer, Roland R.	SE 27-7-25-3	An unnamed coulee	0
Archer, Roland R.	SW 18-7-24-3	An unnamed coulee	2D
Armstrong, Bert A.	NW 24-6-21-3	An unnamed coulee	11D
Armstrong, John	W½ 4-8-24-3	Armstrong Creek	63D
Armstrong, Jake	NW 9-8-24-3	Armstrong Creek	50E
Armstrong, Jake	SE 24 & E½ 24-6-24-3	Frenchman River	50
Armstrong, John	NE 5 & SW 8-8-24-3	Clarence Coulee	72
Armstrong, John	SW 8-8--24-3	Clarence Coulee	50E
Armstrong, John C.	NW 32-7-24-3	An unnamed coulee	60
Armstrong, Kenneth	SE 31-7-24-3	An unnamed coulee	0
Armstrong, Lewis	NW 2-8-24-3	Coulee No. 1	30E
Armstrong, Lewis	SW 2-8-24-3	Coulee No. 2	20E
Armstrong, Lewis	NW 9-8-24-3	An unnamed coulee	10E
Arnal, G.C.	NE 27-7-24-3	An unnamed coulee	5E
Bascom Melvin A.	SW 4-6-29-3	Frenchman River	0
Beck, Norman	N½ 3-7-24-3	An unnamed coulee	15E
Beck, Norman	NW 28-6-24-3	Unnamed sloughs	0E
Bock, W. G. Jr.	SE 36-6-21-3	An unnamed coulee	5E
Bock, W. G.	NW 36-6-21-3	An unnamed coulee	3E

Department of Energy, Mines and Resources
Inland Waters Branch
Water Survey of Canada Division

Miscellaneous Diversions Made in Frenchman River Tributary Basin, in 1969
E - Estimated by Water Survey of Canada engineer
D - Diverted during spring runoff

Ditch Owner	Location	Diverting From	Approximate Acre-feet Diverted
Brekhus, S.E. & Hester F.	NE 28-7-26-3	Lone Pine Creek	90E
Brekhus, S.E. & Hester F.	SE 27-7-26-3	Lone Pine Creek	45E
Brekhus, S.E. & Hester,F.	NW 22-7-26-3	An unnamed coulee	12E
Breton, Lucien V.	NW 11-7-23-3	An unnamed slough	4D
Bryan, G.H.	SE 22 & SW 23-8-26-3	An unnamed coulee	20D
Bryan, W. Guy c/o Bryan, Harley	NW 11-8-26-3	An unnamed coulee	5
Busse, J. P.	NE 9 & SW 16-5-19-3	Chambery Coulee	20
Busse, J. P.	SE 16-5-19-3	An unnamed coulee	0
Busse, J. P.	NE 9-5-19-3	Chambery Coulee	18
J.W. & Armellia Caton	SW 31-6-24-3	Fairwell Creek	100
J.W. & Armellia Caton	SW 13-6-25-3	Moirvale Creek	140
J.W. & Armellia Caton	SW 31-6-24-3	Fairwell Creek	250
Clark, C. B.	SW 31-4-18-3	Frenchman River	38E
Clark, C. B.	SW 33-4-18-3	Frenchman River	34E
Clark, C. B.	SE 31 & SW 31-4-18-3	Frenchman River	43E
Clark, C. B.	SW 32-4-18-3	Frenchman River	19E
Clark, C. B.	SE 32-4-18-3	Frenchman River	16E
Clement, H.	SE 6-5-13-3	Denniel Creek	10E
Currie, Wm. M.	NE 2-5-22-3	An unnamed coulee	0E
Cypress Cattle Co.	NW 29-6-25-3	Davis Creek	12E
Cypress Cattle Co.	Through works constructed on NW 29-6-25-3	Davis Creek	50E
Cypress Cattle Co.	SE 14-6-25-3	Moirvale Coulee	15E

Department of Energy, Mines and Resources
Inland Waters Branch
Water Survey of Canada Division

Miscellaneous Diversions Made in Frenchman River Tributary Basin, in 1969
E - Estimated by Water Survey of Canada engineer
D - Diverted during spring runoff

Ditch Owner	Location	Diverting From	Approximate Acre-feet Diverted
David, Stanley & Lloyd	N½ 20-7-23-3	Blacktail Creek	18
Dixon, Bruce M.	NE 2-2-11-3	Breed Creek	85E
Dixon, Clifford G.	NW 8-6-12-3	An unnamed coulee	18
Duke, Frank	SE 32-6-20-3	An unnamed coulee	5D
Duke, Frank	SW 31-6-20-3	An unnamed coulee	10E
Duke, Fredrick & Glen	SW 31-6-20-3	An unnamed coulee	15E
Field L. W.	SE 31-5-21-3	Galliene Coulee	12D
Fordice, L. E.	NW 18-7-25-3	An unnamed coulee	12D
Fordice, L. E.	NW 19-7-25-3	An unnamed coulee	6D
Fordice, Luther E.	SE 24-7-26-3	An unnamed coulee	5D
Fordice, Luther E.	NW 18-7-25-3	Belanger Creek	35D
Fordice, Luther E.	SE 12-7-26-3	An unnamed coulee	0
Freel, R. F.	NW 24-6-23-3	Frenchman River	16
Galbraith, G.	W½ 10-8-23-3	An unnamed coulee	0
Gallot, Marius	NW 16-7-24-3	An unnamed coulee	5E
Garissere, Jean	SW 30-8-25-3	An unnamed coulee	5E
Grant, Mrs. Betty	SW 1-5-12-3	An unnamed coulee	20E
Grant, Mrs. Betty	SE 22-4-12-3	An unnamed coulee	3E
Greenlay, V. R.	NE 33-4-17-3	An unnamed coulee	15D
Greenlay, V. R.	NW 28-4-17-3	An unnamed coulee	15D
Gun Grazing Co-Op	SW 19-6-17-3	An unnamed slough	0
Gunter, R. V.	NW 7-5-12-3	An unnamed coulee	3D

Department of Energy, Mines and Resources
Inland Waters Branch
Water Survey of Canada Division

Miscellaneous Diversions Made in Frenchman River Tributary Basin, in 1969
E - Estimated by Water Survey of Canada engineer
D - Diverted during spring runoff

Ditch Owner	Location	Diverting From	Approximate Acre-feet Diverted
Hanson Brothers	NW 16-8-22-3	N.Br. Frenchman River	0
Hanson, Mrs. E.	SW 15-6-20-3	An unnamed coulee	8E
Hayes, George	NW 28-4-12-3	An unnamed coulee	8E
Howard, J.	NE 7-7-22-3	Bolingbroke Creek	9E
Howard, J. & Eleanor H.	2 points NW 2-7-23-3	Concrete Coulee	70E
Howard, J. & Eleanor H.	SE 2-7-23-3	N. Br. Frenchman River	9E
Jensen, Homer	NW 6-6-16-3	Bate Creek	20D
Jensen, Homer	2 points SE 32, SW 32 & NE 30-4-17-3	Frenchman River	25
Jensen, Homer C.	SE 32-4-17-3	Frenchman River	8
Kunzle, Hans	SE 27-6-21-3	Outlaw Coulee	15D
Larson, W. C.	R/A between NE 33 and NW 34-2-12-3	Little Pinto Creek	18D
Larson, W. C.	NE 34-2-12-3	An unnamed coulee	12D
Larson, W. C.	NE 35-2-12-3	An unnamed coulee	10D
Larson, W. C.	SW 4-3-12-3	An unnamed coulee	20D
Lewis, W. H.	SE 28-6-21-3	Frenchman River	10E
McCuaig, D.	NE 13-5-21-3	An unnamed coulee	23D
Monvoisin, John	NE 10 & SE 15-3-10-3	An unnamed coulee	25D
Monvoisin, Raymond	NW 3-3-10-3	An unnamed coulee	20D
Monvoisin, Raymond	SW 2-3-10-3	An unnamed coulee	12D

Department of Energy, Mines and Resources
Inland Waters Branch
Water Survey of Canada Division

Miscellaneous Diversions Made in Frenchman River Tributary Basin, in 1969
E - Estimated by Water Survey of Canada engineer
D - Diverted during spring runoff

Ditch Owner	Location	Diverting From	Approximate Acre-feet Diverted
Nadeau, Ovide	SW 36-3-13-3	An unnamed coulee	25D
Nadeau, O.	NW 2-4-13-3	E. Br. Denniel Creek	10D
Olson, Mrs. Alma	SE 7-4-12-3	An unnamed coulee	3
Olson, Clifford G.	W½ 5-4-12-3	An unnamed coulee	8D
Olson, Frank E.	SW 16-4-12-3	An unnamed coulee	4
Olson, F. E.	NE 17-4-12-3	An unnamed coulee	6D
Olson, F. E.	NW 16-4-12-3	E. Br. Denniel Creek	15D
Olson, F. E.	NW 17-4-12-3	An unnamed coulee	0
Olson, G. C.	2 points on NW 8-4-12-3	An unnamed coulee	6D
Pearson, Alfred	N½ 22-6-23-3	Frenchman River	9
Pearson, Alfred	N½ 22-6-23-3	Frenchman River	18
Pearson, A.	SE 15-6-23-3	An unnamed coulee	12D
Pearson, A.	NE 21 & SE 28-6-23-3	Frenchman River	12
Pearson, Donald J.	NE 10-6-23-3	An unnamed coulee	9
Perrault, Fernand	N 3-3-14-3	An unnamed slough	0E
Perrin, S. M. & Moorehead, I. R.	NW 2-8-25-3	An unnamed coulee	16
Perrin, S. M. & Moorehead, I. R.	NW 2-8-25-3	An unnamed coulee	7
Perrin, S. M. & Moorehead, I.R.	NE 3-8-25-3	Willow Creek	15
Rabourn, Charles J.	SE 30-7-23-3	Blacktail	29D

Department of Energy, Mines and Resources
Inland Waters Branch
Water Survey of Canada Division

Miscellaneous Diversions Made in Frenchman River Tributary Basin, in 1969
E - Estimated by Water Survey of Canada engineer
D - Diverted during spring runoff

Ditch Owner	Location	Diverting From	Approximate Acre-feet Diverted
Saville, W. G.	NW 10-7-24-3	An unnamed coulee	12D
Saville, Wm. & Ann	NW 2-7-24-3	An unnamed coulee	14D
Shufletoski, Henry	NE 16-7-25-3	Davis Creek	10E
Shufletoski, Lewis	SW 1-8-24-3	An unnamed coulee	0
Smith, C. W.	SW 8-4-10-3	An unnamed coulee	1D
Smith, C. W.	SE 7-4-10-3	An unnamed coulee	0
Smith, C. W.	NW 5-4-10-3	An unnamed coulee	3D
Stredwich, R. S.	SE 27-6-22-3	Frenchman River	44
Syverson, Edwin	SW 8-6-24-3	An unnamed coulee	5D
Syverson, Edwin	SE 7-6-24-3	An unnamed coulee	5D
Taylor, E.	NW 30-4-21-3	An unnamed coulee	3E
Topham, I.S.	N½ 8 & SE 17-7-22-3	N.Br. Frenchman River	6
Walker, F.	NE 16-4-12-3	An unnamed coulee	8E
Walker, Francis	NW 24 & SE 27-1-11-3	Frenchman River	35E
Walker, Francis	NE 13-1-11-3	Coulee No. 1	13E
Walker, Francis	NE 13-1-11-3	Coulee No. 2	8E
Walker, U. W.	NE 1-5-12-3	An unnamed coulee	15E
Way, R.	NW 10-1-10-3	Molstead Creek	30E
Way, R. J. & Gillespie, D. T.	NW 9-1-10-3	Frenchman River	8E
Way, R. J. & Gillespie, D. T.	NW 3-1-10-3	Frenchman River	12E
White, C. D.	SW 23-5-17-3	Frenchman River	18
White, C. D.	NE 20-5-17-3	Horse Camp Coulee	8

Department of Energy, Mines and Resources
Inland Waters Branch
Water Survey of Canada Division

Miscellaneous Diversions Made in Frenchman River Tributary Basin, in 1969
E - Estimated by Water Survey of Canada engineer
D - Diverted during spring runoff

Ditch Owner	Location	Diverting From	Approximate Acre-feet Diverted
White, C. D. & B. M.	SE 15-6-18-3	An unnamed coulee	3D
White, F. J.	NE 23-5-17-3	An unnamed coulee	23D
White, F. T.	SW 36-5-17-3	McDonald Coulee	50
White, Wm. F.	SE 5-8-22-3	Calf Creek	110
Whitney, Jack	NE 28-7-26-3	Lone Pine Creek	14D
Whitney, Jack A.	NW 33-7-26-3	Lone Pine Creek	15E
Widdifield, Charles F.	SW 26-5-21-3	Eastbrook Coulee	0
Williamson, Fred	NE 1-6-21-3	Eastbrook Coulee	100E
Wranesck, George	NE 30-6-13-3	An unnamed coulee	20E
Young, Dillon R.	NE 31-6-21-3	An unnamed slough	0E
		Total Use	2,819

Montana Special

9-193 [redacted]

Daily Gage Height, in Feet, and Discharge, in Second-Feet, of Rock Cr. bel. Horse Cr. ~~River~~ ~~Creek~~

~~At~~ Near international boundary for the Year ~~Ending September 30~~, 1969

Drainage Area 328 Square Miles. Water-Stage Recorder Fischer-Porter digital and Stevens A-35 Ratio 1:6

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

File Number Washington District 6-1695.00

Used rating table ~~dated~~ #4

Gage Read to — Once/Twice a Day by —

Gage heights used to ~~half tenths between~~ and feet, hundredths ~~below and tenths above these limits~~.

Max. Disch. 4,420 Sec.-ft. at 0100 on Apr. 7 (G. H. 12.03 ft.) Max. G. H. Same ft. at on

Min. Disch. No flow Sec.-ft. on Mar. 1, 25, 29 (G. H. — ft.) Min. G. H. — ft. on

** Discharge measurement unsatisfactory. Field estimate made on this day. a No gage-height record. # Stage-discharge relation affected by ice. S Subdivided. V Variable shift. * Shifted except Apr 1-8. Discharge from varying table. b Gage-height estimated. Discharge from varying table. Equivalent gage heights from primary gage-height record. S Subdivided. Apr 1-8, Apr 11 to July 4 and for periods point out for remainder of season

Day	January Gage height	January Discharge	February Gage height	February Discharge	March Gage height	March Discharge	April Gage height	April Discharge	May Gage height	May Discharge	June Gage height	June Discharge
1						0		a 50	4.25 -.02	139	2.61 -.01	5.6
2						0		a 70	3.92	95	2.50	5.3
3						0		a 90	3.47	50	2.50	5.3
4					*	0	S	b V 148	3.24 -.02	35	2.50	5.3
5						0	6.79	b 60 678	3.12 -.03	28	2.48	4.8
6						0	S	b V 2270	3.04	24	2.47 -.01	4.5
7						0	S	.00 3460	2.96	21	2.46 .00	4.5
8						0	S	1.57 # 1810	2.91	19	2.45	4.3
9						0	6.92	952	2.87	17	2.45	4.3
10						0	6.01	613	2.83 -.03	16	2.43 +.01	3.8
11						0	6.07	1.58 # 636	2.80 -.04	14	2.42	3.6
12						0	5.98	604	2.78	13	2.42	3.6
13						0	5.34	392	2.75 *.60	12	2.41	3.3
14						0	5.20	347	2.73	11	2.40	3.1
15						0	4.54	193	2.71	11	2.39	2.8
16						0	3.97	103	2.70 -.04	10	2.38	2.6
17						0	3.63	66	2.69 -.03	10	2.38	2.6
18						0	3.45	50	2.69	10	2.37	2.4
19						0	3.41	47	2.69	10	2.38	2.6
20						0	3.30	39	2.69	10	2.38	2.6
21						0	3.17	#.69 32	2.67	9.7	2.39	2.8
22						0	3.07	27	2.65	9.1	2.40	3.1
23						0	3.00	.00 24	2.64 -.03	8.8	2.40	3.1
24						0	2.94 -.01	21	2.63 -.02	8.8	2.40	3.1
25					#.65	0	3.00	23	2.61	8.2	2.40	3.1
26						a .10	4.40	165	2.59	7.6	2.42	3.6
27						.20	4.62	206	2.58	7.4	2.47	4.8
28						.10	3.73	75	2.56	6.8	2.53	6.5
29						0	3.51 -.01	54	2.54	6.2	2.69	11
30						1.0	3.44 -.02	48	2.53 -.02	5.9	3.28	38
31						a 2.0			2.51 -.01	5.6		
Total						3.40		13,104.0		639.1		156.0
Mean						.11		437		20.6		5.20
Run-off in inches						6.7		25.990		1,270		309
Run-off in acre-feet												
Maximum						2.0		3,460		139		3.8
Minimum						0		5.0		5.6		2.4

Day	July Gage height	July Discharge	August Gage height	August Discharge	September Gage height	September Discharge	October Gage height	October Discharge	November Gage height	November Discharge	December Gage height	December Discharge
1	3.14	3.0	2.42 +.02	4.1	2.18 +.01	.75	2.21 -.01	.81				
2	3.01	2.4	2.42	4.1	2.18	.74	2.23	.92				
3	4.60	20.4	2.40 +.02	3.7	2.18	.24	2.33	1.8				
4	4.74	23.3	2.38 +.03	3.4	2.18	.73	2.35	2.1				
5	3.46	5.1	2.36	2.8	2.17	.70	2.49 -.01	5.0				
6	3.07	2.7	2.33	2.3	2.17 +.01	.70	2.51 .00	5.9				
7	5.85	55.8	2.33	2.3	2.17 .00	.66	2.53	6.6				
8	5.62	48.1	2.33	2.3	2.17	.64	2.57	7.5				
9	3.92	9.7	2.32	2.2	2.16	.62	2.54	6.7				
10	3.39	4.5	2.31	2.0	2.17	.63	2.51	6.0				
11	3.16	3.1	2.30 +.03	1.9	2.17	.64	2.50	5.7				
12	3.01	2.4	2.30 +.04	2.1	2.16 .00	.59	2.48	5.1				
13	2.89	1.9	2.30	2.0	2.15 -.01	.48	2.45	4.3				
14	2.80 #.62	1.6	2.29	1.9	2.16	.53	2.43 .00	3.9				
15	2.74	1.3	2.28 #.63	1.8	2.17	.58	2.43 +.01	4.1				
16	2.69	1.1	2.27	1.6	2.16 #.64	.57	2.42	3.9				
17	2.65	1.0	2.25	1.5	2.16	.55	2.41	3.6				
18	2.62 .00	9.2	2.24 +.04	1.4	2.16	.57	2.40	3.4				
19	2.64 +.01	1.0	2.25 +.03	1.4	2.16	.57	2.40	3.2				
20	2.68	1.1	2.24	1.3	2.16	.56	2.39	3.2				
21	2.59	8.5	2.23	1.2	2.19	.68	2.39	3.1				
22	2.57	7.8	2.22	1.2	2.21	.79	2.39	3.1				
23	2.55	7.5	2.21	1.1	2.22	.89	2.38 -.01	2.9				
24	2.53	6.7	2.19 +.03	.96	2.21	.81	2.38 +.02	3.1				
25	2.50	6.0	2.19 +.02	.88	2.23	.92	2.38	3.1				
26	2.47 -.01	5.1	2.19	.86	2.23	.94	2.38	3.1				
27	2.47 +.02	5.3	2.19	.87	2.23	.97	2.38	3.1				
28	2.46	5.2	2.19	.84	2.23	.96	2.37 +.02 #.65	2.9				
29	2.46	5.2	2.18	.79	2.22	.90	a	3.0				
30	2.45	4.7	2.17 +.02	.74	2.22 -.01	.89	a	3.0				
31	2.44 +.02	4.4	2.17 +.01	.69			a	3.0				
Total		1,970.6		56.23		21.30		117.13				16,067.76
Mean		63.6		1.81		.710		3.78				
Run-off in inches												
Run-off in acre-feet		3,910		112		42		232				31,870
Maximum		558		4.1		.97		7.5				
Minimum		4.4		.69		.48		.81				

R. D. Mott
Supervisor, Surface Water Branch
Chief, U.S.G.S.

Canadian Engineers JAN 28 1970

Canadian Engineers JAN 28 1970

Canadian Engineers JAN 28 1970

Canadian Engineers JAN 28 1970

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Montana Special

[redacted]

7.7

Daily Gage Height, in Feet, and Discharge, in Second-Feet, of McEACHERN River Creek

At Near INTERNATIONAL BOUNDARY for the ~~Year Ending September 30, 1969~~

Drainage Area 182 Square Miles. Water-Stage Recorder Stevens A-35 Ratio 1.6

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

File Number { Washington / District 06-1700.00

Used rating table dated No 3

Gage Read to hundredths Once ~~Twice a Day~~ by Elsie M. Jackson

Gage heights used to ~~half tenths between and half hundredths below and tenths above these limits~~

Max. Disch. 3,790 Sec.-ft. at 2100 on Apr 6 Max. G. H. Same ft. at on
Min. Disch. No flow Sec.-ft. on at times Min. G. H. ft. on
* Discharge measurement or observation of no flow made on this day.
6-Stage-discharge relation affected by ice. 9-From graph based on gage readings.

Day	January Gage height	January Discharge	February Gage height	February Discharge	March Gage height	March Discharge	April Gage height	April Discharge	May Gage height	May Discharge	June Gage height	June Discharge
1								0	3.63	172	1.30	.08
2								0	3.50	140	1.30	.08
3								0	2.91	47	1.28	.07
4						*	*	0	2.61	24	1.27	.06
5							9 S	6 112	2.49	18	1.25	.05
6							S	v 2,180	2.40	14	1.25	.05
7							S	v 2220	2.30	11	1.23	.04
8							9 S	* 777	2.14	6.0	1.23	.04
9							4.40	392	2.00	3.2	1.23	.05
10							4.24	339	1.91	2.0	1.21	* .04
11							4.21	* 325	1.87	1.6	1.20	.03
12							4.08	287	1.84	1.3	1.19	.03
13							3.77	204	1.80	* 1.1	1.18	.03
14							3.75	201	1.77	.94	1.18	.03
15							3.50	138	1.75	.87	1.17	.02
16							3.02	59	1.71	.77	1.16	.02
17							2.70	31	1.67	.66	1.17	.03
18							2.53	21	1.64	.58	1.15	.02
19							2.48	19	1.61	.50	1.15	* .02
20							2.42	16	1.58	.46	1.16	* .03
21							2.30	* 12	1.54	.37	1.18	.04
22							2.12	6.7	1.50	.30	1.20	.05
23							2.01	4.0	1.50	.30	1.20	* .04
24						*	1.94	2.8	1.48	.28	1.19	.04
25							S	4.1	1.45	.23	1.19	.04
26							S	165	1.42	.20	1.21	.04
27							S	157	1.41	.18	1.24	.06
28							IX 3.13 IX 3.42	100	1.38	.15	1.33	.14
29							3.26	94	1.35	.12	1.34	.15
30							3.27	96	1.33	1.0	1.31	.12
31									1.31	.08		
Total					0		7,962.6		448.29		1.54	
Mean					0		265		14.5		.051	
Second-feet per square mile												
Run-off in inches												
Run-off in acre-feet					0		15,790		889		3.1	
Maximum					0		2,220		172		.15	
Minimum					0		0		.08		.02	

Day	July Gage height	July Discharge	August Gage height	August Discharge	September Gage height	September Discharge	October Gage height	October Discharge	November Gage height	November Discharge	December Gage height	December Discharge
1	1.30	.10	1.25	.07								
2	1.27	.07	1.24	.07								
3	S	5.4	1.21	.05								
4	S	49	1.17	.03								
5	2.49	20	1.12	.01								
6	2.39	15	1.07	0								
7	IX 2.46 IX 2.79	32	1.01	0								
8	2.57	24	.96	0								
9	2.50	20	.90	0								
10	2.46	18	.85	0								
11	2.38	14		0								
12	2.24	9.7		0								
13	2.05	4.6		0								
14	1.92	2.4		0								
15	1.86	* 1.8		* 0								
16	1.78	1.2		0		*						
17	1.70	.84		0								
18	1.65	.71		0								
19	1.59	.55		0								
20	1.53	.41		0								
21	1.48	.31		0								
22	1.43	.25		0								
23	1.39	.19		0								
24	1.36	.15		0								
25	1.34	.14		0								
26	1.35	.15		0								
27	1.36	.16		0				*				
28	1.34	.14		0								
29	1.32	.13		0								
30	1.30	.11		0								
31	1.27	.08		0								
Total		221.59		0.23		0		0				
Mean		7.15		.007		0		0				
Second-feet per square mile												
Run-off in inches												
Run-off in acre-feet		440		0.5		0		0				
Maximum		49		.07		0		0				
Minimum		.07		0		0		0				

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Computed — Checked — Date — Canadian Engineers — JAN 28 1970

Disch. applied — Disch. checked — Date — Canadian Engineers — JAN 28 1970

C. H. copied — C. H. checked — Date — Canadian Engineers — JAN 28 1970

APPROVED: R. D. Wan, Dist. Engr. M/S of Canada
District Chief U.S.G.S.

Period Year 8,634.25

Total 17,130

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CANADA

DEPARTMENT OF ENERGY, MINES AND RESOURCES

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