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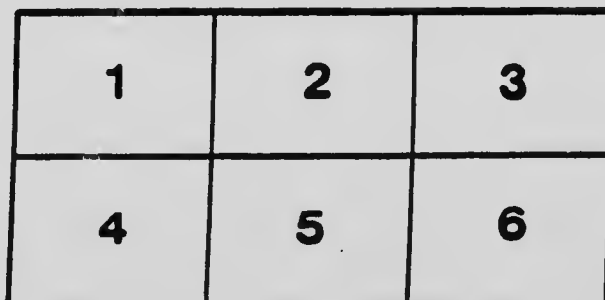
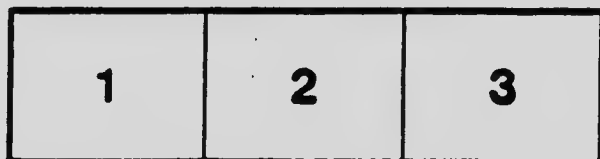
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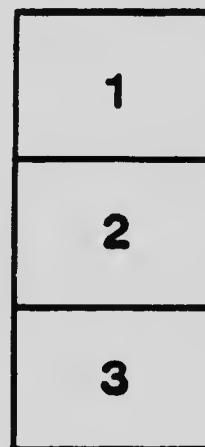
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Elk falls, Campbell river.

DEPARTMENT OF THE INTERIOR—CANADA  
Hon. W. J. ROCHE, Minister, W. W. CORY, Deputy Minister.  
DOMINION WATER POWER BRANCH,  
J. B. CHALLIES, C.E., Superintendent.

1917

WATER RESOURCES PAPER No. 18.

REPORT  
OF THE  
BRITISH COLUMBIA  
HYDROMETRIC SURVEY  
FOR  
The Calendar Year 1915

BY  
R. G. SWAN, B.A. Sc.  
Chief Engineer

Prepared under the direction of the Superintendent of Water Power.



OTTAWA.  
PRINTED BY J. DE L. TACHÉ.  
PRINTER TO THE KING'S MOST EXCELLENT MAJESTY  
1917.

00938222

## ERRATA.

- Page XVII. (Table of Contents) Mark Creek, line 39, in place of page 419 read 409.
- Page XVII. (Table of Contents) 7th line from bottom of page, in place of Bulkley River, Hubbard, read Bulkley River, Hubert.
- Page 164. In table of Monthly Discharge of Puntledge River. Under the heading of "Mean" (3rd column)—  
For February, in place of 112 read 1120.  
For the Year, in place of 1156 read 1240.
- Under the heading of "Total in acre-feet."  
For February, in place of 6220 read 62,200.  
For the Year, in place of 842,120 read 898,100.



00938222

*To Field Marshal His Royal Highness Prince Arthur William Patrick Albert,  
Duke of Connaught and of Strathearn, K.G., K.T., K.P., etc., etc., etc.,  
Governor General and Commander in Chief of the Dominion of Canada.*

MAY IT PLEASE YOUR ROYAL HIGHNESS:

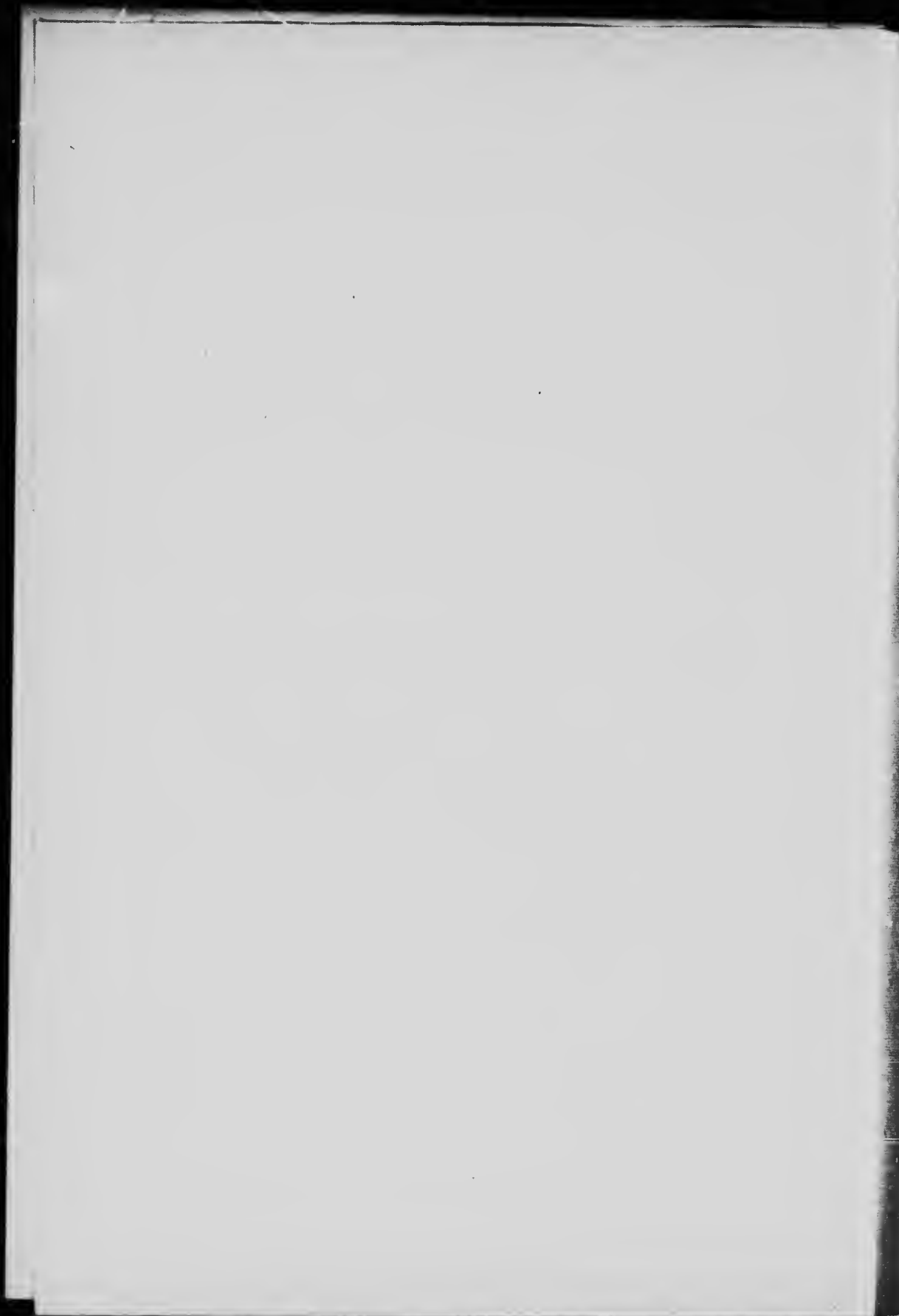
The undersigned has the honour to lay before Your Royal Highness the  
British Columbia Hydrometric Survey Report for 1915.

Respectfully submitted,

W. J. ROCHE,

*Minister of the Interior.*

OTTAWA, May 1, 1916.



DEPARTMENT OF THE INTERIOR,

OTTAWA, May 1, 1916.

The Honourable W. J. Roche, M.D.,

Minister of the Interior.

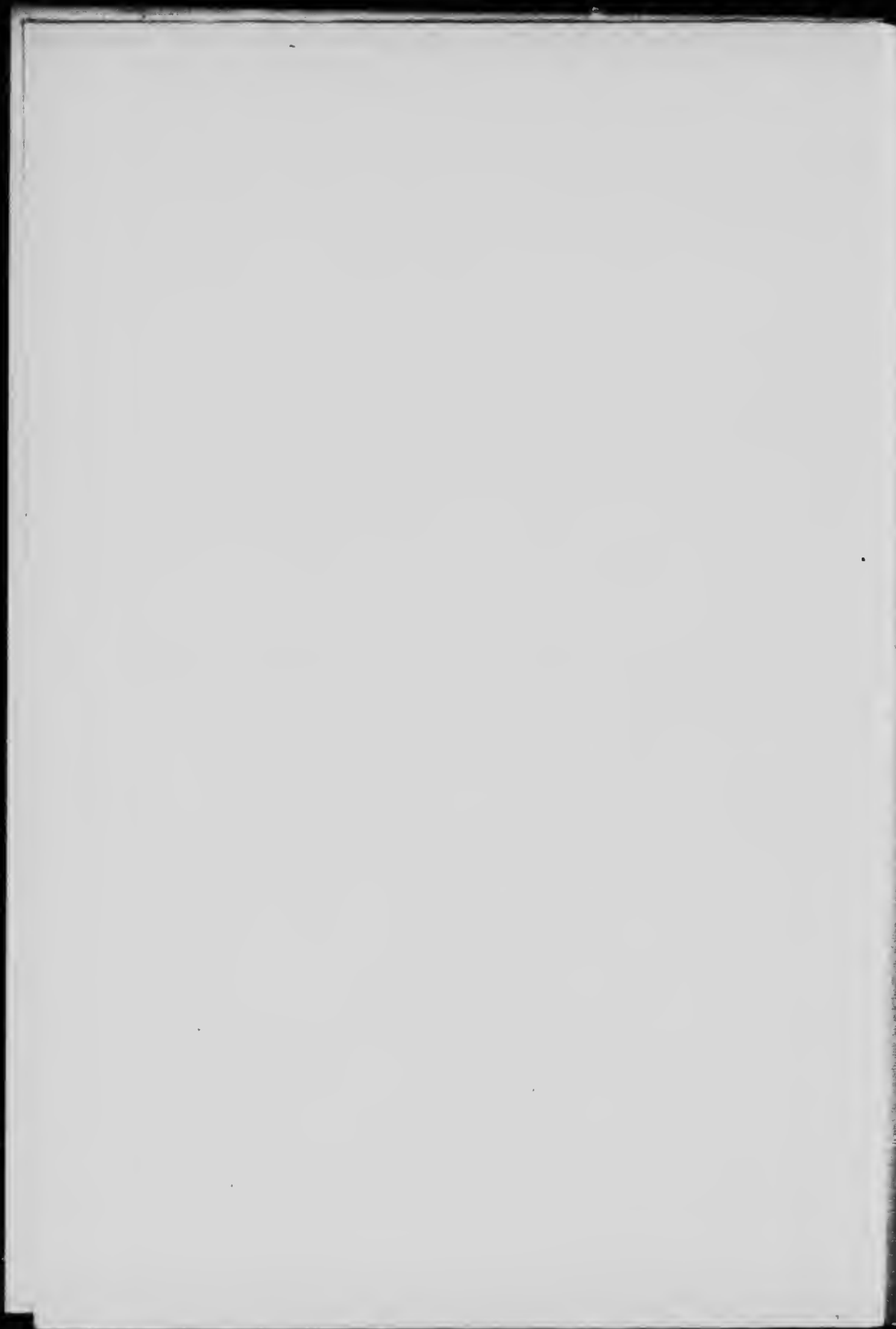
SIR.—I have the honour to submit the British Columbia Hydrometric Survey Report for 1915, and to recommend that it be published as Water Resources Paper No. 18 of the Dominion Water Power Branch.

I have the honour to be, sir,

Your obedient servant,

W. W. CORY,

*Deputy Minister of the Interior.*



DEPARTMENT OF THE INTERIOR, WATER POWER BRANCH,

OTTAWA, May 1, 1916.

W. W. Cory, Esq., C.M.G.,

Deputy Minister of the Interior.

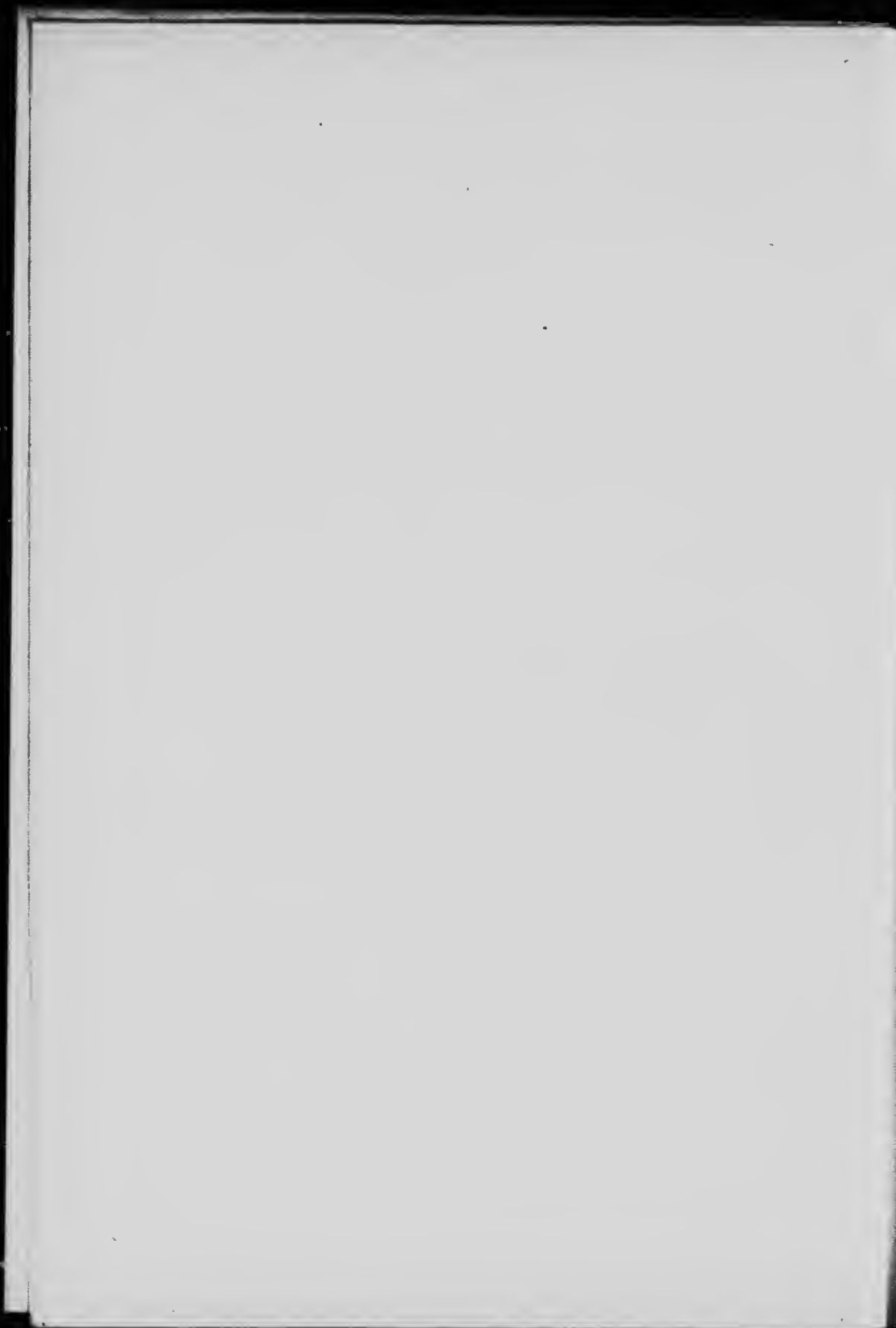
SIR,—I have the honour to submit the attached report by R. G. Swan, B.A.Sc., Chief Engineer of the British Columbia Hydrometric Survey.

In view of its important bearing on the industrial development of southern British Columbia. I would recommend that it be published as Water Resources Paper No. 18 of the Dominion Water Power Branch.

Respectfully submitted,

J. B. CHALLIES,

*Superintendent, Dominion Water Power Branch.*



OTTAWA, May 1, 1916.

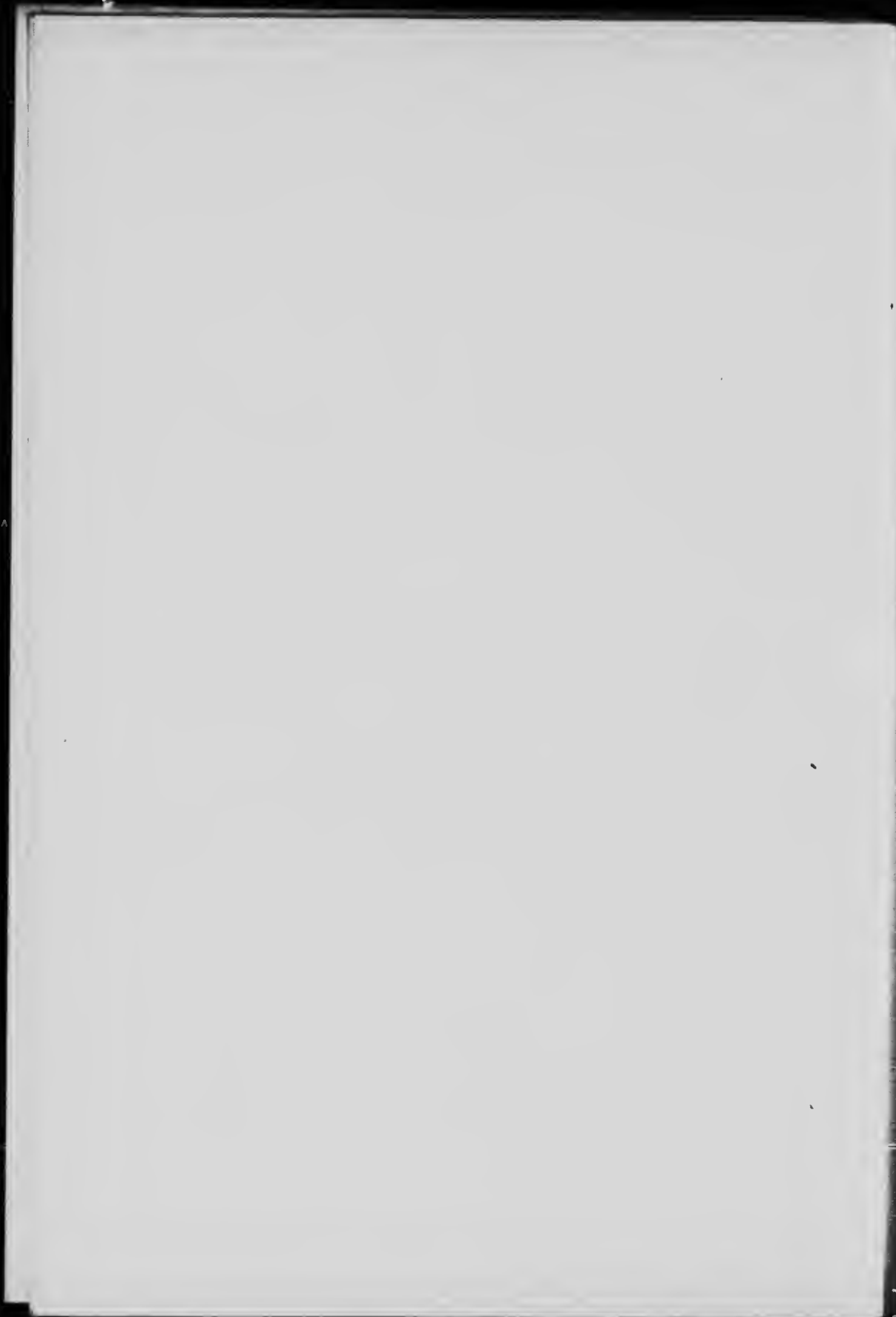
J. B. Challies, Esq., C.E.,  
Superintendent,  
Dominion Water Power Branch,  
Department of the Interior,  
Ottawa.

SIR,—I have the honour to transmit herewith my Annual Report of the British Columbia Hydrometric Survey for the calendar year 1915, together with the reports of engineers in charge of divisions.

Your obedient servant,

R. G. SWAN,  
*Chief Engineer.*





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BRITISH COLUMBIA HYDROMETRIC SURVEY

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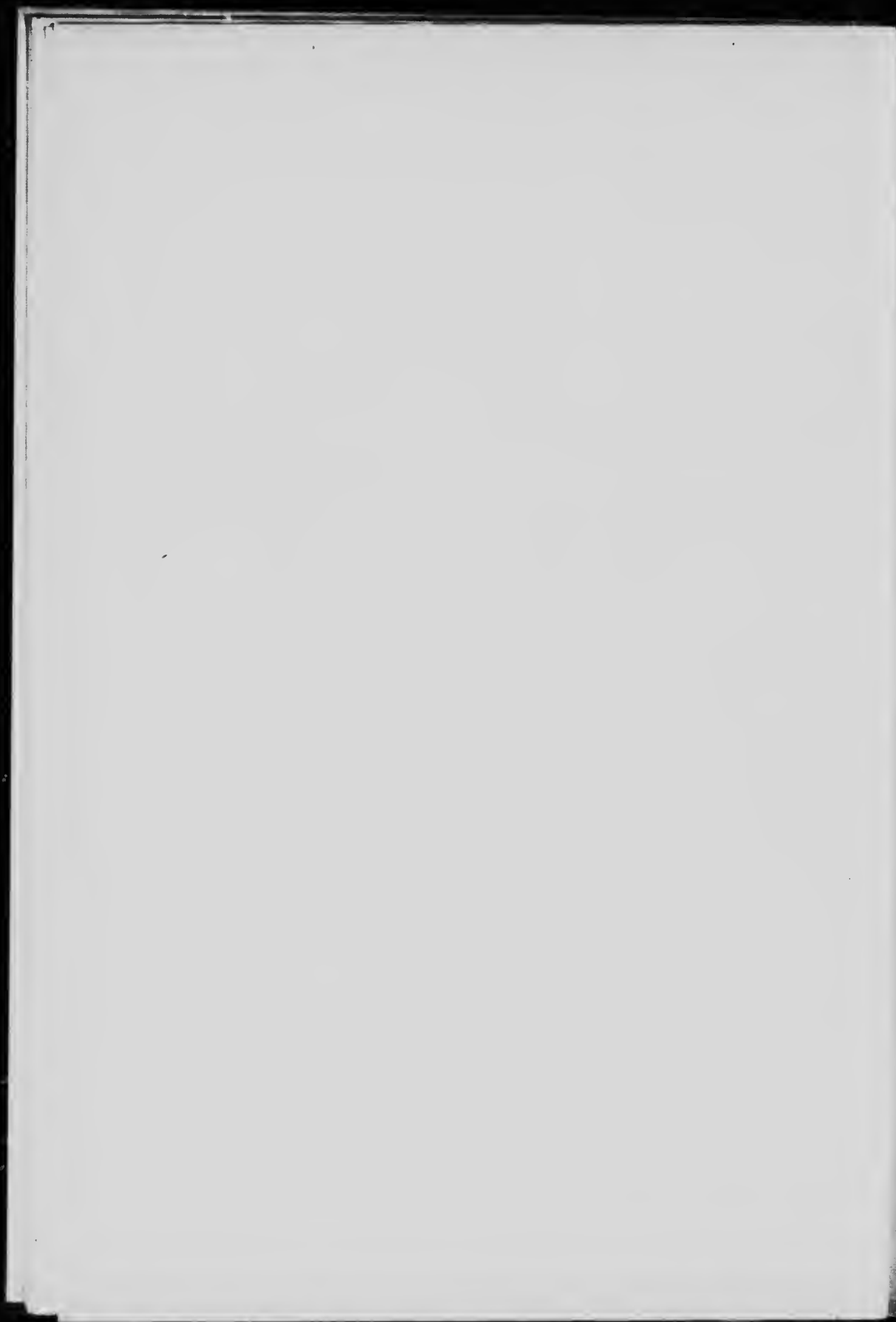
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British Columbia, showing gauging stations.....	Inside back cover
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REPORT  
OF THE  
BRITISH COLUMBIA HYDROMETRIC  
SURVEY FOR 1915.

CHAPTER I.  
REPORT OF R. G. SWAN, B.A.Sc.  
CHIEF ENGINEER.





## CHAPTER I.

## REPORT OF THE CHIEF ENGINEER.

## SCOPE OF WORK.

In addition to maintaining the stream measurement work previously established in the nine districts of the southern part of the province, the field of operations has been extended to include that part of central British Columbia opened up for settlement and development by the completion of the Grand Trunk Pacific Railway. The work in this district was only commenced in May of 1915 and the few stations established were installed at the request of parties who expected to utilize the water in the near future.

Practically no extension of the work has been made in the other districts, the men and funds available being only sufficient for that already established.

The work during the past year has supplied additional information which necessitates the revising of much data which the urgency of the requests of engineers and others in previous years had induced the survey to supply. These revisions are being carefully gone into and I would recommend that a hydrometric bulletin including all such data acquired since the commencement of the survey be published at the end of the year.

Co-operation with the British Columbia Lands Branch and the Dominion Parks Branch has been continued, investigations being made and reports submitted on the following,—applications for lease of foreshore lands for the purpose of removing sand and gravel, for the purchase of lands under irrigation conditions, for the setting aside of certain lands for the protection of the water supply, for the reserving from settlement of certain lands for storage purposes in connection with irrigation, and other applications of a general nature.

In connection with a hydrometric bulletin which the Provincial Water Rights Branch proposed to publish, complete flow data was supplied that Branch in October for the period January 1, to September 30, 1915. The furnishing of the data at that time involved a very considerable extra amount of work, the staff having been so depleted by the members enlisting for overseas service that it was necessary to bring some of the field engineers into the office to assist in the compilation.

Mutual benefit has been derived by the continued co-operation between the Provincial Water Rights Branch and this Survey.

The Conservation Commission of Canada has again been furnished with all the hydrometric data required in connection with its forthcoming report on the water powers of British Columbia. Every effort has been made to secure the information requested by the Commission during the year.

## ORGANIZATION.

The methods of collecting and compiling the data for publication in the Annual Stream Measurement report were similar to those of previous years and have been described fully in other reports.

The division of the territory covered by the survey into districts in 1914, and described in Water Resources Paper No. 14, was found to be suitable and economical and was adhered to in 1915, but the changes in staff due to the war, made it impossible to allot an engineer specially to each district.

At the commencement of the year the staff consisted of the chief engineer, three division engineers, eight assistant engineers, one accountant, two clerical assistants and two stenographers. During the year six of the staff enlisted for active service and only three appointments were made. It is considered that, under the circumstances, the best possible rearrangement of the work was made.

## COAST DIVISION.

As in 1914 Messrs. Cline, Webb and Hughes were in charge of the field work in the Southern, Vancouver Island and Lillooet districts respectively. In September Mr. Cline was transferred to Kamloops to take charge of the Kamloops division when Mr. Dann enlisted for active service. For the remainder of the year what little field work was required in the southern district was looked after by Mr. Hughes.

The computations of the data for the Annual report were made by Messrs. Webb and Hughes and checked by Mr. Balls, the office engineer.

*Coast Division. List of Regular Gauging Stations, Southern District.*

Station Number.	Stream.	Location.
1000	Belknap	Tp. 6, Rge. 7, W. 7 M.
1063	Belknap	Tp. 7, Rge. 7, W. 7 M.
1001	Boulder	Tp. 3, Rge. 27, W. 6 M.
1021	Brandt	Tp. 7, Rge. 7, W. 7 M.
1023	Capilano	Near North Vancouver.
1003	Chehalis	Tp. 4, Rge. 30, W. 6 M.
1004	Chilliwack	Tp. 23, E. C. M.
1005	Coquitlam	Tp. 5, Rge. 26, W. 6 M.
1066	Coquitlam	Tp. 39, W. C. M.
1062	Flume	Six miles from head of Burrard Inlet.
1067	Fraser	Tp. 5, Rge. 26, W. 6 M.
1064	Hixon	Tp. 6, Rge. 7, W. 7 M.
1010	Jones	Tp. 3, Rge. 27, W. 6 M.
1046	Lynn	Near North Vancouver.
1011	Meslloet	Tp. 7, Rge. 7, W. 7 M.
1058	Nicolson	Tp. 4, Rge. 5, W. 6 M.
1013	Norton	Tp. 7, Rge. 7, W. 7 M.
1022	Seymour	Near North Vancouver.
1017	Silver-Pitt	Tp. 4, Rge. 5, W. 7 M.
1055	Skagit	Forty miles south from Hope.
1018	South Lillooet	Tp. 12, E. C. M.
1056	Sumallo	Near Railway Belt boundary.
1057	Sumallo	Tp. 3, Rge. 24, W. 6 M.
1020	Young	Tp. 7, Rge. 7, W. 7 M.

Note:—All stations in Provincial Water District No. 1.

## SESSIONAL PAPER No. 25e

Except for the establishment of the station on Flume creek and the discontinuance of the stations on Black and Slollicum creeks, where the gauge readings were so infrequent as to render the records of little value, no changes were made in the district during 1915.

The majority of the stations in the district have been established at the request of parties interested in the flow records, and in several cases they are co-operating with the department in the matter of expenditures in connection with the maintenance of the stations.

Open water conditions prevail on the majority of the rivers in the district, and as the conditions governing the control are for the most part permanent, the field work in connection with the maintenance of the stations is becoming less each year, now that the stations are well rated.

*Coast Division. List of Regular Gauging Stations, Lillooet District.*

Station Number.	Stream.	Location.
1065	Brandywine	Near Brew—One mile above mouth.
1045	Bridge	Ten miles from Shalalth—Thirty miles above mouth.
1048	Cayuse	Near Lillooet—Above Seton creek.
1034	Cheakamus	Near Cheekye.
1074	Foster Bar	Twenty-three miles south from Lillooet.
1047	Fountain	Near Lillooet—One mile above mouth.
1072	Fraser	At Lillooet.
1035	Green	Near Pemberton—Above Nalrn falls.
1050	Laluwissin	Sec. 30, Tp. 27, Rge. 17, W. 6 M.
1038	Lillooet	Near Pemberton.
1073	Pavillon	Near Pavillon.
1049	Seton	Near Lillooet—Below Seton lake.
1061	Sixmile	At mouth, near Tisdale, B.C.
1037	Soo	One mile above mouth, near Tisdale.
1044	Texas	Fourteen miles south from Lillooet.

Note:—All stations in Provincial Water District No. 1.

In addition to maintaining the stations established in this district prior to 1915, others were established on Brandywine, Foster Bar, Fraser and Pavilion rivers.

While the minimum discharge of Brandywine river is rather small, about 600 horse power could be developed very cheaply and used as a temporary power plant until a larger development on the Cheakamus river is required.

The stations on Foster Bar and Pavilion creeks have been established in connection with irrigation studies. The Fraser river benches adjacent to the mouth of Foster Bar creek, when irrigated, are well suited to cultivation. At present the normal flow of the creek is being used for this purpose. So far no investigations have been made with a view to storing the high water flow. A small dam at the outlet of Pavilion lake stores a portion of the spring and early summer freshets and this water is released as required by the irrigators along the river.

Owing to the old gauge on the Fraser river at Lytton being affected by back-water from the Thompson river, the station was abandoned and a new station established at Lillooet, where measurements are secured from the Pacific Great Eastern Railway bridge.

*Coast Division. List of Regular Gauging Stations, Vancouver Island District.*

Station Number.	Stream.	Location.
1032	Big Qualicum	One and a half mile above mouth.
1042	Campbell	At Campbell lake.
1027	Chemalnus	One mile above mouth, near Chemalnus.
1064	Cowichan	At Cowichan lake.
1030	Englishmans	One and one-half mile above mouth, near Parkerville.
1029	Haslam	Two miles above mouth, near Ladysmith.
1026	Kokalah	Two miles above mouth, near Duncan.
1031	Little Qualicum	At Cameron lake, B.C.
1028	Nanaimo	Six miles above mouth.
1040	Oyster	One mile above mouth.
1026	Puntledge	One mile above mouth, near Courtenay.
1033	Puntledge	Diversion dam, above Canadian Collieries Power Plant.
1028	Shawnigan	At Shawnigan lake, Koenigs, B.C.
1051	Sproat	At Sproat lake.
1052	Stamp	At Great Central lake.
1053	Stamp	One-half mile above Stamp falls.
1039	Tsoluni	Three miles above mouth, near Courtenay.

Note:—All stations in Provincial Water District No. 1.

Stations were established in 1914 on those rivers which were considered of the most importance and with the exception of the station on Campbell river no change was made in the district during 1915.

Owing to the difficulty in securing accurate measurements from a boat, during high water on the Campbell river, a cable and car were installed in May and the station was fairly well rated during the season. The Campbell River Power Company co-operated in the matter of expenditure in the installation of cable and car.

Although the Campbell River Power Company was in possession of the daily gauge records of four gauges on the river since 1910, none of these gauges had ever been rated. These records were placed at the disposal of this survey and each set has been co-related to its gauge, affording an unbroken record of reliable data since the above mentioned year.

*Coast Division. List of Miscellaneous Gauging Stations.*

## SOUTHERN DISTRICT.

Name.	Location.
Black	Howe sound
Bridalveil	Tp. 5, Rge. 28, W. 6 M.
Dunville	Tp. 2, Rge. 29, W. 6 M.
Elk	Tp. 2, Rge. 29, W. 6 M.
Elk	Tp. 2, Rge. 29, W. 6 M.
Hutchinson	Tp. 2, Rge. 29, W. 6 M.
Jackman	Tp. 2, Rge. 29, W. 6 M.
Sollicum	Tp. 5, Rge. 28, W. 6 M.

Prov. Water Dist. No. 1.

Prov. Water Dist. No. 1.

Prov. Water Dist. No. 1.

Prov. Water Dist. No. 1.

Prov. Water Dist. No. 1.

Prov. Water Dist. No. 1.

Prov. Water Dist. No. 1.

BRITISH COLUMBIA HYDROMETRIC SURVEY

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LILLOOET DISTRICT.

Island Bar...	Near Lillooet	Prov. Water Dist. No. 1.
Riley.....	Near Lillooet, above irrigation ditches	Prov. Water Dist. No. 1.
Swartz....	Nineteen miles south from Lillooet	Prov. Water Dist. No. 1.

VANCOUVER ISLAND DISTRICT.

Browne..	Three miles above mouth, near Courtenay	Prov. Water Dist. No. 1.
Holt....	C.N.P. Ry. bridge, near Duncan's	Prov. Water Dist. No. 1.
Millard..	Near Courtenay	Prov. Water Dist. No. 1.
Nanaimo, south fork	Near mouth, twelve miles from Nanaimo	Prov. Water Dist. No. 1.
Quiniam.....	One-half mile above mouth, near Campbell river, B.C.	Prov. Water Dist. No. 1.

KAMLOOPS DIVISION.

The number of changes in the staff of the Kamloops division due to the men enlisting for active service overseas, has made the field and office work exceedingly heavy for the remaining staff. For the greater part of the year the field work in the three districts of the division was carried on by two engineers.

The computations of the data for the annual report were made by Messrs. Tredcroft and McNaughton and checked by the division engineer.

*Kamloops Division. List of Regular Gauging Stations, Kamloops District.*

Station Number.	Stream	Location.
2084	Barriere	Near Barriere
2002	Bolean	Tp. 18, Rge. 12, W. 6 M.
2004	Campbell	Prov. Water Dist. No. 2.
2005	Cherry	Tp. 19, Rge. 16, W. 6 M.
2047	Clearwater	Prov. Water Dist. No. 2.
2082	Edwards	Tp. 19, Rge. 19, W. 6 M.
2083	Edwards, Lyons diversion	Prov. Water Dist. No. 2.
2014	Guichon	Tp. 22, Rge. 16, W. 6 M.
2019	Heffley, below Heffley lake	Prov. Water Dist. No. 2.
2018	Heffley, above diversions, near mouth	Tp. 22, Rge. 16, W. 6 M.
2020	Ingram	Tp. 22, Rge. 17, W. 6 M.
2022	Jamieson	Prov. Water Dist. No. 2.
2056	Little Clearwater	Tp. 22, Rge. 17, W. 6 M.
2023	Louis	Prov. Water Dist. No. 2.
2025	Monte, below diversion to Summit lake	Tp. 23, Rge. 15, W. 6 M.
2024	Monte, above Bostocks diversion	Tp. 18, Rge. 14, W. 6 M.
2069	Murtle	Prov. Water Dist. No. 2.
2085	North Thompson	Tp. 19, Rge. 15, W. 6 M.
2032	Paul	Near Raft river
2085	Raft	Prov. Water Dist. No. 2.
2078	Salmon	Tp. 20, Rge. 16, W. 6 M.
2058	Slwash	Near Raft river
2080	Threemile	Tp. 18, Rge. 12, W. 6 M.
2043	Tranquille	Prov. Water Dist. No. 2.
2066	Whitewood	Tp. 22, Rge. 16, W. 6 M.
		Tp. 20, Rge. 21, W. 6 M.
		Prov. Water Dist. No. 2.
		Tp. 20, Rge. 19, W. 5 M.
		Prov. Water Dist. No. 2.
		Near Barriere
		Prov. Water Dist. No. 2.

The stream measurement work in the Kamloops district is principally on irrigation streams where the frequent shortage of water demands accurate gauging so that the apportioning of water to the various users may be efficiently done.

In establishing and maintaining these stations the requirements of the Water Rights Branch of the Provincial Government are very closely followed.

The stations on Edwards creek and Salmon river, which had been discontinued, were re-established in 1915 at the request of the Water Rights Branch.

On the Barriere, Clearwater, Murtle, Little Clearwater and Raft rivers the stations are maintained in connection with water power projects.

The city of Kamloops has a small power plant in operation at the present time on the Barriere river.

The splendid opportunities for the development of power on the Murtle river warranted the establishment of an automatic water stage register and a cable car to ensure frequency of gauge records and accuracy of meter measurements.

On the North Thompson a station was established on the new highway bridge near Barriere, as the old station above Jamieson creek was found to be expensive and difficult to maintain.

*Kamloops Division. List of Regular Gauging Stations, Okanagan District.*

Station Number.	Stream.	Location.
2000	Adams	Tp. 23, Rge. 12, W. 6 M.
2048	Boundary	At Greenwood
2070	Brash	Tp. 18, Rge. 8, W. 6 M.
2073	Chase	Tp. 21, Rge. 13, W. 6 M.
2051	Crazy	Tp. 23, Rge. 5, W. 6 M.
2010	Eagle	Tp. 23, Rge. 6, W. 6 M.
2064	Granite	Near Coalmont
2052	Kettle, north fork	At Grand forks
2045	Kettle, west fork	Near Westbridge
2048	Kettle, Nicholson's bridge	Near Kettle valley
2049	Kettle, Carson	At Carson
2074	Manson	Tp. 23, Rge. 10, W. 6 M.
2031	Niskonlith	Tp. 21, Rge. 13, W. 6 M.
2088	Okanagan	At Okanagan falls
2077	Ross	Tp. 23, Rge. 9, W. 6 M.
2079	Scotch	Tp. 23, Rge. 11, W. 6 M.
2061	Seymour	Head of Seymour arm, Shuswap lake
2034	Shuswap	Tp. 18, Rge. 9, W. 6 M.
2054	Similkameen	Near Ashnola
2063	South Similkameen	At Princeton
2042	South Thompson	Tp. 21, Rge. 13, W. 6 M.
2062	Tulameen	At Coalmont
2051	Twentymile	Near Hedley
		Prov. Water Dist. No. 2.
		Prov. Water Dist. No. 5.
		Prov. Water Dist. No. 2.
		Prov. Water Dist. No. 2.
		Prov. Water Dist. No. 2.
		Prov. Water Dist. No. 2.
		Prov. Water Dist. No. 4.
		Prov. Water Dist. No. 5.
		Prov. Water Dist. No. 5.
		Prov. Water Dist. No. 2.
		Prov. Water Dist. No. 2.
		Prov. Water Dist. No. 4.
		Prov. Water Dist. No. 2.
		Prov. Water Dist. No. 2.
		Prov. Water Dist. No. 2.
		Prov. Water Dist. No. 4.
		Prov. Water Dist. No. 2.
		Prov. Water Dist. No. 2.
		Prov. Water Dist. No. 4.
		Prov. Water Dist. No. 4.
		Prov. Water Dist. No. 2.
		Prov. Water Dist. No. 5.
		Prov. Water Dist. No. 4.

Chase, Manson and Niskonlith creeks are used for irrigation.

In this district a number of other irrigation streams which are outside the Dominion railway belt are being measured by the Provincial Water Rights Branch.

Records are being kept on Brash creek in co-operation with the city of Enderby for municipal water supply and power purposes.

Most of the other stations in the Okanagan district are maintained on account of water power possibilities.

On Adams river a Gurley water stage register has been in operation all year and the results have been most satisfactory. No ice troubles were experienced although the weather was unusually cold.

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A car and cable were installed in April, 1915, on the Seymour river and the station was consequently fairly well rated during the season, so that the gauge readings obtained in 1914 as well as those in 1915 were made available for determining the flow of the stream.

The car on the Seymour river is located on one of the trails up the river and is used as a ferry by ranchers and others who have occasion to use the trail. A similar use is made of the car on the Murtle river, in the Kamloops district, particularly by the rangers of the Provincial Forestry Department.

*Kamloops Division. List of Regular Gauging Stations, Ashcroft District.*

Station Number.	Stream	Location.
2001	Barnes	Tp. 20, Rge. 24, W. 6 M.
2069	Beaver	North of Nicola lake
2003	Bonaparte	Tp. 21, Rge. 24, W. 6 M.
2071	Cache	Tp. 21, Rge. 24, W. 6 M.
2072	Cache, diversion to Eightmile	Tp. 22, Rge. 24, W. 6 M.
2006	Coldwater	At Merritt
2007	Crim	Tp. 22, Rge. 22, W. 6 M.
2098	Deadman	Tp. 22, Rge. 22, W. 6 M.
2016	Hat	Tp. 19, Rge. 26, W. 6 M.
2027	Nahatlatch	Tp. 12, Rge. 26, W. 6 M.
2030	Nicola, mouth	Tp. 17, Rge. 26, W. 6 M.
2029	Nicola, Merritt	At Merritt
2073	Nicola, Nicola	At Nicola
2086	Nicola, above Nicola lake	East of Nicola lake
2047	Spus	Tp. 13, Rge. 23, W. 6 M.
2039	Thompson, Spences bridge	Tp. 17, Rge. 25, W. 6 M.
		Prov. Water Dist. No. 2.
		Prov. Water Dist. No. 3.
		Prov. Water Dist. No. 2.
		Prov. Water Dist. No. 2.
		Prov. Water Dist. No. 2.
		Prov. Water Dist. No. 2.
		Prov. Water Dist. No. 2.
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		Prov. Water Dist. No. 2.
		Prov. Water Dist. No. 3.
		Prov. Water Dist. No. 3.
		Prov. Water Dist. No. 3.

Most of the streams in the Ashcroft district are used for irrigation purposes and the stations on them are only maintained during the irrigation season.

New stations were established on Beaver creek and on the Nicola river, above Nicola lake, at the request of the Provincial Water Rights Branch.

The station on Nicola river, at Nicola, which was established by the Provincial Water Rights Branch in 1913, was transferred to the British Columbia Hydrometric Survey in 1915.

On Cache creek the station had been discontinued, but, at the request of the Provincial Water Rights Branch, it was started again in 1915.



## Kamloops Division. List of Miscellaneous Gauging Stations.

## KAMLOOPS DISTRICT.

Name	Location	
Alkali creek	Tp. 19, Rge. 19, W. 6 M	Prov. Water Dist. No. 2
Anstey creek	Tp. 28, Rge. 7, W. 6 M	Prov. Water Dist. No. 2
Battle creek	Near Raft river	Prov. Water Dist. No. 2
Bear creek	Tp. 23, Rge. 12, W. 6 M	Prov. Water Dist. No. 2
Bear creek, diversion from	Tp. 23, Rge. 12, W. 6 M	Prov. Water Dist. No. 2
Bear creek	Near Raft river	Prov. Water Dist. No. 2
Billy creek	Tp. 23, Rge. 15, W. 6 M	Prov. Water Dist. No. 2
Canoe creek	Tp. 20, Rge. 9, W. 6 M	Prov. Water Dist. No. 2
Chartrand creek	Tp. 17, Rge. 21, W. 6 M	Prov. Water Dist. No. 3
Chartrand spring	Tp. 17, Rge. 21, W. 6 M	Prov. Water Dist. No. 3
Christian creek	Tp. 22, Rge. 15, W. 6 M	Prov. Water Dist. No. 2
Cold creek	Tp. 20, Rge. 16, W. 6 M	Prov. Water Dist. No. 2
Dairy creek	Tp. 20, Rge. 19, W. 6 M	Prov. Water Dist. No. 2
Dry creek	Tp. 20, Rge. 20, W. 6 M	Prov. Water Dist. No. 2
Edwards creek, near mouth	Tp. 22, Rge. 16, W. 6 M	Prov. Water Dist. No. 2
Fadear creek	Tp. 24, Rge. 15, W. 6 M	Prov. Water Dist. No. 2
Fishtrap creek	Thirty-five miles north of Kamloops	Prov. Water Dist. No. 2
Fraser river	Tp. 18, Rge. 27, W. 6 M	Prov. Water Dist. No. 1
Gold creek	Tp. 23, Rge. 12, W. 6 M	Prov. Water Dist. No. 2
Greenstone creek	Tp. 17, Rge. 20, W. 6 M	Prov. Water Dist. No. 3
Grouse creek	Near Raft river	Prov. Water Dist. No. 2
Gulchon creek, above Witch creek	Tp. 18, Rge. 21, W. 6 M	Prov. Water Dist. No. 3
Gulchon creek, below Allens house	Tp. 18, Rge. 21, W. 6 M	Prov. Water Dist. No. 3
Hefley creek, Andersons diversion	Tp. 22, Rge. 16, W. 6 M	Prov. Water Dist. No. 2
Hefley creek, Austins diversion	Tp. 22, Rge. 17, W. 6 M	Prov. Water Dist. No. 2
Hefley creek, Crawshaws diversion	Tp. 22, Rge. 16, W. 6 M	Prov. Water Dist. No. 2
Hemp creek	Near Raft river	Prov. Water Dist. No. 2
Hermon spring	Near Raft river	Prov. Water Dist. No. 2
Loula creek, at mouth	Loula creek	Prov. Water Dist. No. 2
McGillivray creek	Tp. 22, Rge. 15, W. 6 M	Prov. Water Dist. No. 2
Meadow creek	Tp. 17, Rge. 21, W. 6 M	Prov. Water Dist. No. 3
Meadow creek	Tp. 23, Rge. 10, W. 6 M	Prov. Water Dist. No. 2
Monte creek, diversion to Summit Lake	Tp. 18, Rge. 14, W. 6 M	Prov. Water Dist. No. 2
Penfold creek	Tp. 19, Rge. 19, W. 6 M	Prov. Water Dist. No. 2
Peterson creek	Tp. 19, Rge. 17, W. 6 M	Prov. Water Dist. No. 2
Queest creek	Tp. 24, Rge. 7, W. 6 M	Prov. Water Dist. No. 2
Quenville creek	Tp. 17, Rge. 21, W. 6 M	Prov. Water Dist. No. 3
Quelchena creek	At Quelchena	Prov. Water Dist. No. 3
Ray creek	Below Mamit lake	Prov. Water Dist. No. 3
Robbins creek	Tp. 19, Rge. 18, W. 6 M	Prov. Water Dist. No. 2
Salmon river	Tp. 20, Rge. 10, W. 6 M	Prov. Water Dist. No. 2
Sullivan creek	Tp. 23, Rge. 16, W. 6 M	Prov. Water Dist. No. 2
Threemile creek, Savona road	Tp. 20, Rge. 21, W. 6 M	Prov. Water Dist. No. 2
Threemile creek, south-east fork	Tp. 19, Rge. 20, W. 6 M	Prov. Water Dist. No. 2
Threemile creek, south-west fork	Tp. 19, Rge. 20, W. 6 M	Prov. Water Dist. No. 2
Witch creek	Tp. 18, Rge. 21, W. 6 M	Prov. Water Dist. No. 3

## OKANAGAN DISTRICT.

Aahnola creek	Keremeos	Prov. Water Dist. No. 4
Otter river	Tukameen	Prov. Water Dist. No. 4
Nicholsons creek	Nicholsons bridge	Prov. Water Dist. No. 4
Rock creek	Rock creek	Prov. Water Dist. No. 4

ASHCROFT DISTRICT.

Anderson creek	Tp. 20, Rge. 26, W. 6 M	Prov. Water Dist. No. 2.
Blue Earth creek	Tp. 19, Rge. 26, W. 6 M	Prov. Water Dist. No. 2.
Clemon creek	Tp. 22, Rge. 23, W. 6 M	Prov. Water Dist. No. 2.
Colley creek	Tp. 19, Rge. 26, W. 6 M	Prov. Water Dist. No. 2.
Collins diversion from Bonaparte river	Tp. 21, Rge. 24, W. 6 M	Prov. Water Dist. No. 2.
Hammondia diversion from Hat creek	Tp. 19, Rge. 26, W. 6 M	Prov. Water Dist. No. 2.
Hammondia diversion from Oregon Jack creek	Tp. 19, Rge. 25, W. 6 M	Prov. Water Dist. No. 2.
Hat creek	Tp. 22, Rge. 25, W. 6 M	Prov. Water Dist. No. 2.
King creek	Tp. 19, Rge. 26, W. 6 M	Prov. Water Dist. No. 2.
Lloyd creek	Tp. 20, Rge. 26, W. 6 M	Prov. Water Dist. No. 2.
Log lake creek	Tp. 22, Rge. 23, W. 6 M	Prov. Water Dist. No. 2.
Medline creek	Tp. 21, Rge. 26, W. 6 M	Prov. Water Dist. No. 2.
Nelson creek	Tp. 20, Rge. 24, W. 6 M	Prov. Water Dist. No. 2.
Oregon Jack creek	Tp. 19, Rge. 25, W. 6 M	Prov. Water Dist. No. 2.
Robertson creek	Tp. 22, Rge. 26, W. 6 M	Prov. Water Dist. No. 2.
Scottie creek	Tp. 23, Rge. 25, W. 6 M	Prov. Water Dist. No. 2.
Walhachin diversion from Deadman river.	Tp. 22, Rge. 22, W. 6 M	Prov. Water Dist. No. 2.

Kamloops Division. Water Level Stations, 1915.

Station Number.	Stream.	Location.
2086	Christina	Near Grand Forks. . . . . Prov. Water Dist. No. 6.
2067	Shuswap	Tp. 21, Rge. 8, W. 6 M . . . . . Prov. Water Dist. No. 2.
2040	Thompson, Kamloops	Tp. 20, Rge. 17, W. 6 M . . . . . Prov. Water Dist. No. 2.

NELSON DIVISION.

In the Nelson division, as in the Coast and Kamloops divisions, two engineers carried on the field work in the three districts after 30th June, when Mr. Elliott was transferred to the Fort George district to replace Mr. Chisholm, who enlisted for active service.

The computations of the data for the annual report were made by Messrs. Dempster and Beeston and checked by the division engineer.

Nelson Division. List of Regular Gauging Stations, Nelson District.

Station Number.	Stream.	Location.
3025	Carpenter	Near Sandon. . . . . Prov. Water Dist. No. 6.
3004	Columbia	Near Castlegar . . . . . Prov. Water Dist. No. 6.
3008	Columbia	Near Trill . . . . . Prov. Water Dist. No. 6.
3066	Duncan	Near Howser . . . . . Prov. Water Dist. No. 6.
3070	Fry	Near Johnstona Landing . . . . . Prov. Water Dist. No. 6.
3071	Glacier	Near Howser . . . . . Prov. Water Dist. No. 6.
3081	Goat	Near Erickson . . . . . Prov. Water Dist. No. 6.
3084	Inonoklin	Near Edgewood . . . . . Prov. Water Dist. No. 6.
3029	Kaslo	Near Kaslo . . . . . Prov. Water Dist. No. 6.
3022	Kootenax	Near Nakusp . . . . . Prov. Water Dist. No. 6.
3075	Kootenay	Near Bonnington Falls . . . . . Prov. Water Dist. No. 6.
3014	Kootenay	Near Glade . . . . . Prov. Water Dist. No. 6.
3077	Kootenay	Near Nelson . . . . . Prov. Water Dist. No. 6.
3017	Pend d'Oreille	Near Waneta . . . . . Prov. Water Dist. No. 6.
3027	Silverton, below mill	Near Silverton . . . . . Prov. Water Dist. No. 6.
3026	Silverton, above mill	Near Silverton . . . . . Prov. Water Dist. No. 6.
3016	Slocan	Near Silverton . . . . . Prov. Water Dist. No. 6.
		Near Crescent Valley . . . . . Prov. Water Dist. No. 6.

The station on the Inonoaklin river, established for the study of flow data in connection with a proposed water supply for the town of Edgewood, is the only new station established during the year.

On Nakusp and Sawmill rivers, the stations have been discontinued, the data not being deemed of sufficient importance to warrant the expenditure required to maintain them.

Owing to the difficulty in securing reliable gaugings on the Pend d'Oreille, at Waneta, the division engineer accompanied by Messrs. Hoyt and Parker of the United States Geological Survey, made a reconnaissance trip along the course of the river. The most suitable location for establishing a station was found to be near Metaline Falls, Washington. The station at Waneta was consequently discontinued and we have co-operated with the United States Geological Survey in the establishment of a cable and car at Metaline Falls, and in the maintenance of the station. The Survey's station on the Columbia river, at Trail, was also visited and the United States Geological Survey in turn have co-operated with us in its maintenance. A sounding apparatus, weights and reel, have been sent by Mr. Hoyt for use at Trail during high water, as difficulty has previously been experienced in getting soundings at high stages with ordinary weights.

*Nelson Division. List of Regular Gauging Stations, Revelstoke District.*

Station Number.	Stream.	Location.
3000	Akokolex	Tp. 22, Rge. 1, W. 6 M.
3002	Baeberry	Tp. 28, Rge. 22, W. 5 M.
3003	Bugaboo	Near Spillimacheen
3005	Columbia, Golden	Tp. 27, Rge. 22, W. 5 M.
3007	Columbia, Revelstoke	Tp. 23, Rge. 2, W. 6 M.
3062	Field Springs, No. 1	Tp. 28, Rge. 18, W. 5 M.
3063	Field Springs, No. 2	Tp. 28, Rge. 18, W. 5 M.
3064	Field Springs, No. 3	Tp. 28, Rge. 18, W. 5 M.
3036	Findlay	Near Thunder hill
3053	Hospital, weir	Tp. 27, Rge. 22, W. 5 M.
3009	Illecillewaet, Revelstoke	Tp. 23, Rge. 2, W. 6 M.
3030	Incomappleux	Near Beaton
3011	Kicking Horse, Golden	Tp. 27, Rge. 22, W. 5 M.
3012	Kicking Horse, Field	Tp. 28, Rge. 18, W. 5 M.
3013	Kicking Horse, No. 2 tunnel	Tp. 28, Rge. 18, W. 5 M.
3015	No. 2	Near Wilmer
3019	Spillimacheen	Near Spillimacheen
3020	Toby	Near Athalmer
3032	North Vermilion	Near Edgewater
3033	South Vermilion	Near Edgewater
3054	Washout	Near Galena
		Prov. Water Dist. No. 8.
		Prov. Water Dist. No. 8.
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		Prov. Water Dist. No. 8.

The station on Beaver river has been maintained for several years, but as it is not considered of sufficient importance to warrant carrying on further work at this time, the station has been discontinued.

The shifting conditions on Canyon, Illecillewaet, near Glacier, Salmon, Shuswap, Stoddart and Windermere rivers rendered it impossible to secure data sufficiently reliable to compute the daily discharges. The rivers are returned in the Annual Stream Measurement Report under the caption "Miscellaneous" and only the actual meter measurements are given.

With the above exceptions the district is the same as in 1914.

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*Nelson Division. List of Regular Gauging Stations, Cranbrook District.*

Station Number.	Stream.	Location.
3039	Bull	Near Bull river
3038	Cherry	Near Wasa
3048	Elk	Near Elko
3047	Gold	Near Newgate
3041	Kootenay	Near Wardner
3045	Linklater	Near Newgate
3037	Mark	Near Marysville
3056	Movie	Near Kingsville
3046	Phillips	Near Roosville
3049	Rock	Near Elko
3042	Big Sand	Near Jaffray
3043	Little Sand	Near Jaffray
3050	St. Marys	Near Wycliffe

With the exception of the discontinuance of Mud creek no other change has been made in the district since 1914.

This district was not extended during the year as we had hoped, the number of men enlisting for active service made it impossible to look after any more work than in 1914. Measurements were obtained, however, at stages suitable for improving the curves, and ice measurements were secured on streams with power possibilities.

*Nelson Division. List of Miscellaneous Gauging Stations.*

## NELSON DISTRICT.

Stream.	Location.
Eagle creek	Near Edgewood
Giveout creek	Near Nelson
Hall creek	Near Halls siding
Whatshan creek, above Barnes	Near Needles
Whatshan creek, below Barnes	Near Needles
Cariboo creek	Near Burton C.
Carpenter creek	Near New J.
Lardeau river	Near Hows
Slocan river	Near Slocan
Wilson creek	Near Rosebu.

## REVELSTOKE DISTRICT.

Horsechief creek	Near Wilmer
Illecillewaet river	Near Glacier
Salmon river	Near Beaton
Shuswap creek	Near Athalmer
Stoddart creek	Near Athalmer
Sinclair creek	Near Radlum Hot Springs
Windermere river	Near Windermere

## CRANBROOK DISTRICT.

Cedar creek	Near Ainsworth
Hammill creek	Near Argenta
Woodbury creek	Near Ainsworth

## FORT GEORGE DISTRICT.

The completion of the Grand Trunk Pacific Railway has opened up a large portion of central British Columbia for settlement and development, and the requests received for run-off data in connection with proposed power development and municipal water supply, have made it necessary that work should be commenced in this district.

The shortage of funds has prevented us from thoroughly covering the entire district at this time, but stations have been established on the most important streams for which requests for data have been received.

*Fort George District. List of Regular Gauging Stations.*

Station Number	Stream.	Location.
4004	Bulkley, Hazelton	Three-quarters mile from Old Hazelton, B.C.
4003	Bulkley, Hubert	At highway bridge, near Hubert, B.C.
4002	Dore.	Grand Trunk Pacific Railway bridge, near McBride, B.C.
4000	Nechako, Ft. Fraser	Grand Trunk Pacific Railway bridge, near Fort Fraser townsite.
4006	Nechako, Vanderhoof	One-half mile from Vanderhoof, B.C.
4005	Skeena, Hazelton	At ferry.—Old Hazelton, B.C.

In addition to the foregoing list, stations were established on the Stoney and Nautley rivers. The station on Stoney creek, which was established to ascertain the possibility of obtaining power for the town of Vanderhoof, was discontinued, owing to a land slide diverting the bulk of the water into another drainage area. The Nautley river, on which the station was established in connection with a proposed water development, was abandoned; a test of the water showing it to be unfit for this purpose.

*Fort George District. List of Miscellaneous Gauging Stations.*

Stream.	Location.
Bulkley river	Smithers.
Chilako river	Millers ranch, near South Fort George.
Dome creek	Mile 145, B.C. (G. T. P. Ry.).
Fraser river	Mile 145, B.C. (G. T. P. Ry.).
Nautley river.	Fort Fraser
Stoney creek	Vanderhoof

## EXPLANATION OF TABLES.

For each regular gauging station the following data are given so far as available:—

1. Description of station.
2. Table of discharge measurements.
3. Daily gauge-height discharge table.
4. Tables of monthly discharge and run-off.

Under the description of stations is given the location, general information regarding the equipment, and the time the station has been maintained. Regarding stations established this year, is given briefly, the source, description of drainage area, and present uses of the river. In addition, the description covers ice conditions and their effect on the relation of gauge height to discharge.

The table of discharge measurements gives the number of measurements made during the year, the date measurement was made, name of engineer, the width and area of the cross section and the discharge in cubic feet per second. The zero of the gauge is set to an arbitrary datum, and has no relation to the zero flow or bed of the river. In general, the zero is located below the lowest known flow.

The daily gauge-height discharge tables give the daily elevation of the surface of the river above the zero of the gauge, and the daily discharge in cubic feet per second for the observed gauge height.

In the table of monthly discharge the column headed "Maximum" gives the mean flow for the day when the mean gauge height was highest. As the gauge height is the mean for the day, there may have been short periods when the gauge height and corresponding discharge was higher than given in this column. Likewise in the column of "Minimum" the quantity given is the mean flow for the day when the mean gauge height was lowest. The column headed "Mean" is the average flow for each second during the month. On this the computations for the remaining columns are based.

## DEFINITIONS OF TERMS.

The volume of water flowing in a stream called the run-off or "discharge" is expressed in various terms, each of which has become associated with a certain class of work. These terms may be divided into two groups: (1) those which represent a rate of flow, as second-feet, gallons per minute, and run-off in second feet per square mile; and (2) those which represent the actual quantity of water, as run-off in depth in inches and acre feet.

The units used in this report are, second-feet, second-feet per square mile, run-off in inches, and acre-feet.

"Second-foot" is an abbreviation for cubic foot per second (c. f. s.) and is the rate of discharge of water flowing in a stream 1 foot wide, 1 foot deep, at a rate of 1 foot per second. It is generally used as a fundamental unit from which others are computed by the use of the factors given in the following table of equivalents.

"Second-feet per square mile" is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming that the run-off is distributed uniformly both as regards time and area.

"Run-off in inches" is the depth to which the drainage area would be covered if all the water flowing from it in a given period were conserved and uniformly distributed on the surface. It is used for comparing run-off with rainfall, which is usually expressed in depth in inches.

"Acre-foot is equivalent to 43,560 cubic feet, and is the quantity required to cover an acre to the depth of 1 foot. It is a common unit of measurement of quantity, and is generally used in connection with storage.

### CONVENIENT EQUIVALENTS.

The following is a list of convenient equivalents for use in hydraulic computations:

1 second-foot equals 35.71 British Columbia miner's inches.

1 second-foot equals 6.23 British Imperial gallons per second; equals 538,472 gallons for one day.

1 second-foot equals 7.48 United States gallons per second; equals 646,272 gallons for one day.

1 second-foot for one year covers 1 square mile, 1.131 feet or 13.572 inches deep.

1 second-foot for one year equals 31,536,000 cubic feet; equals 724 acre-feet.

1 second-foot equals about 1 acre-inch per hour.

1 second-foot for one day equals 86,400 cubic feet; equals 1.983 acre-feet.

1 second-foot for one 28 day month equals 55.52 acre-feet.

1 second-foot for one 29 day month equals 57.50 acre-feet.

1 second-foot for one 30 day month equals 59.48 acre-feet.

1 second-foot for one 31 day month equals 61.46 acre-feet.

1 second-foot for one 28 day month covers 1 square mile 1.041 inches deep.

1 second-foot for one 29 day month covers 1 square mile 1.079 inches deep.

1 second-foot for one 30 day month covers 1 square mile 1.116 inches deep.

1 second-foot for one 31 day month covers 1 square mile 1.153 inches deep.

100 British Imperial gallons per minute equals 0.268 second-feet.

100 United States gallons per minute equals 0.223 second-feet.

1,000,000 British Imperial gallons per day equals 1.86 second-feet.

1,000,000 United States gallons per day equals 1.55 second-feet.

1,000,000 British Imperial gallons equals 3.68 acre-feet.

1,000,000 United States gallons equals 3.07 acre-feet.

1,000,000 cubic feet equals 22.95 acre-feet.

1 acre-foot equals 43,560 cubic feet.

1 acre-foot equals 271,472 British imperial gallons.

1 acre-foot equals 325,850 United States gallons.

1 inch deep on 1 square mile equals 2,323,200 cubic feet.

1 inch deep on 1 square mile equals 0.0737 second-foot per year.

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1 acre equals 43,560 square feet.

1 cubic foot equals 6.23 British imperial gallons.

1 cubic foot equals 7.48 United States gallons.

1 cubic foot of water weighs 62.4 pounds.

1 horse-power equals 550 foot-pounds per second.

1 horse-power equals 746 watts.

1 horse-power equals 1 second-foot falling 8.80 feet.

To calculate water power quickly:

$$\frac{\text{sec.-ft.} \times \text{fall in feet}}{11} = \text{net horse-power on water wheel, realizing 80 per cent}$$

of theoretical power.

### ACCURACY AND RELIABILITY OF DATA.

Practically all discharge measurements made under fair conditions are well within 5 per cent of the true discharge of the time of observation. Inasmuch as the errors of meter measurements are largely compensating, the mean rating curve, when well defined, is much more accurate than the individual measurements.

In order to give information regarding the probable accuracy of the computed results, an accuracy column is inserted in the monthly discharge table. Accuracy "A" indicates that the mean accuracy is probably accurate within 5 per cent; "B" within 10 per cent; "C" within 15 per cent; "D" within 15 to 25 per cent. Special conditions are covered by foot notes.

The accuracy in many cases is not as great as we would wish, the area covered is very large, and a large number of the stations have been maintained but a short time. Future observations may render necessary a certain amount of revision of the data here supplied.

The topographic surveys of the province are very incomplete, and the drainage areas are, in many cases, only approximate; consequently the figures showing discharge per square mile, and run-off depth in inches may be somewhat in error.

### PUBLICATIONS.

The stream measurement work of this organization to date has been made available to the public in the following publications:—

Water Resources Paper No. 1.—Records to Dec. 31, 1912.

Water Resources Paper No. 8.—Records to Dec. 31, 1913.

Water Resources Paper No. 14.—Records to Dec. 31, 1914.

Water Resources Paper No. 18.—Records to Dec. 31, 1915.



## ACKNOWLEDGMENTS.

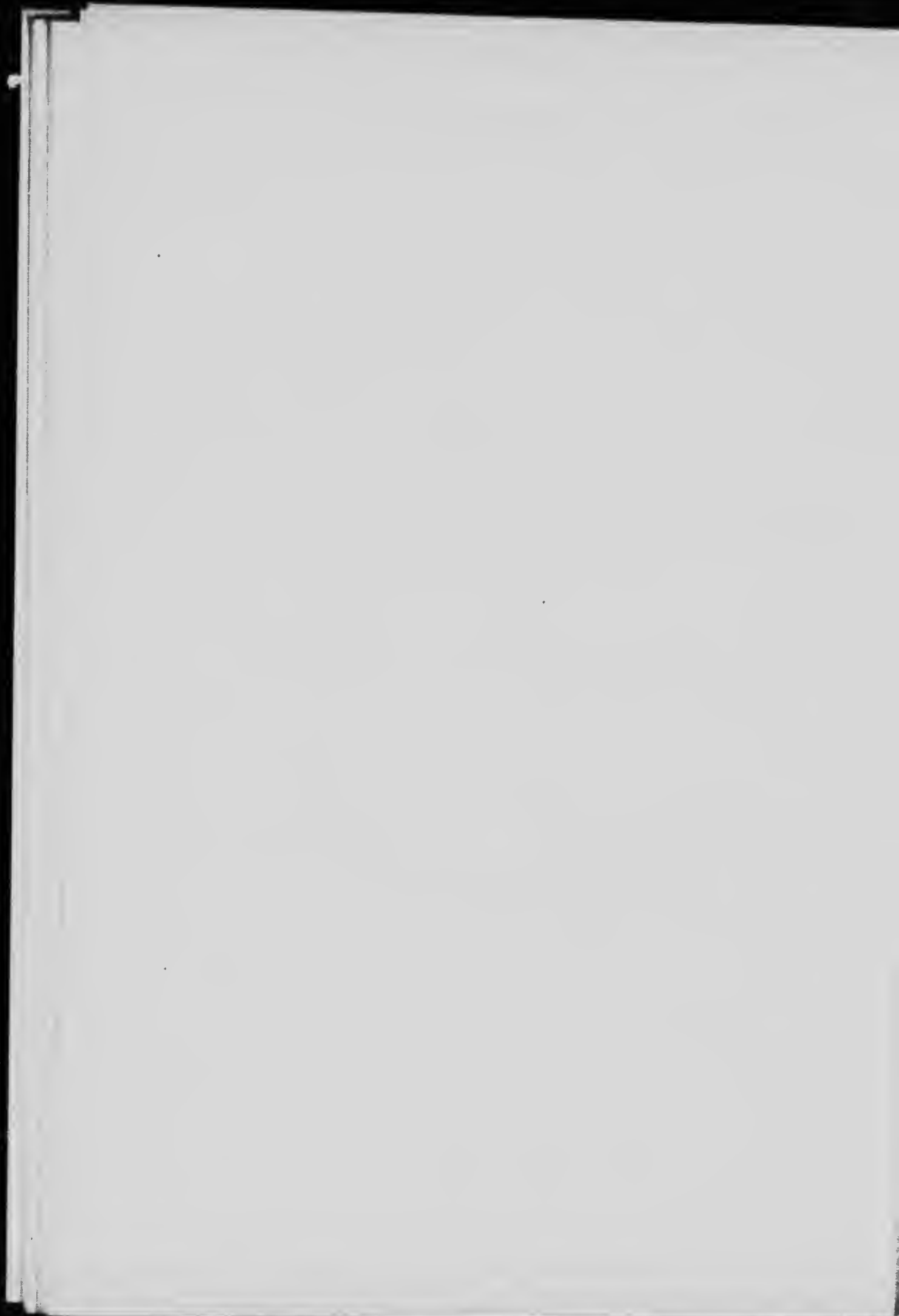
I take pleasure in expressing my appreciation of the hearty co-operation of the different individuals and companies interested in stream flow in the province, particularly the following:—

The Westminster Power Company; Messrs. Anderson & Warden, Civil Engineers, Vancouver, B.C.; Mr. Fellows, City Engineer, Vancouver, B.C.; Mr. F. A. Easton, C.E., Assistant Engineer, Vancouver Power Co., Ltd.; Mr. Wallace Grime, Secretary, Campbell River Power Company, Victoria, B.C.; Mr. James Hunter, C.E., Chief Engineer, Canadian Collieries (Dunsmuir) Ltd; Mr. Wm. Young, C.E., Comptroller of Water Rights, Victoria, B.C.; The Hon. L. A. Campbell; Mr. Bulger, Nakusp; and the district engineers of the Water Rights Branch, Government of British Columbia.

The following publications have been made use of in the compilation of this report:—The Monthly Weather Review, by the Meteorological Service of the Department of Marine and Fisheries and certain memoirs issued by the Geological Survey of the Department of Mines.

REPORT  
OF THE  
BRITISH COLUMBIA HYDROMETRIC  
SURVEY FOR 1915.

CHAPTER II.  
REPORT OF C. E. WEBB, B.A.Sc.  
ACTING DIVISION ENGINEER.



CHAPTER II.  
COAST DIVISION.  
TERRITORY.

*Geography.*—The Coast division of the British Columbia Hydrometric Survey comprises the south-western part of British Columbia. By referring to the key map showing the number and location of all the regular gauging stations, the exact boundaries may be clearly noted. All gauging stations numbering in the *One Thousands* are in the Coast division.

The Coast division is subdivided into three districts, known as Lillooet, Southern, and Vancouver Island. These districts were fully described in the 1914 report (Water Resources Paper No. 14.) Generally speaking, the Lillooet district extends along the line of the Pacific Great Eastern Railway from the head of Howe Sound to the vicinity of the town of Lillooet. The southern district comprises the territory around Vancouver, and extends up the valley of the Fraser river as far east as North Bend. Vancouver Island district is the whole of Vancouver Island, although as yet no work has been done on the north end or west coast.

The Coast division includes the large manufacturing centres of Greater Vancouver, New Westminster, and Victoria. These centres are supplied with electric energy by two large hydro-electric power companies, the Western Canada Power Company and the British Columbia Electric Railway Company.



Showing intake of Vancouver Water Supply.  
Gauging section, Capilano creek, 10 feet above intake.



Moose falls, Campbell river.



**Elk falls, Campbell river.**

**This is considered the best undeveloped water power on the British Columbia Coast.**

*Topography.*—The topography of the Coast division varies to such a great extent that it is hard to discuss it with regard to the different drainages, except in a very general manner. Along the Fraser river from North Bend west, the topography changes from the high rugged mountains of the Coast range, with narrow bench lands, to the fertile low lands at the mouth of the river where the valley is wide. The great interior plateau with its semi-arid soil comes into the division in the vicinity of Lillooet. There is some fine agricultural land in this district which, when irrigated, yields excellent crops. To the west of Lillooet the mountains rise rapidly and precipitation increases. Vancouver Island has a mountainous interior and for the most part is very heavily timbered. The streams are comparatively short and swift, rising and falling rapidly with sudden changes in climatic conditions.

*Economic Geology.*—The mineral wealth in the division is very great and new properties are continually being opened up and developed. The present war has given a great impetus to the already active mining industry in this province and many companies are enlarging their plants, which will greatly increase their productions. Gold, silver, copper and coal are all mined extensively, while Portland cement is manufactured on a large scale on Vancouver Island.

Hydro-electric energy is used to a large extent in all mining operations in the Coast division, most mines having their own hydro-electric installations.

## CLIMATE.

*Temperature and Precipitation.*—The climate of the south-western part of British Columbia is moderate. The warm Japan current which flows along the coast has a great effect on the climatic conditions of the province. Due to the mountainous nature of the country there is often a great difference in both temperature and precipitation in a very short distance. In the winter, precipitation is mostly caused by moisture-laden winds from the Pacific ocean. These winds frequently cross the low coastal plains without precipitating a drop of water, but on striking the cold mountain sides at a high altitude, the moisture is immediately condensed, causing heavy precipitation, probably in the form of snow on the mountains and rain in the valleys.

The snow stored in the higher altitudes during the winter comes off as a rule during May and June. The streams along the coast and on Vancouver Island are subject to high water almost any time from October to June. These streams usually have their minimum flow in the months of August and September. The inland streams in the southern and Lillooet districts being subject to lower temperatures in the winter months, generally have their minimum flow in January and February and their maximum flow in the spring.

Temperature and precipitation tables for the different localities in each district, accompanying this report, give the mean monthly temperature and the total monthly precipitation for the year, with the difference from the average in each case for the past ten years or more. These tables have been compiled from the monthly reports of the Meteorological Service of Canada, Mr. R. F. Stupart, F. R. S. C., director.









Campbell river at Irene pool.

1875

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In compiling these tables an endeavor has been made to choose those observation stations that will most closely average the actual precipitations and temperatures over the whole division.

### USES OF WATER.

The uses of water may more easily be discussed under the following headings: Municipal Water Supply, Irrigation, Reclamation, Water Power Developments, and Water Power Possibilities.



View of Stamp falls, on Stamp river.

In the accompanying lists the streams are classified under the different headings. Descriptions of each stream may be found either in this or a previous report. By referring to the lists, the number and year of the Water Resources paper describing each stream may be found.

#### MUNICIPAL SUPPLY.

The supply of pure water to municipalities, towns or cities requires the thorough investigation of the flow in available streams.

## IRRIGATION.

The lands in the valley of the Fraser river, around Lillooet require irrigation. There are many small streams in this district which require to be controlled to give a regular supply of water during the dry season, which usually extends from June till September.

## RECLAMATION.

The study of the high water on the Coquitlam river, in view of reclaiming the lands which are yearly flooded by the overflowing of the banks of this river, has been given considerable attention this year. Discharge data has been obtained for the year since January 25th. Other streams are listed in the report. The study of the stream flow of Lillooet river has been continued to ascertain the amount of water to be taken care of in the reclaiming of some forty square miles of good agricultural land at the head of Lillooet lake.

## WATER POWER DEVELOPMENTS.

The water power developed on the streams investigated by this survey has been discussed in previous papers.

## WATER POWER POSSIBILITIES.

Many inquiries being received regarding the possibilities of the establishment of electro-chemical manufacturing plants on or near the coast. During the year very few new investigations were started on power streams in the Coast division, as funds have not been available for the extension of work. There are many economical developments available. All streams which have been examined by this survey for the economical development of hydro-electric energy have been discussed in previous reports.

The following list shows the present use and possible future uses of the water where gauging stations have been established, and indicates the reason for maintaining the station.

## MUNICIPAL WATER SUPPLY.

*Southern District.*

Bridalveil creek	1915 report—Miscellaneous measurements.
Capilano creek	1913 report—(Water Resources Paper No. 8).
Dunville creek	1915 report—Miscellaneous measurements.
Elk creek	1915 report—Miscellaneous measurements.
Hutchison creek	1915 report—Miscellaneous measurements.
Lynn creek	1913 report—(Water Resources Paper No. 8).
Seymour creek	1913 report—(Water Resources Paper No. 8).
Silver-Pitt creek	1913 report—(Water Resources Paper No. 8).
Trout creek	1914 report—Miscellaneous measurements.
Windermere creek	1914 report—Miscellaneous measurements.

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*Vancouver Island District.*

Browne creek .....	1915 report—Miscellaneous measurements.
Holt creek .....	1915 report—Miscellaneous measurements.
Millard creek .....	1915 report—Miscellaneous measurements.
Nanaimo—South Fork .....	1915 report—Miscellaneous measurements.
Shawwalgan creek .....	1914 report—(Water Resources Paper Nn. 14).
Sooke river .....	1914 report—Miscellaneous measurements.

*Lillooet District.*

Lillooet creek .....	1915 report—Miscellaneous measurements.
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IRRIGATION.

*Southern District.*

Silver-Hope creek .....	1913 report—(Water Resources Paper No. 8).
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*Lillooet District.*

Cayuse creek .....	1914 report—(Water Resources Paper No. 14).
Foster Bar creek .....	1915 report.
Fountain creek .....	1914 report—(Water Resources Paper No. 14).
Laluwistin creek .....	1914 report—(Water Resources Paper No. 14).
Pavilion creek .....	1915 report.
Riley creek .....	1914 report—(Water Resources Paper No. 14).
Swarts creek .....	1915 report—Miscellaneous measurements.
Texas creek .....	1914 report—(Water Resources Paper No. 14).

*Vancouver Island District.*

No Irrigation.

RECLAMATION.

*Southern District.*

Chilliwack river .....	1913 report—(Water Resources Paper No. 8).
Coquitlam river .....	1915 report.
Silver-Pitt creek .....	1913 report—(Water Resources Paper No. 8).

*Lillooet District.*

Lillooet river .....	1913 report—(Water Resources Paper No. 8).
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*Vancouver Island District.*

No reclamation.

WATER POWER DEVELOPMENTS.

*Southern District.*

Coquitlam river .....	1913 report—(Water Resources Paper No. 8).
Gilley creek .....	1913 report—(Water Resources Paper No. 8).
Jackman creek .....	1915 report—Miscellaneous measurements.
Power river .....	1913 report—(Water Resources Paper No. 8).
Stave river .....	1913 report—(Water Resources Paper No. 8).

*Lillooet District.*

McGillivray creek .....	1914 report—(Water Resources Paper No. 14) Seton creek
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*Vancouver Island District.*

Puntledge river .....	1914 report—(Water Resources Paper No. 14).
Jordon river .....	1914 report—(Water Resources Paper No. 14).
Goldstream river .....	1914 report—(Water Resources Paper No. 14).

WATER POWER POSSIBILITIES.

Southern District.

Chehalis river.....	1913 report—(Water Resources Paper No. 8).
Chilliwack river.....	1913 report—(Water Resources Paper No. 3).
Coquihalla river.....	1913 report—(Water Resources Paper No. 6).
Jones creek.....	1913 report—(Water Resources Paper No. 8).
Mesilloet (Indian) river.....	1913 report—(Water Resources Paper No. 8).
Mesilloet river tributaries.....	1913 report—(Water Resources Paper No. 3).
Nicolium river.....	1914 report—(Water Resources Paper No. 14).
North Lillooet river.....	1913 report—(Water Resources Paper No. 8).
Rainbow creek.....	1913 report—(Water Resources Paper No. 8).
Raven creek.....	1913 report—(Water Resources Paper No. 8).
Sumallo river.....	1914 report—(Water Resources Paper No. 3).
Silver-Hope creek.....	1913 report—(Water Resources Paper No. 14).
Silver-Pitt creek.....	1913 report—(Water Resources Paper No. 8).
Stollicum creek.....	1913 report—(Water Resources Paper No. 3).
South Lillooet river.....	1913 report—(Water Resources Paper No. 8).

Lillooet District.

Brandywine river.....	1913 report.
Bridge river.....	1913 report—(Water Resources Paper No. 8).
Chehalamus river.....	1913 report—(Water Resources Paper No. 6).
Cayuse creek.....	1914 report—(Water Resources Paper No. 14).
Green river.....	1913 report—(Water Resources Paper No. 8).
Little Blackwater river.....	1914 report—(Water Resources Paper No. 14) Seton creek.
Soo river.....	1914 report—(Water Resources Paper No. 14).
Sixmile creek.....	1913 report—Miscellaneous measurements.

Vancouver Island District.

Campbell river.....	1914 report—(Water Resources Paper No. 14).
Stamp river at falls.....	1914 report—(Water Resources Paper No. 14).
Little Qualicum river.....	1914 report—(Water Resources Paper No. 14).
Nanaimo river.....	1914 report—(Water Resources Paper No. 14).
Sproat river.....	1914 report—(Water Resources Paper No. 14).
Stamp river at Great Central lake.....	1914 report—(Water Resources Paper No. 14).

Total Monthly Precipitation (Inches)—Southern District—1915.

Locality	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
Britannia Beach.....	7.83	6.64	5.17	5.77	4.47	1.35	1.60	0.54	1.64	14.56	7.09	15.60	73.46
Vancouver.....	7.13	4.42	4.18	3.04	3.42	1.07	0.91	0.30	0.80	6.83	5.41	10.30	49.93
Steveston.....	4.34	2.62	2.76	1.75	2.52	0.33	0.53	0.33	0.37	6.14	3.92	7.44	33.07
Ladner.....	2.90	1.85	1.90	1.25	1.65	0.45	0.65	0.07	0.50	4.34	3.58	5.30	33.44
Buntzen lake.....	11.22	7.03	7.97	5.70	5.78	0.44	2.03	0.73	1.46	19.36	10.12	19.64	91.46
Coquitlam lake.....	15.87	10.98	12.24	8.69	7.38	0.63	2.29	0.86	1.56	24.59	15.02	24.91	134.92
New Westminster.....	6.98	4.04	4.22	3.47	3.12	0.61	0.92	0.16	1.46	10.29	6.09	10.90	53.26
Stave Falls.....	8.31	5.51	4.12	5.34	5.49	1.60	1.92	0.03	1.46	11.61	7.46	13.62	33.36
North Nicome.....	8.70	4.21	3.13	4.98	4.46	2.49	2.84	0.14	1.77	14.32	7.66	13.02	70.82
Agassiz.....	7.17	5.67	2.48	5.37	5.20	2.36	1.62	0.07	1.26	11.20	7.75	15.39	35.57
Jones lake.....	4.97	3.86	3.53	5.36	6.53	4.11	2.56	0.36	2.54	15.15	9.38	12.68	71.20
Chilliwack.....	6.90	3.39	2.37	4.33	5.27	1.67	1.10	0.02	1.32	10.03	6.91	10.52	53.73
Hope.....	2.52	3.59	1.71	2.62	.....	1.13	1.13	0.12	2.08	9.98	8.87	11.11	.....

Difference from Average Precipitation (Inches)—Southern District—1915.  
 Difference of Total for Month from Monthly Average for Previous 10 Years or More.

Locality	No. of Years Records	Jan	Feb.	Mar.	Apr.	May	June	July	Aug	Sept.	Oct.	Nov.	Dec.	Year.
Vancouver.....	14	-1.43	-1.89	-0.26	-0.05	-0.14	-1.75	-0.42	-1.35	-3.49	3.14	-5.87	2.80	-10.62
Steveston.....	19	-0.71	-1.41	0.25	-0.16	0.17	-1.53	-0.43	-0.81	-2.11	2.79	-3.12	2.13	-4.94
Ladner.....	14	-1.69	-2.27	-1.09	-0.56	-0.75	-1.20	-0.55	-1.08	-2.26	0.23	-0.58	0.40	-11.40
Buntzen lake.....	13	4.45	-3.00	-1.02	-0.58	0.02	-4.13	-0.17	-2.28	-8.36	7.43	-10.02	6.73	-19.64
Coquitlam lake.....	12	-5.63	-3.76	1.22	0.26	-0.68	-5.08	-0.37	-3.27	-8.24	4.11	-14.89	6.39	-25.35
New Westminster.....	37	-0.87	-2.64	-1.17	0.35	-0.31	2.15	-0.55	-1.64	-1.17	4.69	-3.04	3.69	-5.54
North Nicome.....	23	0.13	-3.98	-2.95	-1.10	-0.01	-2.47	0.10	-2.08	-3.36	3.99	-3.20	3.95	-12.95
Agassiz.....	24	0.43	-0.11	-2.64	1.05	0.39	-2.46	-0.64	-2.68	-3.40	5.46	-1.16	8.62	2.26
Chilliwack.....	13	-0.24	-2.99	-1.93	0.63	1.09	-1.54	-0.87	-2.08	-2.88	4.11	-2.43	1.82	-7.02

N.B.—All quantities are plus unless otherwise designated.

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Mean Monthly Temperature (Degrees Fahr.)—Southern District—1915.

Locality.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Britannia beach				50.3	55.5	58.8	64.0	65.0	57.0	50.0	40.0	37.0
Vancouver	38.2	42.5	47.7	52.3	56.2	60.5	65.0	66.0	58.0	51.0	42.0	39.0
Steveston	37.4	41.0	45.3	50.2	54.2	59.2	62.0	63.0	56.0	50.0	41.0	39.0
Ladner	39.2	43.9	48.9	52.9	56.3	62.3	63.0	61.0	56.0	49.0	42.0	41.0
New Westminster	37.0	41.2	46.2	52.1	55.9	60.5	65.0	66.0	58.0	51.0	41.0	38.0
Stave Falls	36.5	42.1	48.4	53.4	57.6	60.5	66.0	67.0	59.0	51.0	41.0	38.0
North Nicomen	37.5	41.7	49.0	53.1	53.4	60.8	66.0	67.0	59.0	51.0	41.0	38.0
Agassiz	37.4	41.0	48.1	50.2	54.3	59.4	63.0	66.0	57.0	48.0	40.0	38.0
Jones lake	27.3	33.1	38.3	47.1	51.5	55.7	62.9	64.0	52.8	44.1	32.4	29.2
Chilliwack	36.7	41.3	48.9	51.9	56.4	59.5	65.0	65.0	57.0	50.0	40.0	37.0
Hope	33.0	39.3	48.8	53.5		60.6	65.0	69.0	58.0	49.0	37.0	32.0

Difference from Average Temperature (Degrees Fahr.)—Southern District—1915.

Difference of Average for Month from Monthly Average for Previous 10 Years or More.

Locality.	No of Years Records	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Vancouver	14	3.2	4.7	5.8	5.3	2.7	2.1	-1.0	4.0	2.0	2.0	0.0	0.0
Steveston	19	1.8	3.2	4.4	4.0	2.0	2.6	1.0	4.0	2.0	2.0	-1.0	0.0
Ladner	14	4.9	6.5	7.3	6.2	4.0	5.1	-1.0	2.0	1.0	0.0	-2.0	2.0
New Westminster	27	2.0	3.2	5.6	4.0	2.2	1.7	2.0	3.0	1.0	2.0	-1.0	0.0
North Nicomen	23	3.0	4.2	6.5	4.4	-1.3	1.8	1.0	4.0	2.0	1.0	-2.0	0.0
Agassiz	24	2.8	4.2	4.6	1.0	-1.2	0.4	-1.0	3.0	0.0	-3.0	-1.0	1.0
Chilliwack	13	0.4	3.1	5.9	1.9		-0.6	1.0	2.0	0.0	0.0	-1.0	0.0

N.B.—All quantities are plus unless otherwise designated.

Total Monthly Precipitation (Inches)—Lillooet District—1915.

Locality.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
Pemberton hatchery	2.50	3.28	1.47	2.12	1.91	0.65	1.63	0.53	0.36	6.59	2.02	5.98	29.04
Pemberton meadows	3.99	3.69	1.73	2.58	0.93	0.51	1.25	0.36	0.51	5.88	4.65	7.93	34.01
Fifteenmile ranch (Pavilion)	0.58	0.38	0.15		1.64	1.01	1.48	1.93	0.15	0.42			

Mean Monthly Temperature (Degrees Fahr.)—Lillooet District—1915.

Locality.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Pemberton hatchery	28.0	35.7	42.7	50.0	55.1	61.1	66.0	67.0	56.0	47.0	34.0	29.0
Pemberton meadows	23.8	34.0	42.3	50.9	57.2	62.5	66.0	65.0	55.0	47.0	33.0	27.0
Fifteenmile ranch (Pavilion)	29.7	37.8	43.8		56.8	63.0	69.0	71.0	55.0	46.0		



*Total Monthly Precipitation (Inches)—Vancouver Island District—1915.*

Locality.	Jan.	Feb.	Mar.	Apl.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
Victoria.....	1.32	0.96	1.93	0.37	1.22	0.91	0.94	0.04	0.20	4.20	4.37	4.78	31.73
Sooke.....	2.93	3.41	2.71	1.66	1.64	0.22	0.72	0.02	0.71	7.02	9.01	3.22	37.31
Shawnigan lake.....	2.23	3.07	1.94	1.37	1.79	0.86	0.73	0.03	0.71	3.77	3.37	10.87	34.31
Cobble hill.....	3.99	2.10	2.03	3.05	1.34	0.32	0.60	0.06	0.79	4.64	0.12	3.64	33.73
Cowichan (Tzouhalem).....	4.94	2.65	2.17	2.12	3.44	0.40	0.90	0.16	0.79	5.31	9.22	9.67	37.33
Ladysmith.....	5.97	3.21	4.91	1.63	3.12	1.09	0.54	0.21	0.36	7.92	7.57	12.14	42.00
Nanaimo.....	3.69	3.27	2.98	2.16	2.64	0.44	0.81	0.15	0.38	5.61	5.87	9.47	34.85
Nanoose bay.....	2.91	3.89	1.39	1.32	2.27	0.79	0.59	0.23	0.47	4.65	9.49	4.09	32.60
Alberni.....	7.91	8.52	5.67	3.63	2.93	1.42	0.66	0.27	2.34	14.14	9.11	13.31	75.33
Alert bay.....	5.13		2.75	3.19		0.46	1.26	0.16	1.27	11.42			
Clayoquot.....	10.99	10.46	13.22	9.10	7.47	2.44	2.69	2.63	1.77	31.02	14.52	22.31	112.03
Quatsino.....	8.36	9.90	7.71	6.77	2.62	0.46	1.70	2.47	1.94	16.99	12.34	14.19	93.37
Holberg.....	10.98	14.73	9.71	14.12	5.73	1.67	2.49	3.53	5.16	34.99	16.34	22.12	123.33

*Mean Monthly Temperature (Degrees Fahr.)—Vancouver Island District—1915.*

Locality.	Jan.	Feb.	Mar.	Apl.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Victoria.....	40.5	43.3	49.6	51.2	53.9	57.8	60.0	62.0	57.0	51.0	43.0	41.0
Sooke.....	39.3	42.1	48.3	50.4	53.9	56.2	61.0	63.0	55.0	52.0	42.0	40.0
Shawnigan lake.....	35.1	39.5	45.4	50.1	52.5	57.6	64.0	66.0	57.0	49.0	36.0	33.0
Cobble Hill.....	36.8	39.9	45.3	48.7	53.2	59.7	61.0	63.0	56.0	50.0	40.0	36.0
Cowichan (Tzouhalem).....	37.1	42.1	47.0	51.6	55.0	60.2	64.0	66.0	58.0	51.0	41.0	39.0
Ladysmith.....	38.6	40.6	46.6	50.7	54.5	59.5	63.0	66.0	56.0	51.0	40.0	37.0
Nanaimo.....	37.7	41.9	46.5	51.0	53.3	61.0	65.0	66.0	56.0	51.0	41.0	40.0
Nanoose bay.....	36.4	36.6	44.9	49.6	53.9	59.5	64.0	66.0	57.0	49.0	40.0	39.0
Alberni.....	35.1	40.8	47.4	51.5	55.4	61.1	65.0	67.0	60.0	51.0	39.0	35.0
Alert Bay.....	40.4		48.2	49.6		56.6	59.0	62.0	56.0	50.0	41.0	40.0
Clayoquot.....	40.3	42.1	47.9	50.1	53.3	56.0	60.0	62.0	56.0	51.0	43.0	40.0
Quatsino.....	38.5	40.4	46.2	49.2	54.5	56.0	60.0	62.0	56.0	50.0	40.0	39.0
Holberg.....	39.0	41.0	47.1	48.8	54.1	58.4	61.0	64.0	58.0	51.0	43.0	42.0

*Difference from Average Precipitation (Inches)—Vancouver Island District—1915.  
Difference of Total for Month from Monthly Average for Previous 10 Years or More.*

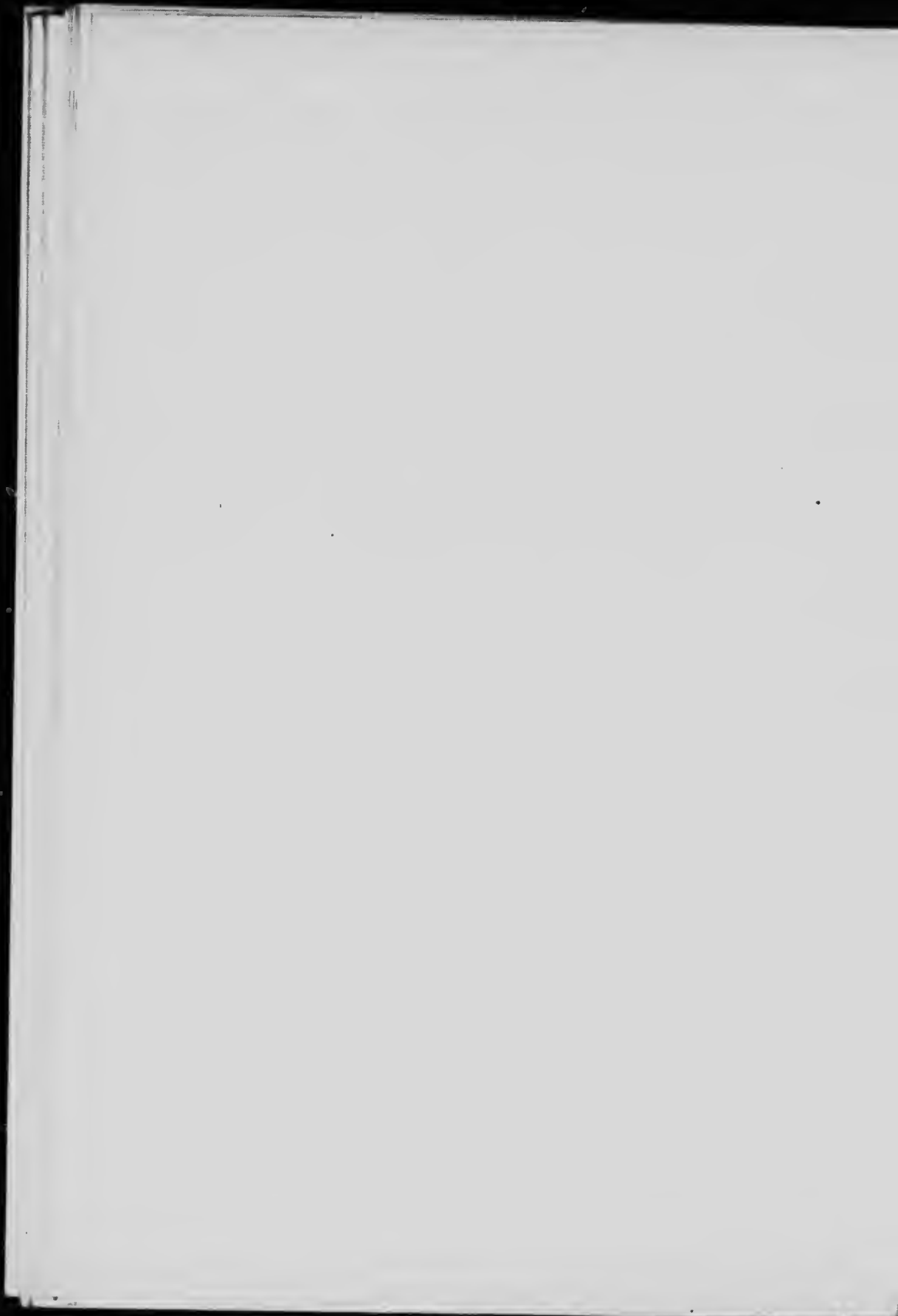
Locality.	Jan.	Feb.	Mar.	Apl.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
Victoria.....	-2.99	-2.55	-1.02	-1.16	-0.04	-0.32	0.48	-0.61	-1.21	1.65	-1.89	-1.12	-10.79
Nanaimo.....	-2.33	2.16	-0.42	0.48	0.82	-1.46	0.01	-0.61	-1.69	2.52	-2.90	1.30	-6.44
Alberni.....	-1.73	0.06	0.22	1.52	0.11	-0.88	-0.09	-0.37	-0.75	8.49	-3.28	5.89	6.38
Clayoquot.....	-4.03	-2.50	3.26	0.73	0.74	-1.80	0.88	-0.69	-8.29	8.23	-5.06	6.22	0.69
Quatsino.....	-4.05	-1.19	1.40	-0.92	-3.00	-4.17	-1.07	-1.58	-5.12	7.39	-4.41	-3.15	-22.67

*Difference from Average Temperature (Inches)—Vancouver Island District—1915.  
Difference of Average for Month from Monthly Average for Previous 10 Years or More.*

Locality.	Jan.	Feb.	Mar.	Apl.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Victoria.....	1.3	3.0	6.5	3.5	0.9	0.7	0.0	2.0	1.0	1.0	-3.0	0.0
Nanaimo.....	1.8	3.1	4.2	3.6	1.3	2.6	1.0	3.0	1.0	1.0	-2.0	1.0
Alberni.....	1.4	3.1	5.3	3.6	0.7	2.2	0.0	2.0	2.0	0.0	-2.0	-3.0
Clayoquot.....	0.8	1.4	5.5	4.5	3.3	3.7	2.0	3.0	0.0	0.0	-3.0	-2.0
Quatsino.....	2.1	2.4	5.4	5.5	3.1	4.6	2.0	4.0	2.0	2.0	-2.0	-1.0

REPORT  
OF THE  
BRITISH COLUMBIA HYDROMETRIC  
SURVEY FOR 1915.

CHAPTER III.  
Kamloops Division.  
REPORT OF C. G. CLINE, B.A.Sc., D.L.S.  
DIVISION ENGINEER.



## CHAPTER III.

## KAMLOOPS DIVISION.

## TERRITORY.

*Geography.*—The Kamloops division consists of the southern central portion of British Columbia, and comprises the provincial land districts of Kamloops, Similkameen, Osoyoos and a small part of Yale. It includes the watershed of the Thompson river, and a portion of the Columbia River basin lying north of the International boundary and drained by the Kettle, Similkameen and Okanagan rivers. The total area is 33,000 square miles.

The division coincides approximately with what is known to geologists as the Interior Plateau region which extends from the Coast range of mountains on the west to the Gold range on the east, and has the two branches of the Cascade range to the south and south-west. Many characteristic features of the climate of this part of the province are directly traceable to these circumstances of location and surroundings.

*Topography and Geology.*—The region is composed of extensive plateaus, numerous valleys, great and small, and broadly rounded summits with gently sloping sides. The general elevation of the plateaus is from 4,000 to 5,000 feet above sea-level. The deeper valleys, which contain the main drainage systems of the country are at about 1,000 feet. The rounded summits rise as high as 6,000 and 7,000 feet, there is a very considerable range of altitude.



Dawson falls, Murtle river.

The deeper valleys seem to have been scooped out by ice action or eroded by water. They are broadly U-shaped and are only partly occupied by the streams which flow through them. In certain cases, however, the streams have expanded into lakes, and fill practically the whole width of the valley bottom.

The depth of the tributary valleys and the steepness of their slope toward the main drainage system, seem to depend on the size of the streams. The valleys of the large rivers have been worn down until the slope is comparatively small, whereas the valleys of the small creeks are not nearly as deep and often descend hundreds of feet in a few miles. If a small stream which has its source on a plateau or on the side of a mountain, flows directly into one of the main drainage rivers, its descent is necessarily very rapid; if it is tributary to a stream of intermediate size, its descent is generally more gradual. As a rule, the smaller streams have the steeper slopes and are often more important for many purposes than the larger ones.

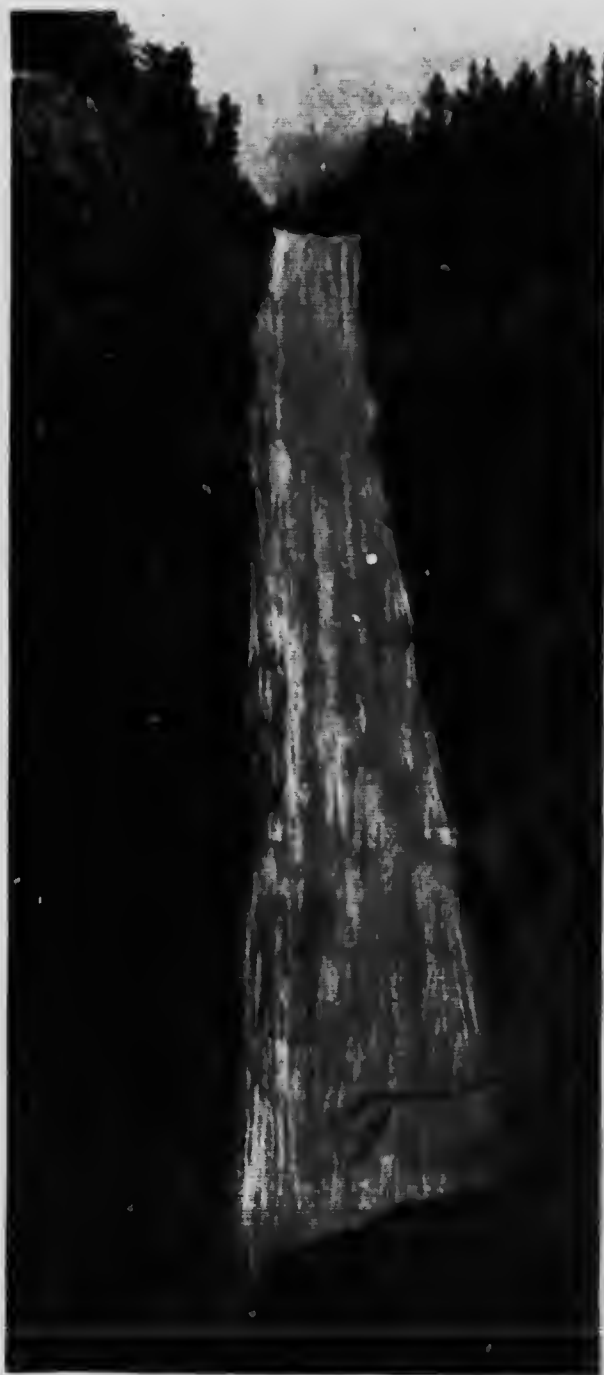


Alfalfa field beside South Thompson river, irrigated by pumping.

#### CLIMATE.

The Kamloops division is nearly all within the central dry belt. The winds from the Pacific ocean have been deprived of moisture on the western slope of the Coast range, and are heated as they descend to the plateau region. Winds from other directions are affected in a similar manner, so that they are generally capable of absorbing moisture. As a consequence, the climate is dry. The annual range of temperature is great, as is also the daily range in summer.

A study of the following tables will give an idea of some of the features of the climate in this part of the province. They give the precipitation and temperature for the stations of the meteorological service which are in this division. The variations from the average are also tabulated where the records extend over a period long enough to render the averages reliable.



Murtle river, at Helmcken falls. A sheer fall of 450 feet.  
—Photograph by F. R. Archibald.

It is well to bear in mind that most of these stations are located in the main valleys in the centres of population, and that very few are on the plateaus and none on the mountains. The stations at Edith lake above Kamloops, and at the Nickel Plate mine above Hedley, show very clearly the difference in temperature and precipitation caused by a difference of two or three thousand feet in altitude. Both these stations have lower temperatures and greater precipitations than the ones in the valley below them though they are only a few miles away. For any considerable watershed area, the mean monthly precipitation and the mean monthly temperature may differ a good deal from the figures obtained at the centre of population of that area.

The influence of the mountain ranges is quite noticeable. Around Shuswap lake, which is just west of the Gold range, the precipitation is greatest, and it diminishes towards the south and west. There is a greater precipitation in the



Thompson river. Irrigated lands, near Ashcroft.

valley of the North Thompson river, than there is at Kamloops which has the valley of the South Thompson lying open to the east. The precipitation is fairly large in the Similkameen valley, but not nearly as large as it is on the western side of the Hope mountains. The effect of the mountains in increasing the precipitation is most noticeable on their western slopes, where the moisture-bearing winds from the west are cooled as they ascend to higher altitudes.

The tables giving the variation from the average afford a ready means of comparing the weather conditions of 1915 with those of other years. They show that the winter was much milder than usual, with a rather lighter precipitation. As a result, very little snow remained on the hills till spring and it looked as though there might be a very considerable shortage of water. In the spring and summer, however, the precipitation was considerably heavier than usual so that the irrigationists and other water users had a fairly good supply.

SESSIONAL PAPER No. 25c

## USES OF WATER.

The general characteristics of the streams of this division previously mentioned, have a considerable effect on the uses to which they are put. A large stream flowing with a small slope through a broad, fertile valley, provides an unfailing supply of water, but for most purposes it is at so low an elevation that it is not easily utilized. A smaller tributary stream, on the other hand, while carrying less water, will generally have such a steep slope that the water can be diverted and carried through a gravity system to the places where it is needed. In many localities, therefore, practically the whole flow of a small stream may be used and found insufficient, whereas a large stream close at hand may be used very little or not at all. In such cases an accurate measurement of the discharge of the smaller stream is more important from an irrigation viewpoint than the measurement of the larger one.

One of the outstanding features of the use of water in this division is in the matter of irrigation. The large amount of sunshine and hot weather during the summer make ideal growing conditions, particularly in the larger valleys, but the small amount of precipitation, especially during the summer months, render irrigation necessary throughout nearly the whole division. On some of the higher lands, dry farming seems to be meeting with considerable success; but it is in the broad, fertile valleys that most of the farming is carried on, and it is there that irrigation is practiced so extensively. In the past, gravity supplies from the smaller streams have been given a marked preference, and no doubt these are the best where there is sufficient water. In certain localities, however, pumping plants are being installed to raise water from the large rivers and lakes on to land which could not be otherwise irrigated. Cheap hydro-electric power is quite an important factor in this development.

The following list shows the present use or possible future uses of the water, where gauging stations have been established, and indicates the reason for maintaining the station.

## MUNICIPAL WATER SUPPLY.

*Kamloops District.*

Canoe creek..... 1911-12 report—(Water Resources Paper No. 1).

*Okanagan District.*

Braah creek..... 1915 report.  
 Chase creek..... 1911-12 report—(Water Resources Paper No. 1).  
 Crazy creek..... 1914 report—(Water Resources Paper No. 14).  
 Thompson river..... 1911-12 report—(Water Resources Paper No. 1).  
 Okanagan river..... 1914 report—(Water Resources Paper No. 14).

*Ashcroft District.*

Coldwater river..... 1914 report—Miscellaneous measurements.



## IRRIGATION.

*Kamloops District.*

Bolan creek	1911-12 report—(Water Resources Paper No. 1).
Campbell creek	1911-12 report—(Water Resources Paper No. 1).
Cherry creek	1911-12 report—(Water Resources Paper No. 1).
Edwards creek	1911-12 report—(Water Resources Paper No. 1).
Gulchon creek	1911-12 report—(Water Resources Paper No. 1).
Hefley creek	1911-12 report—(Water Resources Paper No. 1).
Ingram creek	1911-12 report—(Water Resources Paper No. 1).
Jamieson creek	1911-12 report—(Water Resources Paper No. 1).
Louis creek	1911-12 report—(Water Resources Paper No. 1).
Monte creek	1911-12 report—(Water Resources Paper No. 1).
Paul creek	1911-12 report—(Water Resources Paper No. 1).
Salmon river	1911-12 report—(Water Resources Paper No. 1).
Siwash creek	1914 report—(Water Resources Paper No. 1).
Threemile creek	1913 report—Miscellaneous measurements.
Tranquille river	1911-12 report—(Water Resources Paper No. 1).
Whitewood creek	1914 report—(Water Resources Paper No. 14).

*Okanagan District.*

Ashnola river	1914 report—(Water Resources Paper No. 14).
Chase creek	1915 report.
Manson creek	1915 report.
Niskonlith creek	1911-12 report—(Water Resources Paper No. 1).
Ross creek	1915 report.

*Ashcroft District.*

Barnes creek	1911-12 report—(Water Resources Paper No. 1).
Beaver creek	1915 report.
Bonaparte river	1911-12 report—(Water Resources Paper No. 1).
Cache creek	1911-12 report—(Water Resources Paper No. 1).
Coldwater river	1913 report—Miscellaneous measurements.
Cris creek	1911-12 report—(Water Resources Paper No. 1).
Deadman river	1911-12 report—(Water Resources Paper No. 1).
Hat creek	1911-12 report—(Water Resources Paper No. 1).
Nicola river	1911-12 report—(Water Resources Paper No. 1).
Splus creek	1911-12 report—(Water Resources Paper No. 1).

## RECLAMATION.

*Okanagan District.*

Okanagan river	1914 report—(Water Resources Paper No. 14).
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## WATER POWER DEVELOPMENT.

*Kamloops District.*

Barriere river	1915 report.
Clearwater river	1914 report—(Water Resources Paper No. 14).
Little Clearwater river	1914 report—(Water Resources Paper No. 14).
Murtle river	1914 report—(Water Resources Paper No. 14).
Louis creek	1911-12 report—(Water Resources Paper No. 1).
North Thompson river	1911-12 report—(Water Resources Paper No. 1).
Raft river	1914 report—(Water Resources Paper No. 14).

*Okanagan District.*

Boundary creek	1914 report—(Water Resources Paper No. 14).
Crazy creek	1914 report—(Water Resources Paper No. 14).
Kettle river	1914 report—(Water Resources Paper No. 14).
Similkameen river	1914 report—(Water Resources Paper No. 14).
Twentymile creek	1913 report—(Water Resources Paper No. 8).

WATER POWER POSSIBILITIES.

Okanagan District.

Adams river	1911-12 report—(Water Resources Paper No. 1).
Eagle river	1911-12 report—(Water Resources Paper No. 1).
Granite creek	1914 report—(Water Resources Paper No. 14).
Okanagan river	1914 report—(Water Resources Paper No. 14).
Scotch creek	1913 report—Miscellaneous measurements.
Seymour creek	1913 report—Miscellaneous measurements.
Shuswap river	1911-12 report—(Water Resources Paper No. 1).
South Similkameen river	1914 report—(Water Resources Paper No. 14).
Tulameen river	1913 report—Miscellaneous measurements.

Ashcroft District.

Coldwater creek	1913 report—Miscellaneous measurements.
Nahatlatch river	1911-12 report—(Water Resources Paper No. 1).
Nicola river	1911-12 report—(Water Resources Paper No. 1).

LOGGING.

Okanagan District.

Adams river	1911-12 report—(Water Resources Paper No. 1).
Kettle river	1914 report—(Water Resources Paper No. 14).
Okanagan river	1914 report—(Water Resources Paper No. 14).

Ashcroft District.

Thompson river	1911-12 report—(Water Resources Paper No. 1).
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Mean Monthly Temperature (Degrees Fahr.)—Kamloops Division—1915.

Locality.	Altitude.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
<i>Nicola</i>														
Nicola lake	2120	16	28	39					65	53	47	32	27	
<i>Thompson</i>														
Tranquille	1142	25	37	45	55	59	64	69	70	57	51	35	31	50
Kamloops	1245	23	37	45	56	58	63	69	72	57			30	49
Editl. lake	3200	17	29	36	45	49	52	58	52	45			22	40
<i>N. Thompson</i>														
Chinook cove		22	34	41	51	56	58	64	47	53	46	31	26	49
Vavenby	1450	21	35	40	51	56	58	63	66	52	45	30	25	45
<i>S. Thompson</i>														
Monte creek	1155	21	33	39	51	55	50	67	59	54	50		29	
Tappen	1350	28	35	43	53	59	63	68	71	55	49	34	29	49
Salmon Arm		22	33	42	51	55	59	64	70		48	33	28	
Glenemma		26	37	48		55	59	53	65	55	48	35	30	
<i>Okanagan valley</i>														
Enderby	1180	23	33	42	52	57	60	66	69	55	44	35	27	47
Armstrong	1187	22	32	40	50	55	58	63	66	53	46	32	25	45
Vernon	1582	20	32	41	51	54	59	65	70	55	47	31	27	45
Richlands		19	31	38	47	50	57		54		44	28	25	
Okanagan mission	1200	25	34	40	59	55	50	65	67	55	47	36	31	47
Summerland	1100	22	33	41	52	55	62	56	71	57	48	32	28	47
Pentlcton		27	35	43	55	56	52	55	70	47	51	35	31	49
<i>Similkameen</i>														
Princeton	1650	16	29	40	49	52	55	63	66	53	45	27	19	43
Hedley	1771	23	34	43	52	55	61	66	71	56	47	30	27	48
Hedley (Nickel Plate)	4500	20	26	31	40		45	54	51	42	37	18	13	
<i>Kettle</i>														
Greenwood	1746	15	31	39	48	52	55	62	67	53	45	27	24	43
Grand Forks	2400	18	32		58	55	61	65	71	56	46	30	25	

Total Monthly Precipitation (Inches)—Kamloops Division—1915.

Locality	Altitude	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
Nicola lake	2120	0 95	0 00	0 30					0 57	0 82	0 82	0 77	1 36	
Thompson														
Tranquille	1142	0 89	0 10	0 59	0 15	1 54	2 40	2 72	0 54	0 67	0 16	0 42	1 02	11 21
Kamloops	1245	0 93	0 00	0 47	0 17	2 28	2 49	1 15	1 32	0 61	0 80	0 37	1 60	12 20
Edith lake	3200	1 85	0 45	0 61	0 30	2 25	4 06	1 77	0 73	0 72	0 89	1 46	3 60	17 72
N. Thompson														
Chinook cove		0 75	0 57	0 76	0 40	2 80	3 32	2 76	0 87	1 13	1 05	0 55	1 56	16 82
Vavenby	1450	0 41	0 20	0 33	0 72	1 49	3 11	3 45	0 81	1 53	1 12	0 60	1 27	16 04
S. Thompson														
Monte creek	1156	1 75	Trace	1 32	0 28	1 64	3 54	0 79	0 96	0 41	0 36	0 17	0 88	12 14
Tappen	1350	2 51	0 76	1 01	1 34	3 55	2 27	2 75	0 60	1 22	1 34	1 96	2 23	24 19
Salmon arm		2 15	0 45	0 96	1 93	2 51	2 55	2 56	0 60	0 73	1 32	0 67	2 00	20 53
Glenemma		1 80	1 13	1 35	1 17	3 13	5 47	2 28	1 19	1 49	2 16	1 32	2 20	24 76
Canoe point		2 18	0 37	1 00	2 06	2 76	4 21	3 11	1 20	1 36	2 24	1 22		
Okanagan valley														
Enderby	1180	2 29	0 54	1 29	2 15	2 88	4 84	2 26	0 20	1 23	1 19	0 96	2 10	22 05
Armstrong	1187	1 99	0 64	0 92	1 50	2 95	3 26	2 27	0 84	1 48	1 67	1 09	2 14	20 70
Vernon	1582	1 33	0 56	0 68	1 62	2 91	1 72	2 18	0 72	0 92	1 14	0 86	0 87	15 56
Richlands		1 60	0 73	0 47	2 08	4 98	3 11		0 83	2 20	1 57	0 46	0 80	
Okanagan mission	1200	1 24	0 56	0 82	0 79	2 55	0 88	1 89	0 26	1 65	1 21	1 31	1 23	14 19
Summerland	1100	0 53	1 00	1 28	0 38	2 83	0 86	2 41	0 27	1 24	1 16	0 82	1 85	14 73
Penticton		0 65	0 44	1 08	0 91	3 49	1 16	2 35	0 27	1 01	0 99	0 77	1 14	14 26
Similkameen														
Princeton	1650	0 75	0 25	0 76	0 41	2 54	0 96	2 56	1 36	1 07	1 00	2 02	1 67	15 35
Hedley	1771	0 25	0 54	0 53	0 65	3 35	1 18	2 29	0 71	1 32	1 13	0 28	1 28	12 56
Hedley (Nickel Plate)	4500	0 80	0 60	0 80	2 06		1 20	2 25	0 25	2 02	1 72	3 15	3 60	
Kettle														
Greenwood	1746	0 72	1 10	0 92	2 40	4 24	1 59	3 25	0 61	0 71	0 80	1 20	3 63	21 17
Grand Forks	2400	1 25	0 99		1 99	3 61	1 82	3 44	0 05	0 89	1 21	0 97	1 25	

Difference from Average Precipitation (Inches)—Kamloops Division—1915.  
Difference of Total for Month from Monthly Average for Previous 10 Years or More.

Locality	No. of Years Records	Jan	Feb	Mar	Apr	May	June	July	Aug.	Sept.	Oct	Nov	Dec.	Year
Nicola lake	20	0 10	-0 84	-0 31					-0 40	-0 30	0 14	-0 59	0 46	
Kamloops	23	0 02	-0 80	-0 15	0 19	1 35	1 26	-0 12	0 27	-0 33	0 21	-0 67	0 50	1 16
Enderby	13	-0 30	1 08	-0 28	1 38	1 57	2 71	0 80	-1 03	-0 47	-0 32	-1 78	-0 20	1 56
Vernon	21	0 17	0 56	-0 04	0 11	1 68	-0 07	0 82	-0 31	-0 56	0 35	-0 61	-0 40	0 57
Okanagan mission	16	0 09	0 74	-0 02	0 33	1 52	-0 34	0 12	-0 77	0 48	0 36	-0 68	-0 15	0 02
Princeton	19	0 61	0 68	0 15	0 12	1 20	-0 13	1 31	0 46	0 02	0 17	0 15	0 33	2 26
Hedley	11	0 78	0 67	0 09	0 20	1 79	-0 21	1 08	-0 27	0 64	0 43	-0 59	0 52	2 24
Hedley (Nickel Plate)	11			-0 60	-1 64		-1 44	0 77	-1 39	0 99	-0 05	-0 85	1 70	

N B.—All quantities are plus unless otherwise designated.

Difference from Average Temperature (Degrees Fahr.)—Kamloops Division—1915.  
Difference of Average for Month from Monthly Average for Previous 10 Years or More.

Locality	No. of Years Records	Jan	Feb	Mar.	Apr	May	June	July	Aug.	Sept.	Oct	Nov	Dec.	Year
Nicola lake	20	-3	4	7					5	0	3	-1	0	
Kamloops	23	1	10	8	6	1	-1	-1	4	-1	2	7	1	27
Enderby	13	1	2	7	5	2	1	-0	5	1	0	1	1	29
Vernon	21	0	6	6	4	0	-1	-1	5	0	2	-3	-1	17
Okanagan mission	15	1	9	3	2	-1	-1	-2	3	0	2	0	1	18
Princeton	19	1	6	8	5	0	1	0	4	0	2	-4	-3	20
Hedley	11	3	7	7	5	1	1	-1	6	1	1	-6	-2	23
Hedley (Nickel Plate)	11	3	4	5	5		2	-2	8	-5	0	-11	-9	

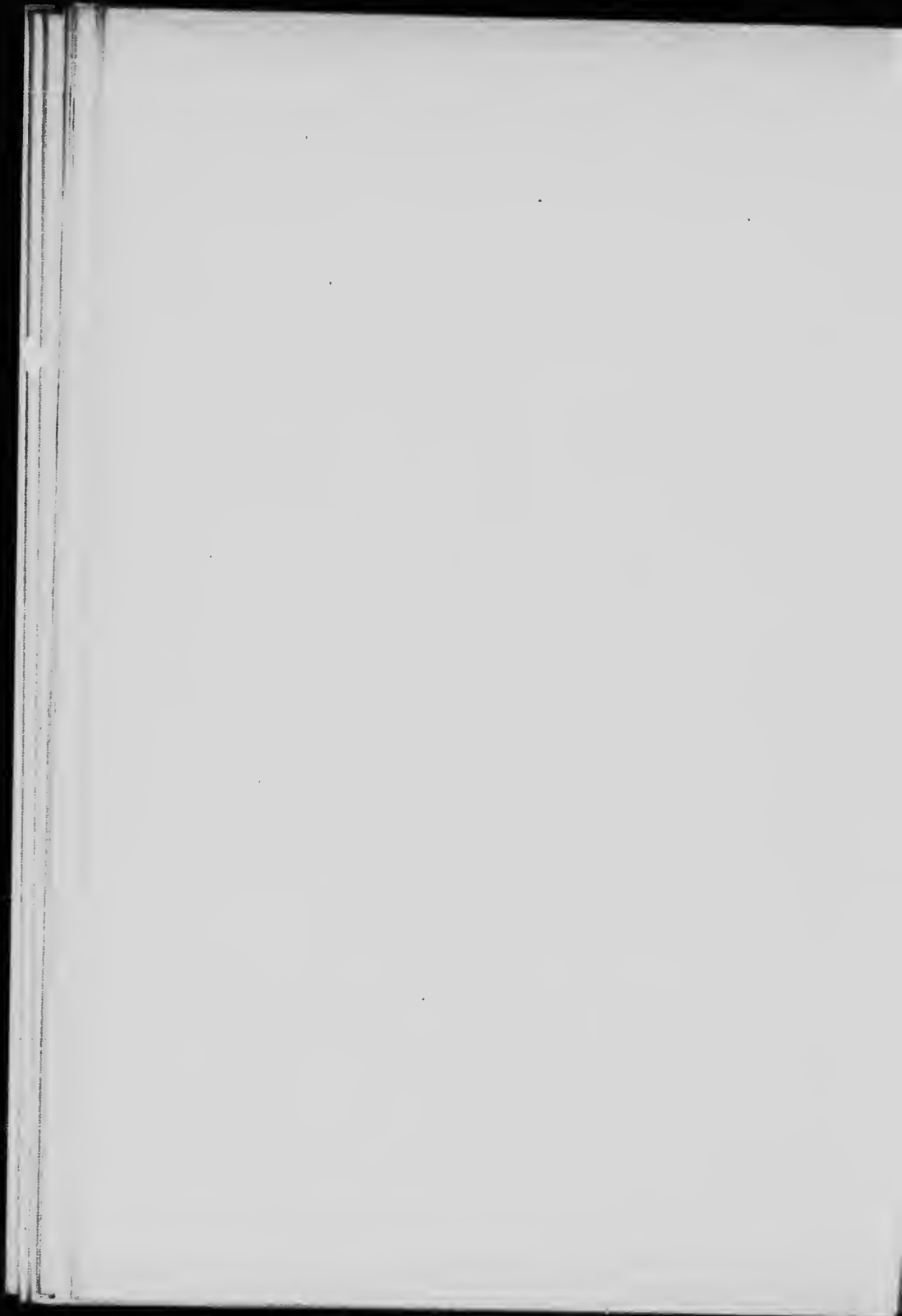
REPORT  
OF THE  
BRITISH COLUMBIA HYDROMETRIC  
SURVEY FOR 1915.

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CHAPTER IV.

Nelson Division.

REPORT OF C. E. RICHARDSON, B.A.Sc., D.L.S.  
DIVISION ENGINEER.



CHAPTER IV.  
NELSON DIVISION.  
TERRITORY.

*Geography.*—This division covers approximately 29,000 square miles of the south and eastern part of the province of British Columbia. The division might readily be called "Kootenay division" as it extends over practically all of that area known as Kootenay district. It is bounded on the north by the height of land connecting the summit of the Rockies with the summit of the Columbia or Gold mountains; on the west by the summit of the Columbia range; on the south by the 49th parallel of latitude or International boundary, and on the east by the backbone of the Rockies. This area is very mountainous, with numerous lakes, rivers and creeks, which afford innumerable opportunities for future water power development; there are three rivers, however, that constitute the drainage system of the whole division; these are the Columbia, the Kootenay and the Pend d'Oreille.

The Columbia rises in the Columbia and Windermere lakes, 90 miles south-east of Golden and flows in a north-westerly direction for about 200 miles to the mouth of Canoe river at Big Bend, near the northerly limits of the division.

From Canoe river the Columbia flows practically south for about 250 miles, past Revelstoke, through the beautiful Arrow lakes, crossing the International boundary near Waneta, B.C. Kootenay river rises in the Beaverfoot range of the Rockies, about 35 miles south-east of Golden and flows practically south for 175 miles, passing within one mile of Columbia lake and crossing the International boundary near Newgate, B.C. It flows through Montana into Idaho, entering West Kootenay 60 miles west of Newgate and 20 miles south of Kootenay Landing, at which point the river loses itself in beautiful Kootenay lake. From the west arm of Kootenay lake the river flows in a south-westerly direction, discharging into Columbia river 20 miles north of the boundary. Pend d'Oreille river, of which Flathead river in East Kootenay is a tributary, has only a small portion of its drainage in Canada. It discharges into Columbia river about 200 yards above the International boundary.

Hot springs are numerous, several being located in the vicinity of Windermere lakes, Halcyon, Ainsworth and other points.

In the division three national parks are located—The Yoho, Glacier and Revelstoke. Each park has its outstanding features. Yoho with its Yoho valley, Takakkaw falls, natural bridge and Emerald lake; Glacier with Illecillewaet, Grand and Gegic glaciers and mammoth snowfields; Revelstoke, with its prairie country near the summit of Mt. Revelstoke.

The chief industries are mining (of coal, gold, lead, silver, copper and zinc) lumber (chiefly B.C. fir and western pine) and farming (mixed and fruit).

Transportation facilities are afforded by the main line of the C.P.R. in the north, and various branch lines of the C.P.R. and Great Northern in the south. Navigation is carried on continuously on Kootenay and Arrow lakes. Good roads are frequent in East Kootenay and government trails give access to other principal points of interest.

## TOPOGRAPHY.

*Mountain Systems.*—The topography of Nelson division is relative to four mountain systems—the Rockies, the Purcells, the Selkirks and the Columbia range.

The summit of the Rockies, which constitutes the eastern boundary of the division, consists of a well defined range studded with snow-capped peaks, many of which are well over 10,000 feet. The western slope includes various local ranges, mostly paralleling the main range. The more famous passes are Crowsnest, Vermilion and Kicking Horse, about 5,000 feet at the divides. The larger rivers from south to north are the Elk, Bull, Kootenay, above Canal flats, Kicking Horse, Blaeberry and Bush. These streams, with the possible exception of the Bull, are all glacial fed and the valleys generally are well timbered to an elevation of 7,000 feet.

The Purcells constitute that system to the west of the Rockies bounded on the north by the confluence of Columbia and Beaver rivers, on the east by Columbia and Kootenay rivers, on the south by the Kootenay and on the west by the north-flowing portion of Kootenay river, Kootenay lake, Duncan river and Beaver river.

The principal streams fed by the Purcells are, Goat, Moyie, Yahk, St. Marys, Findlay, Dutch, Toby, Horsethief, Forsters (No. 2), Bugaboo, Spillimacheen, Hammil and Fry. Many of these streams are glacial fed.

The Selkirks extend southward from the Big Bend of Columbia river, lying between the Rockies and Purcells on the west and Columbia range on the east. The northern portion of the Selkirks are strikingly scenic, peaks are high and treacherous; passes are few, Rogers pass alone is well known. The more important rivers are Incomappleux, Akolkolex, Illecillewaet, Downie, Gold, and Mountain. Well known glaciers are the Illecillewaet or Great glacier, Grand glacier and Gegic glacier. One mammoth snowfield feeds these glaciers.

The summit of Columbia or Gold range forms the western boundary of this division. This system of mountains is less impressive than the three already described. The larger rivers are Inonoaklin, Whatshan, Arrowpark, Pingston, and Jordon. A few small glaciers may be found in the higher peaks.

*Trenches.*—Between the ranges of mountains above mentioned there are these great depressions or trenches, namely, Rocky Mountain trench, Purcell trench and "Selkirk valley."

Rocky Mountain trench lies between the Rockies and the Purcells in the south and Selkirk in the north of this division. It extends in Canada from the International boundary in a north-westerly direction as far north as Alaska and perhaps to the Arctic ocean. In Nelson division it is occupied by south-

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flowing Kootenay river, the north-flowing Columbia and Canoe rivers. The average width of its floor is 5 miles but in the neighborhood of St. Marys river, near Cranbrook, it is 16 miles wide and varies in width to the International boundary, affording in the plains possibilities for agriculture.

Purcell trench, approximately 200 miles in length, separates Purcell range on the east from the Selkirks on the west. It is occupied by Beaver river, Duncan river, Kootenay lake and north-flowing Kootenay river. On an average the valley is 2 to 5 miles wide.

Selkirk valley or trench is occupied by Columbia river, flowing south, and the Arrow lakes. It is from 3 to 5 miles in width and separates the Selkirks on the east from Columbia or Gold range on the west. Upper Arrow lake is about 40 miles long and from 2 to 3 miles wide. The mountains rise abruptly to an



Showing thickness of ice on Bull river.

altitude of from 5,000 to 7,000 feet. The lower lake is about 50 miles long and has an average width of 2 miles. There are pronounced falls on practically all the tributaries to the lakes.

*Geology.*—Mining is by far the most important industry in this division. In 1913 and 1914 approximately two-thirds of the mine production of British Columbia was from the Kootenay-Boundary district. Gold, silver, lead, copper, zinc and coal are mined in various localities, particularly in the southern part.

#### CLIMATE.

Run-off is relative directly to topography and climate. Climatic conditions are themselves partially dependent on topography. In the study of stream



flow it is essential to be familiar with these two factors. The topography, however, remains a constant factor and the variation in the flow of streams is due therefore directly to climatic conditions. In this division the peculiar topography affords a remarkable climate. It is impossible to assume that the climatic conditions at a certain point will be general in that neighborhood. On the other hand although there are marked variations in some sections a general resemblance may be seen between other localities.

The following tables are appended:—

1. Monthly and yearly precipitation, 1915
2. Differences from average precipitation.
3. Mean monthly and average temperatures, 1915.
4. Differences from average temperature.

These tables are compiled from the monthly reports for 1915 of the Meteorological Service, Mr. R. F. Stupart, director.

In these tables a comparison is shown between 10 points, 5 in East Kootenay and 5 in West Kootenay. With the exception of Glacier and Fernie these points are all in the valleys of Columbia and Kootenay rivers—practically the lowest points in their respective localities. It must be remembered that the precipitation or temperature at any one of these points does not represent the precipitation or temperature in its locality.

## USES OF WATER.

### MUNICIPAL SUPPLY.

In the Kootenays the mountain streams, lakes and springs generally afford an ample supply for municipal purposes without much difficulty being encountered. It is essential, however, in many cases, that a study of the streams be made. The variation of the flow is so great that unless those interested are familiar with the streams, they will be deceived by appearances. Studies are now being carried on by this survey with regard to municipal supply and when possible any assistance will gladly be given interested parties.

### IRRIGATION.

The scarcity of agricultural land and the richness of the soil necessitates the utilization of all available land in an attempt to fulfil the demands of the local markets. With the exception of small plots here and there, the valleys of Columbia and Kootenay rivers afford the only location of agricultural lands. The largest farming district is in the Rocky mountain trench (see description under topography) from Spillimacheen south to the International boundary.

Irrigation is practised to some extent in the valleys throughout the whole division. It is essential in East Kootenay, south of Spillimacheen. In the vicinity of Edgewater and Athalmer two companies, holding large tracts of land, installed irrigation systems, which include over 30 miles of flume.

At present systematic records during the irrigation season are being obtained on approximately 15 irrigation streams.

## MINING.

In the operation of practically all mines the use of water is essential. After the ore is mined and shipped to the smelter, water and water power become an important factor.

Various requests have come in during the year for information on small streams for mining purposes. Where possible information is supplied, but these streams are so numerous that it is hard to tell upon which information will be required.

## RECLAMATION.

There are two large reclamation projects in this division—on the Columbia between Golden and Spillimacheen, and on the Kootenay above Kootenay lake. The former is at present under way, surveys have been made and plans submitted. This scheme deals with the reclamation of about 15,000 acres. The Kootenay flats reclamation is an international affair, including probably more land in the United States than in British Columbia. The required surveys, etc., have not as yet been made.

Systematic and reliable stream flow data is being obtained in connection with these projects on the Columbia, near Golden and Kootenay river, at the outlet of the lake, near Nelson.

## WATER POWER DEVELOPMENT.

A rather complete list of water power developments was published in the report of the division engineer, Kootenay Boundary division, in Water Resources Paper No. 8. These powers were listed under "Mining" and under "Hydroelectric Developments." Since that list was published no large plants have been installed. Various small powers of from 100 to 500 H.P. have since been utilized for mining purposes and improvements and additions have been made to some of the larger plants. The West Kootenay Light and Power Co. have remodelled their plant at lower Bonnington Falls to accommodate the demand for power of the new zinc smelter at Trail. The City of Revelstoke have remodelled their municipal plant and installed a new turbine and generator, which greatly increases the efficiency of the plant.

Power is used extensively for mining. Of the total installation, probably in excess of 40,000 horse power, over 30,000 horse power is used for mining and smelting. Installations in this division are comparatively cheap, due to the pronounced falls and canyons on most of the streams.

## WATER POWER POSSIBILITIES.

Water Power possibilities throughout the Kootenay are innumerable and dozens of unnoticed sites would be in demand were they located in other parts of the Dominion. The topographic conditions afford in most cases a high head at considerably less than the average cost for Canada. The combination of the climatic and topographic conditions on the other hand is often a detriment. The variation in flow is extreme, a heavy freshet generally occurring in May, June or July, and very low water with frazil ice occurring in February, and March,

A careful study of the characteristics of each individual stream is essential before any plant is installed. The streams throughout this division are most deceptive and it is not safe to estimate the run off of any one stream from a study of its next door neighbor.

The following list shows the present use and possible future uses of the water where gauging stations have been established, and indicates the reason for maintaining the station.

## MUNICIPAL WATER SUPPLY.

*Revelstoke District.*

Field Springs (No. 1)	1914	report—(Water Resources Paper No. 14).
Field Springs (No. 2)	1914	report—(Water Resources Paper No. 14).
Field Springs (No. 3)	1914	report—(Water Resources Paper No. 14).
Hospital creek (Weir)	1914	report—(Water Resources Paper No. 14).

## IRRIGATION.

*Revelstoke District.*

Findlay creek	1914	report—(Water Resources Paper No. 14).
North Vermillion	1914	report—(Water Resources Paper No. 14).
South Vermillion	1914	report—(Water Resources Paper No. 14).
Washout	1911-12	report—(Water Resources Paper No. 14).

*Cranbrook District.*

Cherry creek	1914	report—(Water Resources Paper No. 14).
Gold creek	1914	report—(Water Resources Paper No. 14).
Link later creek	1914	report—(Water Resources Paper No. 14).
Phillips creek	1914	report—(Water Resources Paper No. 14).
Rock creek	1914	report—(Water Resources Paper No. 14).
Big Sand creek	1914	report—(Water Resources Paper No. 14).
Little Sand creek	1914	report—(Water Resources Paper No. 14).

## RECLAMATION.

*Nelson District.*

Duncan river	1914	report—(Water Resources Paper No. 14).
Fry creek	1914	report—(Water Resources Paper No. 14).
Glacier creek	1914	report—(Water Resources Paper No. 14).
Kootenay river	1913	report—(Water Resources Paper No. 9).

*Revelstoke District.*

Bugaboo river	1913	report—(Water Resources Paper No. 8).
Columbia river	1911-12	report—(Water Resources Paper No. 1).
No. 3 creek	1911-12	report—(Water Resources Paper No. 1).
Spillimacheen creek	1911-12	report—(Water Resources Paper No. 1).
Toby creek	1911-12	report—(Water Resources Paper No. 1).

## WATER POWER POSSIBILITIES.

*Nelson District.*

Carpenter creek	1914	report—(Water Resources Paper No. 14).
Columbia river	1913	report—(Water Resources Paper No. 8).
Columbia river	1913	report—(Water Resources Paper No. 8).
Goat creek	1914	report—(Water Resources Paper No. 8).
Inonokiln creek	1915	report—(Water Resources Paper No. 14).
Kaalo creek	1914	report—(Water Resources Paper No. 14).
Kooskanax creek	1914	report—(Water Resources Paper No. 14).
Kootenay river	1913	report—(Water Resources Paper No. 14).
Kootenay river	1913	report—(Water Resources Paper No. 14).
Pend d'Oreille river	1913	report—(Water Resources Paper No. 8).
Silverton (below mill)	1913	report—(Water Resources Paper No. 5).
Silverton (above mill)	1914	report—(Water Resources Paper No. 14).
Slocan river	1914	report—(Water Resources Paper No. 14).
	1913	report—(Water Resources Paper No. 8).

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Revelstoke District.

Akolkolok river...	1911-12 report—(Water Resources Paper No. 1)
Blueberry river...	1912 report—(Water Resources Paper No. 8)
Columbia river (Revelstoke)	1911-12 report—(Water Resources Paper No. 1)
Hecilawaet river.....	1911-12 report—(Water Resources Paper No. 1)
Incomapleux river.....	1911-12 report—(Water Resources Paper No. 1)
Kicking Horse (Golden)	1911-12 report—(Water Resources Paper No. 1)
Kicking Horse (Field)	1911-12 report—(Water Resources Paper No. 1)
Kicking Horse (No. 3)	1911-12 report—(Water Resources Paper No. 1)

Cranbrook District.

Bull river.....	1914 report—(Water Resources Paper No. 14)
Elk river.....	1914 report—(Water Resources Paper No. 14)
Kootenay river...	1914 report—(Water Resources Paper No. 14)
Mark creek.....	1914 report—(Water Resources Paper No. 14)
Moyle river.....	1914 report—(Water Resources Paper No. 14)
St. Marys river...	1914 report—(Water Resources Paper No. 14)

Mean Monthly Temperatures (Degrees Fahr.)—Nelson Division—1915.

Locality.	No. of Years Records.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
Golden	14	13.5				54.4	56.6	50.0	54.0	49.0	42.0			
Wilmer..	7	15.0	27.2	36.5	45.4	52.1	55.3		56.0	50.0	43.0	25.0	20.0	
Glacier..	13	16.5	24.5	30.8	39.7	47.1	50.1		61.0	44.0	37.0	24.0	20.0	37.57
Revelstoke	16	19.6	32.0	39.0	48.5	55.2	57.9	63.0	66.0	52.0	44.0	32.0	27.0	44.7
Nakusp..	4	23.5	31.5	35.7	45.0	53.5	56.9	61.0	70.0	54.0	45.0	32.0	27.0	44.7
Nelson..	12	25.1	30.4	41.1	50.3	53.8	63.6	55.0	66.0	50.0	44.0	32.0	27.0	44.7
Waneta..	3	21.8		40.1		52.1	55.7	64.0		54.0	45.0	32.0	27.0	45.4
Cranbrook	15	16.9	29.0	37.7	45.6	52.9	56.9	60.0	67.0	50.0	45.0	29.0	24.0	
Elko.....	20	21.4	31.9	38.5	48.0	55.4	58.8	62.0	71.0	53.0	45.0	26.0	21.0	42.8
Fernie..	2	17.7	26.4	33.9	46.6	50.4	53.5	59.0	65.0	49.0	44.0	27.0	22.0	45.7

Total Monthly Precipitation (Inches)—Nelson Division—1915.

Locality.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
Golden	0.50				1.62	3.64	4.75		0.62	1.05	2.31		
Wilmer..	0.55	0.48	0.08	0.45	1.63	4.02		0.51	0.91	0.80		0.50	
Glacier..	5.60	4.30	0.63	2.78	2.00	5.42	6.29	1.82	2.41	8.09	1.01	0.50	
Revelstoke	3.40	2.18	0.84	3.19	4.83	2.93	4.91	0.72	2.51	3.97	3.65	5.12	40.18
Nakusp..	2.00	1.62	1.02	3.85	4.57	3.70	3.11	0.63	1.05	3.84	2.01	3.53	29.03
Nelson..	1.10	0.80	0.85	2.59	3.72	2.09	3.87	0.60	1.12	2.16	3.16	3.57	25.65
Waneta..	1.20		2.07		4.85	3.03	4.36	0.10	0.80	2.38	3.25	3.55	
Cranbrook	0.60	0.70	0.12	0.13	2.26	2.13	2.88	0.31	1.84	0.94	3.84	1.50	16.24
Elko.....	1.55	1.14	0.86	0.72	2.91	3.00	2.27	0.60	4.38	1.93	2.11	2.10	24.85
Fernie..	1.84	2.86	0.75	1.05	2.93	4.47	1.84	0.26	2.19	3.45	6.84	5.91	34.29

Difference from Average Precipitation (Inches)—Nelson Division—1915.  
Difference of Total for Month from Monthly Average for Previous 10 Years or More.

Locality.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
Golden	-1.73				0.70	2.00	3.43	-1.01	-0.59	0.34			
Glacier..	-2.04	-1.59			1.30	2.43	3.95	-0.70	-1.73	4.17	0.50	-0.12	1.00
Revelstoke	-1.81	-2.36	-1.99	1.23	2.61	-0.04	2.41	-1.84	-0.88	1.09	-1.85	0.56	-2.07
Elko.....	0.35	-0.14	-0.36	-0.15	0.58	1.49	0.43	-0.74	2.04	0.94	0.11	0.55	5.42
Nelson..	-2.35	-1.51	-0.79	1.30	1.55	-0.70	1.87	-1.34	-0.67	-0.12	-0.35	1.03	-1.98
Cranbrook		-0.78			0.79	0.42	1.48			0.24	1.15	-0.07	

## DEPARTMENT OF THE INTERIOR

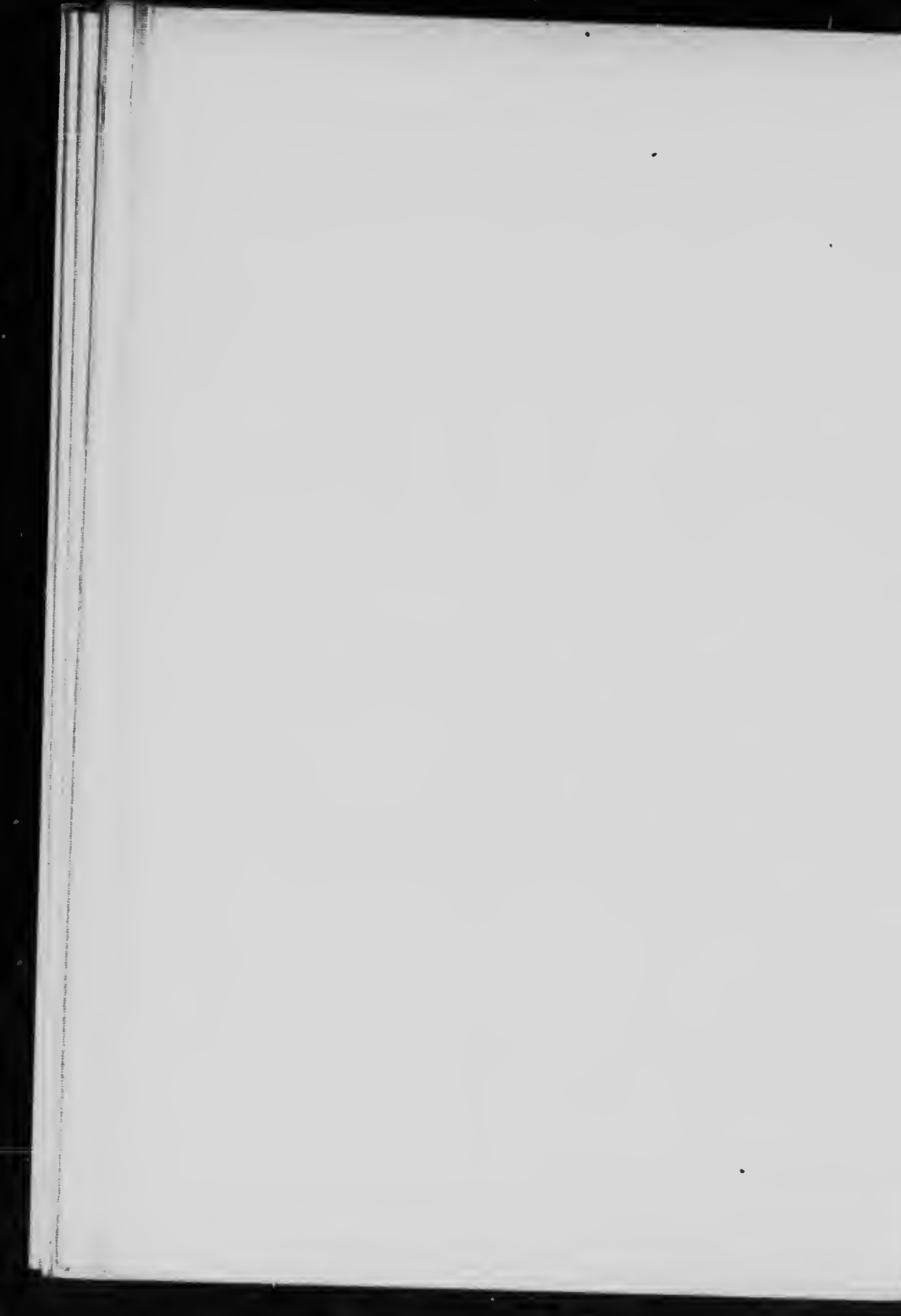
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*Difference from Average Temperature (Degrees Fahr.)—Nelson Division—1915.  
Difference of Average for Month from Monthly Average for Previous 10 Years or  
More.*

Locality.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
Golden .....	3.2				3.7	-0.4	-1.0	6.0	-1.0	2.0			
Glacier .....	1.7	8.6	8.4	4.2	3.3	-1.1	0.0	5.0	-2.0	0.0	-3.0	1.0	31.0
Revelstoke .....	-0.3	6.3	6.3	8.5	3.4	-0.8	-1.0	5.0	-1.0	1.0	-3.0	0.0	36.3
Nelson .....	0.3	1.9	4.4	3.6	0.1	3.0	-1.0	7.0	-2.0	0.0	-6.0	-4.0	6.5
Elko .....	-0.7	6.2	4.4	6.6	3.0	-1.5	-3.0	5.0	3.0	6.0	-4.0	-4.0	23.3
Cranbrook .....		10.0			2.3	0.0	0.0			2.0	-3.0	1.0	

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OF THE  
BRITISH COLUMBIA HYDROMETRIC  
SURVEY FOR 1915.

CHAPTER V.  
Fort George District.  
REPORT OF J. A. ELLIOTT, B.A.Sc.  
DISTRICT ENGINEER.



CHAPTER V.  
FORT GEORGE DISTRICT.  
TERRITORY.

*Geography.*—The completion of the Grand Trunk Pacific Railway opens up a large portion of central British Columbia for settlement and development. This railway enters British Columbia through the Yellowhead pass at about latitude 53°, and traversing the province in a north-westerly direction it crosses the 55th parallel near Hazelton, there turning south-west it reaches the Pacific coast at Prince Rupert, near latitude 54°.

The Fort George district covers the territory adjacent to the Grand Trunk Pacific Railway, between the Rocky mountains and the coast. The district is divided by the Great Interior plateau into two main drainage basins—the Fraser and the Skeena.

The Fraser river rises near the summit of the Yellowhead pass at an altitude of 3,710 feet. Flowing due west it falls 1,300 feet in 52 miles; near Tete Jaune it turns north-west and flows through the "Inter-montane" valley to about latitude 54°; at Fort George it receives the waters of the Nechako river and then turns westward and southward. Near Fort George it is at an altitude of 1,900 feet—a descent of 500 feet in about 200 miles.

The Nechako, the largest northern affluent of the Fraser, is 255 miles long. It rises on the eastern slope of the Interior plateau and drains several large lakes, including Ootsabunkut, 40 miles long, Cheslatta, 25, Francais, 60, and Fraser, 12 miles. About 50 miles from its confluence with the Fraser, the Nechako receives the waters of its northern tributary, Stuart river, which is 220 miles long and drains two large lakes.—Stuart lake with an area of 221 square miles and Tacla, 135 square miles.

The Skeena basin drains all the land west of the Great plateau. The Skeena river rises on the eastern slope of the Coast range at about latitude 57° and flows almost directly south for about 175 miles; near Hazelton it turns south-west and flows through the Coast range for 154 miles to the Pacific ocean, being the first river north of the Fraser to cut across this range of mountains. About 35 miles north of Hazelton the Babine river flows into the Skeena. The Babine rises in Babine lake, which has an area of 306 square miles. It drains the north-eastern slope of the Babine range. At Hazelton the Skeena receives the waters of the Bulkley river. This river rises near the summit of the Great plateau and flows in a north-westerly direction to its confluence with the Skeena.

*Topography.*—The upper Fraser river flowing west from Yellowhead Pass lies in an "Inter-montane" valley between the Selwyn range and the Rainbow mountains, a part of the great Rocky Mountain system. The Rainbow mountains are composed of a group of high snow-capped peaks, notable among which are,—Mount Mowat (9,293 feet), Mount Kain (9,392 feet), Mount Resplendent (11,178 feet), Lynx Mountain (10,471), Mount Helmet (11,160 feet) and Mount Robson (13,700 feet), the highest peak and greatest mass in the Canadian Rockies.

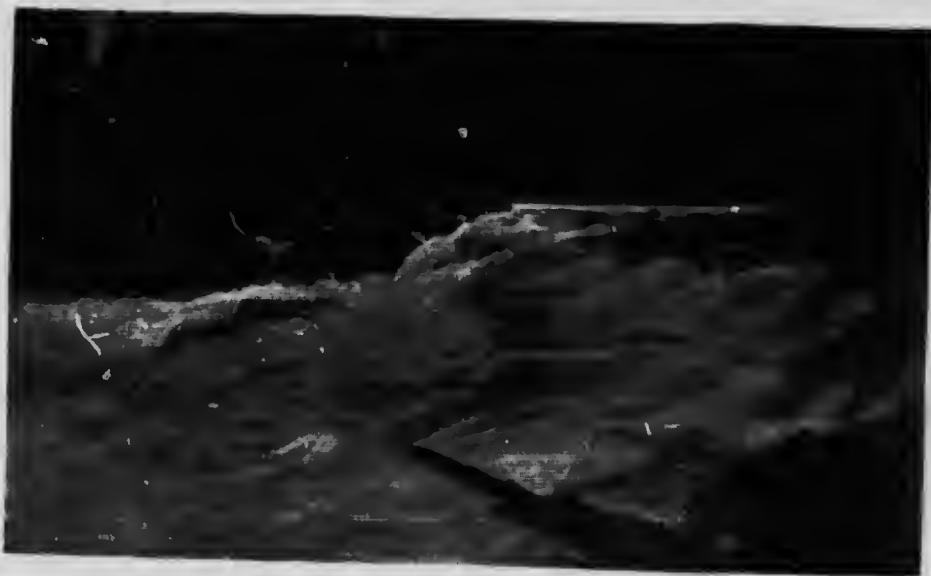


7 GEORGE V. A. 1917

The most prominent peaks in the Selwyn group are Mount Geikie (11,016 feet) and Mount Fitzwilliam (9,747 feet).



Chain gauge and measuring section, on Skeena, at Hazelton. Measurements are made from the Indian dugout canoe shown in the foreground, points of observation being marked by a tag line.



Fifteen-foot falls, on Fraser river, near Albreda.

It is from the snowfields and glaciers of the Rainbow mountains that the upper Fraser river receives its great volume of water. Moose river, a tributary,

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flowing from the eastern slopes of Resplendent, Kain and Lynx mountains has a fall of about 150 feet in Rainbow canyon, near its mouth. To the west and north of Mount Robson lies the valley of the Grand Fork of the Fraser river, part of which is known as the "Valley of a Thousand Falls," where the famous Emperor falls are located.

West of the Rainbow mountains the "Inter-montane" valley becomes a little wider and the flanking mountains less massive and predominant; on the north it is still bounded by the Rocky mountains, but the south by the lower and less massive Cariboo range, which is separated from the Selwyn range by the McLellan river, flowing north to the Fraser, and Canoe river, flowing south to the Columbia. The streams rising in the Cariboo range are not of great length.

Near Fort George, the Fraser, turning southward, flows between the Cariboo range on the east and the Telegraph range on the west. The Telegraph range is not very prominent, being the height of land of the Great Interior plateau, dividing the watersheds of Nechako and Chilcotin rivers.

The Nechako river, flowing into the Fraser at Fort George, drains a great basin, which is said by geologists to be an old lake bed. This basin now contains many large lakes. On the south-west it is bounded by the lower Telegraph and Fawnie ranges and the heights of the Interior plateau; to the west lies the Coast range, and on the north and east the upper Nechako valley is confined by the Omineca mountains and the ridge between the Parsnip and Stuart valleys. Throughout the Nechako district there are no very great differences in elevation.

The Bulkley valley is more undulating and varies from four to ten miles in width. On the north-east it is bounded by the Babine mountains and on the south-west by the Hudson bay and massive Rochers DeBoules mountains. The streams rising in the Rochers DeBoules mountains are short in length but contain many falls and rapids.

The upper Skeena valley lies between the Coast and Cassiar ranges. The Cassiar range at the south being terminated by the Babine river valley. Westward from Hazelton the Skeena valley cuts the Coast range transversely. The bounding mountains are high and clearly outlined, the valley is narrow and deep. Many of the streams of this district have considerable fall and pass through canyons in the deep valleys.

The relative elevations of points in the Skeena and Fraser drainage basins may be well shown by the following altitudes at points along the Grand Trunk Pacific Railway:—

		Feet
Skeena	Terrace	240
	Hazelton	988
Bulkley	Moricetown	1353
	Hubert	1690
	Houston	1982
	Height of land near Rose lake	2366
Nechako	Fraser lake	2,208
	Vanderhoof	2,097
	Stuart river	2,087
	Fort George	1,870
	Willow river	1,921
Fraser	McBride	2,370
	Tete Jaune	2,400
	Lucerne	3,819

*Geology.*—There is little known at present of the geological formation of the district, very little mapping having been done. The mineral deposits in many parts of the district are known to be very rich. On the east, in the Rocky mountains and Cariboo range, copper and gold are found in several places, though no extensive mining has yet been carried on. Placer gold may be found in nearly all the streams of the Cariboo range. Mica is found in large quantities near Tete Jaune cache, and marble near McBride.

Several large discoveries of metalliferous veins have been found in the Bulkley and Skeena valleys and are especially predominant in the Hudson bay, Rochers DeBoules and Babine mountains. Silver-lead and chalcopyrite are the principal valuable minerals present. Zinc-blende, pyrite, arseno-pyrite and stibnite are also associated in this formation. Very little development has yet been done on any of the properties. However, owing to the impetus given to the metal market by the present war, development work is now being prosecuted on many properties in preparation for shipping. The Rochers DeBoules Copper Company have opened up a large mine near Hazelton and are now shipping large quantities of ore to the smelters. The Silver-Standard, near Hazelton, and the Cordillera Copper Mine, near Usk, have done considerable development and have recently entered the shipping lists.

Thin streaks of bituminous coal are found in considerable areas in the Bulkley and Telkwa river valleys.

#### CLIMATE.

The warm Japan current, flowing south along the coast of British Columbia, has a moderating influence on the climate of the central interior of the province. Warm winds penetrate the deep inlets and following the low passes at their heads spread over the Great Central plateau.

Very little meteorological data is obtainable, as yet, in this district. The only point at which rainfall and snowfall observations have been observed for any length of time is at Fort St. James, on Stuart river. The Dominion Meteorological Bureau recently established observation stations at New Hazelton, Fort St. James, and Central Fort George. Tables showing precipitation and temperature at these stations are appended hereto.

#### USES OF WATER.

The settlement along the greater part of the Grand Trunk Pacific being very recent, there has as yet been little commercial or industrial development of the water resources. The chief industries in this district are farming, mining and lumbering. Many small towns have been established along the railway at the central points of the various districts.

#### MUNICIPAL SUPPLY.

At present most of these towns are of such recent growth that no plants for distribution of water have been constructed, however this is a question of vital importance to every community and in several cases investigations are being made to determine the best source of municipal supply.

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## IRRIGATION.

Farming will no doubt be the chief industry of this part of the province. In many parts of the district, land is rapidly being taken up by settlers. Agricultural development of every kind is being prosecuted. Irrigation is practically unnecessary throughout the district, but where desired, an adequate supply may always be obtained from any of the numerous small streams.

## WATER POWER DEVELOPMENTS AND POSSIBILITIES.

The power possibilities of this district are as yet unknown. At the present time there are only two hydro-electric plants in the district.

## WOODWORTH LAKE.

The city of Prince Rupert has installed a 1650 horse-power hydro-electric plant at Woodworth lake to generate light and power for the municipality. Water is diverted from the lake through a 45-inch pipe line 7,800 feet long, and operates under a head of 330 feet. The pipe line is also used as a means of auxiliary supply to the municipal water system.

## JUNIPER CREEK.

The Rochers DeBoules Copper Company have installed a small hydro-electric plant on Juniper creek, near Hazelton, in connection with the development of their mines. Water is carried from Juniper creek through a wood stave pipe 3,783 feet long and is delivered to a Pelton-Doble wheel under an effective head of 178 feet.

A splendid example of the latent power of the district is given by the Bulkley river, which flows in a deep, narrow canyon for 30 miles from its mouth and falls 1,000 feet in this distance.

*Total Monthly Precipitation (Inches)—Fort George District—1915.*

Locality.	No. of Years Records	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year
Fort George	3	0 15	0 10	0 85	1 23	2 22	1 67	1 88	1 46	1 26				
Fort St. James	22	0 36	0 84	0 73	0 73	1 36	1 54	3 54	0 60	0 89	2 26	0 96	0 86	14 60
New Hazelton	2	0 63	1 31	0 48	1 04	1 30	2 25	3 47	2 27	1 67	2 25	0 47	1 19	18 26

*Difference from Average Precipitation (Inches)—Fort George District—1915.**Difference of Total for Month from Monthly Average for Previous 10 Years or More.*

Locality.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
Fort St. James	-1 22	-0 35	-0 09	-0 16	0 47	0 04	2 32	-0 79	-0 34	1 05	-0 96	-0 69	-0 72

At Fort St. James the average precipitation per year (1903-12) was 15.24 inches.

N.B.—All quantities are plus unless otherwise designated.

*Mean Monthly Temperature (Degrees Fahr.)—Fort George District—1915.*

Locality.	No. of Years Records.	Jan.	Feb.	Mar.	Apl.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year
Fort George.....	3	13.4	24.3	25.6	43.1	50.5	56.7	61.0	62.0	47.0				
Fort St. James.....	22	11.9	20.1	25.2	40.8	31.6	57.7	62.0	62.0	50.0	40.6	23.0	20.0	26.2
New Hazelton.....	2	20.1	26.3	40.3	44.3	34.3	57.7	63.0	66.0	51.0	45.0	31.0	27.0	42.9

*Difference from Average Temperature (Degrees Fahr.)—Fort George District—1915.*  
*Difference of Average for Month from Monthly Average for Previous 10 Years or More.*

Locality.	Jan.	Feb.	Mar.	Apl.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
Fort St. James. ....	4.7	7.6	18.7	6.3	6.3	6.6	7.0	6.0	5.0	3.0	-1.0	3.0	73.4

N.B.—All quantities are plus unless otherwise designated.

REPORT  
OF THE  
BRITISH COLUMBIA HYDROMETRIC  
SURVEY FOR 1915.

CHAPTER VI.  
Coast Division.  
HYDROMETRIC DATA.



## CHAPTER VI.

## COAST DIVISION—HYDROMETRIC DATA.

## SOUTHERN DISTRICT.

## BELKNAP CREEK AT BELKNAP LAKE.—(1000).

*Location.*—At the outlet of Belknap lake, in section 36, township 6, range 7, west of 7th meridian.

*Records Available.*—Daily discharges from October, 1912, to December, 1915. (Records for 1915 are given herein; preceding records are tabulated in previous reports).

*Drainage Area.*—Not determined.

*Gauge.*—Vertical staff gauge read bi-weekly by Mr. J. L. Davis.

*Channel.*—Bed of stream strewn with boulders, giving uneven bottom but permanent control.

*Discharge Measurements.*—Eleven nieter measurements made during 1912-13-14-15, define rating curve very well except for extreme high water.

*Winter Flow.*—Very heavy snowfall but little ice. Open water conditions practically all winter.

*Accuracy.*—"D." (Poor, because gauge readings were infrequent).

*Co-operation.*—Gauge readings are made by employees of Westminster Power Company.

*Discharge Measurements of Belknap River at Belknap Lake for 1915.*

Date.	Engineer.	Meter No.	Width.	Area of Section	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
May 11	C. E. Dobbie	1057	40	125	1.2	2.68	149
July 22	R. V. Gordon	1808	39	70	0.7	1.63	50



Daily Gauge Height and Discharge of Belknap Creek at Belknap Lake for 1915.

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.
	Feet	Sec.-ft.	Feet	Sec.-ft.	Feet	Sec.-ft.	Feet	Sec.-ft.	Feet	Sec.-ft.	Feet	Sec.-ft.
1		31		15	1 3	32						
2		32		16		19						
3		32	1 3	17	1 3	17						
4		32		17		17						
5	1 50	33	1 2	17		17			3 4	115	3 0	74
6		34		33						136		83
7		36		30		17	3 8	170		135		82
8	1 53	37		40		17		176		147		100
9		34	1 7	49	1 2	17		186		158	2 46	110
10		31		40		21		194		169		130
11		28		30		25		202	2 9	180	2 0	90
12	1 35	25	1 26	25	1 35	25		210	2 7	158		74
13		21		19		115		220		143		74
14	1 20	17		17		210	3 1	230		131		74
15		17		15	3 5	390	3 3	250		119	2 0	74
16		16	1 1	13		250		280		107		72
17		15		23	2 1	103		245		95	1 93	70
18		14	1 5	33		105		217	2 1	83		73
19		13		31		106		146		95		76
20	1 10	13		30		107	2 7	155		110		79
21		12						149	2 5	125		82
22	1 05	12		29		109		120		132		85
23		11	1 35	27		111	2 3	102		140	2 15	88
24		10		25		113		98		146		63
25	0 9	10	1 7	49	2 4	115		93	2 7	156		78
26		10				90		84		150	2 0	74
27	0 9	10		41	1 9	65	2 1	83		145		67
28		11		34		65		83	2 6	140		60
29		12		27		65		83		125	1 75	83
30		13			1 9	65	2 1	83		110		68
31		14				91		90		78		40
									2 05	78		

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.
	Feet	Sec.-ft.	Feet	Sec.-ft.	Feet	Sec.-ft.	Feet	Sec.-ft.	Feet	Sec.-ft.	Feet	Sec.-ft.
1		90		30		30						
2	2 15	84		26		45	1 3	22		440		90
3		74	1 39	26		46		24	4 0	430		130
4		71		24		47		26		440	2 8	170
5		68		21		48		28		485		180
6	1 90	65	1 22	16	1 70	49		30	4 4	510		150
7		77		14		40		26				
8		89		17		33	1 5	33		420	2 6	140
9	2 30	103		17		33		26		320		270
10		93		14		26		20		220		400
11		83		15	1 24	19	1 1	13		120	4 5	330
12		74	1 15	15		17		15	1 25	20		410
13	1 90	65		15		15		17		18		280
14		63		15		13	1 25	20		15		170
15	1 85	61	1 16	15	1 00	11		42		16	1 8	67
16		56		15		11	2 15	65		15		64
17		51		16		17		58		14		82
18		47	1 15	15		17		125	1 1	13	1 7	49
19		43		15	1 00	11		160		23		118
20	1 58	39		17	0 90	10		195	1 5	33		180
21		43		17		10	3 1	230		70	3 20	250
22	1 63	43	1 20	17		10		310		100		205
23	1 63	43		17		10						
24		42	1 20	17	0 90	10	4 2	390		130		162
25		42		16		10		470		160		118
26		41		14		9		445	2 9	190	2 0	74
27	1 59	40	1 15	15		9	3 86	425		220		62
28		38		15		9		400	3 2	250		52
29		36		15	0 85	9	4 90	505		210		40
30		34		15		12		410		170		28
31		32	1 15	15		15		580		130	1 2	17
								550		90		15
								520	1 8	57	1 1	13
								490				11

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(Records for  
reports).

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Date.

Ma. 11 C. F. D.  
Aug. 21 R. V. G.  
Nov. 11 H. C. H.

## Monthly Discharge of Belknap Creek at Belknap Lake for 1915.

MONTH.	DISCHARGE IN SECOND-FEET				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet
January	27	10	21			
February	49	12	27			
March	390	17	92			
April	280	82	166			
May	190	78	125			
June	120	40	77			
July	103	39	60			
August	20	15	17			
September	49	9	20			
October	610	13	222			
November	510	12	179			
December	350	11	144			
The year	610	9	95			

## BELKNAP CREEK BELOW ANN LAKE. -(1063).

*Location.*—About half way between Ann lake and Belknap lake, near the proposed site for the diversion dam, and in section 36, township 7, range 7, west 7th meridian.

*Records Available.*—Daily discharges from June, 1913, to December, 1915. Records for 1915 are given herein; preceding records are tabulated in previous reports.

*Drainage Area.*—Not determined.

*Gauge.*—Vertical staff gauge read bi-weekly by Mr. J. L. Davis.

*Channel.*—Boulders and gravel.

*Discharge Measurements.*—Eight discharge measurements made during 1913-14-15 define the rating curve accurately except for extreme high stages.

*Winter Flow.*—Ice conditions at gauging station in very cold weather.

*Accuracy.*—"D." Poor because of infrequent gauge readings.

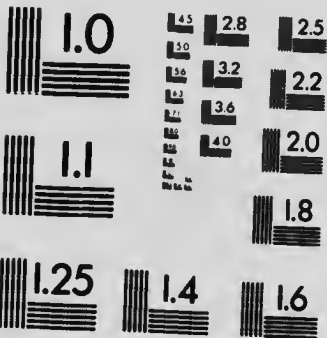
*Co-operation.*—Gauge readings are made by the employees of the West-ster Power Company.

## Discharge Measurements of Belknap River below Ann Lake for 1915.

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per Sec.	Feet	Sec-ft
11 C. F. Dobbie	1057	31	87.4	1.5	2.40	128.0	
21 R. V. Gordon	1505	31	66.0	0.66	1.43	44.0	
11 H. C. Hughes	1046	31	51.0	0.32	0.84	16.4	

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SESSIONAL PAPER No. 25e

Monthly discharge of Belknap River below Ann Lake for 1915.

MONTH.	DISCHARGE IN SECOND-FEET.			RUN-OFF.		
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January	28	5	15			
February	33	8	17			
March	310	8	68			
April	210	57	115			
May	155	63	101			
June	99	46	64			
July	116	39	65			
August	39	13	19			
September	44	4	18			
October	625	10	215			
November	500	14	167			
December	525	14	202			
The year	625	4	89			

BOULDER CREEK.—(1001).

*Location.*—Near mouth of creek, and near Jones lake, in section 28, township 3, range 27, west of 6th meridian.

*Records Available.*—Daily discharges from January, 1913, to December, 1915. (Records for 1915 are given herein; preceding records are tabulated in previous reports).

*Drainage Area.*—Not determined.

*Gauge.*—A fine wire is stretched tightly across the stream and the distance to the water surface is measured by a graduated rod. The result subtracted from 15.00 gives the direct reading. Daily gauge readings by Mr. R. Barr.

*Channel.*—The channel is about 30 feet wide. The bed of the stream is covered with boulders, giving uneven bottom but good control.

*Discharge Measurements.*—Six discharge measurements made during 1911-12-13-14, define the curve very well except for extreme high stages of the water.

*Winter Flow.*—The stream is affected by ice for about a month each winter.

*Accuracy.*—Below 100 cubic feet per second, "B." Above 100 cubic feet per second, "C."

*Co-operation.*—The records on this stream are kept by Messrs. Anderson & Warden, Civil Engineers, Vancouver, for the Vancouver Power Company.

Discharge Measurements of Boulder Creek near Mouth for 1915.

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
April 23	Cline & Hughes	1521	30	39.2	1.00	19.3	40.4

## Daily Gauge Height and Discharge of Boulder Creek near Mouth for 1915.

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	.....	13	.....	12	4.20	13	4.90	55	4.50	26	4.90	65
2	4.22	15	.....	12	4.20	12	5.42	190	4.50	26	4.85	75
6	4.25	15	.....	12	4.20	12	2.50	200	4.55	72	4.80	55
4	4.22	15	.....	12	4.20	12	5.20	140	4.70	50	4.80	65
2	4.25	15	.....	16	4.20	13	5.00	105	4.60	65	4.90	55
5	4.20	13	.....	13	4.20	12	4.60	65	4.90	55	4.90	65
7	4.20	13	.....	14	4.20	12	4.90	55	4.90	55	4.80	65
8	4.20	13	Frozen	15	4.20	12	4.80	55	4.90	52	4.70	50
9	4.20	12	4.20	15	4.20	12	4.70	50	4.60	55	4.55	44
10	4.20	12	4.20	15	4.25	15	4.65	42	4.65	75	4.65	44
11	4.40	22	4.25	15	4.25	15	4.70	50	4.70	50	4.60	25
12	4.25	19	4.20	13	4.20	13	4.95	95	4.70	50	4.75	27
13	4.25	15	4.25	12	4.25	15	4.90	65	4.70	50	4.60	52
14	4.22	15	4.20	12	4.55	22	4.60	65	4.65	75	4.70	50
13	4.20	13	4.15	11	5.05	112	4.60	65	4.70	50	4.75	57
13	4.20	12	4.15	11	4.25	22	4.90	55	4.70	50	4.70	20
17	4.20	12	4.20	12	4.50	37	5.10	120	4.70	50	5.00	105
13	4.20	13	4.20	12	4.75	56	5.00	105	5.10	120	4.60	65
19	4.20	12	4.20	13	4.60	27	5.00	105	5.40	160	4.80	65
30	4.20	13	4.20	12	4.60	37	4.95	95	2.20	140	4.75	57
21	4.20	12	4.20	16	5.00	105	4.80	53	4.90	55	4.70	50
22	Frozen	16	4.20	12	5.10	120	4.70	50	4.95	95	4.70	50
23	.....	12	4.15	11	5.10	120	4.65	44	4.55	72	4.70	50
24	.....	13	4.15	11	5.90	85	4.55	44	4.90	65	4.65	44
25	.....	16	4.20	13	4.70	50	4.70	50	5.90	65	4.60	27
26	.....	12	4.20	13	4.50	67	4.70	50	4.80	62	4.50	37
27	.....	12	4.20	13	4.50	28	4.70	50	4.60	65	4.60	27
28	.....	13	4.20	13	4.80	28	4.70	50	5.25	150	4.60	67
29	.....	13	.....	.....	4.70	50	4.70	50	4.95	95	4.50	27
20	.....	13	.....	.....	4.70	50	4.60	67	4.60	55	4.50	27
21	.....	13	.....	.....	4.70	50	.....	.....	4.80	65	.....	.....
	July.		August.		September.		October.		November.		December.	
1	4.50	37	4.20	13	4.10	10	4.10	10	5.00	105	4.20	16
2	4.55	32	4.20	13	4.10	10	4.55	62	4.85	75	4.20	16
3	4.55	62	4.20	13	4.05	9	4.30	15	4.75	57	4.25	19
4	4.50	25	4.20	13	4.05	9	4.25	14	4.75	57	4.50	27
5	4.45	25	4.15	12	4.05	9	4.65	19	4.85	75	4.60	37
6	4.65	44	4.15	12	4.05	9	4.25	14	4.55	42	4.50	25
7	4.50	26	4.15	12	4.05	9	4.15	12	4.60	27	4.40	22
6	4.50	28	4.15	12	4.10	10	4.15	12	4.50	28	5.40	160
9	4.45	25	4.15	12	4.25	14	4.10	10	4.45	25	4.60	65
10	4.45	25	4.15	12	4.20	12	4.10	10	4.40	22	4.70	50
11	4.45	25	4.15	12	4.10	10	4.10	10	4.25	19	4.45	25
12	4.45	25	4.15	12	4.10	10	4.45	25	4.25	19	4.45	25
14	4.55	44	4.15	12	4.10	10	4.40	22	4.20	15	4.40	22
15	4.65	75	4.10	10	4.10	10	4.65	43	4.30	15	4.35	16
16	.....	.....	4.10	10	4.10	10	4.40	22	4.30	16	4.30	16
16	4.80	55	4.10	10	4.10	10	4.60	16	4.45	25	4.25	14
17	4.75	55	4.15	12	4.10	10	4.25	14	4.40	22	4.25	14
16	4.55	44	4.15	12	4.10	10	4.60	15	4.45	25	4.20	13
19	4.50	25	4.10	10	4.10	10	4.65	43	4.50	28	4.20	13
20	4.50	25	4.10	10	4.05	9	5.30	150	4.40	22	4.20	13
21	4.45	25	4.10	10	4.05	9	4.35	75	4.40	22	4.95	95
22	4.40	22	4.10	10	4.05	9	4.75	57	4.25	19	4.55	75
26	4.40	22	4.10	10	4.05	9	4.75	57	4.45	25	4.70	50
24	4.35	19	4.10	10	4.10	10	4.70	50	4.40	22	4.55	46
25	4.30	16	4.10	10	4.10	10	5.20	160	4.40	22	4.55	43
25	4.25	14	4.10	10	4.05	9	5.40	160	4.40	22	4.65	46
27	4.20	15	4.05	9	4.05	9	5.25	170	4.30	16	4.55	42
26	4.25	14	4.05	9	4.05	9	5.65	260	4.60	15	4.50	37
29	4.25	14	4.05	9	4.05	9	5.00	105	4.20	16	1ce	37
30	4.25	14	4.05	9	4.05	9	4.35	75	4.30	16	.....	37
31	4.25	14	4.10	10	.....	.....	5.70	240	.....	.....	.....	27

SESSIONAL PAPER No. 260

## Monthly Discharge of Boulder Creek near Mouth for 1915.

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January.....	22	13	14			
February.....	16	11	13			
March.....	120	13	40			
April.....	200	37	80			
May.....	160	28	76			
June.....	108	87	57			
July.....	75	14	29			
August.....	12	9	11			
September.....	14	9	10			
October.....	240	10	62			
November.....	105	16	31			
December.....	140	13	38			
The year.....	240	9	38			

## BRANDT CREEK ABOVE YOUNG CREEK.—(1021).

*Location.*—A few hundred feet above the mouth of Young creek, in section 10, township 7, range 7, west of 7th meridian.

*Records Available.*—Daily discharges from November, 1914, to December, 1915. (Records for 1915 are given herein; preceding records are tabulated in previous reports).

*Drainage Area.*—Not determined.

*Gauge.*—Cable gauge. Gauge read bi-weekly by Mr. J. L. Davis.

*Channel.*—Solid rock at control. The channel is about 15 feet wide.

*Discharge Measurements.*—Five meter measurements made during 1914 and 1915 define the curve fairly well except for extreme stages of the water.

*Winter Flow.*—Very heavy snowfall but practically no ice, so that open water conditions prevail practically all winter.

*Accuracy.*—"D," because of infrequent gauge readings.

*Co-operation.*—Gauge readings are maintained by the Westminster Power Company.

## Discharge Measurements of Brandt Creek above Young for 1915.

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
May 8	C. E. Doble.....	1057	9.5	14.9	0.70	1.85	10.5
July 19	R. V. Gordon.....	1505	8.0	5.9	0.47	1.47	2.8
July 22	R. V. Gordon.....	1505	7.5	5.2	0.33	1.38	1.7
Nov. 10	H. C. Hughes.....	1048	7.0	7.0	0.60	1.60	4.2

## Daily Gauge Height and Discharge of Brandt Creek above Young for 1915.

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1		6.5		9.0	1.7	5.5		13.0		27.0		13.0
2		5.5	1.75	7.7		5.5		13.0		33.0		13.0
3		5.5		5.0	1.5	4.5		13.0	2.3	39.0	1.9	13.0
4	1.70	6.5	1.55	3.7		4.5		13.0		35.0		10.8
5		7.0		5.0		4.5		13.0		29.0		8.7
5		7.5		6.0		4.5	1.9	13.0		23.0		5.5
7	1.75	7.7		8.0		4.5		16.0		17.0	1.5	4.5
3		8.0	1.8	9.0	1.5	4.5		19.0	1.85	11.0		4.5
9		8.3		8.0		5.5		22.0		11.0		4.5
10		8.6		7.0	1.7	5.5		25.0		11.0	1.6	4.5
11	1.80	9.0	1.7	6.5		25.2		25.0		12.0		4.0
12		9.0		6.0		43.9		28.0		12.0		4.0
13		9.0		5.0		62.6	2.2	30.0		12.0		3.5
14	1.80	9.0		4.0		81.3		40.0		12.0	1.5	3.0
15		8.1	1.5	3.0	2.7	100.0	2.4	50.0		13.0		3.0
15		7.2		10.0		58.0		41.0		13.0	1.5	3.0
17		6.3	2.0	17.0	2.0	17.0		33.0	1.9	13.0		3.0
18		5.4		13.5		18.0		25.0		15.0		3.0
19	1.60	4.5		10.5		19.0	2.0	17.0		15.0		3.0
20		5.0		8.5		21.0		15.0	2.0	17.0		3.0
21	1.55	5.5		5.5		3.0		12.0		19.0		3.0
22		4.5	1.6	4.5		25.0	1.8	9.0		20.0	1.5	3.0
23		3.7		6.0	2.15	26.0		10.0		21.0		3.0
24	1.50	3.0	1.75	7.7		18.0		11.0	2.1	23.0		2.0
25		9.0		7.3	1.8	9.0		12.0		28.0	1.4	2.0
26		16.0		7.1		9.0	1.9	13.0		33.0		2.0
27	2.10	23.0		6.9		9.0		12.0	2.3	39.0		2.0
28		20.0		6.7	1.8	9.0		10.0		31.0	1.4	2.0
29		17.0				11.0	1.8	9.0		25.0		2.0
30		14.0			1.9	13.0		15.0		19.0		2.0
31		11.0				13.0			1.9	13.0		
<hr/>												
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		1.5		0.5		3.9	1.5	4.5		40.0		40.0
2	1.30	1.5		0.4	1.70	6.5		4.5	2.1	23.0		70.0
3		1.5	0.75	0.4		8.0		5.5		30.0	2.7	100.0
4		1.5		0.4		4.0		5.5		40.0		88.0
5	1.30	1.5	0.75	0.3		3.0		6.5	2.4	50.0		75.0
6		2.0		0.5	1.28	1.4	4.7	6.5		40.0	2.5	62.0
7		2.0		0.8		1.0		4.0		30.0		150.0
8		3.0		0.8		1.0		4.0		20.0		230.0
9	1.60	4.5		1.0		1.5	1.3	1.5		15.0	3.8	320.0
10		4.0	1.25	1.3	1.40	2.0		6.0	1.60	4.5		240.0
11		4.0		1.3		1.8		10.0		5.0		160.0
12	1.65	5.5		1.2		1.6	1.95	15.0		5.0		80.0
13		5.0		1.2		1.4		13.5		5.0	1.8	9.0
14		4.0	1.23	1.2	1.24	1.3		12.0		5.0		9.0
15	1.50	3.0		1.0		1.3	1.84	10.6		5.0		7.0
16		3.0		0.5		1.2		12.2	1.65	5.5	1.7	6.5
17		3.0	0.67	0.3	1.23	1.2		13.8		9.0		110.0
18		2.7		0.3		1.2		15.4	1.96	13.0		215.0
19	1.47	2.7		0.3		1.1	2.0	17.0		15.0	3.8	320.0
20		2.0		0.3	1.20	1.1		60.0		17.0		260.0
21		2.0	0.7	0.3		1.1		100.0		19.0		200.0
22		2.0		0.6		1.1	2.9	140.0		21.0		140.0
23	1.38	1.9		0.9	1.20	1.1		114.0	2.1	23.0	2.6	60.0
24		1.8	1.2	1.1		1.1		88.0		31.0		66.0
25		1.8		1.1		1.1	2.5	62.0	2.3	39.0		51.0
25	1.35	1.7		1.2		1.1		102.0		34.0		37.0
27		1.7	1.22	1.2		1.1	2.9	140.0		29.0		23.0
28	1.35	1.7		1.2	1.20	1.1		120.0		24.0	1.8	9.0
29		1.9		1.2		1.5		100.0		19.0		8.0
30		1.0		1.3		2.6		80.0	1.9	13.0	1.7	6.5
31		1.0	1.25	1.3				50.0				5.0



SESSIONAL PAPER No. 25a

## Monthly Discharge of Brandt Creek above Young for 1915.

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January . . . . .	23.0	3.0	8.8	.....	.....	.....
February . . . . .	17.0	3.0	7.3	.....	.....	.....
March . . . . .	100.0	4.5	21.0	.....	.....	.....
April . . . . .	50.0	9.0	19.0	.....	.....	.....
May . . . . .	39.0	11.0	21.0	.....	.....	.....
June . . . . .	13.0	2.0	4.5	.....	.....	.....
July . . . . .	5.5	1.0	2.4	.....	.....	.....
August . . . . .	1.3	0.3	0.8	.....	.....	.....
September . . . . .	6.5	1.1	1.8	.....	.....	.....
October . . . . .	140.0	1.5	43.0	.....	.....	.....
November . . . . .	50.0	4.5	21.0	.....	.....	.....
December . . . . .	320.0	6.0	102.0	.....	.....	.....
The year . . . . .	320.0	0.3	21.0	.....	.....	.....

## CAPILANO CREEK.—(1023).

*Location.*—Just above the Vancouver intake, about 6 miles from the mouth of the creek.

*Records Available.*—Daily discharges from November, 1913, to December, 1915. (Records for 1915 are given herein; preceding records are tabulated in previous reports).

*Drainage Area.*—Sixty-four square miles, estimated by the engineers of the Provincial Water Rights Branch.

*Gauge.*—Vertical gauge staff above intake. Daily gauge readings by Mr. Wm. Morrison, the caretaker of the city intake.

*Channel.*—Rocky bed, water swift in high stages. At low water a temporary dam is placed in the channel below the gauge, causing backwater. A subsidiary gauge has been installed for low water stages beyond the effect of this dam.

*Discharge Measurements.*—Fifteen discharge measurements taken in 1914 and 1915 give a well defined rating curve.

*Winter Flow.*—Open water all year.

*Accuracy.*—"C." A change in gauge was made in June, which will increase future accuracy.

*Co-operation.*—Gauge readings by employees of the Vancouver Waterworks department.

## Discharge Measurements of Capilano Creek above City Intake for 1915.

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	
April 13	Cline & Hughes . . . . .	1521	67	300	4.90	5.95	1460
June 26	C. G. Cline . . . . .	1505	85	97	1.80	2.00	176
June 11	C. G. Cline . . . . .	1505	46	240	1.50	4.20	359
Aug. 4	C. G. Cline . . . . .	1046	34	61	1.05	1.40	64
Dec. 22	Bails & Hughes . . . . .	1046	66	320	2.75	3.25	866

NOTE.—New gauge installed above intake on August 1th.

Daily Gauge Height and Discharge of Capilano Creek above Intake for 1915.  
(Drainage area, 24 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	2.0	4,620	2.2	1,220	4.2	340	10.3	2,320	4.2	210	4.7	490
2	5.6	1,220	5.1	710	4.6	480	9.9	5,420	4.5	410	4.5	410
3	3.7	1,210	4.6	480	4.2	240	7.0	2,950	5.1	710	4.5	410
4	4.2	890	4.2	210	4.6	340	5.9	1,460	2.1	710	4.4	675
5	4.2	310	4.7	490	4.2	480	2.8	1,000	2.2	770	4.6	540
6	4.2	310	6.3	1,220	5.2	1,420	5.4	320	2.3	340	4.7	490
7	4.2	820	2.2	770	4.9	890	2.4	2,060	2.4	920	4.4	275
8	2.0	1,240	2.0	280	4.4	375	2.9	1,420	5.2	770	4.2	640
9	5.0	650	5.6	1,100	4.2	310	5.2	770	2.1	710	4.4	275
10	5.1	710	5.1	710	4.2	310	5.0	660	6.0	1,540	4.1	280
11	2.2	1,790	4.7	490	4.2	210	2.2	770	5.6	640	4.2	610
12	2.1	710	4.2	240	4.1	260	5.6	1,620	5.3	640	4.2	610
13	4.4	275	4.2	240	4.2	210	5.6	1,620	4.9	590	4.2	210
14	4.7	490	4.0	280	3.2	5,020	5.5	1,000	5.1	710	2.2	210
15	4.2	210	4.0	280	7.7	4,110	5.4	920	5.0	650	2.2	210
16	4.1	260	4.0	230	2.9	1,420	5.6	1,100	4.5	410	2.2	210
17	4.0	280	6.2	1,790	5.4	220	5.7	1,210	4.2	640	2.2	210
18	2.9	225	2.0	680	6.0	1,840	5.7	1,210	4.6	540	2.2	270
19	4.0	220	4.4	275	5.2	640	5.7	1,210	5.0	650	2.1	240
20	4.2	310	4.2	210	3.4	920	5.2	770	4.9	590	2.2	270
21	4.0	250	4.2	310	6.1	1,660	4.6	540	4.7	490	2.1	240
22	4.0	220	4.6	450	6.0	1,840	4.7	490	4.6	450	2.1	240
23	2.2	225	5.0	680	5.2	1,220	4.7	490	4.5	410	2.1	240
24	3.2	222	2.0	680	5.4	920	4.6	840	4.9	590	2.1	240
25	3.3	200	5.8	1,000	4.9	590	4.4	275	5.5	1,620	2.0	210
26	2.6	160	4.6	540	4.6	450	4.6	450	5.4	920	2.0	210
27	2.7	180	4.7	490	4.2	210	4.6	450	5.9	1,420	1.9	180
28	2.7	160	5.2	770	4.6	240	4.4	275	5.4	920	1.6	150
29	2.7	160	.....	.....	5.0	650	4.6	450	4.9	590	1.9	180
30	2.6	200	.....	.....	6.2	1,790	4.4	275	4.5	410	2.0	210
31	5.6	1,100	.....	.....	5.6	1,100	.....	.....	4.6	450	.....	.....
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	2.0	210	1.4	65	1.4	65	1.2	45	.....	1,220	2.4	280
2	2.0	210	1.4	68	1.5	80	2.4	350	.....	720	2.7	460
3	1.9	180	1.4	65	1.4	65	1.7	180	2.6	880	4.9	2,600
4	1.9	180	1.4	65	1.6	55	1.6	60	2.9	890	2.0	2,920
5	1.9	180	1.4	65	1.2	55	1.4	65	6.0	680	4.3	2,000
6	1.6	150	1.3	55	1.2	55	1.6	55	2.6	420	4.2	1,660
7	1.7	130	1.2	55	1.2	45	1.3	55	2.4	280	2.2	660
8	1.9	180	1.6	55	1.4	65	1.6	65	2.6	210	5.6	6,620
9	2.0	210	1.2	55	1.6	110	1.2	45	2.1	240	4.1	1,780
10	1.6	150	1.2	55	1.5	80	1.2	45	2.1	240	3.2	760
11	1.6	150	1.3	55	1.4	65	1.2	45	2.1	240	2.9	590
12	1.9	180	1.6	55	1.2	55	2.2	270	2.1	240	3.1	710
13	2.0	210	1.2	55	1.2	45	4.08	1,720	2.1	240	2.2	780
14	1.6	150	1.2	55	1.2	45	6.15	750	2.2	270	2.8	520
15	1.6	150	1.2	55	1.2	45	2.3	210	2.5	290	2.5	390
16	1.9	180	1.6	55	1.2	45	1.9	160	2.6	420	2.4	280
17	1.9	180	1.2	55	1.2	45	1.6	150	2.7	1,220	2.3	310
18	1.7	160	1.3	55	1.2	45	2.8	560	2.6	820	2.3	310
19	1.7	130	1.2	45	1.2	45	2.6	560	2.6	420	2.2	270
20	1.6	110	1.2	45	1.2	45	cov'd	4,400	2.3	210	3.9	1,500
21	1.6	110	1.2	45	1.2	45	.....	4,190	2.6	310	4.2	1,660
22	1.6	110	1.2	45	1.1	28	.....	1,590	2.9	590	3.4	950
23	1.6	110	1.2	45	1.1	35	.....	1,220	2.7	1,220	2.1	710
24	1.5	90	1.2	45	1.1	65	.....	1,450	6.0	650	2.7	460
25	1.5	80	1.2	45	1.1	35	.....	2,420	6.1	710	2.5	290
26	1.5	60	1.2	45	1.1	25	.....	4,620	3.4	950	2.6	210
27	1.5	60	1.2	45	1.1	35	.....	6,560	2.7	450	2.2	270
28	1.5	60	1.2	45	1.1	35	.....	2,950	2.4	250	2.1	240
29	1.5	80	1.2	45	1.1	35	.....	1,040	2.2	760	2.1	240
30	1.4	65	1.2	45	1.1	35	.....	860	2.8	520	2.0	210
31	1.4	65	1.3	28	.....	.....	.....	2,550	.....	.....	2.0	210

NOTE.—October 13 and 14 gauge covered, discharge taken from highwater gauge at intake.

SESSIONAL PAPER No. 23a

Monthly Discharge of Capilano Creek above Intake for 1915.

(Drainage area, 64 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January	4,620	160	845	10.08	11.82	39,700
February	1,920	250	688	10.28	10.88	36,400
March	8,020	280	1,022	18.97	18.41	62,800
April	9,820	378	1,487	28.21	28.89	88,500
May	1,840	810	704	11.00	12.82	43,300
June	540	160	808	4.77	8.82	18,100
July	210	66	128	2.18	2.49	8,420
August	65	45	53	0.88	0.98	2,260
September	110	35	60	0.78	0.87	2,980
October	4,620	48	1,200	18.76	21.63	73,800
November	1,230	240	640	8.44	9.42	32,100
December	8,820	210	1,100	17.19	19.31	67,400
The year.	9,820	35	688	10.28	139.78	477,020

CHEHALIS RIVER.—(1003).

*Location.*—One and a half mile from mouth, in section 14, township 4, range 30, west of 6th meridian.

*Records Available.*—Daily discharges from March, 1912, to June 6, 1915. On this date the station was discontinued temporarily owing to the improbability of power development for a considerable time. (Records available for 1915 are given herein; preceding records are tabulated in previous reports.)

*Drainage Area.*—Two hundred square miles.

*Gauge.*—Chain gauge. Daily gauge readings by Mr. H. Bahn, of Harrison Mills, B.C.

*Channel.*—Rock bed. The water is very swift at high stages and is not confined.

*Discharge Measurements.*—Eleven discharge measurements taken during 1912-13-14-15 give a well defined rating curve.

*Winter Flow.*—Open water all year.

*Accuracy.*—Below 3,000 cubic feet per second "B," above 3,000 cubic feet per second, "C."

Discharge Measurements of Chehalis River 1 Mile above Mouth for 1915.

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
Mar. 6	Cline & Hughes	1,821	110	273	2.30	3.7	883

## Daily Gauge Height and Discharge of Chehalis River near Mouth for 1915.

(Drainage area, 200 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	3.0	470	2.3	670	3.63	940	4.3	1,850	3.4	750	.....	.....
2	3.6	1,060	3.35	710	3.5	620	5.8	6,700	3.35	710	.....	.....
3	4.9	2,750	3.5	320	3.4	750	5.1	3,450	3.3	370	.....	.....
4	4.1	1,320	3.6	900	3.35	710	4.6	3,450	3.3	870	.....	.....
5	3.9	1,140	3.65	940	3.4	780	4.3	2,000	3.3	670	.....	.....
6	3.65	1,100	3.75	1,030	3.45	780	4.4	1,370	3.4	750	.....	.....
7	3.8	1,060	3.35	1,100	3.4	780	4.3	1,550	6.5	620	.....	.....
8	3.75	1,020	3.9	1,140	3.3	670	4.6	2,000	3.55	860	.....	.....
9	3.9	1,140	3.8	1,060	3.25	630	5.0	3,190	3.6	900	.....	.....
10	3.95	1,160	3.6	1,060	3.25	630	4.8	2,480	3.7	980	.....	.....
11	4.60	2,000	3.75	1,020	3.3	670	4.7	2,200	3.6	1,080	.....	.....
12	4.40	1,670	3.7	960	3.35	710	4.6	2,060	6.7	330	.....	.....
13	4.30	1,360	3.6	900	3.35	710	4.5	1,620	3.7	960	.....	.....
14	4.10	1,330	6.6	900	4.0	1,330	4.8	1,620	3.6	900	.....	.....
15	3.95	1,160	3.6	900	3.5	830	4.45	1,740	3.55	660	.....	.....
16	3.60	1,060	3.8	620	5.0	3,100	4.45	1,740	3.55	660	.....	.....
17	3.65	940	3.4	750	4.8	2,450	4.3	1,550	6.80	630	.....	.....
18	3.55	860	3.5	630	4.6	2,000	4.3	1,550	3.48	760	.....	.....
19	3.50	820	3.6	900	4.5	1,620	4.3	1,430	3.48	780	.....	.....
30	3.55	860	6.7	960	4.4	1,670	4.18	1,360	3.80	320	.....	.....
21	3.50	820	3.75	1,020	4.4	1,670	4.1	1,320	3.80	360	.....	.....
33	3.45	780	3.7	960	4.45	1,740	4.0	1,330	3.65	340	.....	.....
23	3.40	780	3.65	940	4.4	1,670	3.9	1,140	6.7	930	.....	.....
24	3.35	710	3.6	900	4.3	1,550	6.6	1,060	6.6	900	.....	.....
25	3.35	710	6.6	900	4.3	1,430	6.75	1,020	3.55	860	.....	.....
26	3.35	710	3.65	940	4.1	1,320	3.7	980	3.5	820	.....	.....
37	3.30	670	3.7	960	4.15	1,380	3.6	900	3.65	940	.....	.....
28	3.25	630	3.75	1,020	4.0	1,330	3.5	830	4.3	1,360	.....	.....
29	3.20	600	.....	.....	3.9	1,140	3.45	780	4.0	1,230	.....	.....
30	6.30	600	.....	.....	4.0	1,330	3.4	780	3.9	1,140	.....	.....
31	3.3	670	.....	.....	4.05	1,280	.....	.....	3.6	1,060	.....	.....

## Monthly Discharge of Chehalis River near Mouth for 1915.

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January	2,750	470	1,040	5.20	6.00	64,000
February	1,140	670	930	4.65	4.84	51,600
March	5,300	630	1,380	6.90	7.95	84,800
April	6,700	750	1,800	9.00	10.04	107,000
May	1,550	670	900	4.50	5.19	55,300
The period.	6,700	470	1,210	6.05	34.03	363,700

NOTE.—Station discontinued May 31st, 1915.

SESSIONAL PAPER No. 26

## CHILLIWACK RIVER.—(1004).

*Location.*—Five miles from Sumas lake, in section 1, township 23, east of the coast meridian.

*Records Available.*—Daily discharges from November, 1911, to December, 1915. (Records available for 1915 are given herein; preceding records are tabulated in previous reports).

*Drainage Area.*—Four hundred and fifty square miles, of which about 100 square miles are in the state of Washington.

*Gauge.*—Vertical staff on rock-filled crib. Daily gauge readings by Mr. A. N. Smith, of Vedder Crossing, B.C.

*Channel.*—Rocky bottom, good control, water deep; swift at high stages.

*Discharge Measurements.*—Sixteen meter measurements made during 1911-12-13-14-15, give a well defined rating curve.

*Winter Flow.*—Open water conditions all year.

*Accuracy.*—"A."

*Discharge Measurements of Chilliwack River 5 Miles above Sumas Mt. for 1915.*

Date	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
April 26	Cline and Hughes.	1,521	125	415	5.30	2.40	2,210

*Daily Gauge Height and Discharge of Chilliwak River 5 Mil. above Sumas Mt.  
for 1915.*

(Drainage area, 480 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	1.4	1,000	1.2	880	1.2	880	1.9	1,880	2.2	2,000	8.8	2,000
2	1.58	1,280	1.18	820	1.28	880	8.8	4,800	8.2	8,180	8.7	8,800
3	1.8	1,400	1.18	820	1.88	980	8.0	8,700	8.8	8,180	2.7	8,000
4	1.8	1,400	1.1	800	1.2	880	4.0	8,300	2.4	8,800	2.8	8,000
8	1.75	1,280	1.1	800	1.28	880	3.4	4,000	2.8	8,800	2.9	8,180
8	1.98	1,280	1.18	880	1.8	900	8.1	8,800	8.8	8,880	8.0	2,800
7	1.8	1,100	1.1	800	1.2	900	8.4	4,000	2.8	2,980	2.9	2,180
8	1.4	1,000	1.1	800	1.28	880	8.8	4,200	2.7	2,900	8.7	2,800
9	1.8	1,100	1.15	820	1.28	880	8.4	4,000	2.7	2,800	2.8	2,880
10	1.8	1,100	1.18	820	1.8	880	8.8	2,880	2.8	2,880	2.8	2,800
11	1.7	1,800	1.8	880	1.18	880	8.4	4,000	2.8	8,880	8.8	8,800
12	1.7	1,200	1.28	880	1.18	880	8.8	2,880	2.8	2,800	8.4	8,200
13	1.88	1,880	1.8	900	1.8	880	2.1	8,800	2.8	2,880	8.8	8,180
14	1.8	1,200	1.2	900	1.2	880	8.8	8,180	8.8	2,880	8.2	2,000
18	1.8	1,100	1.88	880	8.8	8,000	2.8	8,880	2.8	8,800	2.8	2,180
18	1.4	1,000	1.2	880	8.1	1,880	8.7	8,800	2.8	2,800	8.4	8,800
17	1.4	1,000	1.2	900	2.0	1,700	2.8	8,000	8.8	2,880	8.8	2,800
18	1.4	1,000	1.8	900	1.9	1,880	2.9	2,180	2.7	2,800	8.4	2,300
18	1.28	980	1.28	880	2.0	1,700	2.9	2,180	2.8	8,000	2.8	8,180
20	1.2	900	1.28	880	8.1	1,880	2.8	8,000	2.9	2,180	8.8	2,000
21	1.8	900	1.2	880	2.2	8,000	2.7	2,800	2.9	8,180	2.88	2,070
22	1.28	870	1.18	880	2.2	2,180	2.7	2,800	2.8	8,000	2.8	8,000
28	1.2	880	1.18	820	2.8	2,800	2.8	2,880	8.7	2,800	8.18	1,920
24	1.2	880	1.2	880	2.2	2,000	2.8	2,880	2.8	2,880	8.1	1,880
28	1.2	880	1.2	880	2.1	1,880	2.8	2,900	2.8	8,800	8.1	1,880
28	1.2	880	1.88	880	8.0	1,700	8.4	2,300	2.8	2,820	8.08	1,770
27	1.18	820	1.2	900	1.9	1,880	2.8	2,180	2.8	2,880	2.0	1,700
28	1.18	820	1.28	880	1.8	1,400	8.8	2,180	8.4	4,000	2.0	1,700
29	1.1	800	.....	.....	1.8	1,400	8.4	2,200	8.2	8,700	1.98	1,880
30	1.1	800	.....	.....	1.7	1,200	2.8	8,180	8.0	2,300	1.08	1,920
31	1.18	820	.....	.....	1.8	1,200	.....	.....	2.9	2,180	.....	.....
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	2.20	2,000	1.40	1,000	1.2	900	1.2	880	4.2	5,100	1.7	1,300
2	2.28	2,080	1.28	880	1.2	900	1.88	1,180	8.8	4,400	1.8	1,400
3	2.30	2,180	1.40	1,000	1.28	875	1.88	1,180	8.2	2,700	1.9	1,880
4	2.30	2,180	1.48	1,080	1.28	875	1.8	900	2.0	2,800	2.0	1,700
8	2.28	2,080	1.80	1,100	1.30	880	1.2	900	2.8	2,880	2.1	1,880
5	2.20	2,000	1.80	1,100	1.28	875	1.28	875	2.0	2,800	2.2	2,000
7	2.18	1,920	1.80	1,200	1.20	900	1.28	875	2.8	2,000	2.2	2,180
5	2.18	1,920	1.80	1,200	1.20	900	1.2	880	2.8	2,880	4.2	5,800
9	2.10	1,880	1.80	1,200	1.28	880	1.2	880	2.4	2,300	8.8	4,800
10	2.00	1,700	1.88	1,180	1.30	900	1.18	828	2.8	8,180	2.9	2,180
11	2.00	1,700	1.88	1,180	1.28	875	1.18	828	2.2	8,000	2.7	2,800
12	1.98	1,820	1.80	1,100	1.28	875	1.80	1,100	2.1	1,880	2.8	2,800
13	2.00	1,700	1.80	1,100	1.28	875	1.80	1,100	2.0	1,700	2.4	2,200
14	2.08	1,780	1.48	1,080	1.20	880	1.48	1,080	1.8	1,400	2.2	2,180
15	2.00	1,700	1.48	1,080	1.28	875	1.48	1,080	1.8	1,400	2.2	2,000
18	2.00	1,700	1.48	1,080	1.20	880	1.88	980	1.9	1,880	2.2	2,000
17	1.98	1,820	1.40	1,000	1.20	880	1.20	900	2.0	1,700	2.0	1,700
18	1.90	1,880	1.48	1,080	1.20	880	1.80	1,100	2.4	2,300	1.9	1,880
19	1.88	1,880	1.80	1,100	1.18	828	1.70	1,300	2.2	2,180	1.8	1,400
20	1.88	1,880	1.80	1,100	1.18	828	2.40	2,200	2.2	2,000	1.8	1,400
21	1.80	1,800	1.48	1,080	1.1	800	2.2	2,180	2.1	1,880	2.7	2,800
22	1.78	1,880	1.48	1,080	1.1	800	2.00	1,700	2.1	1,880	3.0	2,200
23	1.70	1,800	1.48	1,080	1.18	828	1.90	1,880	2.2	2,000	2.8	2,880
24	1.70	1,800	1.80	1,100	1.2	880	2.00	1,700	2.2	2,180	2.2	2,000
28	1.88	1,280	1.80	1,100	1.2	880	2.00	8,800	2.8	2,880	2.2	2,000
28	1.88	1,280	1.80	1,100	1.2	880	2.00	8,800	2.8	2,880	2.2	2,000
25	1.88	1,280	1.48	1,080	1.2	880	3.28	3,778	2.8	2,880	2.1	1,880
27	1.80	1,200	1.48	1,080	1.18	828	2.80	4,400	2.2	2,180	2.1	1,880
28	1.88	1,280	1.4	1,000	1.18	828	8.18	9,880	2.2	2,000	2.0	1,700
29	1.80	1,100	1.4	1,000	1.18	828	4.00	8,800	2.1	1,880	1.9	1,880
20	1.80	1,100	1.88	980	1.2	880	8.40	4,000	1.9	1,880	1.7	1,800
31	1.40	1,000	1.88	980	.....	.....	4.98	8,800	.....	.....	1.7	1,200

SESSIONAL PAPER No. 26a

Monthly Discharge of Chilliwak River 5 Miles above Sumas Mt. for 1915.

(Drainage area, 480 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January	1,400	800	1,040	2.81	2.66	64,000
February	800	800	820	1.89	1.87	47,200
March	3,800	820	1,860	3.90	2.46	88,000
April	8,700	1,880	3,860	7.48	6.31	138,000
May	4,000	2,000	2,740	5.09	7.02	138,000
June	3,300	1,820	2,320	4.16	5.78	138,000
July	2,130	1,000	1,600	3.66	4.08	88,400
August	1,200	960	1,086	2.37	2.3	66,300
September	980	800	889	1.81	2.13	31,100
October	8,330	826	2,160	4.73	5.81	138,200
November	6,100	1,400	2,460	5.43	6.68	14,000
December	3,800	1,300	2,190	4.67	3.62	138,000
The year	8,380	800	1,820	4.07	36.34	1,077,000

COQUIHALLA RIVER.—(1905).

*Location.*—One mile from mouth, near Hope, in section 10, township 5, range 26, west of 6th meridian.

*Records Available.*—Daily discharges from November, 1911, to December, 1915. (Records for 1915 are given herein; preceding records are tabulated in previous reports).

*Drainage Area.*—Three hundred and sixty square miles.

*Gauge.*—Cable gauge on highway bridge, also subsidiary cable gauge on C.N.R. trestle. The gauge reader is Mr. T. L. Thacker. The gauge on the C.N.R. trestle is read four or five times a week. The gauge on the highway bridge is read once or twice a week.

*Channel.*—Stream rather shallow, with rocky bottom; water swift at the higher stages.

*Discharge Measurements.*—Nineteen meter measurements were made during 1912-13-14-15, giving a well defined rating curve.

*Winter Flow.*—The section is affected by anchor ice at the riffle, although the stream never freezes over.

*Accuracy.*—"C." Gauge readings irregular.

Discharge Measurements of Coquihalla River at Mouth for 1915.

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
July 10	H. C. Hughes	1,067	118	2.07	1.77	1.10	867
June 29	C. G. Cline	1,806	120	2.15	2.10	1.30	459
Dec. 18	H. C. Hughes	1,048	120	2.30	2.11	1.26	486





SESSIONAL PAPER No. 25e

*Monthly Discharge of Coquihalla River at Highway Bridge for 1915.*  
(Drainage area, 360 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January.....	320	210	252	0.70	0.81	15,500
February.....	300	220	242	0.67	0.70	13,400
March.....	1,550	230	530	1.47	1.70	32,500
April.....	3,200	870	1,560	4.39	4.90	94,000
May.....	1,920	810	1,210	3.36	3.87	74,400
June.....	1,100	430	730	2.03	2.26	43,400
July.....	890	270	406	1.13	1.30	25,000
August.....	270	200	222	0.62	0.72	13,650
September.....	270	180	201	0.66	0.63	12,000
October.....	6,840	180	1,150	3.20	3.69	70,700
November.....	2,310	470	1,010	2.81	3.14	60,100
December.....	1,640	445	697	1.94	2.24	42,900
The year.....	6,840	180	686	1.91	25.96	497,550

## COQUITLAM RIVER (1066).

*Location.*—One mile above mouth, in section 2, township 39, west of the coast meridian.

*Records Available.*—Daily discharges from January 25, 1915, to December, 1915.

*Drainage Area.*—One hundred and fifteen square miles above metering section. Taken from provincial map 1913—(scale—3 miles to the inch).

*Gauge.*—Chain gauge on highway bridge at Westminster Junction. The gauge is read daily by Mr. C. Galor.

*Channel.*—Gravelly bottom, good control, water dead at low stages.

*Discharge Measurements.*—Five discharge measurements taken in 1915 give a well defined rating curve.

*Winter Flow.*—The stream is affected by ice only in very cold weather, which occurs but seldom.

*Accuracy.*—"B."

## COQUITLAM RIVER.—(1066).

Coquitlam river rises in Disappointment lake and flows in a southerly direction through Coquitlam lake, discharging into the Fraser river about three miles above New Westminster. The chief tributary is Gold creek, which enters about one and a half mile from the outlet of Coquitlam lake. The total drainage area is about one hundred and fifteen square miles.

A large part of the flow of Coquitlam river is diverted through a tunnel into lake Buntzen and from there carried down in penstocks to a power house situated on the north arm of Burrard Inlet, operated by the British Columbia Electric Railway Company.

The station is established at the highway bridge in the town of Port Coquitlam. The purpose of this station is to determine the maximum flow in the channel near Port Coquitlam. The river at this point overflows its banks during the freshets, and, apart from being a constant menace to public safety, renders a large tract of land practically useless. It is altogether probable that eventually this land will be reclaimed by controlling the flow of the stream.

Daily Gauge Height and Discharge of Coquillam River at Westminster Jct. for 1915.

(Drainage area, 115 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1			3.3	350	3.4	350	4.85	4,330	3.1	300	3.2	350
2			3.0	150	3.7	550	5.5	5,800	3.0	150	3.1	300
3			1.7	70	3.3	540	5.48	5,770	3.0	150	3.0	150
4			1.3	30	3.3	540	4.7	3,850	1.3	110	3.0	150
5			1.7	70	3.9	730	4.3	3,700	1.9	110	1.3	110
6			3.3	300	3.8	540	3.5	2,150	1.3	80	1.8	30
7			3.0	150	2.4	380	3.4	1,400	1.5	80	1.8	30
8			1.9	110	2.4	350	3.4	1,400	1.3	110	1.7	70
9			1.7	70	3.0	150	3.3	1,350	3.0	150	1.5	50
10			2.0	150	3.3	350	4.0	3,300	3.3	380	1.5	50
11			1.9	110	3.4	350	3.3	3,150	3.7	580	1.8	50
12			1.3	110	3.4	1,400	3.7	1,850	2.9	730	1.5	50
13			3.0	150	4.5	4,380	3.4	1,400	2.8	540	1.5	50
14			3.2	350	4.8	4,100	3.3	1,380	3.4	350	1.4	45
15			2.4	380	4.7	3,850	3.3	1,100	2.3	300	1.4	45
16			3.9	730	4.0	3,300	3.3	1,100	2.3	300	1.4	45
17			3.4	350	3.9	1,150	3.1	950	3.0	150	1.4	45
18			2.3	250	3.5	1,700	3.0	800	2.1	300	1.4	45
19			1.9	110	3.4	1,400	2.9	720	2.0	150	1.4	45
20			1.0	110	3.0	500	2.5	540	1.9	110	1.4	45
21			1.9	110	3.9	730	2.8	640	1.9	110	1.4	45
22			2.0	150	3.9	730	2.5	640	2.0	150	1.4	45
23			2.2	250	2.8	540	2.7	560	3.6	430	1.4	45
24			3.4	350	3.7	550	2.5	480	2.4	350	1.4	45
25	1.5	50	3.3	350	3.7	550	2.4	450	2.3	300	1.4	45
26	1.5	50	3.3	350	3.5	480	2.4	850	3.4	350	1.4	45
27	1.45	45	3.3	350	3.5	400	2.3	300	2.7	550	1.4	45
28	1.40	40	2.4	350	3.8	640	2.1	200	2.8	640	1.3	40
29	1.40	40			3.9	730	2.0	150	2.4	350	1.3	40
30	1.40	40			3.9	730	3.0	150	2.4	350	1.3	40
31	3.50	400			3.1	950			2.4	380		
	July.		August.		September.		October.		November.		December.	
1	1.4	40	1.4	40	1.4	40	1.4	40	4.0	3,300	2.8	540
2	1.4	40	1.4	40	1.4	40	1.4	40	3.5	1,550	3.5	480
3	1.4	40	1.4	40	1.4	40	2.0	150	3.0	500	3.9	720
4	1.4	40	1.4	40	1.4	40	1.5	50	3.5	480	4.1	3,500
5	1.4	40	1.4	40	1.4	40	1.4	40	3.9	730	4.3	3,700
5	1.4	40	1.4	40	1.4	40	1.4	40	3.5	400	4.3	3,300
7	1.4	40	1.4	40	1.4	40	1.4	40	2.4	380	5.8	5,740
8	1.4	40	1.4	40	1.4	40	1.4	40	3.3	350	5.3	6,180
9	1.4	40	1.4	40	1.4	40	1.4	40	3.0	150	4.0	3,300
10	1.4	40	1.4	40	1.4	40	1.4	40	1.8	80	3.8	3,000
11	1.4	40	1.4	40	1.4	40	2.8	300	1.7	70	3.1	980
12	1.4	40	1.4	40	1.4	40	2.0	150	1.5	50	3.0	800
13	1.4	40	1.4	40	1.4	40	1.9	110	1.6	50	3.9	730
14	1.4	40	1.4	40	1.4	40	2.3	250	1.5	50	3.5	480
15	1.4	40	1.4	40	1.4	30	3.0	150	1.5	50	3.4	350
16	1.4	40	1.4	40	1.4	40	1.9	110	1.5	50	3.4	350
17	1.4	40	1.4	40	1.4	40	1.9	110	1.8	80	3.5	480
18	1.4	40	1.4	40	1.4	40	2.0	150	3.3	350	3.8	540
19	1.4	40	1.4	40	1.4	40	3.35	1,320	3.1	300	3.3	540
20	1.4	40	1.4	40	1.4	40	3.30	300	2.0	180	4.0	3,300
21	1.4	40	1.4	40	1.4	40	2.40	880	3.3	350	4.0	3,300
22	1.4	40	1.4	40	1.4	40	2.20	250	3.3	250	4.1	3,500
23	1.4	40	1.4	40	1.4	40	2.00	150	3.0	800	4.0	3,300
24	1.4	40	1.4	40	1.4	40	2.20	350	3.0	500	3.3	2,000
25	1.4	40	1.4	40	1.4	40	2.50	480	3.1	950	3.8	3,000
25	1.4	40	1.4	40	1.4	40	3.10	980	3.4	1,400	3.2	1,100
27	1.4	40	1.4	40	1.4	40	2.90	730	3.0	500	2.5	480
28	1.4	40	1.4	40	1.4	40	2.70	550	3.9	730	3.0	150
29	1.4	40	1.4	40	1.4	40	2.60	450	2.9	720	1.9	110
30	1.4	40	1.4	40	1.4	40	2.30	300	3.0	500	1.8	30
31	1.4	40	1.4	40			4.58	3,730			1.8	80

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*Discharge Measurements of Coquillam River at Coquillam Jct. for 1915.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
Jan. 25	H. C. Hughes.	1,933	52	25	1.53	1.50	40 <sup>1</sup>
April 3	C. G. Cline.	1,521	240	1,170	4.40	5.25	5,150 <sup>2</sup>
April 15	Hughes & Cline	1,521	104	792	1.40	3.30	1,120 <sup>3</sup>
June 21	C. G. Cline.	1,505	42	35	1.70	1.35	43 <sup>3</sup>
July 30	H. C. Hughes.	1,046	11	5.5	3.70	1.35	30 <sup>4</sup>

<sup>1</sup> Section 150 yards below gauge.<sup>2</sup> Section at gauge.<sup>3</sup> Section 100 yards below gauge.<sup>4</sup> Section 120 yards below gauge.*Monthly Discharge of Coquillam River at Westminster Junction for 1915.*

(Drainage area, 115 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January	720	70	210	1.82	1.90	11,700
February	4,350	150	1,100	9.57	11.03	57,600
March	5,600	150	1,680	14.35	15.01	95,200
April	720	50	266	2.49	2.67	17,500
May	250	40	70	0.61	0.65	4,150
June	40	40	40	0.35	0.40	2,460
July	40	40	40	0.35	0.40	2,460
August	40	40	40	0.35	0.39	2,350
September	40	40	40	0.35	0.39	2,350
October	3,780	40	377	3.28	3.78	23,200
November	2,300	50	520	4.52	5.04	30,900
December	5,740	50	1,550	13.50	15.50	95,300
The period	8,800	40	534	4.65	55.10	355,960

NOTE.—Station established in January, 1915.

## FLUME CREEK.—(1062).

*Location.*—Five miles from Wigwam Inn, Indian river; and near the mouth of the stream.

*Records Available.*—Daily discharges from July, 1915, to December, 1915.

*Drainage Area.*—Not determined.

*Gauge.*—Vertical staff gauge. The gauge reader is Mr. J. L. Davis. Gauge readings are taken twice a week.

*Channel.*—Solid rock, good control.

*Discharge Measurements.*—Three discharge measurements were taken in 1915, giving a fairly well defined rating curve.

*Winter Flow.*—Fairly heavy snowfall, practically open conditions all winter.

*Accuracy.*—"D," because of infrequent gauge readings.

*Co-operation.*—Gauge readings are taken by the employees of the Westminster Power Company.

## FLUME CREEK.—(1062).

Flume creek rises in the mountains to the west of the Mesliloet river and discharges into the Mesliloet river at an elevation of about 250 feet.

The annual precipitation in the Flume creek watershed is probably between 120 and 150 inches. In the higher altitudes there are snow fields which remain practically all the year.

With a fairly mild temperature in the lower altitudes, the stream is seldom frozen over and is seldom affected by ice for more than a few weeks during the coldest part of the winter.

The drainage basin of Flume creek is very rough and precipitous. The stream having a very rapid fall, a small quantity of power could be developed very cheaply. The watershed is heavily timbered with fir and cedar. During 1912 and 1913, the stream was used by the Hastings Shingle Company to provide water for a shingle bolt flume.

A metering station was established at the mouth by this survey in July, 1915 at the request of the Westminster Power Company.

*Discharge Measurements of Flume Creek at Mouth for 1915.*

Date.	Engineer.	Meter No.	Width.		Mean Velocity.		Gauge Height.		Discharge.	
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.			
May 5	C. E. Dobbie	1,057	24	0	2.00	2.10	72.0			
July 17	R. V. Gordon	1,505	25	20.5	0.88	0.60	18.0			
July 26	R. V. Gordon	1,505	5	3.5	0.95	0.00	3.1			

NOTE.—The metering section varies with the stage of the water.

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Daily Gauge Height and Discharge of Flume Creek at Indian River for 1915.

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
	Feet	Sec.-ft.	Feet.	Sec.-ft	Feet.	Sec.-ft	Feet	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1												38
2												37
3											1.2	37
4												42
5									2.1	72		48
6												
7										70	1.6	53
8										69		48
9										67		42
10										66	1.2	37
11										64		37
12										62		37
13										60		37
14										58	1.2	37
15										56		36
16										55		34
17									1.6	53	1.1	33
18										59		32
19										64		32
20									2.2	70		31
21										76		31
22										67	1.0	30
23									1.5	58		30
24										49		30
25										58	1.0	30
26										67		28
27									2.2	76		26
28										66	0.80	24
29										57		23
30										48		22
31									1.25	39		20
										39		

	July.	August.	September.	October.	November.	December.						
1		15	2	-1.3	2	5	2.5	88		90		
2	0.60	17	-0.03	2	2	7		78	3.3	120		
3		16		2	2	9		69		106		
4	0.50	14		2	3	11	1.8	60		93		
5		15		2	3	14		57	2.3	80		
6		16	-0.03	2	3			53		110		
7		16		2	3	8		49		140		
8	0.60	17		2	3	5	1.40	45	4.5	168		
9		20	-0.03	2	3	19		35		141		
10		23		2	3	33		26		114		
11		25		2	3	0.0	1.45	47	0.60	17	87	
12	0.90	27		2	2	43		39		19	60	
13		25		2	2	39		34		21	50	
14		23	-0.03	2	2	34		29		22	40	
15		21		2	1	29		24	0.80	24	30	
16		19	-0.08	2	-0.18	1	0.80	24		29	41	
17	0.60	17		2	1	54		35		35	52	
18		16		2	1	84	2.40	41		41	64	
19		14		2	-0.25	1		119	1.30	48	76	
20		12		1		154		55		55	85	
21		11	-0.25	1		1	5.00	188		62		
22		9		1	-0.25	1		175	2.00	68	2.9	94
23		7	-0.33	0		1		162		76		89
24		5		0		0	4.00	148	2.40	84		72
25	0.00	3		0		0		168		74		55
26	0.00	3	-0.33	0		0	5.00	188		63		38
27		2		0	-0.30	0		171		52	0.7	21
28		2		1		1		154		41		20
29	-0.02	2		1		2		137	1.00	30		19
30		2	-0.1	2	0.02	3		120		60		18
31		2		2				103			0.60	17

*Monthly Discharge of Flume Creek at Mouth near Indian River for 1915.*

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
June.....	53	20	34			
July.....	27	2	14			
August.....	2	0	2			
September.....	3	0	2			
October.....	188	5	80			
November.....	88	17	49			
December.....	168	17	74			
The period.....	188	0	36			

NOTE.—Station established May, 1915.

FRASER RIVER AT HOPE.—(1607).

*Location.*—At Hope, in section 16, township 5, range 26, west of 6th meridian.

*Records Available.*—Daily discharges from March, 1912, to December, 1915. (Records for 1915 are given herein; preceding records are tabulated in previous reports).

*Drainage Area.*—Above gauging station 85,600 square miles; above mouth 90,000 square miles.

*Gauge.*—Painted on rock bluff at Kettle Valley Railway bridge; readings daily. Daily gauge readings by Mr. F. Nicholson, of Hope, B.C.

*Channel.*—About 900 feet wide, permanent, swift at higher stages.

*Discharge Measurements.*—Eleven meter measurements made during 1912-13-14-15, give a well defined rating curve. Some of these measurements were made by using floats.

*Winter Flow.*—Not enough ice to affect the gauge height-discharge relations.

*Accuracy.*—"B."

*Co-operation.*—Gauge readings taken by the engineers of the Kettle Valley Railroad.

*Discharge Measurements of Fraser River at Hope for 1915.*

Date.	Engineer	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
Mar. 31	H. C. Hughes	1,521	711	16,800	2.1	12.2	35,200
July 2	C. G. Cline	1,505	855	24,490	8.1	21.8	199,000
Oct. 31	H. C. Hughes	1,046	804	20,000	4.2	15.6	84,100
Dec. 17	H. C. Hughes	1,046	705	15,500	1.7	11.25	26,500

NOTE.—Readings taken at Kettle Valley Ry. bridge.

BRITISH COLUMBIA HYDROMETRIC SURVEY

SESSIONAL PAPER No. 25a

Daily Gauge Height and Discharge of Fraser River at Hope for 1915.

(Drainage area, 85,800 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	12.3	38,800	10.9	25,800	10.45	22,200	12.6	41,600	18.6	97,600	21.8	133,700
2	13.1	36,100	10.9	25,800	10.5	22,500	13.5	52,500	18.6	99,200	20.8	178,000
3	12.2	37,200	11.0	28,000	10.5	22,500	14.2	61,800	18.8	97,500	20.3	166,000
4	12.1	38,100	11.1	28,900	10.5	22,500	15.85	87,000	18.7	100,900	20.0	180,000
5	12.0	33,000	11.3	27,800	10.5	22,500	13.7	55,100	18.7	100,900	20.0	180,000
6	11.9	34,100	11.2	27,800	10.5	22,500	15.0	75,000	18.7	100,900	20.1	182,000
7	11.8	38,200	11.2	27,800	10.5	22,500	16.2	92,400	17.7	118,600	20.0	180,000
8	11.8	38,300	11.2	25,700	10.5	22,500	18.52	97,800	18.0	134,000	20.8	166,000
9	11.7	32,300	11.5	28,700	10.5	22,500	16.25	98,200	18.75	137,500	19.96	189,100
10	12.8	48,800	11.3	28,700	10.5	22,500	15.9	87,400	18.55	133,900	19.8	186,400
11	12.0	35,000	11.3	28,700	10.5	22,500	15.9	87,400	18.45	132,100	19.5	151,000
12	12.0	55,000	11.3	28,700	10.5	22,500	15.9	87,400	18.8	158,400	19.7	184,000
13	13.0	35,000	11.3	28,700	10.5	22,500	15.7	84,200	19.5	151,000	19.5	151,000
14	11.8	32,200	11.3	28,700	10.6	23,200	15.5	81,000	20.0	160,000	19.5	147,400
15	11.6	31,400	11.25	28,200	10.7	23,900	15.9	87,400	19.8	156,400	19.0	142,000
16	11.5	30,500	11.2	27,800	10.8	24,600	16.0	89,000	19.2	145,600	19.3	147,400
17	11.4	29,600	11.2	27,800	10.8	24,600	16.4	95,800	19.0	142,000	19.4	149,200
18	11.5	30,500	11.2	27,800	10.9	25,300	16.7	100,900	19.2	145,600	19.5	151,000
19	11.5	30,500	11.2	27,800	11.0	26,000	16.8	102,600	19.6	152,800	19.6	152,800
20	11.5	30,500	11.2	27,800	11.2	27,800	16.9	104,300	19.7	154,600	20.5	170,000
21	11.4	29,600	11.0	26,000	11.45	30,000	17.0	108,000	19.6	152,800	21.0	180,000
22	11.2	27,900	10.95	25,600	11.2	27,800	17.0	108,000	19.8	156,400	21.0	180,000
23	11.1	26,300	10.75	24,200	12.4	39,400	17.5	115,000	20.1	162,000	20.6	172,000
24	11.1	26,900	10.5	22,500	12.4	39,400	16.75	101,700	20.5	170,000	20.7	174,000
25	11.0	26,000	10.45	22,200	12.4	39,400	16.8	102,600	20.6	172,000	20.1	162,000
26	11.0	26,000	10.4	21,800	12.35	38,800	16.65	100,000	21.1	181,900	19.7	154,600
27	11.0	26,000	10.4	21,800	12.37	39,100	16.65	100,000	21.7	193,300	19.7	154,600
28	10.9	25,300	10.4	21,800	12.35	38,900	16.45	96,600	21.4	187,400	20.5	170,000
29	10.9	25,300	10.4	21,800	12.4	39,400	16.47	97,000	21.4	187,600	20.8	176,000
30	10.9	25,300	10.4	21,800	12.5	40,500	16.5	97,500	21.5	189,500	21.7	193,500
31	10.8	24,600	10.4	21,800	12.55	41,000	16.5	97,500	21.4	187,800	21.7	193,500
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	22.00	199,000	20.40	168,000	16.50	97,500	12.50	40,500	15.0	73,000	10.4	21,800
2	21.70	193,300	20.10	162,000	16.35	94,900	12.40	39,400	15.0	73,000	10.4	21,800
3	21.80	191,400	20.10	162,000	16.20	92,400	12.40	39,400	14.9	71,800	10.8	21,800
4	21.15	182,800	19.90	158,200	16.00	89,000	12.30	38,300	14.7	68,800	10.4	21,800
5	20.75	175,000	19.85	157,300	15.80	85,800	12.15	36,700	14.7	68,800	10.5	22,500
6	20.40	168,000	19.75	155,500	15.65	83,400	12.10	36,100	14.5	68,000	10.8	28,200
7	20.65	173,000	19.57	152,300	15.40	79,400	12.0	35,000	13.9	57,700	10.9	28,500
8	20.65	173,000	19.00	142,000	15.15	75,400	12.1	36,100	13.2	51,200	11.1	26,900
9	20.30	166,000	18.80	138,400	15.00	73,000	12.0	35,000	13.0	46,000	11.0	28,000
10	20.25	165,000	18.40	131,200	14.80	70,200	12.1	36,100	12.9	44,900	10.8	24,800
11	20.10	162,000	18.00	124,000	14.30	63,200	12.0	35,000	12.7	42,700	10.5	22,500
12	21.15	182,800	18.00	124,000	13.70	55,100	12.2	37,200	12.4	39,400	10.5	22,500
13	21.30	185,700	18.10	125,800	13.35	50,500	12.0	35,000	12.0	35,000	10.4	21,800
14	22.30	204,700	18.00	124,000	13.00	46,000	11.8	33,200	12.0	35,000	10.3	21,100
15	22.20	202,800	17.50	120,400	12.80	43,800	11.75	32,700	12.0	35,000	10.1	19,700
16	21.55	190,400	17.60	116,800	12.80	43,900	12.00	35,000	11.9	34,100	10.0	19,000
17	21.10	181,900	17.80	120,400	12.90	44,900	12.0	35,000	11.9	34,100	9.8	17,600
18	21.20	183,800	18.00	124,000	12.90	44,900	12.1	36,100	11.8	33,200	9.6	16,200
19	21.40	187,600	17.50	115,000	13.00	46,000	12.4	39,400	11.8	33,200	9.5	15,500
20	20.80	176,000	17.90	122,200	13.00	46,000	12.7	42,700	11.6	31,400	10.0	19,000
21	21.40	187,600	18.00	124,000	13.20	48,600	12.9	44,900	11.8	33,200	10.6	23,200
22	21.10	181,900	18.20	127,600	13.35	50,500	13.0	46,000	11.6	31,400	10.4	21,800
23	20.80	176,000	18.20	127,600	13.50	52,500	13.0	46,000	11.5	30,500	10.3	21,100
24	20.60	170,000	18.10	125,800	13.30	49,900	13.0	46,000	11.5	30,500	10.3	21,100
25	20.50	170,000	18.00	124,000	13.00	46,000	12.9	44,900	11.4	29,800	10.1	19,700
26	20.35	167,000	17.80	120,400	13.00	46,000	13.0	46,000	11.2	27,800	10.1	19,700
27	20.15	163,000	17.80	120,400	12.80	43,800	14.0	59,000	11.0	26,000	10.1	19,700
28	20.00	160,000	17.60	116,800	12.75	43,300	16.0	89,000	10.9	25,300	9.9	18,300
29	19.90	158,200	17.30	111,400	12.60	41,600	15.0	73,000	10.7	23,900	9.7	16,900
30	19.90	158,200	17.00	106,000	12.50	40,500	15.5	81,000	10.6	23,200	9.5	15,500
31	20.00	160,000	16.70	100,900	12.50	40,500	15.5	81,000	10.6	23,200	9.3	14,100

## Monthly Discharge of Fraser River at Hope for 1915.

(Drainage area, 85,600 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January	43,600	24,600	31,800	0.37	0.43	1,925,000
February	28,700	21,650	26,500	0.31	0.32	1,470,000
March	41,000	22,200	28,400	0.33	0.38	1,745,000
April	115,000	41,600	88,500	1.03	1.15	5,256,000
May	183,300	97,500	146,000	1.71	1.97	8,980,000
June	193,300	142,000	162,800	1.90	2.12	9,690,000
July	204,700	156,200	177,300	2.07	2.39	10,902,000
August	168,000	100,900	130,600	1.52	1.75	8,020,000
September	97,500	40,500	59,600	0.70	0.76	3,345,000
October	81,000	32,700	44,900	0.52	0.50	2,760,000
November	73,000	23,200	41,900	0.49	0.55	2,493,000
December	26,900	14,100	20,700	0.24	0.28	1,273,000
The year	204,700	14,100	79,900	0.93	12.72	58,061,000

## HIXON CREEK ABOVE BELKNAP CREEK.—(1064).

*Location.*—About 1 mile above the mouth of Belknap creek, in section 36, township 6, range 7, west of the 7th meridian.

*Records Available.*—Daily discharges from April to September, 1914, and from May to December, 1915. (Records for 1915 are given herein, for 1914 records see previous report.)

*Drainage Area.*—Not determined.

*Gauge.*—Vertical staff, nailed to tree. Gauge readings are taken twice a week by Mr. J. L. Davis.

*Channel.*—Rock and gravel with natural log weir as control.

*Discharge Measurements.*—Seven discharge measurements taken during 1913-14-15, give a well defined rating curve.

*Winter Flow.*—Very heavy snowfall, and some ice in winter.

*Accuracy.*—"D," because of infrequency of gauge readings (about twice a week).

*Co-operation.*—Gauge readings taken by the employees of the Westminster Power Company.

## Discharge Measurements of Hixon Creek above Belknap for 1915.

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
May 10	C. E. Dobbie	1,087	21	32.0	1.60	1.65	53.0 <sup>1</sup>
July 22	R. V. Gordon	1,505	30	9.2	0.53	0.50	4.9 <sup>2</sup>
Nov. 10	H. C. Hughes	1,046	24	17.8	0.33	0.70	5.9 <sup>2</sup>

<sup>1</sup> Section at gauge.<sup>2</sup> Section above gauge.



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Daily Gauge Height and Discharge of Hixon Creek above Belknap for 1915.

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1		18		4		5		0.6		4.5		30.0
2	1.10	16		4	0.9	7		4.5	1.2	23.0		24.0
3		16	0.44	4		6		4.8		28.0	1.8	83.0
4		16		4		6		5.4		38.0		43.0
5	1.10	18		3.3		8		8.4	1.4	33.0		48.0
6		20	0.40	3.5	0.8	4	0.74	5.4		81.0	1.4	88.0
7		24		3.8		4		4.0		24.0		83.0
8		28		3.5		4		4.0		13.0		72.0
9	1.30	30		3.8		8	0.34	3.0		13.0	2.0	83.0
10		22		3	0.7	5		4.0	0.80	6.0		70.0
11		16	0.35	3		5		5.0		8.0		32.0
12		10		3		4	0.80	6.0		6.0		34.0
13	0.60	4.8		3		3		5.0		6.0	1.1	18.0
14		4	0.38	3	0.3	3		8.0		6.8		14.0
15		4		3		3	0.55	4.2		8.8		12.0
16		4		3		3		13.0	0.88	6.8	1.0	10.0
17		4	0.35	3	0.3	3		22.0		14.0		17.0
18		4		3		3		30.0	1.20	22.0		24.0
19		4		3		3	1.40	38.0		28.0		81.0
20		4		3	0.3	3		52.0		34.0	1.4	38.0
21	0.50	4	0.32	3		3		66.0		40.0		48.0
22	0.80	4		3		3	1.90	80.0		47.0		48.0
23		4		3	0.3	3		72.0	1.80	54.0	1.8	84.0
24		4	0.30	3		3		63.0		83.0		44.0
25		4		3		3	1.60	54.0	1.80	71.0		34.0
26		4		3		2		62.0		58.0		24.0
27	0.48	4	0.35	3		2	1.80	71.0		46.0		14.0
28		4		3	0.2	2		62.0		34.0	0.6	4.8
29		4		3		2		54.0		22.0		4.0
30		4		3		3		46.0	1.0	10.0	0.5	4.0
31		4	0.28	3				38.0				4.0

Monthly Discharge of Hixon Creek above Belknap for 1915.

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
June.....	30	4	10			
July.....	4	3	3			
August.....	7	2	4			
September.....	80	3	29			
October.....	71	6	27			
November.....	54	4	34			
The period.....	80	2	17.8			

NOTE.—This station re-established in July.

## JONES CREEK.—(1010).

*Location.*—At outlet of Jones lake, in section 28, township 3, range 27, west of the 6th meridian.

*Records Available.*—Daily discharges from April, 1911, to December, 1915. (Records for 1915 are given herein; preceding records are given in previous reports).

*Drainage Area.*—Twenty five square miles, determined by triangulation survey by Anderson & Warden, civil engineers, Vancouver, B.C.

*Gauge.*—Vertical staff fastened to rock-filled crib. Daily gauge readings by Mr. R. Barr, of Ruby Creek, B.C.

*Channel.*—Uniform section, deep water, good control.

*Discharge Measurements.*—Six discharge measurements made during 1911-12-13-14-15, give a well defined rating curve.

*Winter Flow.*—Open water practically all winter.

*Accuracy.*—"A."

*Co-operation.*—The records of this stream are kept by Anderson & Warden, civil engineers for the Vancouver Power Company.

*Discharge Measurements of Jones Creek at Jones Lake for 1915.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet	Sq. ft	Ft. per sec	Feet.	Sec.-ft.
April 23	C. G. Cline & H. C. Hughes	1.521	51	119	1.10	1.02	127

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Daily Gauge Height and Discharge of Jones Creek at Jones Lake for 1915.

(Drainage area, 26 square miles.)

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
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet	Sec.-ft.	Feet	Sec.-ft.	Feet.	Sec.-ft.	Feet	Sec.-ft.
1	0.88	55	0.40	45	0.40	45	0.85	92	0.80	85	1.35	200
2	0.80	40	0.40	45	0.40	45	1.35	255	0.80	85	1.30	190
3	0.85	65	0.40	45	0.70	45	2.20	495	0.60	85	1.20	165
4	0.65	65	0.40	45	0.40	45	2.10	425	0.80	85	1.20	135
5	0.55	35	0.45	47	0.45	47	1.80	325	0.60	85	1.20	185
6	0.80	80	0.45	47	0.45	47	1.60	270	0.90	100	1.30	190
7	0.85	85	0.45	47	0.45	47	1.60	240	1.00	120	1.35	200
8	0.85	85	0.45	47	0.45	47	1.45	230		110	1.30	190
9	0.85	85	0.45	47	0.45	45	1.30	190		100	1.20	185
10	0.85	55	0.45	47	0.70	45	1.25	180		100	1.15	150
11	0.60	30	0.45	47	0.40	45	1.20	165		100	1.20	185
12	0.65	35	0.40	45	0.40	45	1.15	150		100	1.20	185
13	0.60	40	0.45	47	0.40	45	1.20	165		100	1.20	185
14	0.60	60	0.45	47	0.45	47	1.20	165		100	1.15	175
15	0.60	80	0.45	47	0.70	70	1.15	150		100	1.10	155
16	0.60	50	0.45	47	0.75	78	1.15	150		100	1.10	145
17	0.50	80	0.45	47	0.80	85	1.15	150		100	1.10	145
18	0.50	50	0.45	47	0.80	65	1.15	130		100	1.10	145
19	0.50	50	0.45	47	0.80	65	1.20	165		100	1.10	145
20	0.45	47	0.45	47	0.80	85	1.20	185		100	1.10	145
21	0.45	47	0.45	47	0.80	85	1.15	150		100	1.10	145
22	0.45	47	0.40	45	0.90	100	1.10	140		100	1.10	145
23	0.45	47	0.40	45	0.95	110	1.00	120		100	1.10	145
24	0.40	45	0.40	45	1.00	120	1.00	120		100	1.15	150
25	0.40	45	0.45	47	0.95	110	0.85	110		100	1.10	140
26	0.40	45	0.40	45	0.90	100	0.90	100	1.20	120	1.10	145
27	0.40	45	0.40	45	0.85	92	0.90	100	1.20	120	1.10	145
28	0.40	45	0.40	45	0.80	85	0.90	100	1.35	150	1.10	145
29	0.40	45	0.40	45	0.80	85	0.80	100	1.50	180	1.10	145
30	0.40	45	0.40	45	0.85	92	0.85	92	1.40	160	1.10	145
31	0.40	45	0.40	45	0.85	92	0.85	92	1.30	150	1.10	145
	July.		August		September.		October		November		December.	
	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet	Sec.-ft.	Feet	Sec.-ft.	Feet.	Sec.-ft.	Feet	Sec.-ft.
1	1.10	140	1.10	140	0.85	92	0.50	70	1.10	140	1.10	140
2	1.20	185	1.10	140	0.80	85	0.75	85	1.10	140	1.10	140
3	1.25	178	1.10	140	0.80	85	0.75	85	1.10	140	1.10	140
4	1.20	190	1.05	130	0.80	85	0.70	85	1.10	140	1.10	140
5	1.20	190	1.00	120	0.80	85	0.70	85	1.10	140	1.10	140
6	1.30	190	1.00	120	0.75	78	0.70	70	1.35	180	1.10	140
7	1.25	178	0.95	110	0.70	70	0.60	60	1.25	165	1.10	140
8	1.20	185	0.90	100	0.70	70	0.60	60	1.15	150	1.10	140
9	1.20	185	0.90	100	0.75	78	0.55	55	1.10	140	1.10	140
10	1.15	182	0.90	100	0.70	70	0.50	50	1.00	120	1.10	140
11	1.10	140	0.90	100	0.70	70	0.50	50	1.00	120	1.10	140
12	1.05	130	0.90	100	0.60	60	0.60	60	0.90	100	1.10	140
13	1.05	130	0.90	100	0.50	50	0.65	65	0.90	100	1.00	120
14	1.00	120	0.90	100	0.60	60	0.80	85	0.80	100	0.95	110
15	1.10	140	0.90	100	0.80	60	0.75	77	0.85	100	0.90	110
16	1.20	185	0.90	100	0.80	60	0.70	70	0.85	100	0.85	100
17	1.10	140	0.95	110	0.60	60	0.65	65	0.80	100	0.85	100
18	1.10	140	0.90	100	0.60	60	0.70	70	0.85	100	0.80	95
19	1.10	140	0.90	100	0.80	60	0.95	110	0.90	100	0.80	95
20	1.10	140	1.00	120	0.80	60	1.20	165	0.90	100	0.70	70
21	1.15	152	1.00	120	0.80	80	1.50	240	0.85	92	1.10	140
22	1.15	152	1.05	130	0.60	60	1.35	202	0.80	85	1.30	190
23	1.10	140	1.05	130	0.60	60	1.25	177	0.85	92	1.20	155
24	1.10	140	1.05	130	0.80	60	1.20	165	0.80	85	1.10	140
25	1.10	140	1.05	130	0.60	60	1.40	215	0.90	100	1.05	130
26	1.10	140	1.00	120	0.60	60	1.55	255	0.90	100	1.00	120
27	1.10	140	0.95	110	0.80	60	2.00	390	0.85	92	1.00	120
28	1.15	145	0.95	110	0.75	77	2.55	565	0.80	85	1.00	120
29	1.05	130	0.90	100	0.50	50	2.20	480	0.80	85	0.95	110
30	1.10	140	0.95	110	0.50	50	1.85	342	0.80	85	0.90	100
31	1.10	140	0.90	100	0.50	50	2.00	390	0.80	85	0.80	85

## Monthly discharge of Jones Creek at Jones Lake for 1915.

(Drainage area, 33 square miles)

MONTH	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet
January	55	45	53	2 12	2 44	3,260
February	47	45	46	1 84	1 92	2,550
March	120	45	71	2 64	3 27	4,370
April	495	92	180	7 21	9 04	10,700
May	255	65	152	6 07	7 00	9,350
June	200	120	159	6 35	7 06	9,450
July	190	120	150	6 00	6 92	9,220
August	140	100	113	4 52	5 21	6,930
September	92	50	66	2 64	2 95	3,920
October	565	50	157	6 26	7 24	9,650
November	373	53	134	5 35	3 77	7,970
December	227	70	116	4 54	3 33	7,130
The period	565	45	116	4 56	43 39	54,340

## LYNN CREEK.—(1046).

*Location.*—Below the overflow from the No. 1 Vancouver intake, and about 4 miles from the mouth of the stream.

*Records Available.*—Daily discharges from June, 1914, to December, 1915. (Records for 1915 are given herein; for 1914 records see previous report.)

*Drainage Area.*—Fourteen square miles, estimated by the engineers of the Provincial Water Rights Branch.

*Gauge.*—Cable gauge on flume bridge. Gauge read twice daily by Mr. J. Kirkland, caretaker of the North Vancouver intake.

*Channel.*—Boulders and solid rock.

*Discharge Measurements.*—Five measurements made during 1915 give a well defined rating curve.

*Winter Flow.*—Open water all year.

*Accuracy.*—"C."

*Co-operation.*—Gauge readings taken by the employees of the waterworks department of North Vancouver.

## Discharge Measurements of Lynn Creek below Intake for 1915.

Date.	Engineer	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
April 9	C. G. Cline	1,821	41	70 1	2.30	5.52	155.0
June 1	Cline & Gordon	1,805	29	58 9	1.55	5.00	88.7
June 24	C. G. Cline	1,805	23	20.2	0.90	4.12	18.0
Aug. 3	C. G. Cline	1,048	22	14.2	0.48	3.55	6.3
Aug. 13	C. G. Cline	1,057	14	11.2	0.30	3.45	3.3

BRITISH COLUMBIA HYDROMETRIC SURVEY

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Daily Gauge Height and Discharge of Lynn Creek below City Intake for 1915.

(Drainage area, 14 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	3.13	108	4.7	87	8.7	200	8.88	248	4.7	87	8.0	90
2	3.48	138	4.3	37	8.3	185	9.80	1,800	4.8	48	8.2	113
3	3.60	120	8.0	90	8.8	188	7.08	488	4.23	38	8.8	163
4	8.10	102	4.8	77	8.78	808	8.95	243	8.8	113	8.1	103
5	3.00	80	3.1	102	8.88	173	8.4	180	8.8	188	4.8	87
6	4.80	77	8.8	188	3.3	115	8.3	130	8.8	188	4.7	37
7	8.80	180	8.88	178	8.4	150	3.7	200	3.78	308	4.73	32
8	3.48	188	8.7	200	5.8	218	8.85	248	5.7	200	4.8	48
9	8.40	180	5.6	215	6.8	308	8.8	150	8.9	288	4.35	48
10	8.20	118	8.78	208	6.0	250	5.1	102	8.9	288	4.8	77
11	8.10	107	8.98	348	5.9	285	4.9	77	5.9	238	4.88	38
12	8.80	173	8.98	348	8.7	200	3.4	130	5.9	238	8.0	80
13	8.88	110	3.3	188	5.8	165	5.83	323	6.1	370	5.0	90
14	8.80	180	8.4	150	5.3	180	6.03	280	6.8	208	4.93	83
15	8.00	80	5.8	130	5.0	90	6.0	280	8.0	250	4.8	77
16	4.73	88	8.8	165	5.8	130	5.75	208	5.9	285	4.83	73
17	4.2	22	5.4	180	5.75	205	5.3	180	5.8	215	4.8	87
18	4.8	22	8.25	123	5.55	173	5.2	118	5.75	208	4.7	87
19	4.0	13	5.5	165	5.10	102	6.0	90	8.9	235	4.5	41
20	4.0	18	5.75	208	4.9	77	4.95	88	5.7	200	4.3	27
21	4.0	18	5.7	200	5.1	102	4.95	83	5.1	102	4.3	27
22	4.73	62	5.78	208	5.4	150	5.10	102	4.95	63	4.8	27
23	8.80	165	5.95	248	5.3	130	5.50	185	5.0	90	4.28	25
24	8.75	808	5.9	235	5.2	115	5.3	130	6.1	270	4.15	80
25	8.10	270	3.95	243	4.95	53	3.3	130	6.3	308	4.05	18
26	8.75	208	3.9	235	4.5	41	5.1	102	6.75	395	4.0	13
27	8.50	165	5.4	150	4.65	63	5.0	90	8.65	375	4.0	18
28	5.25	123	6.3	130	5.3	180	4.9	77	6.0	250	3.9	9
29	8.0	90	.....	.....	8.1	102	4.95	83	6.85	225	8.9	9
30	4.98	53	.....	.....	5.6	160	4.9	77	5.5	165	3.9	9
31	4.78	62	.....	.....	5.4	160	.....	.....	5.3	130	.....	.....
	July.		August.		September.		October.		November.		December.	
1	8.90	9	3.30	6	3.30	0.5	5.50	165	7.45	562	5.75	802
2	3.50	8	3.80	6	3.65	3.2	5.40	150	4.95	437	5.4	180
3	3.70	3	3.90	6	3.90	9.0	5.00	90	6.50	348	5.4	180
4	3.70	3	3.75	5	3.85	7.5	4.95	85	6.00	250	6.8	290
5	8.60	2	3.70	4	3.55	2.0	4.45	37	5.90	230	7.45	588
6	3.60	2	3.70	4	3.40	1.0	4.30	27	5.90	230	8.45	510
7	3.70	3	8.70	4	3.30	0.5	4.00	13	5.90	230	8.30	750
8	3.80	6	3.70	4	3.30	0.5	4.00	13	6.90	230	7.80	528
9	4.00	13	3.70	4	3.45	1.2	4.00	13	6.60	165	7.00	450
10	4.30	27	3.60	2.5	3.50	1.5	4.00	13	5.40	150	8.25	802
11	4.50	41	3.50	1.5	3.40	1.0	3.90	9	5.50	165	6.0	250
12	4.40	38	3.50	1.5	3.40	1.0	3.90	9	5.90	230	6.9	880
13	4.30	27	3.40	1.0	3.30	0.5	3.90	9	6.75	202	5.9	880
14	4.30	27	8.40	1.0	3.30	0.5	3.90	9	5.30	135	5.75	802
15	4.05	15	8.40	1.0	3.30	0.5	3.90	9	5.30	135	8.80	808
16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
17	4.15	20	3.40	1.0	3.30	0.5	3.90	9	5.80	135	6.75	398
18	4.20	22	8.40	1.0	3.30	0.5	4.16	20	5.40	150	6.90	429
19	3.95	11	3.40	1.0	3.30	0.5	6.05	97	5.85	220	5.90	380
20	8.90	9	8.40	1.0	3.30	0.5	6.45	335	5.8	160	5.60	180
21	4.00	18	3.40	1.0	3.30	0.5	7.50	575	5.5	165	5.80	180
22	4.00	18	3.30	0.5	3.40	1.0	7.80	525	5.75	202	5.95	487
23	4.00	13	3.30	0.5	3.40	1.0	7.00	450	5.90	280	5.90	485
24	4.00	13	3.30	0.5	3.35	0.7	6.00	250	5.65	155	5.40	150
25	8.90	9	3.30	0.5	3.30	0.5	6.25	297	5.40	150	5.40	150
26	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
27	3.90	9	3.80	0.5	3.30	0.5	7.50	650	5.40	150	5.20	180
28	3.85	7	3.88	0.7	3.30	0.5	8.25	785	6.20	290	6.00	90
29	8.80	6	3.4	1.0	3.20	0	7.15	487	6.10	270	4.90	60
30	8.60	8	8.20	0	3.20	0	6.30	305	6.00	250	4.60	80
31	8.90	9	3.80	0	3.20	0	6.90	425	6.00	250	4.60	80
.....	.....	.....	.....	.....	.....	.....	7.50	575	.....	.....	4.60	80

## Monthly Discharge of Lynn Creek below City Intake for 1915.

(Drainage area, 14 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January.....	270	13	116.0	8.21	9.46	7,070
February.....	243	57	169.0	12.07	12.67	9,390
March.....	305	41	151.0	10.78	12.43	9,280
April.....	1,200	77	193.0	13.78	16.36	11,480
May.....	396	49	203.0	14.60	16.72	12,480
June.....	166	9	56.0	4.00	4.46	3,330
July.....	41	2	12.9	0.92	1.06	793
August.....	6	0	2.0	0.14	0.16	123
September.....	9	0	1.2	0.09	0.10	71
October.....	765	9	221.0	16.80	18.22	13,600
November.....	562	120	222.0	16.90	17.70	13,200
December.....	810	50	277.0	19.80	22.80	17,000
The year.....	1,200	6	135.3	9.67	131.06	97,817

## MESILOET RIVER.—(1011).

*Location.*—A short distance below canyon, 8 miles above mouth of river and in section 8, township 7, range 7, west of the 7th meridian.

*Records Available.*—Daily discharges from October, 1912, to December, 1915. (Records for 1915 are given herein; preceding records are tabulated in previous reports).

*Drainage Area.*—Estimated at 65 square miles.

*Gauge.*—Vertical staff bolted to rock. Gauge readings taken twice a week by Mr. J. L. Davis.

*Channel.*—Boulders and gravel, permanent control.

*Discharge Measurements.*—Fifteen discharge measurements taken during 1912-13-14-15, give a well defined rating curve.

*Winter Flow.*—Open water conditions all winter.

*Accuracy.*—"C," because of infrequent gauge readings (twice a week).

*Co-operation.*—Gauge readings are maintained by the Westminster Power Company.

## Discharge Measurements of Mesiloet River 8 Miles above Mouth for 1915.

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
May 6	C. E. Dobbie.....	1.057	75	205	2.30	2.85	476
July 16	R. V. Gordon.....	1.505	85	157	1.31	2.15	206
July 17	R. V. Gordon.....	1.505	84	159	1.19	2.05	174

BRITISH COLUMBIA HYDROMETRIC SURVEY

SESSIONAL PAPER No. 25e

Daily Gauge Height and Discharge of Mesliloe River 8 Miles above Mouth for 1915.

(Drainage area, 65 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	4.2	1,200		245	2 15	185		1,560		240		300
2		860	2.6	280		188		2,120	2 4	250	2.6	310
3	2.9	435		250		191		2,680		300		330
4		426		220	2 2	195		1,880		350		350
5		417	2.2	195		203	3.9	1,080	2 85	410		370
6		408		240		210		965	2.80	390	2 8	390
7		399	2 5	280	2 3	220		850		380		340
8	2.8	390		260		210		735		370		295
9		420		240		195		920		365	2.4	250
10		450		220		185		505		360		245
11	3.0	485		200		170	2.8	390		350		245
12		400	2.15	185	2.05	160		420		340		240
13		315		160		660		450		330	2.35	235
14		230	1.95	135		1,160	3 0	485		325		230
16	2.0	145		142	4 7	1,650		485		320		225
16		130		149		1,260		485	2 6	310	2 3	220
17		114		156		870		485		260		220
18	1.75	98		163	3 0	485	3.0	485		210		220
19		100	2.1	170		495		450		165		220
20		102		150		505		420	1.85	115		220
21		103	1 9	125		515	2 8	390		180	2.3	220
22	1.8	105		190		330		355		245		220
23		98		255	3 1	540		320	2 6	310		220
24	1.7	90		320		430		285		370	2 3	220
26		83	2 8	390		320	2.4	250		425		200
26		76		360	2 3	220		240	3 0	485		180
27	1.6	70		330		205		230		430	2.05	160
28		105		300	2 2	195	2 3	220		380		160
29		140				315		230		330		160
30		176			2.9	435		235	2 5	280		160
31		210				1000				290		

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.	
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	
1	2 20	195		113	2 30	220		95		4 5	1,510		860
2		195	1 84	113		190		95		1,165		4.0	1,160
3		195		113		150		100		825			1,030
4	2.20	195		113		110		100	3.0	485			910
5		198		113	1 60	70	1 60	105		445	3.0		790
6		201	1 84	113		73		90		400			1,365
7		204		102		76		70		355			1,940
8	2.26	207		92		79	1 40	50	2.60	310	5.8		2,520
9		204	1 66	82		82		85		225			2,010
10		290		86		86		120		200			1,500
11		198		90	1.70	90	2 05	158	2 00	145			990
12	2.20	195		94		70		153		145	3 0		485
13		192		98	1.40	50		148		145			410
14		188	1 78	102		50		143		145			330
15		185		99		52		138	2 00	145	2.4		260
16	2.15	182	1.74	96	1.42	52	1 94	133		225			320
17	2.06	158		92		55		151		310			390
18		153		86		58	2.10	170	2 80	390			460
19		148		82	1 50	89		1,010		460	3.1		640
20		143		78		60		1,850		525			630
21		139	1.62	74		60	6.0	2,680		595			710
22		135		54	1 50	60		2,420	3.30	660	3.6		790
23		131	1.25	35		57		2,160		485			660
24		127		55		54	5 0	1,880	2 60	310			630
25	1.89	123		75		50		2,280		305			400
26		120	1.74	96		46	6.0	2,680		300			210
27		117		98	1.32	42		2,480		290	2.0		145
28	1.65	115		100		57		2,280		285			140
29		115		102		72		2,080	2.5	280			135
30		114	1.80	105	1 70	90		1,880		570			130
31		113		162				1,690			1.9		125

*Monthly Discharge of Mesliloet River 8 Miles above Mouth for 1915.*

(Drainage area, 68 square miles.)

MONTH	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January	1,200	70	286	4.40	6.07	17,600
February	300	135	226	3.48	3.62	12,600
March	1,650	160	455	7.00	8.07	23,000
April	2,680	220	677	10.40	11.60	40,300
May	485	115	318	4.89	5.64	19,800
June	390	160	245	3.77	4.21	14,600
July	207	113	164	2.52	2.91	10,100
August	113	35	94	1.45	1.67	6,780
September	220	42	78	1.20	1.34	4,640
October	1,510	50	951	14.63	17.18	68,500
November	2,520	145	422	6.50	7.26	25,100
December	2,520	125	740	11.38	13.96	45,500
The year	2,680	35	388	5.97	92.51	282,320

NICOLUM RIVER.—(1058)

*Location.*—At the pack trail bridge, 9 miles from Hope and 4 miles from the mouth of the river, in section 2', township 4, range 5, west of 6th meridian.

*Records available.*—Daily discharges from August, 1914, to December, 1915. (Records for 1915 are given herein, those preceding are tabulated in a previous report).

*Drainage Area.*—Thirty square miles, above gauging station.

*Gauge.*—Vertical staff gauge. Readings irregular. Gauge readers are Mr. W. H. Robinson and Mr. W. N. Thacker.

*Channel.*—Rocky, water swift at high stages.

*Discharge Measurements.*—Seven meter measurements taken during 1914-15, giving a well defined rating curve.

*Winter Flow.*—The gauge height-discharge relation is affected by anchor ice in very cold weather.

*Accuracy.*—"D." The accuracy is low because of very infrequent gauge readings.

*Discharge Measurements of Nicolum River 4 Miles above Mouth for 1915.*

Date.	Engineer	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet	Sq. ft.	Ft. per sec.	Feet	Sec.-ft.
Mar. 5	Cline & Hughes	1,521	25	17.0	1.35	1.05	23
May 27	H. C. Hughes	1,933	36	35.0	2.32	1.70	89
Oct 30	H. C. Hughes	1,046	41	36.0	2.81	1.65	101



SEASONAL PAPER No. 25a

Daily Gauge Height and Discharge of Nicolum River 4 Miles from Mouth for 1915.

(Drainage area, 30 square miles.)

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
	Feet	Sec.-ft.	Feet	Sec.-ft.	Feet	Sec.-ft.	Feet	Sec.-ft.	Feet	Sec.-ft.	Feet	Sec.-ft.
1		35		25		25		115				
2		35		25		25	2 0	130		70	1 65	92
3	1 2	35		25		15		125		70		85
4		35		25		15	1 7	100	1 5	70	1 6	85
5		35		25	1 0	15		100		70		85
6		35		25		15		85		70		85
7		35		25		15		85		70		85
8		35		25		15		70		70		85
9		37	1 1	25		15	1 5	70		85		70
10		35		25		15		70		85		70
11		25		25	1 0	15		70		85		70
12		25		15		15		70	1 8	85		70
13		25		15		25		70	1 6	85		70
14		25	1 0	15	1 1	25		70		85	1 5	70
15		25		15		25		70		100		70
16		25	1 0	15		35		85		100		70
17		25		15		35		85		114		70
18	1 1	25	1 0	15		45		85		133		70
19		25		15	1 3	45		85	2 0	150		57
20	1 1	25		15		45		85	1 8	85		57
21		25		15		35		85		85		57
22		25		15		35	1 6	85		100		57
23		25		25		35		85	1 7	100	1 4	57
24		25		25		35	1 6	85		100		57
25		25		25		35		85		100		57
26		25	1 1	25	1 1	25	1 8	85		100		57
27		25		25		25		85	1 7	100		57
28		25	1 1	25		35		85		100		57
29		25		25		35		85		100		57
30		25		25	1 3	45		70		100	1 4	57
31		25		25		45		40		100		57

	July	August	September	October	November	December
1		41		20		
2		42		15		
3		43		15		
4		44		15		
5	1 30	45	0 90	15		
6		46		15		
7		47		15	1 0	
8		48	1 10	15		
9		49	1 10	15		
10		50		15		
11		51		20		
12		52		20		
13		53	1 10	20		
14		54		20		
15		55		20		
16		56		20		
17	1 40	57		20		
18		51	1 0	20		
19	1 30	45		20		
20	1 30	45		20		
21		40		20		
22		40	1 10	20	1 4	
23		40		20		
24		40	1 00	15		
25		40	1 00	15		
26		40	1 00	15		
27		40		15		
28	1 20	35		15		
29		35		15		
30		35		15	2 1	
31	1 20	35	1 00	20	2 0	

*Monthly Discharge of Nicolum River 4 Miles above Mouth for 1915.*

(Drainage area, 30 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January..	35	25	28.0	0.93	1.07	1,720
February..	25	15	21.0	0.70	0.73	1,170
March..	80	15	28.0	0.93	1.07	1,720
April..	150	70	86.0	2.87	3.20	5,120
May..	150	70	92.0	3.07	3.54	5,650
June	92	57	69.0	2.30	2.57	4,110
July..	57	35	45.0	1.50	1.73	2,700
August..	30	20	24.0	0.80	0.92	1,480
September..	20	15	17.3	0.58	0.65	1,030
October..	168	20	66.9	2.23	2.57	4,110
The period	169	15	47.7	1.59	18.08	28,820

NOTE.—Gauge readings too infrequent during November and December to give discharge data.

NORTON CREEK.—(1013).

*Location.*—At the outlet of Norton lake, in section 10, township 7, range 7, west of the 7th meridian.

*Records Available.*—Daily discharges from October, 1912, to December, 1915. (Records for 1915 are given herein; preceding records are tabulated in previous reports).

*Drainage Area.*—The exact drainage area is not known, but it is very small.

*Gauge.*—Vertical staff. Gauge readings are taken twice a week by Mr. J. L. Davis.

*Channel.*—Boulders. The control is good.

*Discharge Measurements.*—Fifteen meter measurements made during 1912-13-14-15, give a well defined rating curve.

*Winter Flow.*—The lake freezes over, but the stream is free of ice at the gauge, throughout the winter.

*Accuracy.*—"C," because of infrequent gauge readings.

*Co-operation.*—The gauge readers are maintained by the Westminster Power Company.

*Discharge Measurements of Norton Creek near Norton Lake for 1915.*

Date.	Engineer	Meter No.	Width	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
May	7 C. E. Dobbie	1 657	2.4	1.4	0.90	2.02	1.2 <sup>1</sup>
July	19 R. V. Gordon	1,505	3.0	2.1	0.92	1.99	2.0 <sup>1</sup>
Nov.	9 H. C. Hughes	1,040	9.0	11.0	0.41	2.35	4.5 <sup>2</sup>

<sup>1</sup> Section at gauge

<sup>2</sup> Section 50 feet above gauge

Daily Gauge Height and Discharge of Norton Creek at Norton Lake for 1915.

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1		15		8	2.65	10						
2		15	2.60	8	2.60	9		10		3		6
3		15	2.55	8	2.55	8		11		3		6
4	2.95	20	2.55	8	2.55	8		12	2.15	2		5
5	2.80	14	2.55	8		8		14		2	2.40	5
6								15		2		5
7	2.70	11		9		8	2.85	16		2		
8	2.65	10		10		8		18	2.08	1	2.25	4
9	2.80	14	2.70	11	2.55	9		21		2		3
10	2.75	12	2.75	12	2.55	9		23		3		3
11		14	2.80	14	2.55	8		26	2.30	4	2.20	3
12	2.85	16	2.75	12	2.55	8		29	2.45	6		2
13	2.85	16	2.65	10		18		31		6		2
14	2.75	12		9		28	3.25	34		6		2
15	2.70	11	2.55	8		38		38		6	2.10	2
16	2.60	9	2.50	7	3.55	48	3.45	43		6		2
17		8	2.50	7	3.25	34		34		6	2.05	2
18		6	2.70	11	3.05	24		25	2.45	6		2
19		5	2.70	11	3.05	24		16		6		2
20	2.35	4		10		22	2.55	7		6		2
21	2.35	4		9		21		7	2.45	6		2
22	2.35	4		9		9		6		7		1
23	2.35	4	2.50	7		18	2.45	6		7	2.10	1
24	2.30	4	2.55	8	2.85	16		5		8		1
25	2.30	4	2.55	8	2.85	16		4	2.60	9		1
26	2.30	4	2.70	11	2.75	12		4		8	2.05	1
27	2.25	3		10	2.65	10	2.25	3		8		1
28	2.25	3		10		9		3	2.55	7		1
29		4		9	2.55	8		3		7	2.00	1
30		5			2.55	8	2.25	3		7		1
31		6			2.55	8		3		6		1
		7				9			2.15	6		

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1		0.8		0.4		1.2	1.9	0.7		27.0		7.6
2	1.90	0.7		0.4	2.15	2.3		0.7	3.0	22.0	2.6	8.6
3		0.6	1.78	0.4		2.0		0.7		26.0	2.8	14.0
4		0.5		0.4		1.4		0.7		31.0		12.5
5	1.80	0.4	1.74	0.3		0.8		0.7	3.3	36.0	2.7	11.0
6		0.5	1.74	0.3	1.70	0.2	1.9	0.7		28.0	2.65	9.8
7		0.6		0.3		0.3		0.6		20.0		17.0
8		0.7		0.3		0.4		0.6		12.0		24.0
9	1.90	0.7		0.2		0.5	1.83	0.5	2.35	4.4	3.2	32.0
10		0.9	1.70	0.2	1.83	0.5		1.6	2.30	3.7		24.0
11		1.0		0.2		0.4		2.6	2.25	3.2		17.0
12	2.00	1.2		0.2		0.4	2.3	3.7		3.2	2.64	9.6
13	2.05	1.6		0.1		0.3		3.7		3.2	2.64	9.6
14	2.00	1.2	1.65	0.1	1.74	0.3		3.7		3.2		8.0
15		1.2		0.1		0.3	2.3	3.7	2.25	3.2	2.50	6.7
16		1.2		0.1		0.3		3.7	2.25	3.2	2.50	6.7
17		1.2	1.64	0.1	1.74	0.3		3.7	2.40	5.2		9.0
18		1.2		0.1		0.3		3.7	2.60	8.6		11.0
19	1.99	1.2		0.1		0.2	2.3	3.7		8.0	2.80	14.0
20	1.95	1.0		0.1	1.68	0.2		18.0		7.3	2.83	15.2
21	1.92	0.8	1.63	0.1		0.2				6.6		19.0
22	1.90	0.7		0.1		0.2	3.50			5.9	3.00	22.0
23	1.89	0.7		0.1	1.67	0.2			2.40	5.2	3.00	22.0
24		0.6	1.62	0.1		0.2				6.9		18.0
25		0.5		0.1		0.2	3.40		2.60	8.6		14.0
26	1.80	0.4	1.64	0.1		0.1				8.0		11.0
27	1.85	0.5		0.1		0.1	3.70			7.3		8.6
28		0.5		0.1	1.64	0.1				8.0	2.5	6.7
29		0.5		0.1		0.1			2.45	5.9		6.7
30		0.5		0.1		0.1			2.50	6.7		6.7
31		0.4	1.62	0.1						6.7	2.5	6.7

## Monthly Discharge of Norton Creek at Norton Lake for 1915.

MONTH.	DISCHARGE IN SECOND-FEET.				RUN OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January	20.0	3.0	9.0			
February	14.0	7.0	9.0			
March	48.0	8.0	15.0			
April	43.0	3.0	16.0			
May	9.0	1.0	5.0			
June	6.0	1.0	2.0			
July	1.6	0.4	0.8			
August	0.4	0.1	0.2			
September	2.3	0.1	0.5			
October	55.0	0.5	17.1			
November	36.0	3.2	10.9			
December	32.0	6.7	13.2			
The year	55.0	0.1	8.2			

## SEYMOUR CREEK.—(1022).

*Location.*—Above the Vancouver waterworks intake, about 7 miles from the mouth.

*Records Available.*—Daily discharges from November, 1913, to December, 1915. Records for 1915 are given herein; preceding records are tabulated in previous reports).

*Drainage Area.*—Above the intake, 69 square miles, estimated by the Provincial Water Rights Branch.

*Gauge.*—Vertical staff gauge spiked to the cribbing at the intake. Gauge readings are taken daily by Mr. G. Skinner.

*Channel.*—Rocks and boulders; water swift at high stages.

*Discharge Measurements.*—Ten meter measurements made during 1913-14-15, give a well defined rating curve.

*Winter Flow.*—Open water all winter.

*Accuracy.*—"B."

*Co-operation.*—Gauge readings are made by the employees of the Vancouver Waterworks Department.

## Discharge Measurements of Seymour River above Seymour Intake for 1915.

Date.	Engineer	Meter No.	Width	Area of Section.	Mean Velocity	Gauge Height.	Discharge.
			Feet	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
April 14	C. G. Cline	1,521	185	364	1.90	2.25	710.0
June 10	C. G. Cline	1,505	135	247	1.00	1.37	248.0
Aug. 12	C. G. Cline	1,057	55	94	0.40	0.22	41.9 <sup>1</sup>

<sup>1</sup> Not at regular section.

BRITISH COLUMBIA HYDROMETRIC SURVEY

SESSIONAL PAPER No. 26a

Daily Gauge Height and Discharge of Seymour Creek above City Intake for 1915

(Drainage area, 69 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	2.45	950	2.05	575	1.4	390	4.55	5,375	1.4	210	1.85	425
2	2.55	1,050	1.90	460	1.6	290	5.35	7,750	1.4	210	1.7	340
3	2.75	1,325	1.60	290	1.7	340	3.3	2,350	1.85	425	1.6	290
4	2.15	665	1.50	250	1.4	390	2.7	1,250	2.0	530	1.7	340
5	1.65	315	1.40	210	2.05	575	2.4	900	2.0	530	1.8	390
6	1.55	270	2.00	530	1.9	460	2.3	800	2.05	575	1.8	390
7	1.97	495	2.05	575	1.8	390	2.95	1,650	2.15	665	1.75	365
8	2.35	850	2.05	575	1.7	340	2.8	1,400	2.0	530	1.55	270
9	2.02	550	2.00	530	1.5	250	2.3	800	1.95	495	1.45	230
10	1.95	495	1.75	365	1.55	270	2.1	620	2.52	1,020	1.4	210
11	2.75	1,325	1.60	290	1.5	250	2.6	1,100	2.40	900	1.45	230
12	2.17	685	1.50	250	1.4	210	2.7	1,250	2.20	710	1.5	250
13	1.90	460	1.50	250	1.4	210	2.6	1,100	2.00	530	1.4	210
14	1.80	390	1.40	210	3.5	2,500	2.3	800	1.95	495	1.3	180
15	1.65	315	1.35	195	3.55	2,900	2.15	665	2.00	530	1.3	180
16	1.50	250	1.60	290	2.6	1,100	2.3	800	1.86	390	1.3	180
17	1.35	195	2.60	1,100	2.2	710	2.4	900	1.75	365	1.25	165
18	1.30	180	2.00	530	2.55	1,050	2.3	800	1.90	460	1.25	165
19	1.30	180	1.67	325	2.2	710	2.4	900	2.00	530	1.20	150
20	1.30	180	1.52	260	2.05	575	2.25	755	1.95	495	1.25	165
21	1.25	165	1.45	230	2.5	1,000	1.9	460	1.85	425	1.25	165
22	1.20	150	1.60	290	2.6	1,100	1.75	365	1.80	390	1.2	150
23	1.20	150	1.90	460	2.5	1,000	1.8	390	1.75	365	1.2	150
24	1.15	140	2.20	710	2.25	755	1.85	425	1.70	340	1.2	150
25	1.10	130	2.30	800	2.0	530	1.7	340	2.27	775	1.1	130
26	1.05	120	1.90	460	1.75	385	1.75	365	2.3	800	1.0	110
27	1.00	110	1.70	340	1.6	290	1.65	315	2.5	1,000	1.0	110
28	1.00	110	1.95	495	1.6	290	1.60	290	2.3	800	0.95	100
29	1.00	110			1.82	405	1.70	340	2.0	530	1.0	110
30	1.00	110			2.5	1,000	1.55	270	1.8	390	1.0	110
31	1.67	325			2.2	710			1.7	340		

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	1.00	110	0.50	55	0.60	60	0.51	55	2.2	2,150	1.60	290
2	1.00	110	0.45	52	0.90	95	1.80	390	2.1	620	2.03	560
3	0.95	102	0.40	50	0.70	70	1.75	365	1.55	270	3.08	1,910
4	0.90	95	0.40	50	0.70	70	1.60	290	1.40	210	3.30	2,350
5	0.85	88	0.40	50	0.60	60	1.55	270	2.10	620	2.70	1,250
6	0.85	88	0.35	48	0.60	60	1.50	250	1.80	390	2.80	1,300
7	0.80	80	0.30	45	0.55	57	1.45	230	1.70	340	2.35	850
8	0.95	102	0.30	45	0.65	65	1.40	210	1.50	250	4.90	6,400
9	1.05	120	0.30	45	0.80	80	1.35	195	1.40	210	2.80	1,400
10	0.90	95	0.35	48	0.75	75	1.35	195	1.30	180	2.25	755
11	0.90	95	0.35	49	0.70	70	1.40	210	1.25	165	2.05	575
12	0.90	95	0.50	55	0.65	65	1.60	390	1.20	150	2.10	620
13	1.05	120	0.50	55	0.65	60	2.35	850	1.10	130	2.05	575
14	0.90	95	0.40	50	0.60	60	2.2	710	1.10	130	1.9	460
15	0.90	95	0.40	50	0.55	57	1.8	390	1.30	180	1.7	340
16	1.20	150	0.40	50	0.55	57	1.6	290	1.50	270	1.6	290
17	1.10	130	0.35	48	0.45	52	1.45	230	2.10	620	1.45	230
18	1.00	110	0.30	45	0.40	50	1.97	510	2.00	530	1.40	210
19	0.85	88	0.50	45	0.40	50	2.00	530	1.80	390	1.47	240
20	0.80	80	0.30	45	0.30	45	3.00	1,750	1.60	290	2.75	1,325
21	0.70	70	0.25	42	0.30	45	3.70	3,250	1.65	315	2.80	1,400
22	0.77	70	0.25	42	0.30	45	3.00	1,750	1.99	460	2.50	1,000
23	0.65	65	0.27	44	0.25	42	2.25	755	2.50	1,000	2.20	710
24	0.60	60	0.30	45	0.25	42	2.35	850	2.10	620	1.85	425
25	0.60	60	0.30	45	0.25	42	2.90	1,550	2.25	755	1.70	340
26	0.60	60	0.30	45	0.25	42	3.70	3,250	2.60	1,100	1.50	250
27	0.60	60	0.30	45	0.25	42	4.50	5,250	2.00	530	1.40	210
28	0.60	60	0.30	45	0.22	41	5.90	8,150	1.70	340	1.40	210
29	0.60	60	0.30	45	0.22	41	3.00	1,750	2.00	530	1.30	180
30	0.55	57	0.40	50	0.22	41	2.90	1,550	1.95	495	1.20	150
31	0.50	55	0.60	60			4.90	3,400			1.20	150

NOTE.—Gauge heights corrected for raising of dam, August 24, 25 and August 31 to September 21.

## Monthly Discharge of Seymour Creek above City Intake for 1915.

(Drainage area, 89 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean	Per square mile	Depth in inches on Drainage area.	Total in acre-feet
January	1,325	110	411	5 96	5 87	25,300
February	1,100	195	423	6 13	6 36	23,500
March	2,900	210	700	10 13	11 67	43,000
April	7,750	270	1,184	17 17	19 16	70,400
May	1,020	210	540	7 52	9 02	33,200
June	425	100	214	3 10	3 46	12,700
July	150	55	88	1 27	1 46	5,410
August	50	42	48	0 70	0 81	2,950
September	95	41	56	0 81	0 90	3,330
October	3,150	55	1,380	20 00	23 10	84,800
November	2,150	130	474	6 87	7 67	28,200
December	6,400	180	872	12 60	14 50	53,600
The year	8,150	41	533	7 71	105 00	386,390

## SILVER-PITT CREEK.—(1017).

*Location.*—At lower end of canyon, about 2 miles from mouth of creek, in section 8, township 4, range 5, west of the 7th meridian.

*Records Available.*—Daily discharges from August, 1912, to December, 1915. (Records for 1915 are given herein; preceding records are tabulated in previous reports).

*Drainage Area.*—Seventy square miles, above gauging station.

*Gauge.*—Vertical staff gauge. Gauge readings are taken three times per week by Mr. J. L. Klein.

*Channel.*—Rocky bottom; permanent control.

*Discharge Measurements.*—Nine meter measurements made during 1912 13-14-15, give a well defined rating curve.

*Winter Flow.*—Open water all year.

*Accuracy.*—"C." Gauge readings only three times a week.

*Co-operation.*—None.

## Discharge Measurements of Silver-Pitt Creek 2 Miles above Mouth for 1915.

Date.	Engineer	Meter No.	Width.	Area of Section	Mean Velocity.	Gauge Height.	Discharge
			Feet	Sq. ft.	Ft. per sec.	Feet	Sec.-ft.
July 19	H. C. Hughes	1,046	31	45	1 28	0 52	57.6

BRITISH COLUMBIA HYDROMETRIC SURVEY

SESSIONAL PAPER No. 25a

Daily Gauge Height and Discharge of Silver Pitt Creek, 2 Miles from Mouth for 1915.

(Drainage area, 70 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	1.85	297	1.4	193	0.50	54		664		175		179
2		278		220		92	3.25	742		196		185
3		259	1.65	250	0.90	100		539	1.4	210	1.2	181
4	1.60	240		335		147	2.0	335		235	0.95	108
5		210	2.4	460	1.4	193		319	1.6	240		100
6												
7	1.25	195		390		158		301		221		92
8		260		320		141	1.6	265	1.45	207	0.8	94
9	2.00	335	1.6	240	1.3	175		297		194	0.95	108
10		445		220		145	1.9	319	1.35	185		100
		553	1.4	195	1.0	115		297		222		100
11	2.00	660		210		104	1.9	245		259	0.85	102
12		600	1.5	220	0.95	92		325	1.65	297		114
13	2.00	935		194		320		365		390		120
14		290		176	2.65	547	2.25	412	2.4	460	1.00	128
15	1.60	240	1.2	155		476		368		423		120
16		225		132		405	2.0	335		386	1.05	125
17		210	0.95	108	2.0	335		319	2.05	347		140
18	1.40	195	0.80	84		287	1.8	285		371	1.20	139
19		180		92	1.6	240		273	2.2	395		142
20	1.25	165		100		230		261		301		120
21		120		104	1.5	220	1.65	250	1.45	207	1.0	118
22	0.70	70	1.0	115		217		223		239		111
23		65		150		234	1.4	195	1.75	272	0.95	108
24		60	1.35	185	1.6	240		189		325		90
25	0.60	57		150		224		151		377	0.70	70
26		54	1.0	115	1.45	207	1.3	175	2.3	430		67
27	0.55	51		105		181		170		370	0.65	64
28	0.4	35		95	1.2	155	1.25	145	1.9	310		62
29		75				205		160		271		60
30		115				350	1.2	155		233	0.60	67
31		153			2.8	595			1.4	195		
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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1		45		40	1.40	195	0.40	35		740	1.95	320
2	0.50	45	0.45	40		135		95		600		375
3		45		40	0.75	77	1.20	155	2.4	460	2.90	430
4	0.60	45	0.45	40		65		125		390		380
5		45		35		55		105	1.95	320		330
6		45	0.40	35	0.50	45	0.80	84		300	1.8	285
7	0.50	45		35		75		100		260		720
8		45		35	0.90	100	1.00	115	1.7	260	4.5	1,160
9	0.55	51	0.40	35		120		255		285		850
10	0.90	100		35	1.10	135	2.20	395	1.9	310	2.6	530
11	0.70	70	0.40	35		100		340		280		465
12		45		30		70		320	1.65	250		400
13		100	0.35	30	0.45	40	1.50	285		215	2.0	335
14	1.00	115		30		40		200		180		265
15		160		30	0.40	35	1.00	115	1.15	145	2.20	305
16	1.45	207	0.30	25		35		100		215		399
17		120		25	0.40	35	0.80	94	1.80	285	2.2	398
18	0.60	57	0.30	25		35		270		410		495
19		55		25	0.40	35		455	2.55	540	2.8	595
20		55	0.30	25		35	2.95	645		440		640
21	0.55	51		25		30		590	2.0	235		690
22		51		25	0.35	30	4.60	350		200	3.25	740
23	0.55	51	0.30	25		30		560		270		840
24		50		25	0.25	30	2.80	595	1.5	240	2.00	355
25		45	0.30	25		30		780		190		300
26	0.50	45		25	0.30	25		970	1.15	145		260
27		40	0.30	25		25	4.60	1,160		175	1.50	220
28	0.45	40		25		25		1,090		206		300
29		40		25	0.80	25	4.15	1,025	1.50	240	1.30	175
30	0.45	40	0.30	25		25		980		280		120
31		40		110			2.7	880			0.70	70

*Monthly Discharge of Silver Pitt Creek 2 Miles from Mouth for 1915.*

(Drainage area, 70 square miles.)

MONTH	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean	Per square mile	Depth in inches on Drainage area.	Total in acre-feet.
January.....	840	36	223	3.19	3.66	13,700
February.....	450	96	191	2.73	2.84	10,600
March.....	847	84	238	3.38	3.67	14,400
April.....	742	188	306	4.37	4.66	18,200
May.....	480	178	288	4.11	4.74	17,700
June.....	178	167	108	1.54	1.72	6,430
July.....	207	40	68	0.94	1.06	4,060
August.....	110	26	33	0.47	0.54	2,030
September.....	198	26	68	0.93	0.93	3,460
October.....	1,180	36	433	6.20	7.16	26,600
November.....	740	148	310	4.43	4.94	18,400
December.....	1,160	70	438	6.23	7.16	26,800
The year.....	1,160	28	224	3.20	43.68	162,370

SKAGIT RIVER.—(1055).

*Location.*—40 Miles from Hope and 4 miles from International boundary.

*Records Available.*—Daily discharges from March, 1915, to December, 1915.

*Drainage Area.*—Three hundred and fifty-six square miles, above the measuring section. Taken from the provincial government map of 1913.

*Gauge.*—Gurley automatic gauge.

*Channel.*—Fine gravel, good control, open current.

*Discharge Measurements.*—Five discharge measurements made during 1914-15, give a well defined rating curve.

*Winter Flow.*—The stream is affected by ice during the winter months.

*Accuracy.*—"C." Gauge was out of order for a short period.

SKAGIT RIVER.—(1055).

The Skagit river rises in the mountains about 30 miles south-east of Hope and discharges into the Gulf of Georgia. Some of the mountains in its watershed rise to an elevation of 6,000 feet. It crosses the International boundary about 44 miles south-east of Hope. About 360 square miles of its drainage basin are in Canada.

The precipitation in the Skagit river basin is probably about 90 inches per annum. In the winter the snowfall is fairly heavy. The stream freezes over in many places and is usually affected by ice during January and February.

The Boundary pack trail follows the Skagit river from the Hope-Princeton trail to the boundary, a distance of about 20 miles. When the Pacific highway is completed it will greatly facilitate transportation in this part of the country.



SESSIONAL PAPER No. 26a

There is very little development or settlement in the Skagit river valley, in Canada. There are some mining prospects but little more than assessment work has been done as yet. The valley near the boundary has some possibilities as a stock raising country.

There is a proposal to divert water from the Sumallo river, a tributary of the Skagit, into the lakes which feed the Nicolum river. This would augment the flow of the Nicolum sufficiently to make a power development practicable. It is possible to obtain a head of 2,000 feet.

In connection with the above-mentioned plan of development, this survey has established four gauging stations, located as follows; the Skagit river, four miles from the boundary, the Sumallo river, one mile from its mouth, the Sumallo river, eight miles from its mouth, and the Nicolum river, five miles from its mouth. A Gurley automatic gauge was installed on the Skagit river, four miles from the boundary, in March, 1915.

*Discharge Measurements of Skagit River 4 Miles above International Boundary for 1915.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
Mar. 14	Cline & Hughes...	1,521	140	228	0.80	8.92	193
Mar. 20	H. C. Hughes...	1,521	143	379	1.68	9.80	628
May 30	H. C. Hughes...	1,933	144	454	2.40	10.48	1,099
Oct. 26	H. C. Hughes...	1,046	142	370	1.93	9.99	714
Oct. 28	H. C. Hughes...	1,046	146	480	2.60	10.65	1,250



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Monthly Discharge of Skagit River 4 Miles from International Boundary for 1915.

Drainage area, 356 square miles.)

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF	
	Maximum	Minimum	Mean	Per square mile	Depth in inches on Drainage area	Total in acre-feet.
April	1 240	420	974	2 73	3 05	35,000
May	1 065	760	924	2 59	2 99	36,800
June	1 115	415	850	2 38	2 65	50,600
July	476	425	508	1 43	1 65	31,200
August	470	230	331	0 93	1 07	20,400
September	240	50	136	0 38	0 42	8,090
October	1 305	50	470	1 21	1 49	26,400
November	1 210	345	525	1 48	1 57	35,800
December	665	260	425	1 20	1 36	26,200
The period	1 305	50	575	1 41	1 64	513,290

NOTE.—Station established on March 27, 1915.

SOUTH LILLOOET RIVER.—(1018).

*Location.*—At upper highway bridge, eight miles from mouth, in section 28, township 12, east of the coast meridian.

*Records Available.*—Daily discharges from October, 1911, to December, 1915.

*Drainage Area.*—One hundred square miles.

*Gauge.*—Chain gauge on bridge, also vertical staff gauge on cribbing. Gauge readings are taken daily by Mr. F. Spink.

*Channel.*—Permanent rocky channel.

*Discharge Measurements.*—Twelve meter measurements during 1911-12-13-14-15, give a well defined rating curve.

*Winter Flow.*—Open water all year.

*Accuracy.*—"B."

Discharge Measurements of South Lillooet River 8 Miles above Mouth for 1915.

Date	Engineer	Meter No.	Width	Area of Section	Mean Velocity	Gauge Height	Discharge.
			Feet	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
April 15	Cline & Hughes	1521	125	321	4 70	3 05	1,520
July 5	C. G. Cline	1595	80	90	2 00	0 80	723

Daily Gauge Height and Discharge of South Lilloet River 8 Miles from Mouth for 1915.

(Drainage area, 100 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	1.7	480	1.4	320	1.7	480	2.0	74	1.2	230	1.7	480
2	2.3	380	1.7	480	1.7	480	4.3	1,550	1.2	230	1.65	450
3	2.7	1,440	1.7	480	1.65	450	4.6	1,900	1.2	230	1.6	420
4	2.6	1,320	1.8	550	1.7	480	4.1	3,850	1.15	210	1.5	370
5	2.4	1,080	1.85	580	1.7	480	3.4	2,470	1.2	230	1.4	320
6	2.2	880	1.9	620	1.75	510	3.0	1,850	1.2	230	1.4	320
7	2.0	700	1.95	660	1.9	620	2.8	1,570	1.25	250	1.4	320
8	2.4	1,080	2.0	700	1.8	550	2.9	1,710	1.3	270	1.3	270
9	2.4	1,080	2.1	700	1.7	480	2.8	1,570	1.4	320	1.3	270
10	2.3	980	2.2	880	1.75	510	2.6	1,320	1.5	370	1.2	230
11	3.2	2,150	1.9	620	1.7	480	2.1	1,080	1.8	550	1.15	210
12	3.0	1,850	2.0	700	1.7	480	2.4	1,080	2.0	700	1.1	200
13	2.6	1,320	2.0	700	1.6	420	3.3	2,300	2.0	700	1.1	200
14	2.5	1,200	1.8	550	2.4	1,080	3.2	2,150	2.1	790	1.05	180
15	2.3	980	1.7	480	3.4	2,470	3.05	1,920	2.15	840	1.0	170
16	2.2	880	1.6	420	3.2	2,150	2.6	1,320	2.0	700	0.95	160
17	2.6	700	1.9	620	3.0	1,850	2.5	1,200	1.8	550	0.95	160
18	1.7	480	2.1	700	2.9	1,710	2.4	1,080	1.7	480	0.95	160
19	1.7	480	2.0	700	2.7	1,440	2.25	930	1.7	480	1.0	170
20	1.5	370	1.9	620	2.1	1,080	2.0	700	1.8	550	1.0	170
21	1.5	370	1.8	550	2.4	1,080	1.95	660	1.8	550	1.0	170
22	1.45	340	1.7	480	2.5	1,200	1.9	620	1.7	480	0.95	160
23	1.3	270	1.65	450	2.4	1,080	1.7	480	1.6	420	0.95	160
24	1.25	250	1.6	420	2.3	980	1.55	190	1.65	150	0.90	150
25	1.2	230	1.9	620	2.2	880	1.5	370	1.7	480	0.90	150
26	1.15	210	1.8	550	2.0	700	1.45	340	1.8	550	0.90	150
27	1.10	200	1.7	480	1.8	550	1.35	300	1.9	620	0.90	150
28	1.05	190	1.15	5.3	1.65	450	1.3	270	2.1	790	0.85	145
29	1.00	170	1.6	420	1.6	420	1.25	250	2.15	830	0.80	140
30	0.95	160	1.8	550	1.8	550	1.2	230	1.9	620	0.80	140
31	1.10	200	1.8	550	1.8	550	.....	.....	1.8	550	.....	.....

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	0.85	145	0.65	125	0.50	110	0.40	100	3.6	2,820	2.2	880
2	0.85	145	0.65	125	0.45	105	0.50	110	3.1	2,000	2.0	700
3	0.80	140	0.60	120	0.45	105	0.50	110	2.7	1,440	2.2	880
4	0.85	145	0.60	120	0.45	105	0.50	110	2.6	1,320	2.8	1,070
5	0.80	140	0.60	120	0.45	105	0.50	110	2.3	980	2.9	1,170
6	0.75	135	0.55	115	0.45	105	0.50	110	2.2	880	3.2	2,150
7	0.75	135	0.50	110	0.50	110	0.50	110	2.1	790	3.0	1,850
8	0.80	140	0.50	110	0.55	115	0.50	110	2.0	700	4.4	4,500
9	0.75	135	0.50	110	0.55	115	0.50	110	1.8	550	4.2	4,050
10	0.75	135	0.50	110	0.55	115	0.50	110	1.8	550	3.5	2,640
11	0.80	140	0.50	110	0.52	112	0.50	110	1.6	420	3.0	1,850
12	0.80	140	0.50	110	0.50	110	0.70	130	1.5	370	2.8	1,570
13	0.85	145	0.50	110	0.45	105	1.20	230	1.4	320	2.4	1,080
14	0.85	145	0.50	110	0.45	105	1.70	480	1.4	320	2.2	880
15	0.90	150	0.50	110	0.45	105	1.80	550	1.4	320	2.1	790
16	0.90	150	0.45	105	0.45	105	1.80	550	1.6	420	1.9	620
17	0.85	145	0.45	105	0.45	105	1.70	480	1.9	620	1.8	550
18	0.90	150	0.45	105	0.45	105	1.50	370	2.1	790	1.7	480
19	0.90	150	0.45	105	0.45	105	1.50	370	2.0	700	2.0	700
20	0.90	150	0.45	105	0.40	100	1.90	620	2.0	700	2.5	1,200
21	0.90	150	0.50	110	0.40	100	2.60	1,320	2.0	700	2.8	1,570
22	0.85	145	0.50	110	0.40	100	3.00	1,850	1.9	620	3.1	2,000
23	0.80	140	0.45	105	0.40	100	2.80	1,570	2.3	980	2.8	1,570
24	0.75	135	0.45	105	0.40	100	2.80	1,570	2.3	980	2.7	1,440
25	0.75	135	0.40	100	0.40	100	3.00	1,850	2.3	980	2.5	1,200
26	0.70	130	0.40	100	0.40	100	3.00	1,850	2.6	1,320	2.2	880
27	0.75	135	0.40	100	0.40	100	3.50	2,640	2.4	1,080	2.0	700
28	0.70	130	0.40	100	0.40	100	3.50	2,640	2.2	880	2.1	790
29	0.70	130	0.40	100	0.40	100	3.70	3,010	2.3	980	1.9	620
30	0.70	130	0.40	100	0.35	95	3.90	3,400	2.3	980	1.7	480
31	0.65	125	0.45	105	.....	.....	3.90	3,400	.....	.....	1.6	420

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## Monthly discharge of South Lillooet River 8 Miles from Mouth for 1915.

(Drainage area, 100 square miles.)

MONTH	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January	2,150	160	743	7.43	8.57	45,700
February	880	320	583	5.83	6.07	32,400
March	2,470	420	860	8.60	9.91	52,900
April	4,950	230	1,400	14.00	15.62	83,300
May	840	210	492	4.92	5.67	30,300
June	480	140	225	2.25	2.51	13,400
July	150	125	140	1.40	1.61	8,600
August	125	100	109	1.09	1.26	6,700
September	115	95	105	1.05	1.17	6,250
October	3,400	190	970	9.70	11.20	59,600
November	2,820	320	884	8.84	9.86	52,600
December	4,500	420	1,360	13.60	15.70	83,600
The year	4,950	95	656	6.56	89.15	475,350

## SUMALLO RIVER.—(1056).

*Location.*—One mile from mouth and just south of the railway belt boundary.

*Records Available.*—Daily discharges from July, 1914, to December, 1915. (Records for 1915 are given herein; those for 1914 are tabulated in a previous report).

*Drainage Area.*—Above the mouth, 70 square miles.

*Gauge.*—Vertical staff. Gauge readings are taken daily by Mr. W. H. Robinson.

*Channel.*—Rocky, with good control.

*Discharge Measurements.*—Twelve meter measurements by the engineers of the British Columbia Hydrometric Survey, and one by L. N. Jensen, in 1914 and 1915. One measurement was under ice conditions.

*Winter Flow.*—Stream open all winter, but during very cold weather anchor ice affects the relation between gauge height and discharge.

*Accuracy.*—"B."

*Co-operation.*—Four meter measurements were made during 1913 and 1914 by L. N. Jensen for MacKenzie & Mann.

## Discharge Measurements of Sumallo River 1 Mile above Mouth for 1915.

Date	Engineer	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
Mar. 11	Cline & Hughes	1,521	30	41.0	1.30	0.22	54.3
Mar. 16	Cline & Hughes	1,521	10	62.0	1.90	0.77	118.0
Mar. 29	Hughes	1,521	42	67.0	2.10	1.00	143.0
May 28	Hughes	1,933	48	99.0	3.14	1.80	311.5
May 31	Hughes	1,933	46	88.0	2.80	1.52	247.0
Oct. 29	Hughes	1,046	50	146.0	4.05	2.68	591.0

Daily Gauge Height and Discharge of Sumallo River 1 Mile above Mouth for 1915.

(Drainage area, 70 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	0.4	70	0.1	45	0.1	45	1.6	265	1.5	245	1.5	245
2	0.4	70	0.1	45	0.1	45	2.1	355	1.4	226	1.5	246
3	0.4	70	0.1	45	0.1	45	2.3	440	1.4	225	1.4	226
4	0.4	70	0.1	45	0.1	45	2.4	465	1.4	225	1.4	225
5	0.4	70	0.1	45	0.1	45	2.1	385	1.4	235	1.6	265
6	0.4	70	0.1	45	0.1	45	1.9	335	1.6	265	1.7	200
7	0.3	60	0.1	45	0.1	45	1.8	310	1.8	310	1.8	310
8	0.3	60	0.1	45	0.1	45	1.7	290	2.0	360	1.6	265
9	0.3	60	0.1	45	0.2	50	1.6	265	2.0	360	1.6	246
10	0.3	60	0.1	45	0.2	50	1.5	245	1.9	335	1.4	225
11	0.3	60	0.1	45	0.2	50	1.5	245	1.8	310	1.4	225
12	0.3	60	0.1	45	0.2	50	1.6	265	1.7	290	1.4	225
13	0.3	60	0.1	45	0.2	50	1.8	310	1.6	266	1.4	225
14	0.3	60	0.1	45	0.3	60	1.7	290	1.6	265	1.4	225
15	0.3	60	0.1	45	0.8	120	1.7	290	1.6	265	1.3	205
16	0.3	60	0.1	45	0.7	105	1.8	310	1.6	266	1.3	205
17	0.3	60	0.1	45	0.7	105	1.9	335	1.5	245	1.3	205
18	0.3	60	0.1	45	0.7	105	2.1	385	1.6	265	1.2	185
19	0.3	60	0.1	45	0.7	105	2.2	410	1.8	310	1.2	185
20	0.2	50	0.1	45	0.7	105	2.3	440	1.9	335	1.2	185
21	0.2	50	0.0	40	0.8	120	2.2	410	1.9	335	1.2	185
22	0.2	50	0.0	40	1.0	150	1.8	310	1.9	335	1.1	165
23	0.2	50	0.0	40	1.3	205	1.8	310	1.7	290	1.2	185
24	0.2	50	0.0	40	1.2	185	1.7	290	1.7	290	1.2	185
25	0.2	50	0.0	40	1.2	185	1.6	265	1.7	290	1.2	185
26	0.2	50	0.0	40	1.1	165	1.6	265	1.6	265	1.1	166
27	0.1	45	0.0	40	1.0	150	1.6	265	1.7	290	1.1	165
28	0.0	40	0.0	40	1.0	150	1.6	265	1.8	310	1.0	150
29	0.1	45	.....	.....	1.0	150	1.6	265	1.7	290	1.0	150
30	0.1	45	.....	.....	1.0	150	1.5	245	1.6	265	1.0	150
31	0.1	45	.....	.....	1.0	150	.....	.....	1.5	245	.....	.....

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	1.00	150	0.80	120	0.40	70	0.1	45	2.2	420	0.6	92
2	1.00	150	0.80	120	0.40	70	0.2	52	2.0	360	0.6	92
3	1.10	165	0.70	105	0.40	70	0.3	60	1.8	310	0.6	92
4	1.10	165	0.70	105	0.40	70	0.3	60	1.7	290	0.6	92
5	1.10	165	0.70	106	0.40	70	0.3	60	1.7	290	0.6	92
6	1.10	165	0.70	105	0.40	70	0.3	60	1.6	265	0.6	92
7	1.10	165	0.70	105	0.40	70	0.3	60	1.5	245	0.7	105
8	1.10	165	0.60	90	0.40	70	0.3	60	1.5	245	0.8	120
9	1.00	160	0.60	90	0.30	60	0.2	52	1.4	225	1.0	150
10	1.00	150	0.60	90	0.30	60	0.2	52	1.4	225	1.0	150
11	1.00	150	0.60	90	0.30	60	0.2	52	1.3	205	0.9	135
12	1.00	150	0.60	90	0.30	60	0.4	70	1.2	185	0.8	120
13	1.00	150	0.60	90	0.30	60	0.4	70	1.1	165	0.8	120
14	0.90	135	0.50	80	0.20	50	0.4	70	1.0	150	0.7	105
15	0.90	135	0.50	80	0.20	50	0.4	70	1.0	150	0.7	105
16	0.90	135	0.50	80	0.20	50	0.4	70	0.9	135	0.7	105
17	0.90	135	0.50	80	0.20	50	0.4	70	0.9	135	0.7	105
18	0.90	135	0.50	80	0.20	50	0.4	70	0.9	135	0.7	105
19	0.90	135	0.50	80	0.20	50	0.5	80	0.9	135	0.7	105
20	0.80	120	0.50	80	0.20	50	0.9	135	0.8	120	0.8	120
21	0.80	120	0.50	80	0.10	45	0.9	135	0.8	120	0.9	135
22	0.80	120	0.50	80	0.10	45	0.9	135	0.8	120	0.9	135
23	0.80	120	0.50	80	0.10	45	0.9	135	0.8	120	0.9	135
24	0.80	120	0.50	80	0.10	45	0.9	135	0.8	120	0.9	135
25	0.80	120	0.50	80	0.10	45	1.1	165	0.7	105	0.8	120
26	0.80	120	0.50	80	0.10	45	1.3	205	0.7	105	0.8	120
27	0.80	120	0.60	90	0.10	45	1.9	335	0.7	105	0.7	105
28	0.80	120	0.50	80	0.10	45	3.1	550	0.7	105	0.7	105
29	0.80	120	0.50	80	0.10	45	2.6	560	0.7	105	0.7	105
30	0.80	120	0.50	80	0.10	45	2.2	420	0.6	92	0.6	92
31	0.80	120	0.50	80	.....	.....	2.4	485	.....	.....	0.6	92

SESSIONAL PAPER No. 2

## Monthly Discharge of Sumallo River 1 Mile from Mouth for 1915.

(Drainage area, 70 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET			RUN-OFF		
	Maximum	Minimum	Mean	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January	77	45	58.0	0.83	0.96	3,570
February	45	40	44.0	0.63	0.64	2,440
March	265	45	160.0	1.43	1.85	6,150
April	485	245	320.0	4.57	5.10	19,000
May	345	225	284.0	4.06	4.64	17,460
June	315	255	285.0	3.06	3.35	12,500
July	245	12	138.0	1.97	2.27	8,480
August	125	7	84.0	1.21	1.46	5,460
September	125	45	85.0	1.21	1.39	5,320
October	445	45	187.0	2.24	2.54	9,650
November	125	42	143.0	2.04	2.91	10,900
December	125	42	112.0	1.6	1.84	6,890
The year	445	4	145.0	2.08	24.35	96,010

## SUMALLO RIVER.—(1057).

*Location.*—Eight miles from mouth, in section 28, township 3, range 24, west of 6th meridian.

*Records Available.*—Irregular records from July, 1914, to December, 1915. (Records for 1915 are given herein; those for 1914 are tabulated in a previous report.)

*Drainage Area.*—Seventeen square miles (measured from Dominion map of 1913, scale 3 miles to the inch).

*Gauge.*—Vertical staff. Gauge readings taken by W. H. Robinson and W. N. Thacker. Gauge readings are very irregular.

*Channel.*—Gravel.

*Discharge Measurements.*—Ten meter measurements made during 1914 and 1915 give a well defined rating curve. One measurement was made under ice conditions.

*Winter Flow.*—Station is somewhat affected by ice during very cold weather.

*Accuracy.*—"D." because of infrequent gauge readings.

## Discharge Measurements of Sumallo River 8 Miles above Mouth for 1915.

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
Mar. 15	Cline & Hughes	1,521	36	43.5	1.30	1.05	58.7
Mar. 20	Hughes	1,521	37	50.0	1.64	1.25	82.0
May 10	Hughes	1,933	39	75.0	2.33	1.90	190.0
June 1	Hughes	1,933	39	69.0	2.31	1.72	187.0
Oct. 29	Hughes	1,046	39	90.0	2.96	2.35	266.0

Daily Gauge Height and Discharge of Sumallo River 8 Miles above Mouth for 1915.

(Drainage area, 17 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1		38		16		25		150		136	1 7	150
2		38		16		24	2 0	200		135		150
3	0 9	38		16		24		218		135	1 7	160
4		36		16		23	2 2	236	1 6	136		154
5		33		16		22		246		145	1 7 1/2	158
6		30		16		21		192	1 7 1/2	158	1 80	166
7	0 8	27		16		20		168	1 90	182	1 86	174
8		27		16		19		144	2 00	200	1 7 1/2	158
9		27	0 7	16		18	1 5	120	2 00	200	1 70	160
10	0 8	27		14		17		135	1 95	191	1 65	142
11		26		13	0 7	16		145	1 80	166		141
12		25		12		20	1 7 1/2	158	1 7	150		139
13		23		11		24	1 90	182	1 7	150		137
14		21		9	0 8	27	1 80	166		130	1 6	135
15		19	0 6	7		32	1 80	166		150	1 5 1/2	127
16		17		9		35	1 90	182		150		127
17	0 7	16		11		42	1 90	182	1 7	150	1 5 1/2	127
18		16		13		46	2 00	200	1 8	166		125
19		16	0 7	16	1 0	50	2 10	218	1 9	182		124
20	0 7	16		17		50	2 15	227	1 9	182		123
21		16		19		50	2 1	218		175		122
22		16		21		50	1 8	166		170		121
23		16		23		50		160	1 8	166	1 5	120
24		16		25		50		155		170		120
25		16		26		50	1 7	150		175		115
26		16	0 8	27		50	1 7	150		180		115
27		16		27		50		150	1 9	182		110
28		16	0 8	27		50		150		170		110
29		16		27		50		150		160		105
30		16			1 0	50		150		150	1 4	105
31		16				100			1 7	150		

Day.	July.	August	September	October.	November	December.					
	1		120	85	1 00	50	16	2 3	254	1 10	62
2		120	85		46	0 7	16	2 0	200	62	
3		120	80		42	0 8	27	1 9	182	62	
4		120	80	0 90	38	0 8	27	1 5	166	62	
5	1 50	120	75		34	0 9	38		166	62	
6		115		0 90	38	0 9	38		166	1 10	62
7		115			38	0 8	27	1 8	176	1 15	68
8		110	1 10		38	0 8	27	1 7	150	1 25	82
9		110	1 10		38	0 7	16		142	1 40	105
10		105		0 90	35	0 7	16	1 6	135	1 40	105
11		105	1 10		35	0 7	16		130	1 30	90
12		100	1 10		30	0 9	38		120	1 25	82
13		100	1 10		30		38		110	1 25	82
14		95		0 8	27	0 9	38	2 3	105	1 15	68
15		95			27		38	1 4	105		68
16		90			27	0 9	38	1 3	90		68
17	1 30	90		0 8	27		38		90		68
18		90			25	0 9	38		90		68
19	1 30	90			20	1 0	50	1 3	90	1 15	68
20	1 30	90			18	1 40	105	1 25	82	1 25	82
21		90		0 7	16	1 30	90	1 28	82	1 25	82
22		90	1 10		16	1 20	75		82	1 30	90
23		90			15	1 30	90		82		90
24		90	1 10		16	1 30	90	1 25	82	1 30	90
25		90	1 10		16	1 15	112	1 15	68	1 25	82
26		90	1 10		16	1 60	135		68	1 25	82
27		90			16	1 90	182		68	1 15	82
28	1 35	90			16	2 50	290		68		68
29		90		0 7	16	2 30	254	1 15	68	1 15	68
30		90		0 7	16	2 6	308	1 10	62	1 10	52
31	1 30	90		40		2 7	336			1 10	62



SEASONAL PAPER No. 25a

## Monthly Discharge of Sumallo River 8 miles from Mouth for 1915.

Drainage area, 17 square miles.)

Month.	DISCHARGE IN SECONDS-FEET				Run-Off	
	Maximum	Minimum	Mean	Per square mile	Depth in inches on Drainage area.	Total in acre-feet
January	24	14	22.0	1.50	1.50	1,550
February	17	10	17.0	1.00	1.04	944
March	100	14	37.0	2.15	2.51	2,290
April	244	120	174.0	10.23	11.40	10,400
May	290	111	143.0	8.55	11.05	10,000
June	74	101	133.0	7.82	5.72	7,000
July	120	90	96.0	5.67	6.77	6,130
August	43	40	42.5	1.69	4.25	3,500
September	50	14	37.4	1.42	1.81	1,640
October	334	14	55.4	3.02	5.70	5,200
November	154	42	114.0	4.85	7.63	4,900
December	106	42	74.5	4.40	5.07	4,600
The year	135	-	54.4	4.96	67.54	61,254

## YOUNG CREEK.—1020

*Location.*—At mouth, in section 10, township 7, range 7, west of the 7th meridian.

*Records Available.*—Daily discharges from October, 1912, to December, 1915. (Records for 1915 are given herein; preceding records are tabulated in a previous report.)

*Drainage Area.*—Not determined.

*Gauge.*—Vertical staff. Gauge readings are taken twice a week by Mr. J. L. Davis.

*Channel.*—Solid rock.

*Discharge Measurements.*—Twelve meter measurements made during 1912-13-14-15, give a well defined rating curve.

*Winter Flow.*—Very heavy snowfall but little ice, so that open water conditions prevail all winter.

*Accuracy.*—"C" and "D." because of infrequent gauge readings.

*Co-operation.*—Gauge readings maintained by the Westminster Power Company.

## Discharge Measurements of Young River near Mouth for 1915.

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
May	C. E. Dobbie	1,057	11	12.1	1.20	1.28	16.2
July	R. V. Gordon	1,306	11	10.6	0.63	0.93	6.7
July	R. V. Gordon	1,305	11	9.7	0.20	0.82	2.6
Nov.	H. C. Hughes	1,046	10	10.8	0.68	1.01	7.1

Daily Gauge Height and Discharge of Young Creek at Mouth for 1915.

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1		17		15	1.3	17		33		20		15
2		17	1.3	17		15		22		70		15
3		17		28	1.2	13		31		22		13
4	1.3	17	1.65	40		13		30	1.4	22	1.2	13
5		17		43		13		29		20		13
6		17		46		13	1.5	28		19		13
7	1.3	17		49		13		27		18	1.2	13
8		19	1.8	53	1.2	13		26	1.28	15		13
9		20		41		16		25		16		12
10		20		29	1.35	20		24		16	1.15	12
11	1.4	22	1.3	17		36		23		15		12
12		18		16		52		22		15		11
13		14		14		68	1.37	21		17		11
14	1.1	10		12		84		106		17	1.1	10
15		10	1.1	10	2.4	110	3.2	190		17		0
15		10		27		70		175		17	1.05	8
17		10	1.7	44	1.55	32		166	1.3	17		8
18		10		38		35		145		21		5
19	1.1	10		32		38	2.6	130		25		5
20		11		26		41		93	1.5	28		8
21	1.15	12		20		44		55		29		8
22		11	1.2	13		46	1.3	17		31	1.05	8
23		9		15	1.75	48		17		33		8
24	1.05	8	1.3	17		35		17	1.6	35		7
25		8		17	1.4	22		17		38	1.0	7
26		7		17		22	1.3	17		41		6
27	1.0	7		17		22		17	1.7	44		5
28		9		17	1.4	22		17		35	0.9	5
29		11				28	1.3	17		31		5
30		13			1.6	35		19		24		5
31		13				34			1.3	17		
	July.		August.		September.		October.		November.		December.	
1		4.0		3.5		6.5	1.05	8.5		49.0		42.0
2	0.85	4.2		3.5	1.10	10.0		9.5		39.0		52.0
3		4.4	0.76	3.1		9.0		10.0	1.64	43.0	1.9	63.0
4		4.7		3.0		7.0		11.0		47.0		54.0
5	0.90	5.0	0.75	3.0		5.0		12.0	1.78	51.0		45.0
6		6.0		3.0	0.84	4.1	1.20	13.0		12.0	1.5	35.0
7		7.0		3.0		4.5		10.0		33.0		67.0
8		9.0		2.5		5.0		7.0		24.0		99.0
9	1.10	10.0		2.5		5.0	0.80	3.5		15.0	2.5	130.0
10		12.0	0.7	2.5	1.00	7.0		15.0	1.00	7.0		101.0
11		13.0		2.5		6.0		30.0		7.0		73.0
12	1.25	15.0		2.5		5.0	1.70	44.0		7.0		45.0
13		14.0		2.5		4.0		35.0		7.0	1.3	17.0
14		12.0		2.4	0.75	3.0		25.0		7.0		16.0
15		10.0	0.68	2.4		2.6	1.25	15.0		7.0		14.0
16		10.0		8.1		2.5		18.0	1.00	7.0	1.2	13.0
17		8.0	1.22	13.8	0.70	2.5		21.0		12.0		13.0
18		6.0		13.4		2.5		24.0	1.30	17.0		13.0
19	0.93	5.6		13.4		2.5	1.50	28.0		18.0		13.0
20		5.0		13.4	0.70	2.5		46.0		19.0	1.2	13.0
21		5.0	1.2	13.0		2.5		54.0		20.0		33.0
22		4.5		10.5		2.5	2.10	82.0		21.0		53.0
23	0.83	4.0		6.5	0.70	2.5		73.0	1.40	22.0	2.0	73.0
24		4.0	0.7	2.5		2.5		63.0		33.0		59.0
25		4.0		2.5		2.5	1.80	53.0	1.70	44.0		46.0
26	0.80	3.5		2.4		2.4		63.0		39.0		33.0
27		3.5	0.67	2.4		2.4		73.0		34.0		20.0
28	0.82	3.8		2.5	0.68	2.4	2.10	82.0		30.0	1.0	7.0
29		3.5		2.5		5.5		74.0		26.9		7.0
30		3.5		2.5		3.5		98.0	1.40	22.0	1.0	7.0
31		3.5	0.71	2.6				58.0				7.0

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Monthly Discharge of Young Creek near Mouth for 1915.

MONTH	DISCHARGE IN SECOND-FEET.			RUN-OFF.		
	Maximum	Minimum.	Mean	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January.....	22.0	7.0	13.0			
February.....	53.0	10.0	26.0			
March.....	110.0	13.0	35.0			
April.....	190.0	17.0	52.0			
May.....	44.0	16.0	24.0			
June.....	18.0	5.0	10.0			
July.....	15.0	3.5	6.7			
August.....	13.8	2.4	5.0			
September.....	10.0	2.4	4.4			
October.....	82.0	3.5	37.0			
November.....	51.0	7.0	28.0			
December.....	130.0	17.0	41.0			
The year.....	190.0	2.4	23.3			

## LILLOOET DISTRICT.

## BRANDYWINE RIVER.—(1065).

*Location.*—Highway Bridge, above Falls; 27 miles from Squamish.

*Records Available.*—Daily discharges from May 26, 1915, to December 31, 1915.

*Drainage Area.*—Not determined.

*Gauge.*—Vertical staff. Gauge readings are taken daily by Mr. G. C. Turpin.

*Channel.*—Rocky, and covered with boulders. The control is good.

*Discharge Measurements.*—Six meter measurements, taken during 1915, give a well defined rating curve except for very high stages of the water.

*Winter Flow.*—The stream is affected by ice during the winter months.

*Accuracy.*—"B."

## BRANDYWINE RIVER.—(1065).

The Brandywine river rises in the mountains, north of Squamish, and discharges into the Cheakamus river about eighteen miles above the mouth.

On the Brandywine watershed the climate is much similar to that of the Cheakamus valley. The total annual precipitation is about ninety inches.

The main line of the Pacific Great Eastern Railway crosses the stream about a mile from its mouth.

Just below the railway trestle the river has a perpendicular fall of about two hundred feet. With a minimum discharge of forty cubic feet a second, about 600 horse-power could be developed very cheaply. This might well be used as a temporary power plant for a larger development on the Cheakamus river.

The surrounding country contains many mineral deposits and, although considerable prospecting is being done at the present time, very few claims have been developed to any extent.

There is a small quantity of timber and a little agricultural land near the mouth of the stream.

*Discharge Measurements of Brandywine River 1 Mile above Mouth for 1915.*

Date	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
May 27	C. G. Cline	1,505	25	51.5	3.23	2.50	256.0
June 10	Hughes & Gordon	1,057	28	75.8	2.40	2.63	182.0
June 11	Hughes & Gordon	1,057	30	101.0	3.60	3.30	364.0
Aug. 16	H. C. Hughes	1,505	30	76.0	2.76	2.68	210.0
Aug. 17	H. C. Hughes	1,505	28	58.5	1.95	2.23	114.0
Dec. 9	H. C. Hughes	1,046	26	93.6	0.72	1.90	67.5

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Daily Gauge Height and Discharge of Brandywine River above Falls for 1915.

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
	Feet	Sec.-ft.	Feet	Sec.-ft.	Feet	Sec.-ft.	Feet	Sec.-ft.	Feet	Sec.-ft.	Feet	Sec.-ft.
1											3.4	225
2											3.2	225
3											3.3	370
4											3.5	430
5											4.0	610
6												
7											3.2	340
8											3.2	340
9											2.8	225
10											3.2	340
11											2.6	180
12											3.3	370
13											3.1	310
14											3.2	340
15											3.4	400
16											3.3	370
17											3.2	340
18											2.9	250
19											2.5	180
20											2.7	200
21											2.7	200
22											2.6	180
23											2.7	200
24											3.3	370
25											3.1	210
26											2.8	225
27									2	160	2.7	200
28									2.9	250	2.6	180
29									2.8	225	3.3	370
30									2.6	180	2.9	250
31									2.5	160	3.6	460
									2.8	225		
July	August		September		October		November		December			
1	3.6	460	3.2	340	2.1	95	1.75	47	3.20	340	1.70	45
2	3.7	490	2.5	190	2.2	110	1.80	55	3.05	295	1.82	57
3	3.6	460	2.9	250	2.3	125	1.65	42	2.60	190	2.00	80
4	3.3	370	2.3	125	2.6	180	1.60	40	2.30	125	2.30	125
5	3.4	400	2.5	160	2.1	95	1.45	32	2.20	110	2.45	150
6	2.9	250	2.4	140	1.9	65	1.45	32	2.10	95	2.60	160
7	3.4	400	2.7	200	2.1	95	1.45	32	2.10	95	2.10	95
8	3.5	430	2.2	110	1.9	65	1.45	32	2.00	80		60
9	3.7	200	2.2	200	1.8	55	1.42	31	2.00	80	1.90	65
10	2.5	160	2.8	225	1.9	65	1.40	30	1.90	65	1.60	55
11	2.3	125	2.7	200	1.6	40	1.40	30	1.90	65	1.70	45
12	3.3	370	2.9	225	1.8	55	1.50	35	1.90	65	1.70	45
13	2.8	225	2.7	200	1.7	45	1.50	35	1.85	60	1.70	45
14	3.2	340	2.8	225	1.8	55	1.50	35	1.80	65	1.70	45
15	2.7	200	2.7	200	1.9	65	1.50	35	1.90	65	1.65	42
16	2.6	180	2.4	190	2.0	80	1.55	37	2.00	80	1.60	40
17	3.0	240	2.2	110	1.7	45	1.75	47	2.05	67	1.60	40
18	3.6	180	2.7	200	1.7	45	2.15	102	2.10	85	1.60	40
19	2.5	160	2.3	125	2.1	95	2.15	102	2.00	80	1.60	40
20	2.8	225	3.2	340	2.2	110	2.05	87	1.90	65	1.60	40
21	2.3	125	2.7	200	1.6	40	2.25	117	1.80	65	1.65	42
22	2.4	140	3.2	340	1.7	45	2.75	212	1.75	47	1.70	45
23	2.3	125	2.2	110	1.6	40	2.70	200	2.05	87	1.70	45
24	2.8	225	2.6	180	1.65	42	2.70	200	1.95	72	1.65	42
25	2.6	180	2.2	110	1.65	42	2.65	190	1.85	60	1.60	40
26	2.6	180	2.3	125	1.65	42	4.50	810	1.80	65	1.60	40
27	2.7	200	2.0	250	1.8	48	5.25	475	1.70	45	1.60	40
28	2.3	125	2.8	225	1.6	40	5.20	1,120	1.70	45	1.70	45
29	2.7	200	2.7	200	1.6	40	3.30	370	1.60	65	1.90	65
30	2.6	180	2.4	140	1.65	42	2.70	200	1.70	48	1.90	65
31	2.7	200	2.2	110			3.35	385			1.90	65

## Monthly Discharge of Brandywine River above Falls for 1915.

MONTH	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile	Depth in inches on Drainage area.	Total in acre-feet.
June	610	180	300			
July	480	125	251			
August	340	110	191			
September	180	40	67			
October	1,120	30	168			
November	340	45	92			
December	180	40	61			
The period	1,120	30	160			

NOTE.—Station established May, 1915.

## BRIDGE RIVER.—(1045).

*Location.*—Thirty miles above mouth and ten miles from Mission, on Seton lake.

*Records Available.*—Daily discharges from October 7th, 1913, to December 31st, 1915. (Records for 1915 are given herein; preceding records are tabulated in previous reports.)

*Drainage Area.*—The Provincial map (scale 17.75 miles to the inch) shows a drainage area of 1,900 square miles above gauging station.

*Gauge.*—Vertical staff gauge. The gauge reader is Mr. A. Vierra, of Bridge River. Readings are taken twice a day.

*Channel.*—Wide and deep, with sand and mud bottom, and excellent measuring section.

*Discharge Measurements.*—Eleven meter measurements taken during 1913-14-15 give a well defined rating curve.

*Winter Flow.*—The stream is frozen over during the colder winter months.

*Accuracy.*—"A."

*Co-operation.*—Gauge readings taken in co-operation with the Bridge River Power Company.

## Discharge Measurements of Bridge River 30 Miles above Mouth for 1915.

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Disch.
			Feet.	Sq. ft.	ft. per sec.	Feet.	Sec.
Feb. 16	H. C. Hughes	1,057	156	724	0.76	0.95	5.4
May 7	C. G. Cline	1,505	156	1,050	3.10	3.75	34
June 24	Hughes & Gordon	1,057	156	1,794	4.73	7.00	84
Aug. 9	H. C. Hughes	1,505	156	1,790	4.73	6.80	84

<sup>1</sup> Measurement taken under ice conditions.

BRITISH COLUMBIA HYDROMETRIC SURVEY

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Daily Gauge Height and Discharge of Bridge River 30 Miles above Mouth for 1915.

(Drainage area, 1,900 square miles.)

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
	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.
1	1 20	1 250	1 10	840	0 44	450	1 40	970	2 45	2 500	4 30	4 400
2	1 10	1 150	1 15	750	0 40	45	1 45	1 20	2 65	2 100	4 35	4 480
3	1 35	920	1 10	700	0 40	450	2 35	1 900	2 55	2 400	4 45	4 620
4	1 25	840	1 10	700	0 40	45	2 4	2 000	3 05	2 750	4 70	5 050
5	1 20	790	1 00	610	0 38	45	2 35	1 950	3 55	3 350	5 65	6 620
6	1 20	790	1 00	610	0 30	450	2 2	1 740	4 55	4 800	6 45	9 000
7	1 30	790	1 00	610	0 3	45	2 20	1 740	5 10	6 000	7 40	10 200
8	1 20	790	1 00	610	0 35	490	3 2	1 740	5 90	7 100	7 10	9 500
9	1 20	790	1 00	610	0 30	450	3 1	1 670	4 10	7 500	6 15	7 900
10	1 20	790	1 00	610	0 30	510	2 3	1 560	5 70	6 700	5 60	6 550
11	1 20	790	1 00	610	0 30	510	2 30	1 560	5 20	5 450	5 15	5 740
12	1 20	790	1 00	610	0 30	510	2 30	1 560	4 70	5 550	5 40	6 200
13	1 10	790	1 00	610	0 30	510	2 25	1 440	4 45	4 620	6 00	7 300
14	1 10	790	1 00	610	0 30	530	2 30	1 490	4 40	4 560	6 50	8 200
15	1 10	790	1 00	610	1 00	41	2 30	1 800	4 35	4 490	6 95	9 200
16	1 10	790	1 00	610	1 25	830	2 45	2 500	3 40	3 400	7 40	10 200
17	1 10	790	1 00	610	1 30	880	2 45	2 500	3 45	3 740	7 50	10 400
18	1 10	790	1 00	610	1 35	920	3 15	2 450	3 95	3 920	7 70	10 400
19	1 10	790	0 90	530	1 30	48	3 40	3 150	4 45	5 240	7 00	99 300
20	1 10	790	0 90	530	1 25	43	3 50	3 700	5 45	6 280	6 70	8 700
21	1 20	790	0 90	530	1 25	830	3 40	4 400	5 70	6 700	6 70	6 700
22	1 00	610	0 90	530	1 35	920	3 20	2 900	5 60	6 550	6 90	9 100
23	0 50	450	0 90	530	1 50	1 060	3 15	2 750	5 35	4 100	7 05	9 400
24	1 30	450	0 90	530	1 60	1 150	3 05	2 750	5 05	5 800	7 15	9 600
25	1 65	450	0 90	530	1 50	1 060	3 00	2 700	5 00	5 500	7 35	10 100
26	1 95	450	0 90	530	1 40	970	3 00	2 700	4 95	5 420	6 80	8 900
27	2 05	450	0 90	530	1 35	920	3 00	2 700	4 75	5 120	6 20	7 600
28	2 20	450	0 95	490	1 35	920	3 00	2 700	4 90	5 350	6 20	7 650
29	1 40	450			1 40	970	2 45	2 050	4 75	5 120	6 45	6 570
30	1 60	610			1 40	970	3 05	2 750	4 40	4 550	7 30	10 000
31	1 40	790			1 40	970			4 35	4 480		

	July.		August		September		October		November		December.	
1	7 95	11 400	8 70	13 200	7 20	9 700	3 40	3 400	2 00	1 540	0 5	450
2	8 35	12 400	9 90	13 700	6 05	7 400	3 25	2 970	1 80	1 350	0 9	530
3	8 65	13 100	9 00	14 000	5 80	6 900	2 90	2 550	1 70	1 250	1 15	740
4	8 95	13 800	8 50	12 700	6 05	7 400	2 80	2 450	1 65	1 200	1 1	700
5	9 15	14 400	7 60	10 600	6 70	8 700	2 30	1 890	1 60	1 150	1 3	790
6	9 30	14 800	7 30	10 600	5 75	6 800	2 30	1 890	1 45	1 010	1 1	700
7	8 55	13 600	6 95	9 200	4 75	5 120	2 05	1 610	1 20	790	0 9	530
8	8 20	12 000	6 95	9 200	4 05	4 050	2 00	1 560	1 15	740	0 9	530
9	7 95	11 400	6 55	8 320	3 70	3 550	1 95	1 500	1 20	790	0 9	530
10	7 45	10 700	6 95	9 200	3 45	3 250	1 80	1 350	1 20	790	0 65	490
11	6 80	8 900	7 20	9 700	3 40	3 150	1 70	1 250	1 20	790	0 8	480
12	6 20	7 650	7 25	9 820	3 40	3 150	1 70	1 250	0 75	410	0 8	450
13	6 15	7 570	6 90	9 100	3 15	2 850	1 60	1 150	0 80	210	0 9	530
14	6 20	7 650	7 00	9 300	2 90	2 550	1 60	1 150	0 90	530	0 8	480
15	6 40	8 000	7 25	10 100	3 50	3 300	1 60	1 150	1 30	880	0 8	450
16	6 65	6 570	7 60	10 600	4 00	4 000	1 50	1 060	1 25	830	0 6	450
17	6 40	8 000	7 35	10 500	4 30	4 700	1 85	1 400	1 25	830	0 7	370
18	6 25	7 730	8 00	11 500	4 35	4 900	2 10	1 670	1 20	790	0 7	370
19	6 50	8 200	7 85	11 200	4 75	5 120	2 20	1 780	1 10	700	0 8	480
20	6 80	8 900	8 35	12 400	4 35	4 480	1 80	1 350	0 95	570	0 9	530
21	7 25	9 830	9 05	14 100	3 90	3 850	1 70	1 250	0 70	370	0 9	530
22	7 75	10 900	9 40	15 500	3 90	3 30	2 50	2 190	0 65	330	0 9	530
23	7 90	11 300	9 25	14 700	3 80	3 400	2 15	1 720	0 90	530	0 9	530
24	7 60	10 600	9 0	14 000	3 90	3 450	1 95	1 500	1 0	610	0 8	450
25	7 60	10 600	8 8	13 200	3 60	3 400	1 85	1 400	1 15	740	0 8	450
26	7 85	10 700	8 45	10 400	3 50	3 500	1 50	1 150	1 1	700	0 85	450
27	7 95	11 400	7 6	10 600	3 40	3 150	2 95	2 620	1 0	610	0 75	410
28	8 35	12 400	7 2	9 700	3 10	2 800	2 80	2 450	0 9	530	0 80	450
29	8 35	12 400	7 3	10 000	3 00	2 700	2 75	2 400	0 8	450	0 80	450
30	7 95	11 400	7 55	10 500	3 55	3 350	2 25	1 830	0 85	490	0 85	490
31	8 15	11 900	8 15	11 900			2 05	1 610			0 70	370

NOTE.—Jan. 23-31 gauge raised because of ice conditions. Discharge constant.

*Monthly Discharge of Bridge River 30 Miles above Mouth for 1915.*

(Drainage area, 1,900 square miles.)

MONTH	DISCHARGE IN SECOND-FOOT				RUN-OFF.	
	Maximum.	Minimum.	Mean	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet
January	1,250	480	711	0.37	0.43	43,700
February	880	490	601	0.32	0.33	33,400
March	1,180	480	723	0.38	0.44	44,800
April	3,700	970	3,343	1.18	1.32	133,000
May	7,800	3,300	4,939	2.60	3.00	304,000
June	10,800	4,400	8,136	4.28	4.77	484,000
July	14,800	7,870	10,720	5.64	6.50	659,100
August	15,800	9,100	11,340	5.97	6.88	697,300
September	9,700	2,850	4,497	2.37	2.64	267,600
October	3,400	1,060	1,768	0.93	1.07	108,500
November	1,540	210	751	0.40	0.46	44,700
December	790	370	503	0.26	0.30	30,900
The year	15,800	210	8,910	2.06	28.13	2,850,700

CAYUSE CREEK.—(1048).

*Location.*—At the Pacific Great Eastern Railway trestle, 2 miles from the mouth, and 2½ miles from Lillooet.

*Records Available.*—Daily discharges from April 8th, 1914, to December 31st, 1915. (Records for 1915 are given herein; for 1914 see previous report.)

*Drainage Area.*—Three hundred and fifty square miles (measured from the Provincial map of 1912, scale 12 miles to the inch).

*Gauge.*—Vertical staff gauge, nailed to a pile of the false work of the trestle. Daily gauge readings are taken by Mr. S. Marshall, of Lillooet, B.C.

*Channel.*—Wide, and of moderate depth, strewn with boulders and coarse gravel. The current is swift at the higher stages. The metering section is a good one.

*Discharge Measurements.*—Nine discharge measurements taken during 1914 and 1915 give a well defined rating curve.

*Winter Flow.*—The stream is affected by ice conditions during the winter months.

*Accuracy.*—"B."

*Discharge Measurements of Cayuse River above Seton Creek for 1915.*

Date	Engineer	Meter No.	Width	Area of Section	Mean Velocity	Gauge Height	Discharge
			Feet	Sq. ft.	Ft. per sec.	Feet.	S.
Feb.	W.H. C. Hughes	1,057	67	16.	0.92	0.14	—
May	W.C. G. Clme.	1,505	83	328	6.00	2.25	—
June	W.H. Gordon & Hughes	1,057	82	318	5.90	2.30	—
Aug.	W.H. C. Hughes	1,505	75	238	4.57	1.60	—
Dec.	W.H. C. Hughes	1,046	71	143	1.38	0.34	—



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Daily Gauge Height and Discharge of Cayuse Creek above Seton Creek for 1915.

(Drainage area, 250 square miles)

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
	Feet.	Sec.-ft.	Feet	Sec.-ft.	Feet	Sec.-ft.	Feet.	Sec.-ft.	Feet	Sec.-ft.	Feet.	Sec.-ft.
1	0.3	220	0.2	140	0.1	150	0.45	290	1.2	700	1.6	950
2	0.2	190	0.2	140	0.1	150	0.45	290	1.3	700	1.6	950
3	0.1	140	0.2	140	0.15	145	0.9	435	1.5	700	1.6	950
4	0.1	140	0.15	145	0.15	145	0.9	435	1.5	700	1.8	1,185
5	0.1	150	0.15	145	0.2	140	0.9	475	1.4	775	2.0	1,500
6	0.1	150	0.15	145	0.2	140	1.0	525	1.7	1,060	2.4	2,420
7	0.0	125	0.15	145	0.2	140	1.0	525	2.0	1,400	2.5	2,710
8	0.0	125	0.15	145	0.2	150	1.1	575	2.2	1,910	2.4	2,420
9	0.0	125	0.15	145	0.2	140	1.0	525	2.2	2,140	2.2	1,910
10	0.9	475	0.1	150	0.2	140	1.0	525	2.2	1,910	2.0	1,500
11	0.7	345	0.1	150	0.2	140	0.9	475	2.0	1,600	1.9	1,240
12	0.5	350	0.1	150	0.15	145	0.9	475	1.9	1,340	1.9	1,240
13	0.1	140	0.1	150	0.15	165	0.9	475	1.9	1,185	2.0	1,500
14	0.2	190	0.1	150	0.2	140	0.9	475	1.9	1,185	2.1	1,600
15	0.2	190	0.1	150	0.2	140	1.0	525	1.7	1,060	2.2	2,140
16	0.5	190	0.1	150	0.2	140	1.1	575	1.7	1,060	2.4	2,420
17	0.2	140	0.15	145	0.2	140	1.2	635	1.6	950	2.5	2,710
18	0.2	140	0.15	145	0.25	200	1.4	775	1.7	1,060	2.4	2,420
19	0.2	140	0.1	150	0.25	200	1.6	850	1.6	1,185	2.2	1,910
20	0.5	140	0.1	150	0.3	220	1.7	1,060	2.0	1,500	1.9	1,340
21	0.2	140	0.1	150	0.4	240	1.4	950	2.1	1,400	1.9	1,240
22	0.2	140	0.1	150	0.45	240	1.4	775	2.0	1,400	1.9	1,240
23	0.2	140	0.1	150	0.45	240	1.4	775	2.0	1,500	2.0	1,500
24	0.2	140	0.1	150	0.45	240	1.4	775	1.9	1,540	2.1	1,600
25	0.2	140	0.1	150	0.45	240	1.3	700	1.9	1,240	2.2	1,910
26	0.2	140	0.1	150	0.45	240	1.3	700	1.6	1,185	2.0	1,600
27	0.2	140	0.1	150	0.45	240	1.4	775	1.9	1,165	1.9	1,240
28	0.2	140	0.1	150	0.4	240	1.4	775	1.9	1,240	1.9	1,240
29	0.2	140	0.1	150	0.4	240	1.4	775	1.8	1,185	2.0	1,500
30	0.2	140	0.1	150	0.45	240	1.3	700	1.7	1,060	2.2	1,910
31	0.2	180	0.1	150	0.5	300	1.4	775	1.6	950	1.9	1,240
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	2.2	1,910	1.4	1,185	1.4	775	0.65	370	0.9	475	0.20	220
2	2.2	2,140	1.4	1,185	1.3	700	0.45	370	0.8	425	0.30	320
3	2.5	2,140	1.7	1,060	1.2	635	0.40	250	0.8	425	0.50	220
4	2.4	2,420	1.7	1,060	1.2	635	0.60	350	0.8	425	0.20	160
5	2.4	2,420	1.7	1,060	1.2	635	0.60	250	0.7	285	0.20	220
6	2.2	2,140	1.7	1,060	1.2	635	0.60	250	0.7	285	0.20	180
7	2.2	2,140	1.6	950	1.1	575	0.50	200	0.7	285	0.30	320
8	2.1	1,600	1.6	950	1.0	525	0.50	300	0.6	250	0.35	240
9	2.0	1,500	1.6	950	0.9	475	0.50	300	0.5	200	0.35	240
10	1.9	1,240	1.6	950	0.9	425	0.50	200	0.5	200	0.20	220
11	1.9	1,185	1.5	850	0.9	425	0.50	300	0.4	240	0.30	220
12	1.7	1,060	1.5	850	0.8	425	0.50	200	0.4	260	0.20	220
13	1.6	950	1.4	775	0.8	425	0.50	200	0.4	260	0.25	200
14	1.7	1,060	1.4	775	0.7	345	0.40	260	0.4	260	0.25	200
15	1.7	1,060	1.4	775	0.7	345	0.40	260	0.4	260	0.20	180
16	1.6	1,165	1.4	775	0.7	345	0.40	260	0.4	260	0.20	180
17	1.7	1,060	1.6	950	0.6	350	0.40	260	0.4	260	0.10	160
18	1.6	950	1.6	950	0.6	350	0.40	260	0.4	260	0.10	160
19	1.7	1,060	1.7	1,060	0.6	350	0.40	260	0.4	260	0.10	160
20	1.8	1,185	1.6	950	0.7	345	0.45	280	0.35	240	0.20	180
21	1.9	1,340	1.5	850	0.7	345	0.50	200	0.35	240	0.30	220
22	2.0	1,500	1.5	850	0.7	345	0.60	350	0.35	240	0.25	200
23	1.9	1,340	1.6	950	0.7	345	0.70	265	0.35	240	0.20	180
24	1.8	1,185	1.6	950	0.7	345	0.70	285	0.35	240	0.20	180
25	1.6	1,185	1.5	850	0.6	250	0.60	425	0.35	240	0.20	180
26	1.9	1,340	1.5	850	0.6	350	0.55	450	0.35	240	0.10	160
27	2.0	1,500	1.4	775	0.6	350	1.00	525	0.35	240	0.10	160
28	2.1	1,600	1.4	775	0.6	250	1.20	625	0.35	240	0.10	160
29	2.0	1,500	1.3	700	0.55	225	1.30	700	0.30	220	0.10	160
30	1.9	1,340	1.4	775	0.65	270	1.20	635	0.30	220	0.10	160
31	1.8	1,185	1.4	775	0	0	1.00	525	0.30	220	0.10	160

*Monthly Discharge of Cayuse Creek above Seton Lake for 1915.*

(Drainage area, 250 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January	475	125	193	0.55	0.33	11,900
February	180	150	157	0.48	0.47	8,720
March	300	150	213	0.61	0.70	13,100
April	1,060	280	624	1.78	1.99	37,100
May	2,140	700	1,240	3.54	4.08	75,200
June	2,710	950	1,690	4.83	5.39	101,000
July	2,420	950	1,470	4.20	4.84	90,000
August	1,185	700	910	2.60	3.00	56,000
September	775	325	450	1.29	1.44	25,670
October	700	260	370	1.06	1.22	22,700
November	475	220	295	0.84	0.94	17,600
December	240	150	190	0.54	0.62	11,700
The year.....	2,710	125	650	1.86	25.32	473,220

CHEAKAMUS RIVER.—(1034).

*Location.*—Highway bridge, about 1 mile from the mouth and 10 miles from Squamish.

*Records Available.*—Daily discharges from March 11, 1914, to December 31, 1915. (Records for 1915 are given herein, for 1914, see previous report.)

*Drainage Area.*—Above the measuring section, 250 square miles (from the Provincial map of 1912, scale 17.75 miles to the inch).

*Gauge.*—Cable gauge from the highway bridge. Daily gauge readings by Mr. C. Voeltzel.

*Channel.*—Wide and shallow. The bed is rough and strewn with boulders.

*Discharge Measurements.*—Thirteen discharge measurements were made during 1914 and 1915.

*Winter Flow.*—Open water conditions all winter.

*Accuracy.*—"C."

*Discharge Measurements of Cheakamus River 1 Mile above Mouth for 1915.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
Feb. 2	H. C. Hughes	1,521	120	245	2.02	1.55	728
Feb. 24	H. C. Hughes	1,521	121	232	2.20	1.70	746
May 28	C. G. Cline	1,505	140	444	7.00	2.15	2,010
June 10	Hughes & Gordon	1,057	140	467	5.30	3.40	2,500
June 12	Hughes & Gordon	1,067	140	502	5.24	2.92	2,634
Aug. 16	H. C. Hughes	1,505	140	550	6.07	4.10	2,400
Dec.	H. C. Hughes	1,046	140	470	5.71	3.10	2,692

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Daily Gauge Height and Discharge of Cheakamus River at Checkye for 1915

(Drainage area, 350 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	1.2	550	1.2	550	1.8	860	4.5	4,850	2.5	1,430	3.45	1,380
2	1.6	750	1.3	600	1.8	860	7.75	13,880	2.5	1,430	3.55	1,480
3	1.9	920	1.4	650	1.8	860	6.8	10,500	3.7	1,650	3.55	1,480
4	1.4	650	1.3	600	1.8	860	4.9	5,800	3.3	2,450	3.16	2,220
5	1.4	650	1.3	600	1.8	860	3.9	3,550	3.7	3,150	3.35	2,520
6	1.3	500	1.5	700	1.8	860	3.9	5,550	4.0	5,750	3.55	2,580
7	1.3	600	1.5	700	1.9	920	3.8	3,350	4.0	5,750	3.55	2,450
8	1.5	500	1.5	700	1.8	860	3.7	3,150	3.9	3,550	2.45	2,680
9	1.3	500	1.6	750	1.8	860	3.5	2,800	3.9	3,650	3.15	2,220
10	1.3	500	1.5	750	1.7	800	3.5	2,800	3.9	3,350	3.30	2,450
11	2.1	1,070	1.6	750	1.75	830	4.0	3,750	3.7	3,150	3.60	2,950
12	2.1	1,070	1.6	750	1.6	750	3.8	3,350	3.7	3,150	3.7	3,150
12	1.9	920	1.5	700	1.6	750	3.6	2,950	3.6	2,800	3.9	3,550
14	1.7	800	1.5	700	2.68	1,630	3.5	2,800	3.3	2,450	4.0	3,750
15	1.5	700	1.5	700	4.4	4,600	3.5	2,800	3.1	2,150	4.1	3,950
16	1.3	600	1.5	700	3.6	2,950	3.6	2,950	3.1	2,150	4.1	3,950
17	1.3	600	1.7	800	2.9	1,890	3.5	2,800	3.15	2,220	4.1	3,950
15	1.3	550	1.6	750	2.7	1,650	3.7	3,150	3.2	2,300	4.1	3,950
19	1.1	510	1.5	700	2.7	1,650	3.9	3,560	3.3	2,450	3.6	2,950
20	1.1	510	1.5	700	2.7	1,650	3.7	3,180	3.5	2,800	3.5	3,350
21	1.1	510	1.5	700	2.9	1,890	3.5	2,800	3.7	3,150	4.0	3,750
22	1.0	480	1.5	700	3.4	2,600	3.3	2,430	3.7	3,150	4.0	3,750
23	1.0	480	1.5	700	3.2	2,300	3.2	2,300	3.4	2,600	4.2	4,150
24	1.0	480	1.7	800	3.0	2,020	3.0	2,020	3.1	2,150	4.3	4,400
25	0.9	450	1.9	920	2.6	1,530	2.7	1,650	3.0	2,020	4.4	4,600
26	0.9	450	1.5	860	2.3	1,230	2.7	1,650	3.0	2,030	3.3	3,350
27	0.9	480	1.8	860	2.1	1,070	2.6	1,530	2.3	2,450	3.6	2,950
28	0.9	450	1.9	920	2.1	1,070	2.6	1,530	3.4	2,600	4.0	3,750
29	0.9	450	.....	.....	2.1	1,070	2.6	1,530	2.85	1,530	4.5	4,400
30	0.9	450	.....	.....	2.5	1,430	2.5	1,430	2.45	1,350	4.4	4,600
31	1.0	480	.....	.....	2.6	1,530	.....	.....	2.35	1,280	.....	.....
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	4.6	4,860	4.4	4,600	4.6	4,850	3.1	2,150	.....	.....	.....	.....
2	4.7	5,300	4.3	4,400	3.8	3,350	3.2	2,300	.....	.....	.....	.....
3	4.9	5,300	4.3	4,400	3.7	3,150	2.9	1,890	.....	.....	.....	.....
4	5.1	6,250	4.1	3,950	3.8	3,350	2.5	1,430	.....	.....	.....	.....
5	4.9	5,800	4.1	5,950	3.5	2,800	2.5	1,430	.....	.....	.....	.....
6	4.7	6,300	4.0	3,750	3.3	2,450	2.3	1,230	.....	.....	.....	.....
7	4.2	4,150	3.9	3,550	3.3	2,450	2.2	1,150	.....	.....	2.9	1,590
8	3.6	2,950	3.9	3,550	3.2	2,300	2.1	1,070	.....	.....	3.3	2,300
9	4.6	5,100	4.0	3,750	3.1	2,150	2.0	990	.....	.....	2.8	1,770
10	4.4	4,600	4.1	3,950	2.9	1,890	2.0	990	.....	.....	2.2	1,150
11	4.3	4,400	4.1	3,950	2.8	1,770	2.0	990	.....	.....	3.1	1,070
12	4.1	3,950	4.1	3,950	2.7	1,650	2.1	1,070	.....	.....	2.0	990
13	4.0	3,750	4.1	3,960	2.7	1,650	2.2	1,150	.....	.....	2.0	990
14	3.9	3,550	4.1	3,950	2.8	1,770	2.1	1,070	.....	.....	2.0	990
15	3.8	3,350	4.3	4,150	2.8	1,770	2.1	1,070	.....	.....	1.9	920
16	3.8	3,350	4.3	4,400	2.8	1,770	2.1	1,070	.....	.....	1.5	860
17	3.8	3,350	4.4	4,600	3.9	1,890	3.0	2,020	.....	.....	1.7	800
18	3.3	2,350	4.1	3,950	2.9	1,890	2.4	1,330	.....	.....	1.7	800
19	3.3	3,550	4.3	4,400	3.0	2,020	2.3	1,230	.....	.....	1.5	750
20	4.1	3,950	4.7	5,300	3.0	2,020	2.4	1,350	.....	.....	2.1	1,070
21	4.3	4,400	4.7	5,300	2.9	1,890	6.25	9,125	.....	.....	2.7	1,650
22	4.3	4,400	4.7	5,300	2.9	1,890	4.4	4,600	.....	.....	2.4	1,330
23	4.3	4,150	4.3	4,400	2.9	1,890	3.8	3,350	.....	.....	2.1	1,070
24	4.1	3,950	4.5	4,850	2.8	1,770	3.6	2,950	.....	.....	2.0	990
25	4.5	4,550	4.5	4,850	2.5	1,770	5.6	7,500	.....	.....	1.9	920
26	4.5	4,850	4.0	3,750	2.7	1,550	5.8	8,000	.....	.....	1.8	560
27	4.4	4,800	4.1	2,950	2.7	1,650	5.6	7,500	.....	.....	1.7	500
28	4.2	4,150	4.1	2,950	2.7	1,650	5.2	6,500	.....	.....	1.5	750
29	4.2	4,150	4.4	4,600	2.9	1,590	5.0	6,050	.....	.....	1.8	750
30	4.1	3,950	4.4	4,600	3.1	2,200	4.3	4,150	.....	.....	1.5	750
31	4.1	3,950	4.5	4,850	.....	.....	.....	4,000	.....	.....	.....	.....

*Monthly Discharge of Cheakamus River at Checkye for 1915.*

(Drainage area, 250 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January.....	1,070	480	612	2.46	2.63	67,600
February.....	920	580	736	2.90	6.02	40,300
March.....	4,600	800	1,440	5.76	6.64	56,600
April.....	12,850	1,440	4,450	16.40	16.40	208,000
May.....	3,740	1,280	2,520	10.12	11.66	165,000
June.....	4,600	1,650	3,270	16.08	14.69	195,000
July.....	6,260	3,650	4,320	17.60	16.90	204,000
August.....	5,600	4,550	3,960	15.80	16.20	242,000
September.....	4,840	1,650	2,180	8.72	9.76	160,000
October.....	9,125	990	2,930	11.80	16.60	160,000
The period.....	12,880	480	2,542	10.17	115.67	1,641,000

NOTE.—No continuous readings during November and December.

FOSTER BAR CREEK.—(1074).

*Location.*—Above the irrigation ditches, 19 miles below Lillooet.

*Records Available.*—Daily discharges from June 22 to September 30, 1915.

*Drainage Area.*—Twenty square miles.

*Gauge.*—Vertical staff gauge. Daily gauge readings are taken by Mr. C. McGillivray of the Halfway House, Lytton, B.C.

*Channel.*—Boulders and gravel, with good control.

*Discharge Measurements.*—Three discharge measurements give a well defined rating curve for the range of the stream.

*Winter Flow.*—The gauge is only read during the irrigation season.

*Accuracy.*—"B."

FOSTER BAR CREEK.—(1074).

Foster Bar creek rises in the mountains south-west of Lillooet, flows in a south-westerly direction and discharges into the Fraser river, twenty-three miles below Lillooet, at an elevation of 450 feet. The drainage area is twenty square miles.

The climate in the watershed of this stream is much similar to that of the Lillooet district. The summers are hot and the winters rather severe. The mean annual precipitation is about ten inches. This increases very much with the altitude.

The Fraser river benches adjacent to the mouth of this stream are well suited to cultivation when irrigated. At present the normal flow of the stream is being used for this purpose. So far no investigations have been made with a view to storing the high water flow.

SESSIONAL PAPER No. 25a

Discharge Measurements of Foster Bar Creek above Irrigation Ditches for 1915.

Date.	Engineer	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
June 23	Gordon & Hughes	1 387	7	2 50	2 10	0 55	5 23
Aug. 10	H. C. Hughes	1 505	7	1 96	1 04	0 08	2 02
Dec. 4	H. C. Hughes	1 349	7	1 19	0 31	0 43	0 55

Daily Gauge Height and Discharge of Foster Bar Creek above Ditches for 1915.

Drainage area, 20 square miles.

	June.	July	August.	September
1	0 75	3 7	0 45	2 3
2	0 75	3 7	0 45	2 3
3	0 75	3 7	0 45	2 3
4	0 75	3 7	0 45	2 3
5	0 75	3 7	0 40	2 1
6	0 75	3 7	0 40	2 1
7	0 75	3 7	0 40	2 1
8	0 75	3 7	0 40	2 1
9	0 75	3 7	0 40	2 1
10	0 75	3 7	0 40	2 1
11	0 75	3 7	0 40	2 1
12	0 75	3 7	0 40	2 1
13	0 75	3 7	0 40	2 1
14	0 75	3 7	0 40	2 1
15	0 75	3 7	0 40	2 1
16	0 75	3 7	0 40	2 1
17	0 75	3 7	0 40	2 1
18	0 75	3 7	0 40	2 1
19	0 75	3 7	0 40	2 1
20	0 75	3 7	0 40	2 1
21	0 75	3 7	0 40	2 1
22	0 85	5 5	0 45	2 3
23	0 90	4 4	0 45	2 3
24	0 90	4 4	0 45	2 3
25	0 90	4 4	0 45	2 3
26	0 90	4 4	0 45	2 3
27	0 90	4 4	0 45	2 3
28	0 90	4 4	0 70	3 1
29	0 90	4 4	0 70	3 1
30	0 90	4 4	0 70	3 1
31	0 90	4 4	0 70	3 1

Monthly Discharge of Foster Bar Creek above Ditches for 1915.

Drainage area, 20 square miles

MONTH	DISCHARGE IN SECOND-FEET			RUN-OFF.	
	Maximum.	Minimum.	Mean.	Depth in inches on Drainage area.	Total in acre-feet
July	2 7	3 1	3 04	0 15	187 0
August	2 5	1 3	2 06	0 10	122 0
September	1 1	1 1	1 10	0 06	65 5
The period	1 7	1 3	2 04	0 10	375 5

NOTE.—Station established in July 1915 and maintained throughout the irrigation season.

## FOUNTAIN CREEK.—(1047).

*Location.*—Above the irrigation ditches, 1½ mile from the mouth and 10 miles from Lillooet.

*Records Available.*—Daily discharges from June to October, 1914, and from April to October, 1915. (Records for 1915 are given herein, those for 1914 are tabulated in a previous report.)

*Drainage Area.*—Twenty square miles (measured from the Provincial map of 1913, scale 12 miles to the inch).

*Gauge.*—Vertical staff gauge. Daily gauge readings are taken by Mr. E Peterson, of Lillooet, B.C.

*Channel.*—Wide and shallow, gravel bottom. The current is fairly swift. The control is good.

*Discharge Measurements.*—Five discharge measurements taken during 1915 give a fairly well defined rating curve.

*Winter Flow.*—The gauge readings are discontinued during the winter months.

*Accuracy.*—"C."

*Discharge Measurements of Fountain Creek above Irrigation Ditches for 1915.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
May 21	C. G. C.	1,505	12	6.60	3.65	1.30	24.1
June 18	Gordon & Hughes	1,057	11	5.80	3.45	1.30	20.0
Aug. 7	H. C. Hughes	1,505	11	4.75	2.82	1.15	13.4
Dec. 3	H. C. Hughes	1,046	8	2.70	1.12	1.04	3.0



*Monthly Discharge of Fountain Creek above Ditches for 1915.*

(Drainage area, 20 square miles.)

Month.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
May.....	29	1	18.0	0.70	0.92	924
June.....	29	23	25.0	1.25	1.62	1,780
July.....	23	7	15.0	0.75	0.91	972
August.....	23	2	8.2	0.41	0.47	504
September.....	2	2	2.0	0.10	0.11	119
The period.....	29	1	14.2	0.70	4.03	4,209

NOTE.—Station maintained only during the irrigation season; that is from May to September, 1915.

## FRASER RIVER.—(1072).

## AT LILLOOET.

*Location.*—Pacific Great Eastern Railway trestle at Lillooet.*Records Available.*—Daily discharges from May 14, to December 31, 1915.*Drainage Area.*—Sixty-two thousand five hundred square miles—from Provincial map of 1912.*Gauge.*—Cable gauge from the trestle. Gauge readings are taken twice a day by Mr. J. W. Burke, of Lillooet, B.C.*Channel.*—Wide, and fairly deep. The current is very swift at the higher stages of the water. The bottom is covered with gravel and boulders.*Discharge Measurements.*—Three discharge measurements, taken in 1915, outline the rating curve.*Winter Flow.*—Open water throughout the year.*Accuracy.*—"D," because of insufficient meter measurements.

## FRASER RIVER AT LILLOOET.—(1072).

For a complete description of the Fraser river refer to the report of the Railway Belt Hydrometric Survey, 1911-12, Water Resources Paper No. 1.

This station was established at Lillooet on May 14, 1915, to obtain accurate data on the discharge of the Fraser river above its confluence with the Thompson river. The gauge on the Fraser at Lytton was found to be affected by backwater from the Thompson river.

*Discharge Measurements of Fraser River at Lillooet, B.C., for 1915.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
May 15	C. G. Cline.....	1.505	580	8,540	10.40	22.20	82,200
June 26	Gordon & Hughes	1.057	580	9,800	11.00	22.50	108,000
Dec. 6	H. C. Hughes...	1.046	528	5,800	3.31	16.03	19,200

NOTE.—Station established May 15, 1915.



BRITISH COLUMBIA HYDROMETRIC SURVEY

SESSIONAL PAPER No. 25c

Daily Gauge Height and Discharge of Fraser River at Lillooet for 1915.

(Drainage area, 63,300 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1											24.8	102,000
2											23.7	91,000
3											23.8	92,000
4											23.9	93,000
5											24.1	95,000
6											24.3	97,000
7											24.4	98,000
8											24.3	97,000
9											24.3	97,000
10											24.3	97,000
11											24.2	96,000
12											24.2	96,000
13											24.1	95,000
14									23.3	87,000	24.0	94,000
15									23.3	87,000	24.0	94,000
16												
17									23.1	85,000	24.0	94,000
18									23.0	84,000	24.2	97,000
19									22.9	82,000	24.7	101,000
20									23.0	84,000	25.3	107,000
21									23.1	88,000	25.5	109,000
22									26.3	87,000	28.3	117,000
23									25.6	90,000	28.9	113,000
24									23.8	92,000	28.4	108,000
25									24.0	94,000	25.4	108,000
26									24.4	98,000	25.4	108,000
27									25.2	108,000	25.2	106,000
28									26.4	108,000	25.6	110,000
29									26.8	110,000	26.6	110,000
30									25.7	111,000	26.4	118,000
31									25.8	109,000	26.8	120,000
									25.3	107,000		

	July.		August.		September.		October.		November.		December.	
1	26.1	115,000	34.7	101,000	22.5	80,000	.....	42,600	19.4	48,800	15.3	13,800
2	26.4	118,000	34.7	101,000	22.4	78,000	.....	41,100	19.1	46,100	18.8	16,200
3	26.1	115,000	24.9	103,000	22.3	77,000	18.4	39,600	18.8	43,200	18.9	18,100
4	28.1	115,000	34.6	102,000	22.1	75,000	18.4	39,600	18.7	42,300	16.0	19,200
5	28.0	114,000	24.7	101,000	21.9	74,000	18.4	39,600	18.4	39,600	15.9	18,400
6	28.9	113,000	24.8	99,000	21.5	69,000	18.4	39,600	18.2	37,800	16.0	19,200
7	25.6	110,000	24.2	96,000	21.3	67,000	18.6	38,700	18.1	36,900	16.16	30,400
8	25.2	106,000	24.0	94,000	21.0	64,000	18.3	38,700	17.9	35,100	15.96	18,800
9	25.0	104,000	23.7	91,000	20.7	61,100	18.2	37,800	17.6	32,400	16.60	16,000
10	24.9	103,000	23.8	90,000	20.3	57,300	18.1	36,900	17.6	31,500	16.18	12,600
11	24.8	102,000	23.8	89,000	19.8	52,600	18.0	38,000	17.3	29,800	15.25	13,200
12	24.9	103,000	23.8	89,000	19.4	48,800	17.9	36,100	16.8	26,600	13.18	12,800
13	27.6	129,000	23.8	89,000	19.0	45,200	17.8	34,200	16.4	22,400	16.06	11,800
14	29.1	148,000	23.4	88,000	18.7	42,300	17.8	34,200	16.2	20,800	16.26	13,200
15	28.1	138,000	23.3	87,000	18.6	41,400	17.9	35,100	16.2	30,800	18.30	13,600
16	27.3	127,000	23.3	87,000	18.7	42,300	18.1	36,900	16.3	21,800	16.20	12,900
17	26.8	122,000	23.2	86,000	18.8	43,200	18.5	40,600	16.4	22,400	16.10	12,200
18	26.3	117,000	23.2	87,000	19.0	45,200	18.7	42,600	16.6	23,200	15.16	12,800
19	26.1	115,000	23.4	88,000	20.1	53,500	19.0	45,200	16.6	24,000	18.00	11,800
20	25.8	112,000	23.6	90,000	19.4	48,800	19.3	47,900	18.5	23,200	18.23	13,200
21	28.8	112,000	34.0	94,000	19.8	60,600	19.3	47,900	16.4	22,400	18.10	12,200
22	26.7	111,000	34.6	97,000	19.6	52,600	19.2	47,000	16.3	21,600	16.20	12,900
23	25.4	108,000	24.2	96,000	19.8	62,600	19.1	46,100	16.2	20,600	16.20	12,900
24	28.1	106,000	34.0	94,000	19.7	61,600	19.0	46,200	16.1	20,000	18.20	12,900
25	28.0	104,000	23.9	93,000	19.4	46,800	18.9	44,200	16.0	19,200	14.96	11,100
26	25.1	105,000	23.7	91,000	19.3	47,900	18.8	43,200	15.9	18,400	14.88	10,400
27	26.1	105,000	23.4	88,000	19.2	47,000	18.8	43,200	18.0	19,200	14.76	9,700
28	25.1	108,000	26.3	87,000	19.1	46,100	16.8	43,300	16.7	16,800	14.86	10,400
29	25.1	105,000	23.1	86,000	18.9	44,200	19.8	60,600	15.6	16,000	14.96	11,100
30	25.1	105,000	23.0	84,000	18.9	44,200	20.1	58,600	15.1	12,200	14.88	10,400
31	26.1	105,000	22.9	83,000	.....	.....	20.0	54,800	.....	.....	14.98	11,100

## Monthly Discharge of Fraser River at Lillooet for 1915.

(Drainage area, 62,800 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
June.....	120,000	91,000	102,000	1.83	1.83	8,070,000
July.....	142,000	102,000	112,000	1.81	2.09	8,920,000
August.....	103,000	83,000	91,900	1.47	1.70	8,680,000
September.....	90,000	41,400	55,100	0.88	0.68	2,280,000
October.....	88,800	24,200	42,000	0.87	0.77	2,880,000
November.....	48,300	12,200	27,100	0.42	0.48	1,610,000
December.....	20,400	10,400	13,700	0.22	0.22	842,000
The period.....	148,000	10,400	83,543	1.01	8.08	28,922,000

NOTE.—Station established May 14, 1918.

## GREEN RIVER AT NAIRN FALLS.—(1035).

*Location.*—Five miles from the mouth, 3 miles from Pemberton.*Records Available.*—Daily discharges from November, 1913, to December, 1915. (Records for 1915 are given herein; preceding records are tabulated in previous reports.)*Drainage Area.*—Drainage area, as measured from the Provincial map of 1912 (scale 17.75 miles to the inch), is 180 square miles.*Gauge.*—Sloping staff gauge bolted to rocks. Daily gauge readings are taken by Mr. L. Merson, of Pemberton, B.C.*Channel.*—Wide and fairly deep. Rock and gravel bottom,—a good metering section with a good control.*Discharge Measurements.*—Twenty-seven meter measurements taken during 1913-14-15 give a very well defined rating curve.*Winter Flow.*—The stream is affected by ice during the winter months.*Accuracy.*—"A" below discharge of 13,300 cubic feet per second.

"B" above discharge of 13,300 cubic feet per second.

## Discharge Measurements of Green River above Nairn Falls for 1915.

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
Jan. 21	C. E. Dobbie.....	1,057	78	185	1.20	0.10	231
Feb. 8	Dobbie & Hughes.....	1,057	78	167	1.41	2.18	238
Mar. 9	C. E. Dobbie.....	1,057	78	202	1.62	2.25	327
Mar. 14	C. E. Dobbie.....	1,057	78	230	1.90	2.68	441
Mar. 15	C. E. Dobbie.....	1,057	78	354	3.20	4.28	1,140
Mar. 22	C. E. Dobbie.....	1,057	81	416	4.00	5.10	1,630
Mar. 23	C. E. Dobbie.....	1,057	81	458	4.20	5.60	1,920
Mar. 27	C. E. Dobbie.....	1,057	80	261	3.38	3.90	882
April 3	C. E. Dobbie.....	1,057	100	426	4.40	8.20	5,300
April 4	C. E. Dobbie.....	1,057	95	652	5.30	7.30	3,470
April 11	C. E. Dobbie.....	1,057	81	408	3.43	4.80	1,400
April 20	C. G. Cline.....	1,087	83	400	3.60	4.95	1,440
May 23	C. G. Cline.....	1,505	81	465	4.80	5.10	2,210
June 14	Hughes & Gordon.....	1,037	98	603	4.90	6.95	3,000
Aug. 5	H. C. Hughes.....	1,505	95	595	4.79	6.85	2,830

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Daily Gauge Height and Discharge of Green River at Nairn Falls for 1915.

(Drainage area, 180 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	2.50	850	3.50	350	2.25	280	4.3	1,120	.....	1,220	5.9	2,120
2	2.50	330	2.33	300	2.22	280	9.3	6,540	4.3	1,120	5.7	1,990
3	2.40	390	2.28	260	2.25	280	9.6	6,020	4.4	1,170	6.0	2,210
4	2.50	330	.....	270	2.30	290	7.4	3,490	8.8	2,060	6.3	2,370
5	2.50	330	.....	330	2.33	300	6.3	2,430	6.7	2,810	8.3	4,460
6	2.50	350	2.15	240	2.36	310	5.9	2,130	7.3	3,390	8.0	4,180
7	2.46	330	2.16	240	2.40	320	6.9	2,130	6.3	4,350	8.2	4,350
8	2.46	330	2.16	240	2.40	320	6.6	1,860	8.0	4,130	7.8	3,910
9	2.46	330	2.13	240	2.35	300	5.0	1,520	7.6	3,910	7.4	3,490
10	2.46	330	2.13	240	2.42	330	4.7	1,840	7.0	3,090	.....	3,180
11	2.50	350	2.13	240	2.60	350	4.8	1,400	6.8	2,900	6.6	2,900
12	2.50	350	2.15	240	2.48	340	5.6	1,920	6.0	2,210	6.9	2,990
13	2.40	320	2.10	230	2.60	350	5.9	2,130	6.0	2,210	7.2	3,290
14	2.40	320	2.10	230	2.66	420	6.2	1,640	6.2	2,370	7.3	3,860
15	2.33	300	3.10	230	4.20	1,070	5.1	1,580	3.8	2,060	7.6	3,690
16	2.46	330	2.10	230	4.20	1,070	6.1	2,290	5.4	1,780	7.8	3,910
17	2.35	300	2.15	240	4.00	970	6.1	2,290	5.4	1,780	8.0	4,130
18	2.35	300	2.15	240	4.60	1,280	6.5	2,330	5.6	1,920	7.3	3,390
19	2.30	290	2.05	220	4.38	1,160	6.7	2,610	6.3	3,370	6.8	2,900
20	2.30	290	2.06	220	4.10	1,020	6.8	2,900	6.8	3,900	7.0	3,090
21	2.10	330	2.13	240	4.40	1,170	5.7	1,990	7.0	3,090	6.9	2,990
22	2.10	280	2.15	240	5.10	1,580	5.3	1,710	6.6	2,720	7.0	3,090
23	.....	280	2.18	230	5.60	1,920	3.2	1,640	6.3	2,450	7.5	3,390
24	2.40	320	2.18	230	4.90	1,460	5.3	1,710	3.8	2,060	7.8	3,910
25	.....	370	2.26	280	4.60	1,220	4.95	1,490	5.8	2,060	7.3	3,390
26	.....	420	2.20	260	4.10	1,020	5.10	1,380	5.6	1,920	7.0	3,090
27	2.85	490	2.20	260	3.90	920	3.00	1,520	6.0	2,210	6.7	2,610
28	3.30	670	2.20	260	3.70	630	4.7	1,340	6.4	2,640	6.4	2,640
29	3.30	670	.....	.....	3.73	850	6.0	1,520	6.0	2,210	6.1	2,290
30	3.10	590	.....	.....	3.90	920	.....	1,400	5.7	1,990	7.6	3,690
31	2.40	320	.....	.....	4.0	970	.....	.....	3.4	1,780	.....	.....
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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	8.2	4,350	8.4	4,580	6.4	2,340	4.1	1,020	4.3	1,120	2.3	360
2	8.7	4,940	6.1	4,240	6.6	2,720	4.1	1,020	4.3	1,120	2.5	350
3	8.9	5,130	6.3	4,460	6.1	2,290	4.1	1,020	4.0	970	3.5	360
4	9.4	5,740	7.4	3,490	7.0	3,090	3.9	920	4.0	970	2.6	390
5	9.8	6,260	6.8	2,900	6.3	2,450	3.7	830	4.0	970	3.7	430
6	9.6	6,020	6.9	2,990	6.0	2,210	3.5	750	3.8	870	2.8	470
7	9.2	5,540	6.6	2,720	5.4	1,780	3.3	670	3.6	790	2.8	470
8	8.8	5,060	6.3	2,450	4.8	1,400	3.1	590	3.6	790	2.7	430
9	8.2	4,350	6.9	2,990	4.6	1,280	3.0	560	3.4	710	2.7	430
10	6.0	4,130	7.0	3,090	4.6	1,280	2.8	470	3.2	630	2.7	430
11	7.3	3,390	7.2	3,290	4.2	1,070	2.7	430	3.2	630	2.6	390
12	7.0	3,090	6.4	2,540	4.0	970	2.8	470	3.0	550	2.5	350
13	6.8	2,900	6.8	2,900	4.0	970	2.8	470	2.6	470	2.4	320
14	6.3	2,460	7.5	3,590	4.3	1,120	2.9	510	2.8	470	2.4	320
15	6.6	2,720	7.2	3,290	4.6	1,280	3.0	550	2.8	470	2.4	320
16	7.1	3,190	7.0	3,090	4.8	1,400	3.1	590	3.8	470	2.4	320
17	6.8	2,900	7.6	3,690	4.8	1,400	3.2	630	2.7	430	2.4	320
18	6.8	2,900	7.8	3,910	5.0	1,520	3.2	630	2.7	430	2.4	320
19	7.1	3,190	8.9	5,130	5.3	1,710	3.4	710	2.7	430	2.4	320
20	7.4	3,490	8.6	4,820	5.6	1,920	3.7	830	2.6	390	2.4	320
21	7.3	3,390	9.0	5,300	5.0	1,520	4.0	970	2.6	390	2.5	360
22	8.2	4,350	9.2	5,540	4.8	1,400	4.2	1,070	2.6	390	2.6	390
23	8.0	4,130	8.4	4,580	4.6	1,280	4.4	1,170	2.6	390	2.6	390
24	8.0	4,130	9.0	5,300	4.8	1,400	4.4	1,170	2.7	430	2.5	330
25	7.9	4,020	8.3	4,460	4.5	1,220	4.7	1,340	2.7	430	2.5	360
26	7.6	3,690	7.6	3,690	4.5	1,220	2.9	4130	2.7	430	2.5	350
27	8.2	4,350	6.9	2,990	4.7	1,340	6.4	2,540	2.6	390	2.5	350
28	8.0	4,130	7.2	3,290	4.2	1,070	7.0	3,090	2.6	390	2.4	320
29	8.3	4,460	7.7	3,800	4.2	1,070	6.0	2,210	2.6	390	2.4	320
30	8.7	4,940	8.0	4,130	4.9	1,460	3.0	1,520	2.5	350	2.4	320
31	8.1	4,240	7.2	3,290	.....	.....	4.3	1,120	.....	.....	2.4	320

*Monthly Discharge of Green River at Nairn Falls for 1915.*

(Drainage area, 130 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January	670	220	661	2.01	2.22	22,800
February	680	220	280	1.89	1.45	13,900
March	1,920	260	770	4.26	4.88	47,800
April	6,060	1,120	2,170	12.05	16.48	129,000
May	4,660	1,120	6,410	18.40	18.45	148,000
June	4,460	1,990	6,240	16.00	20.06	192,000
July	6,260	6,460	4,120	22.80	26.40	256,000
August	2,240	2,460	6,760	20.90	26.10	221,000
September	6,090	670	1,660	6.76	9.60	56,000
October	4,180	430	1,160	6.11	7.04	67,600
November	1,120	350	649	2.27	6.65	38,000
December	470	620	862	2.01	2.62	22,200
The year	6,660	660	1,726	9.66	160.99	1,256,300

**LALUWISSIN CREEK.—(1050).**

*Location.*—Above the irrigation ditches, about 1 mile from the mouth and 26 miles from Lillooet, section 30, township 27, range 17, west of 6th meridian.

*Records Available.*—Daily discharges from June to September, 1914, and from April to December, 1915. (Records for 1915 are given herein; those for 1914 are tabulated in a previous report.)

*Drainage Area.*—Twenty square miles (measured from the Provincial map of 1913, scale 12 miles to the inch.)

*Gauge.*—Vertical staff gauge. Daily gauge readings taken by Mr. J. E. Maher, of Lillooet, B.C.

*Channel.*—Shallow, and strewn with boulders and coarse gravel. The current is fairly swift. The metering section is a good one.

*Discharge Measurements.*—Four meter measurements taken during 1915 give a well defined rating curve.

*Winter Flow.*—Stream affected by ice in winter months.

*Accuracy.*—"B."

*Discharge Measurements of Lалуwissin Creek above Irrigation Ditches for 1915.*

Date.	Engineer.	Meter No.	Width.	Area of Section	Mean Velocity.	Gauge Height.	Discharge
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
May 23	C. G. Cline	1,505	5.5	5.32	4.40	1.70	23.6
June 22	Hughes & Gordon	1,057	6.0	3.15	6.50	1.45	8.0
Aug. 10	H. C. Hughes	1,605	7.5	2.80	1.66	1.30	3.5
Dec. 6	H. C. Hughes	1,046	6.0	1.99	1.00	1.20	2.0

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Daily Gauge Height and Discharge of Luluwissin Creek above Irrigation Ditches for 1915.

(Drainage area, 20 square miles)

[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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1									1.5	10	1.45	20
2									1.4	6	1.45	20
3									1.4	6	1.6	16
4									1.4	6	1.6	16
5									1.4	6	1.6	16
6									1.4	8	1.6	16
7									1.5	10	1.6	16
8									1.5	10	1.6	16
9									1.5	10	1.55	13
10							1.2	2	1.5	10	1.55	13
11							1.2	2	1.5	10	1.5	10
12							1.2	2	1.5	10	1.5	10
13							1.2	2	1.5	10	1.5	10
14							1.3	4	1.5	10	1.5	10
15							1.4	6	1.5	10	1.5	10
16							1.4	6	1.5	10	1.5	10
17							1.4	6	1.55	12	1.5	10
18							1.5	10	1.6	16	1.5	10
19							1.5	10	1.7	24	1.5	10
20							1.5	10	1.7	24	1.5	10
21							1.5	10	1.75	29	1.45	6
22							1.5	10	1.75	29	1.4	6
23							1.5	10	1.75	29	1.4	6
24							1.5	10	1.7	24	1.45	8
25							1.5	10	1.7	24	1.5	10
26							1.5	10	1.7	24	1.5	10
27							1.5	10	1.7	24	1.5	10
28							1.5	10	1.65	20	1.5	10
29							1.5	10	1.65	20	1.45	8
30							1.5	10	1.65	20	1.45	8
31							1.5	10	1.65	20	1.45	8

[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	1.45	8.1	1.40	6.2	1.25	2.6	1.20	2.0	1.25	2.8	1.15	1.6
2	1.40	6.2	1.35	5.0	1.25	2.8	1.20	2.0	1.25	2.8	1.15	1.6
3	1.40	6.2	1.25	5.0	1.25	2.6	1.20	2.0	1.25	2.6	1.20	2.0
4	1.40	6.2	1.35	5.0	1.25	2.6	1.20	2.0	1.25	2.6	1.20	2.0
5	1.40	6.3	1.20	2.7	1.25	2.8	1.25	2.6	1.20	2.0	1.20	2.0
6	1.40	6.2	1.20	2.7	1.25	2.6	1.25	2.8	1.20	2.0	1.20	2.0
7	1.40	6.2	1.30	3.7	1.25	2.6	1.20	2.0	1.20	2.0	1.20	2.0
8	1.40	6.2	1.30	3.7	1.25	2.6	1.20	2.0	1.20	2.0	1.20	2.0
9	1.40	6.2	1.30	2.7	1.25	2.6	1.20	2.0	1.20	2.0	1.55	1.6
10	1.35	5.0	1.30	3.7	1.25	2.8	1.20	2.0	1.20	2.0	1.15	1.6
11	1.25	5.0	1.20	2.7	1.25	2.8	1.20	2.0	1.20	2.0	1.15	1.6
12	1.35	5.0	1.30	3.7	1.25	2.8	1.20	2.0	1.20	2.0	1.15	1.6
13	1.35	6.0	1.30	2.7	1.25	2.8	1.20	2.0	1.15	1.6	1.15	1.6
14	1.35	5.0	1.20	2.7	1.25	2.8	1.20	2.0	1.15	1.6	1.15	1.6
15	1.35	5.0	1.30	3.7	1.25	2.8	1.20	2.0	1.15	1.6	1.15	1.6
16	1.35	5.0	1.30	3.7	1.25	2.8	1.20	2.0	1.10	1.2	1.20	2.0
17	1.35	5.0	1.30	3.7	1.20	2.0	1.20	2.0	1.10	1.2	1.20	2.0
18	1.35	5.0	1.30	3.7	1.20	2.0	1.20	2.0	1.10	1.2	1.20	2.0
19	1.35	5.0	1.30	3.7	1.20	2.0	1.20	2.0	1.10	1.2	1.15	1.6
20	1.25	5.0	1.30	3.7	1.20	2.0	1.20	2.0	1.15	1.6	1.15	1.6
21	1.35	5.0	1.30	2.7	1.20	2.0	1.20	2.0	1.15	1.6	1.15	1.6
22	1.20	3.7	1.20	3.7	1.20	2.0	1.20	2.0	1.20	2.0	1.20	2.0
23	1.30	3.7	1.30	3.7	1.20	2.0	1.25	2.8	1.20	2.0	1.20	2.0
24	1.30	2.7	1.25	2.6	1.15	1.6	1.25	2.8	1.20	2.0	1.20	2.0
25	1.30	2.7	1.25	2.8	1.15	1.6	1.25	2.6	1.20	2.0	1.20	2.0
26	1.30	3.7	1.25	2.8	1.15	1.6	1.25	2.6	1.15	1.6	1.20	2.0
27	1.25	5.0	1.20	2.0	1.15	1.6	1.25	2.8	1.15	1.6	1.20	2.0
28	1.40	6.3	1.20	2.0	1.15	1.6	1.25	2.6	1.15	1.6	1.20	2.0
29	1.40	6.3	1.20	2.0	1.15	1.6	1.25	2.8	1.15	1.6	1.15	1.6
30	1.40	6.2	1.25	2.8	1.15	1.6	1.25	2.6	1.15	1.6	1.15	1.6
31	1.40	6.2	1.25	2.6	1.15	1.6	1.25	2.8	1.15	1.6	1.15	1.6

## Monthly Discharge of Luluwissin River above Irrigation Ditches for 1915.

(Drainage area, 30 square miles.)

MONTH.	DISCHARGE IN SECOND-FOOT.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
May...	29.0	6.0	18.50	0.78	0.90	953
June...	20.0	6.0	11.50	0.48	0.64	684
July....	8.1	3.7	5.39	0.27	0.31	331
August..	6.3	2.0	3.90	0.18	0.21	221
September	2.8	1.6	2.23	0.12	0.12	139
October..	2.6	2.0	2.29	0.11	0.13	141
November	2.8	1.6	1.87	0.09	0.10	111
December	2.0	1.6	1.81	0.09	0.10	111
The period....	29.0	1.6	5.54	0.28	3.53	3,891

NOTE.—Station maintained throughout the irrigation season and also till end of year for storage data.

## LILLOOET RIVER.—(1038).

*Location.*—Government highway bridge at Agerton, 1½ mile from Pemberton, and 8 miles above Lillooet lake.

*Records Available.*—Daily discharges from November 16, 1913, to December 31, 1915. (Records for 1915 are given herein; preceding records are tabulated in previous reports.)

*Drainage Area.*—Eight hundred square miles.

*Gauge.*—Vertical staff gauge nailed to the central pier of the bridge. Daily gauge readings are taken by Mr. N. J. Baker, of Pemberton, B.C.

*Channel.*—Wide and deep, with smooth sandy bottom. An excellent measuring section.

*Discharge Measurements.*—Twelve meter measurements taken during 1914 and 1915 give a well defined rating curve.

*Winter Flow.*—The stream is affected by ice conditions during the winter months.

*Accuracy.*—"A."

## Discharge Measurements of Lillooet River 6 Miles above Lillooet Lake for 1915.

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
Feb. 8	Dobbie & Hughes	1,057	175	460	1.72	2.08	778
Feb. 22	Dobbie & Hughes	1,057	175	368	1.95	1.90	712
May 24	C. G. Cline	1,505	181	1,827	3.38	5.35	5,170
June 12	Hughes & Gordon	1,057	188	1,783	4.26	7.25	7,980
Aug. 4	H. C. Hughes	1,505	191	2,220	5.10	8.80	11,200
Dec. 1	H. C. Hughes	1,046	175	444	2.00	1.50	886

ice cover.

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Daily Gauge Height and Discharge of Lillooet River 6 Miles above Lillooet Lake  
for 1915.

(Drainage area, 800 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	2.3	2,470	2.0	700	1.2	900	2.0	2,670	3.2	2,670	5.0	4,930
2	2.5	2,470	2.0	700	1.2	900	3.4	2,990	3.1	2,770	6.4	5,440
3	3.7	2,280	2.0	700	1.3	1,000	3.1	5,050	2.1	2,770	5.4	5,440
4	2.7	2,280	2.0	700	1.3	1,000	4.8	4,320	3.5	3,200	6.8	7,480
5	2.8	2,280	2.0	700	1.3	1,000	4.0	2,780	3.8	3,530	7.3	8,420
6	2.4	2,090	2.0	700	1.3	1,000	2.7	3,420	5.4	5,440	7.6	9,030
7	2.3	2,000	2.0	700	1.2	900	3.3	3,200	7.0	7,850	7.6	9,030
8	2.3	2,000	2.0	700	1.2	900	3.2	2,870	6.8	7,480	7.0	7,850
9	2.0	1,700	2.1	700	1.2	900	3.0	2,670	6.8	7,480	6.4	6,440
10	2.0	1,700	2.0	700	1.2	900	3.0	2,670	6.4	6,840	5.9	6,110
11	1.5	1,800	1.5	700	1.3	1,000	3.4	2,990	6.0	6,250	6.0	6,250
12	1.5	1,500	1.0	700	1.2	1,000	2.4	2,990	5.3	5,210	6.9	7,880
13	1.3	1,200	1.0	700	1.2	1,000	3.9	2,640	8.2	5,180	6.9	7,660
14	1.6	1,200	1.0	700	1.5	1,200	3.8	3,100	5.0	4,930	7.3	8,420
15	1.3	1,000	1.0	700	2.1	1,800	3.5	3,200	4.9	4,810	8.1	10,210
16	1.3	1,000	1.0	700	2.1	1,800	4.0	3,750	4.8	4,690	6.3	10,700
17	1.3	1,000	1.0	700	2.2	1,900	4.3	4,080	4.5	4,320	8.2	10,480
18	1.3	1,000	1.0	700	2.3	2,000	4.6	4,440	4.5	4,320	7.6	9,030
19	1.2	900	1.0	700	2.5	2,190	4.6	4,440	5.4	5,440	7.3	8,420
20	1.2	900	1.0	700	2.6	2,280	4.5	4,320	5.8	5,970	7.5	8,820
21	1.1	800	1.0	700	2.8	2,470	4.6	4,320	6.2	5,840	7.6	9,030
22	1.0	700	1.0	700	3.0	2,670	4.2	3,970	6.9	6,110	8.0	9,970
23	1.0	700	1.0	700	3.0	2,670	4.0	3,750	6.7	5,830	8.0	9,970
24	1.0	700	1.1	800	2.0	2,670	4.0	3,750	5.4	5,440	8.1	10,210
25	1.2	700	1.2	900	2.8	2,470	3.8	3,530	5.4	5,440	7.5	8,820
26	1.2	700	1.2	900	2.8	2,470	3.8	3,530	5.4	5,440	7.1	8,040
27	1.2	700	1.2	900	2.5	2,190	3.7	3,120	5.4	5,440	7.4	8,620
28	1.3	700	1.2	900	2.5	2,190	3.7	3,420	5.2	5,180	7.4	8,620
29	1.6	700	...	...	2.3	2,000	3.5	3,200	5.2	5,180	8.1	10,210
30	1.8	700	...	...	2.3	2,000	3.2	2,870	4.9	4,810	9.0	12,520
31	2.0	700	...	...	2.3	2,000	...	...	4.9	4,810	...	...

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	9.6	14,150	11.1	18,600	7.4	8,620	5.3	5,210	3.5	3,900	1.6	1,300
2	10.0	16,310	11.3	19,200	7.4	8,620	4.8	4,690	3.2	2,870	1.6	1,300
3	11.0	18,300	10.5	16,800	8.2	10,480	4.6	4,440	3.0	2,670	1.7	1,400
4	11.2	18,900	8.0	9,970	9.3	13,340	3.6	3,310	2.7	2,380	1.7	1,400
5	11.3	19,200	7.5	8,820	8.6	11,200	3.7	3,420	2.6	2,280	1.8	1,500
6	10.8	17,700	7.8	9,490	7.1	8,040	3.2	2,870	2.7	2,840	2.0	1,700
7	10.5	16,800	8.0	9,970	5.9	6,110	3.0	2,670	2.4	2,090	2.0	1,700
8	10.0	16,310	7.9	9,730	5.2	5,180	2.8	2,470	2.3	2,060	1.8	1,500
9	8.8	11,950	8.2	10,450	4.8	4,690	2.6	2,280	2.2	1,900	1.8	1,500
10	8.3	10,700	9.5	13,900	5.0	4,930	2.5	2,190	2.0	1,700	1.7	1,400
11	7.8	9,490	7.6	9,030	5.5	5,570	2.4	2,090	2.0	1,700	1.6	1,300
12	7.4	8,620	7.6	9,030	5.2	5,180	2.2	1,900	1.9	1,600	1.6	1,300
13	7.0	7,850	8.6	11,450	4.6	4,440	2.1	1,800	2.0	1,700	1.6	1,300
14	7.7	9,260	9.8	14,740	5.0	4,930	2.1	1,800	2.0	1,700	1.6	1,300
15	8.4	10,960	10.0	15,310	5.4	5,440	2.0	1,700	1.9	1,600	1.5	1,200
16	8.0	9,970	9.5	13,900	5.8	5,970	2.2	1,900	1.9	1,600	1.5	1,200
17	7.8	9,490	10.1	15,600	6.9	7,660	2.5	2,190	1.9	1,600	1.5	1,200
18	7.4	8,620	9.0	12,520	7.0	7,850	3.2	2,870	1.9	1,600	1.5	1,200
19	8.2	10,450	10.3	16,200	6.3	6,690	3.0	2,670	1.8	1,500	1.5	1,200
20	9.0	12,520	11.1	18,600	6.0	6,250	2.8	2,470	1.7	1,400	1.6	1,300
21	8.7	11,710	11.4	19,500	5.7	5,830	3.6	3,310	1.7	1,400	1.6	1,300
22	8.8	11,980	11.2	19,200	5.4	5,440	4.4	4,200	1.7	1,400	1.6	1,300
23	9.0	12,520	11.1	18,600	5.1	5,050	3.3	2,980	1.7	1,400	1.6	1,300
24	9.0	12,520	11.1	18,600	5.5	5,570	3.1	2,770	1.7	1,400	1.5	1,200
25	9.1	12,790	10.9	18,000	6.0	6,250	2.7	2,380	1.7	1,400	1.6	1,300
26	9.1	12,790	9.0	12,520	4.6	4,440	4.1	3,860	1.8	1,500	1.6	1,300
27	10.3	16,200	7.9	9,730	4.8	4,810	5.4	5,440	1.7	1,400	2.7	2,380
28	9.5	14,740	8.8	11,980	4.4	4,200	6.8	7,480	1.6	1,300	3.0	2,670
29	10.1	16,600	9.2	13,060	4.4	4,200	4.9	4,810	1.6	1,300	2.9	2,570
30	10.2	16,900	9.0	12,520	4.2	3,970	3.9	3,640	1.6	1,300	3.1	2,770
31	11.1	18,800	8.4	10,950	...	...	3.6	3,310	...	...	3.1	2,770

Note.—From January 23 to February 12, gauge raised because of ice conditions, no increase in the discharge.



*Monthly Discharge of Lillooet River 6 Miles above Lillooet Lake for 1915.*

(Drainage area, 800 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January.....	3,470	700	1,300	1.62	1.67	79,900
February.....	900	700	730	0.91	0.96	40,600
March.....	2,670	900	1,660	2.06	2.40	102,000
April.....	6,060	2,670	3,550	4.44	4.95	211,000
May.....	7,860	2,770	5,160	6.46	7.47	218,000
June.....	12,520	4,930	8,470	10.60	11.62	304,000
July.....	19,200	7,650	12,200	16.60	19.00	412,000
August.....	19,600	6,820	12,600	17.30	19.90	449,000
September.....	13,340	3,970	6,360	7.95	6.67	376,000
October.....	7,480	1,700	3,300	4.00	4.61	197,000
November.....	3,200	1,500	1,760	2.23	2.48	106,000
December.....	2,770	1,300	1,660	1.94	2.24	96,300
The year.....	19,600	700	6,065	6.24	68.57	2,692,700

PAVILION CREEK.—(1073).

*Location.*—Above the ditches, 22 miles above Lillooet.

*Records Available.*—Daily discharges from June 19 to September 30, 1915.

*Drainage Area.*—Eighty-two square miles, taken from the Provincial Government map, 1913.

*Gauge.*—Vertical staff gauge. Daily gauge readings are taken by Mr. C. A. Shaw.

*Channel.*—Wide and shallow. The bottom is of sand and gravel.

*Discharge Measurements.*—Three discharge measurements taken during 1915 define the rating curve fairly well.

*Winter Flow.*—Records kept only during the irrigation season.

*Accuracy.*—"B."

PAVILION CREEK.—(1073).

Pavilion creek rises in the mountains west of Pavilion, flows in a south-westerly direction and discharges into the Fraser river twenty-two miles above Lillooet. It drains Pavilion lake which is about three miles long and a third of a mile wide.

It has two large tributaries, both entering from the right. The total drainage area of Pavilion creek is 82 square miles.

The climate in the Pavilion creek valley resembles that of the Lillooet district generally. The summers are very hot, and the winters severe. The mean annual precipitation in the watershed is about ten inches.

The valley of Pavilion creek and its tributaries, and the adjacent benches on the Fraser river are well adapted to cultivation by irrigation; the water from the stream being used for this purpose. Some attempt has been made to regulate the flow to give sufficient water for the low water season. A small timber dam



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at the outlet of the lake stores the water which comes down during the spring and early summer freshets. When this water is required a sluice gate in the dam is opened and the water is allowed to flow down the natural channel of the stream to the irrigation ditches.

Considerable water is diverted from the tributaries which are above the gauging station.

The discharge data given for this stream is computed from the flow at the metering section and does not include water diverted above the section.

*Discharge Measurements of Pavilion Creek above Irrigation Ditches for 1915.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
June 19	Hughes & Gordon	1,087	14	10 0	2.08	1.45	21.0
Aug. 7	H. C. Hughes	1,505	13		9.5	1.77	18.3
Dec. 3	H. C. Hughes	1,045	8	1.6	0.70	0.71	1.1

*Daily Gauge Height and Discharge of Pavilion Creek above Ditches for 1915.*

(Drainage area, 52 square miles.)

Day.	June.		July.		August.		September.		October.		November.	
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1			1.3	13.0	1.45	21.0	1.3	13.0				
2			1.3	13.0	1.45	21.0	1.3	13.0				
3			1.3	15.0	1.45	21.0	1.3	13.0				
4			1.25	11.2	1.4	18.3	1.3	13.0				
5			1.25	11.2	1.4	18.3	1.3	13.0				
6												
7			1.2	9.4	1.35	15.6	1.3	13.0				
8			1.2	9.4	1.4	18.3	1.3	13.0				
9			1.2	9.4	1.4	18.3	1.25	11.2				
10			1.2	9.4	1.35	15.6	1.25	11.2				
11			1.15	8.0	1.3	13.0	1.3	13.0				
12			1.15	8.0	1.3	13.0	1.2	9.4				
13			1.2	9.4	1.3	13.0	1.15	8.0				
14			1.25	11.2	1.3	13.0	1.1	5.7				
15			1.3	13.0	1.3	13.0	1.1	6.7				
16			1.3	13.0	1.3	13.0	1.1	5.7				
17			1.25	11.2	1.35	15.6	1.05	5.7				
18			1.2	9.4	1.4	18.3	0.95	3.9				
19	1.45	21.0	1.2	9.4	1.4	18.3	0.9	3.2				
20	1.40	15.3	1.2	9.4	1.35	15.6	0.9	3.2				
21	1.55	15.5	1.15	8.0	1.35	15.6	1.45	21.0				
22	1.30	13.0	1.15	8.0	1.3	13.0	1.45	21.0				
23	1.30	13.0	1.15	8.0	1.3	13.0	1.45	21.0				
24	1.35	15.5	1.3	13.0	1.3	13.0	1.45	21.0				
25	1.30	13.0	1.3	13.0	1.3	13.0	0.9	5.2				
26	1.40	15.3	1.3	13.0	1.3	13.0	0.9	5.2				
27	1.45	21.0	1.4	18.3	1.25	11.2	0.55	2.6				
28	1.40	15.3	1.4	18.3	1.25	11.2	0.9	3.2				
29	1.35	15.5	1.45	21.0	1.25	11.2	0.9	3.2				
30	1.35	15.5	1.50	24.0	1.3	13.0	0.95	3.9				
31			1.45	21.0	1.3	13.0						

*Monthly Discharge of Pavilion Creek near Pavilion, B.C., for 1915.*

(Drainage area, 82 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
July..	24.0	8.0	12.10	0.15	0.17	744
August	21.0	11.2	15.00	0.18	0.21	922
September	21.0	2.6	9.75	0.12	0.13	580
The period	24.0	2.6	12.28	0.15	0.51	2,246

NOTE.—The station was established in June, 1915, and gauge readings were continued throughout the irrigation season; that is, to September 30, 1915.

SETON CREEK.—(1049).

*Location.*—At the foot bridge at the provincial hatchery,  $\frac{1}{2}$  mile below Seton lake, and 3 miles from Lillooet.

*Records Available.*—Daily discharges from April 6, 1914, to December 31, 1915. (Records for 1915 are given herein; those for 1914 are tabulated in a previous report.)

*Drainage Area.*—460 square miles, measured from the Provincial map of 1912 (scale 12 miles to the inch).

*Gauge.*—Vertical staff gauge nailed to bridge pier. Daily gauge readings are taken by Mr. J. B. Arthur of the Provincial hatchery, Lillooet, B.C.

*Channel.*—Wide and shallow, strewn with boulders. The current is very swift at the higher stages of the water.

*Discharge Measurements.*—Nine discharge measurements taken during 1914 and 1915 give a well defined rating curve.

*Winter Flow.*—Open water conditions all year.

*Accuracy.*—"B."

*Discharge Measurements of Seton Creek below Seton Lake for 1915.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
Feb. 12	H. C. Hughes	1,057	75	85	2.78	1.43	235
May 10	C. G. Cline	1,505	74	171	5.10	2.55	575
June 15	Gordon & Hughes	1,057	77	222	4.45	3.20	1,430
Aug. 6	H. C. Hughes	1,505	75	190	5.45	2.75	1,040
Dec. 2	H. C. Hughes	1,046	66	89	2.66	1.43	235

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Daily Gauge Height and Discharge of Seton Creek below Seton Lake for 1915.

(Drainage area, 460 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	1.6	300	1.4	230	1.4	230	1.4	230	2.2	620	3.0	1,260
2	1.6	300	1.4	230	1.4	230	1.4	230	2.2	620	3.0	1,260
3	1.6	300	1.4	230	1.4	230	1.4	230	2.2	620	3.0	1,260
4	1.6	300	1.4	230	1.4	230	1.5	260	2.2	620	3.0	1,260
5	1.6	300	1.4	230	1.4	230	1.5	260	2.2	620	2.9	1,170
6	1.6	300	1.4	230	1.4	230	1.5	260	2.3	690	2.9	1,170
7	1.6	300	1.4	230	1.4	230	1.5	260	2.3	690	3.0	1,260
8	1.6	300	1.4	230	1.3	200	1.6	300	2.4	760	3.0	1,260
9	1.6	300	1.4	230	1.3	200	1.6	300	2.5	840	3.0	1,260
10	1.6	300	1.4	230	1.3	200	1.6	300	2.6	920	3.1	1,350
11	1.6	300	1.4	230	1.3	200	1.6	300	2.6	920	3.1	1,350
12	1.6	300	1.4	230	1.3	200	1.6	300	2.7	1,000	3.2	1,440
13	1.6	300	1.4	230	1.3	200	1.6	300	2.7	1,000	3.2	1,440
14	1.6	300	1.4	230	1.3	200	1.7	350	2.7	1,000	3.2	1,440
15	1.6	300	1.4	230	1.3	200	1.7	350	2.8	1,080	3.2	1,440
16	1.6	300	1.4	230	1.3	200	1.8	400	2.8	1,080	3.2	1,440
17	1.6	300	1.4	230	1.3	200	1.8	400	2.9	1,170	3.2	1,440
18	1.6	300	1.4	230	1.3	200	1.9	450	2.9	1,170	3.2	1,440
19	1.6	300	1.4	230	1.3	200	1.9	450	2.9	1,170	3.3	1,660
20	1.6	300	1.4	230	1.3	200	1.9	450	2.9	1,170	3.3	1,550
21	1.5	260	1.4	230	1.3	200	1.9	450	2.9	1,170	3.4	1,660
22	1.5	260	1.4	230	1.3	200	2.0	500	3.0	1,260	3.4	1,660
23	1.5	260	1.4	230	1.3	200	2.0	500	3.0	1,260	3.4	1,660
24	1.4	230	1.4	230	1.4	230	2.1	560	3.0	1,260	3.4	1,660
26	1.4	230	1.4	230	1.4	230	2.1	560	3.1	1,350	3.4	1,660
26	1.4	230	1.4	230	1.4	230	2.2	620	3.1	1,350	3.4	1,660
27	1.4	230	1.4	230	1.4	230	2.2	620	3.1	1,350	3.4	1,660
28	1.4	230	1.4	230	1.4	230	2.2	620	3.1	1,350	3.4	1,660
29	1.4	230	1.4	230	1.4	230	2.1	560	3.1	1,350	3.3	1,650
30	1.4	230	1.4	230	1.4	230	2.2	620	3.1	1,350	3.3	1,650
31	1.4	230	1.4	230	1.4	230	2.2	620	3.1	1,360		
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	3.3	1,550	3.0	1,260	2.8	1,080	1.7	350	1.5	260	1.4	230
2	3.3	1,550	3.1	1,350	2.7	1,000	1.7	350	1.5	260	1.4	230
3	3.3	1,550	3.2	1,440	2.6	920	1.7	350	1.5	260	1.4	230
4	3.3	1,550	3.2	1,440	2.6	920	1.7	350	1.5	260	1.4	230
5	3.4	1,660	3.2	1,440	2.5	840	1.6	300	1.6	300	1.4	230
6	3.4	1,660	2.8	1,080	2.5	840	1.6	300	1.6	300	1.4	230
7	3.6	1,760	2.9	1,170	2.4	760	1.6	300	1.6	300	1.4	230
8	3.6	1,760	2.6	1,080	2.3	690	1.6	300	1.6	300	1.4	230
9	3.6	1,760	2.8	1,080	2.3	690	1.6	300	1.5	260	1.4	230
10	3.5	1,760	2.8	1,080	2.2	620	1.6	300	1.5	260	1.4	230
11	3.4	1,660	2.8	1,080	2.2	620	1.5	260	1.5	260	1.4	230
12	3.4	1,660	2.8	1,080	2.2	620	1.5	260	1.6	260	1.4	230
13	3.4	1,660	2.8	1,080	2.1	560	1.5	260	1.6	260	1.6	260
14	3.3	1,660	2.7	1,000	2.1	560	1.5	260	1.6	260	1.6	260
15	3.3	1,550	2.7	1,000	2.0	500	1.4	230	1.5	260	1.6	260
16	3.3	1,550	2.7	1,000	2.0	500	1.4	230	1.5	260	1.5	260
17	3.3	1,550	2.8	1,080	2.0	500	1.4	230	1.5	260	1.7	350
18	3.2	1,440	2.8	1,080	2.0	500	1.4	230	1.6	260	1.7	350
19	3.0	1,260	2.8	1,080	1.9	450	1.4	230	1.6	260	1.6	300
20	3.0	1,260	2.8	1,080	1.9	450	1.3	200	1.5	260	1.6	300
21	3.0	1,260	2.8	1,080	1.9	450	1.3	200	1.4	230	1.6	300
22	3.0	1,260	2.7	1,000	1.9	450	1.3	200	1.4	230	1.6	300
23	3.0	1,260	2.7	1,000	1.9	450	1.3	200	1.4	230	1.6	300
24	3.0	1,260	2.8	1,080	1.8	400	1.3	200	1.4	230	1.6	300
26	3.0	1,260	2.8	1,080	1.8	400	1.3	200	1.4	230	1.6	300
26	3.0	1,260	2.8	1,080	1.8	400	1.3	200	1.4	230	1.6	300
27	3.0	1,260	2.8	1,080	1.8	400	1.4	230	1.4	230	1.6	300
28	3.1	1,350	2.6	1,080	1.7	350	1.5	260	1.4	230	1.6	300
29	3.1	1,350	2.8	1,080	1.7	350	1.5	260	1.4	230	1.6	300
30	3.1	1,350	2.8	1,080	1.7	350	1.5	260	1.4	230	1.6	300
31	3.1	1,350	2.8	1,080	1.7	350	1.5	260	1.4	230	1.6	300

*Monthly Discharge of Seton Creek below Seton Lake for 1915.*

(Drainage area, 460 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January.....	300	230	276	0.60	0.69	17,100
February.....	330	230	230	0.50	0.63	12,600
March.....	230	200	216	0.47	0.64	13,300
April.....	620	330	400	0.37	0.97	33,600
May.....	1,360	620	1,040	3.36	3.61	63,900
June.....	1,660	1,170	1,460	3.16	3.63	66,300
July.....	1,760	1,260	1,480	3.22	3.71	91,000
August.....	1,440	1,000	1,130	3.44	3.61	66,900
September.....	1,080	360	667	1.28	1.43	34,900
October.....	360	200	260	0.66	0.66	16,000
November.....	300	230	265	0.66	0.66	16,200
December.....	360	230	270	0.69	0.66	16,600
The year.....	1,760	200	632	1.38	16.76	469,700

**SIX MILE CREEK.—(1061).**

*Location.*—At the highway bridge 1 mile from the mouth, 5 miles from Pemberton, and 56 miles from Squamish.

*Records Available.*—Daily discharges from June 2, 1914, to April 30, 1915. (Records for 1915 are given herein; those for 1914 are tabulated in a previous report.)

*Drainage Area.*—Thirty square miles (measured from the Provincial map of 1913, scale 3 miles to the inch).

*Gauge.*—Vertical staff gauge on bridge pier. Daily gauge readings are taken by Mr. C. E. Dobbie.

*Channel.*—Wide and shallow. Strewn with boulders and coarse gravel. The current is very swift.

*Discharge Measurements.*—Five meter measurements made during 1914-15 give a well defined rating curve, except for very high stages of the water.

*Winter Flow.*—The stream is affected by ice only during the extreme cold weather.

*Accuracy.*—"C."

*Discharge Measurements of Six Mile Creek near Mouth for 1915.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
Jan. 19	C. E. Dobbie.....	1.067	21	19.6	3.33	1.33	57.3 <sup>1</sup>
Feb. 6	Dobbie & Hughes.....	1.067	22	26.0	1.67	1.13	43.9 <sup>1</sup>
Mar. 17	C. E. Dobbie.....	1.057	63	72.0	3.30	1.90	164.0 <sup>2</sup>
Mar. 16	C. E. Dobbie.....	1.067	41	68.0	3.60	1.90	203.0 <sup>2</sup>
April 12	C. E. Dobbie.....	1.057	42	76.6	5.45	2.66	416.0 <sup>2</sup>
April 20	C. E. Dobbie.....	1.067	44	96.0	6.60	3.96	668.0 <sup>2</sup>
April 29	Cline & Dobbie.....	1.057	43	78.8	4.70	2.43	370.0 <sup>2</sup>
May 26	C. G. Cline.....	1.605	43	71.6	6.80	2.85	413.0 <sup>2</sup>

<sup>1</sup> Section below highway bridge, wading measurements.

<sup>2</sup> Foot bridge.

<sup>3</sup> Highway bridge.

<sup>4</sup> Foot bridge surface velocities.

SESSIONAL PAPER No. 25a

Daily Gauge Height and Discharge of Six Mile Creek 5 Miles from Pemberton for 1915.

(Drainage area, 30 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	1.40	80	.....	53	1.13	48	2.05	215	.....	.....	.....	.....
2	.....	30	1.20	50	1.30	50	.....	560	.....	.....	.....	.....
3	1.40	30	1.15	48	1.17	47	3.4	910	.....	.....	.....	.....
4	1.28	57	1.18	48	.....	48	.....	575	.....	.....	.....	.....
5	1.35	72	1.15	46	1.20	50	2.7	440	.....	.....	.....	.....
6	.....	72	.....	44	1.25	57	2.55	370	.....	.....	.....	.....
7	1.35	72	1.13	43	1.25	57	2.55	370	.....	.....	.....	.....
8	.....	72	.....	43	1.15	45	.....	330	.....	.....	.....	.....
9	1.35	72	1.13	43	1.38	77	2.3	290	.....	.....	.....	.....
10	1.35	72	1.13	43	1.25	57	2.2	260	.....	.....	.....	.....
11	.....	54	1.10	40	1.30	65	2.3	290	.....	.....	.....	.....
12	.....	58	.....	37	1.30	65	2.55	370	.....	.....	.....	.....
13	1.20	50	1.05	35	1.30	65	2.55	370	.....	.....	.....	.....
14	1.30	65	1.10	40	.....	148	2.4	320	.....	.....	.....	.....
15	1.20	50	1.10	40	2.10	230	2.35	305	.....	.....	.....	.....
16	1.30	65	1.10	40	1.9	180	2.55	370	.....	.....	.....	.....
17	1.25	57	1.13	43	1.9	180	2.75	465	.....	.....	.....	.....
18	1.25	57	1.13	43	.....	190	2.55	515	.....	.....	.....	.....
19	1.25	57	.....	40	2.00	200	2.95	570	.....	.....	.....	.....
20	1.25	57	1.08	38	1.95	190	2.95	570	.....	.....	.....	.....
21	1.10	40	1.10	40	2.15	245	2.55	370	.....	.....	.....	.....
22	.....	48	.....	40	2.45	335	2.45	335	.....	.....	.....	.....
23	1.25	57	1.10	40	2.50	350	2.45	335	.....	.....	.....	.....
24	1.20	50	1.10	40	2.30	290	2.50	350	.....	.....	.....	.....
25	1.15	45	1.13	43	2.10	230	2.35	305	.....	.....	.....	.....
26	1.20	50	1.20	50	1.95	190	2.45	335	.....	.....	.....	.....
27	1.25	57	.....	48	1.85	170	2.40	320	.....	.....	.....	.....
28	1.25	57	1.15	45	1.85	170	2.30	290	.....	.....	.....	.....
29	1.30	55	.....	.....	1.85	170	2.45	335	.....	.....	.....	.....
30	1.25	57	.....	.....	1.90	180	2.28	285	.....	.....	.....	.....
31	1.25	57	.....	.....	1.95	190	.....	.....	.....	.....	.....	.....

Monthly Discharge of Six Mile River 5 Miles from Pemberton for 1915.

(Drainage area, 30 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January.....	30	40	51	2.03	2.34	3,750
February.....	55	35	43	1.43	1.49	2,390
March.....	350	47	147	4.90	5.55	9,040
April.....	910	215	394	13.13	14.55	23,400
The period.....	910	35	181	5.37	24.13	38,530

NOTE.—Discontinued April 30th, 1915.

## SOO RIVER.—(1037).

*Location.*—At the highway bridge, 2 miles from the mouth,  $6\frac{1}{2}$  miles from Pemberton, and 56 miles from Squamish.

*Records Available.*—Daily discharges from December 5, 1914, to April 30, 1915. (Records for 1915 are given herein; those for 1914 are tabulated in a previous report.)

*Drainage Area.*—Seventy-five square miles (measured from the Provincial map of 1912, scale 3 miles to the inch).

*Gauge.*—Vertical staff gauge on bridge pier. The gauge readings are taken daily by C. E. Dobbie.

*Channel.*—Wide and shallow, strewn with boulders, gravel and silt. The current is fairly swift.

*Discharge Measurements.*—Seven meter measurements made in 1915 give a well defined rating curve.

*Winter Flow.*—The measuring section is usually frozen over and the channel is affected by ice during the winter.

*Accuracy.*—"B."

*Discharge Measurements of Soo River 1 Mile above Mouth for 1915.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
Jan. 20	C. E. Dobbie . . . . .	1,057	79	353	0.52	1.30	60.7 <sup>1</sup>
Feb. 4	Dobbie & Hughes	1,057	74	100	0.72	0.35	72.1
Mar. 20	C. E. Dobbie . . . . .	1,057	85	230	1.80	1.18	425.0
Mar. 24	C. E. Dobbie . . . . .	1,057	99	267	2.40	1.60	658.0
April 5	C. E. Dobbie . . . . .	1,057	108	306	2.90	1.75	897.0
April 2	Cline & Dobbie	1,057	102	254	2.00	3.00	496.0 <sup>2</sup>
May 28	C. G. Cline . . . . .	1,508	100	253	3.20	3.60	803.0 <sup>2</sup>

<sup>1</sup> Ice cover

<sup>2</sup> Subsidiary gauge.

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Daily Gauge Height and Discharge of Soo River near Pemberton for 1915.

Drainage area, 75 square miles.

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	2 30	130		75	2 20	76	2 95	465				
2		100	2 50	75	2 20	75		1,060				
3	2 20	75	2 20	75	2 20	75	5 00	1,630				
4	2 20	75	2 20	75		87		1,260				
5	2 20	75		58	2 25	100	3 75	905				
6		75	2 15	50	2 28	120	3 50	765				
7	2 20	75	2 15	50	2 30	130	3 50	765				
8		75	3 15	50	2 30	130		670				
9	2 20	75	3 15	50		130		580				
10	2 20	75	2 15	50	2 30	130	3 00	490				
11		75	3 15	50		130	3 30	650				
12		75		50	2 30	130	3 75	905				
13	2 20	75	2 15	50	2 30	130	3 80	930				
14	2 20	75	2 15	50		230	3 40	710				
15		190	2 15	50		330	3 40	710				
15	2 45	205	2 15	50	2 90	440	3 40	710				
17	2 30	75	2 15	50		455	3 80	930				
18	2 30	75	2 15	50		470	2 90	990				
19		75		37	3 00	490	4 00	1,045				
20	2 20	75	2 10	25	2 83	398	3 90	990				
21		75	2 15	55	3 05	512	3 40	710				
22		75		70		580	3 30	550				
23	3 50	75	3 20	75	3 65	850	3 20	500				
24	4 00	75	2 20	75	3 32	660	3 30	550				
25	4 50	75	2 23	90	2 95	465	3 10	545				
25	4 80	75	2 20	75	2 95	405	3 23	515				
27	5 00	75		75	2 75	257		570				
28	5 30	75	2 20	75	2 75	257	3 08	525				
29	5 00	75			2 75	257		505				
30		75			2 84	400	3 00	490				
31	3 30	75			2 83	398						

NOTE.—January 23 to February 2 gauge raised because of ice.

Monthly Discharge of Soo River near Pemberton for 1915.

(Drainage area, 75 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January	305	75	85	1.13	1.30	5,230
February	90	25	61	0.81	0.84	3,390
March	850	75	303	4.04	4.55	18,600
April	1,530	455	787	10.23	11.41	45,500
The period	1,630	25	304	4.05	18.21	72,830

NOTE.—Discontinued April 30th, 1915.

## TEXAS CREEK.—(1044).

*Location.*—At the highway bridge, 14 miles from Lillooet, on the west bank of the Fraser river.

*Records Available.*—Daily discharges from April to September, 1914, and from April to September, 1915. (Records for 1915 are given herein; those for 1914 are tabulated in a previous report.)

*Drainage Area.*—Fifty square miles (measured from the Provincial map of 1912, scale 12 miles to the inch).

*Gauge.*—Vertical staff gauge nailed to the bridge pier. Gauge readings are taken three times a week by Mr. C. Armstrong, of Lillooet, B.C.

*Channel.*—Wide and shallow, and covered with boulders. The measuring section is rather poor but it is the best obtainable.

*Discharge Measurements.*—Four meter measurements taken during 1915 give a well defined rating curve.

*Winter Flow.*—Records kept only during the irrigation season.

*Accuracy.*—"C."

*Discharge Measurements of Texas Creek 1 Mile above Mouth for 1915.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
May 11	C. G. Cline.....	1,805	18	24.4	11.50	1.80	280.0
June 25	Hughes & Gordon.....	1,057	22	50.0	6.00	1.90	300.0
Aug. 10	H. C. Hughes.....	1,805	23	34.4	3.17	1.30	109.0
Dec. 5	H. C. Hughes.....	1,046	20	20.7	1.23	0.61	35.4





*Monthly Discharge of Texas Creek ½ Mile above Mouth, 14 Miles below Lillooet,  
for 1915.*

(Drainage area, 60 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
May . . . . .	300	183	223.0	7.04	8.13	21,300
June . . . . .	545	204	370.0	7.40	8.26	23,000
July . . . . .	410	180	281.0	6.33	8.43	17,300
August . . . . .	120	77	130.0	3.30	3.00	7,900
September . . . . .	70	42	83.1	1.04	1.13	3,100
The period . . . . .	345	43	237.0	4.74	27.03	73,050

NOTE.—Station maintained only during irrigation season, May to September, 1916.

### VANCOUVER ISLAND DISTRICT.

#### BIG QUALICUM RIVER.—(1032).

*Location.*—One thousand feet upstream from Esquimalt and Nanaimo Railway bridge. Twenty miles from Parksville.

*Records Available.*—Daily discharges, March 23, 1913, to April 30, 1914, May 21, 1914, to December 31, 1915. (Records for 1915 are given herein; preceding records are tabulated in previous reports.)

*Drainage Area.*—Sixty-two square miles.

*Gauge.*—Eighteen foot wooden staff, location on left bank about one hundred feet above railroad bridge; read daily by Mr. Leon Becque.

*Channel.*—Even gravel bed. Channel straight for 300 feet above and below section.

*Discharge Measurements.*—One in 1913 by Provincial Water Rights Branch, four in 1914 and three in 1915. Covering all but highest stage.

*Winter Flow.*—Open all year.

*Accuracy.*—"B" (up to discharge of 450 cubic feet per second), "C" (above 450 cubic feet per second).

*Co-operation.*—Gauge installed in 1913 by Provincial Water Rights Branch, and records to April 30, 1914, supplied by that branch.

#### *Discharge Measurements of Big Qualicum River at 1½ Mile above Mouth for 1915.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec. ft.
April 18	Milner & Webb . .	1,057	64	96.2	3.26	8.65	314.0
Sept. 4	H. C. Hughes . . .	1,505	28	17.4	1.39	1.27	24.3
Nov. 1	Webb & Balla . . .	1,057	68	148.0	5.26	8.65	778.0

<sup>1</sup> Not at regular section.

SESSIONAL PAPER No. 26a

Daily Gauge Height and Discharge of Big Qualicum River 1½ Mile above Mouth for 1915.

(Drainage area, 62 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	3.2	140	2.3	170	3.4	300	3.6	280	2.1	120	2.0	100
2	3.6	380	2.3	170	2.4	200	3.2	500	2.1	130	2.0	100
3	3.6	410	2.2	140	2.4	300	3.4	660	2.1	120	1.8	88
4	2.3	380	3.2	140	2.4	200	3.2	580	2.1	120	1.8	83
6	2.6	360	2.2	140	2.4	300	3.1	510	2.0	100	1.9	83
6	2.7	320	2.4	200	2.4	200	3.0	480	2.0	100	1.8	88
7	2.7	320	2.6	260	2.4	200	3.0	480	2.0	100	1.8	70
8	2.6	360	2.7	320	2.4	300	2.9	410	2.0	100	1.8	70
8	2.5	360	2.7	320	2.3	170	2.5	360	2.0	100	1.8	70
10	2.9	410	2.7	320	2.3	170	2.5	380	2.1	120	1.8	70
11	3.5	610	2.6	280	2.3	170	2.7	320	2.1	130	1.8	70
12	3.3	620	2.6	260	2.3	170	2.7	320	2.1	120	1.7	70
13	3.1	610	2.7	320	2.3	170	2.7	320	2.1	130	1.7	65
14	3.2	660	2.7	320	2.3	170	2.7	220	2.1	120	1.7	63
15	3.0	460	2.7	320	2.3	360	2.7	320	2.1	120	1.7	33
16	2.6	410	2.7	320	2.8	260	2.5	280	2.1	120	1.7	53
17	2.6	360	2.9	410	3.0	460	2.6	280	2.0	100	1.7	58
18	2.7	320	2.6	360	3.0	460	2.5	240	2.0	100	1.7	58
19	2.7	320	2.5	280	3.0	460	2.5	240	2.0	100	1.7	56
20	2.5	350	2.5	340	2.9	410	2.4	200	2.0	100	1.5	45
21	2.5	240	2.5	340	2.9	410	2.4	200	2.0	100	1.5	46
22	2.4	200	2.5	240	2.6	350	2.4	200	2.0	100	1.6	46
23	2.4	200	2.5	240	2.6	360	2.3	170	2.0	100	1.6	46
24	2.3	170	2.5	240	2.7	320	2.3	170	2.0	100	1.6	46
25	2.2	170	2.5	240	2.5	260	2.3	170	2.0	100	1.6	45
26	2.3	170	2.5	240	2.5	280	2.2	140	2.0	100	1.6	46
27	2.3	170	2.5	240	2.6	240	2.2	140	2.0	100	1.5	36
28	2.2	140	2.4	200	2.5	240	2.2	140	2.0	100	1.5	36
29	2.2	140	2.0		2.5	340	2.1	120	2.0	100	1.5	36
30	2.2	140			2.5	240	2.1	120	2.0	100	1.5	35
31	3.2	140			2.5	240			2.0	100		

	July.		August.		September.		October.		November.		December.	
1	1.5	35	1.4	25	1.2	20	1.2	20	2.6	610	2.9	410
2	1.5	35	1.4	25	1.3	20	1.4	25	3.5	740	2.9	410
3	1.6	35	1.4	25	1.3	20	1.4	25	3.3	620	3.0	460
4	1.5	36	1.4	25	1.3	20	1.4	25	3.1	510	3.0	460
5	1.5	35	1.4	25	1.2	20	1.4	25	3.0	460	3.0	460
6	1.6	35	1.4	26	1.2	20	1.4	25	2.9	410	3.4	680
7	1.6	35	1.4	25	1.3	20	1.4	25	2.8	360	3.3	680
8	1.6	35	1.3	20	1.3	20	1.4	26	2.7	320	3.3	680
9	1.5	35	1.3	20	1.3	20	1.4	26	2.6	280	2.5	610
10	1.5	33	1.3	20	1.3	20	1.4	25	2.5	240	3.4	680
11	1.5	36	1.3	20	1.2	20	1.4	25	2.5	240	3.3	680
12	1.5	35	1.3	29	1.3	20	1.4	25	2.4	200	3.2	560
13	1.5	35	1.3	20	1.3	20	1.4	26	2.3	170	3.2	680
14	1.5	35	1.3	20	1.3	20	1.4	26	2.3	170	3.0	460
15	1.5	35	1.3	20	1.3	20	1.4	25	2.4	200	2.9	410
15	1.4	25	1.2	20	1.3	20	1.4	25	2.4	200	2.9	410
17	1.4	25	1.3	20	1.3	20	1.4	25	2.5	360	2.5	360
18	1.4	25	1.3	20	1.3	20	1.7	55	2.7	320	2.5	360
19	1.4	26	1.3	20	1.2	20	1.7	65	2.7	320	2.5	260
20	1.4	25	1.2	20	1.3	20	2.0	100	2.5	280	3.3	620
21	1.4	25	1.3	20	1.3	20	2.7	320	2.5	280	3.9	1,040
22	1.4	25	1.3	20	1.3	20	2.7	320	2.5	280	3.7	530
23	1.4	26	1.3	20	1.3	20	2.5	360	2.9	410	3.5	740
24	1.4	25	1.3	20	1.3	20	2.3	360	2.5	360	3.4	580
25	1.4	25	1.3	20	1.3	20	2.5	360	2.2	550	3.3	520
26	1.4	25	1.3	20	1.3	20	2.5	360	3.3	630	3.2	560
27	1.4	25	1.3	20	1.3	20	3.5	910	3.1	610	3.1	610
28	1.4	25	1.3	20	1.3	20	4.2	1,300	3.0	460	3.0	460
29	1.4	25	1.3	20	1.3	20	3.9	1,040	3.1	510		410
30	1.4	25	1.3	20	1.3	20	3.7	860	3.0	460		360
31	1.4	25	1.3	20			2.8	960			2.7	320

**Monthly Discharge of Big Qualicum River 1½ Mile above Mouth for 1915.**

(Drainage area, 82 square miles)

MONTH	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum	Minimum	Mean	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet
January	810	140	318.0	3.90	9.91	19,600
February	410	140	307.0	3.75	9.40	14,200
March	460	170	286.0	3.49	8.80	16,800
April	660	120	302.0	3.69	9.42	19,600
May	120	100	107.0	1.30	3.37	6,800
June	100	33	60.0	0.73	1.88	3,800
July	28	24	26.6	0.33	0.87	1,760
August	23	20	21.1	0.26	0.66	1,350
September	20	30	20.0	0.24	0.61	1,240
October	1,200	30	248.0	3.02	7.70	15,600
November	610	170	359.0	4.38	11.15	22,700
December	1,040	320	634.0	7.73	19.75	40,300
The year	1,300	20	215.0	2.62	6.67	155,000

**CAMPBELL RIVER.—(1042)**

*Location.*—At outlet from Campbell lake.

*Records Available.*—Daily discharges, May 10, 1910, to October 31, 1915. (Records for 1915 are given herein; preceding records are tabulated in previous reports.)

*Drainage Area.*—Seven hundred and eighty square miles.

*Gauge.*—Twelve-foot enamel staff in sections, located one thousand feet above measuring section. Read twice daily by James Forbes.

*Channel.*—Gravel and boulder bed. Channel straight for 200 feet above section. Rapids 100 feet below section.

*Discharge Measurements.*—Four in 1914, six in 1915, covering all stages.

*Winter Flow.*—Open all year.

*Accuracy.*—"B" (up to discharge of 4,000 cubic feet per second). "C" (above 4,000 cubic feet per second).

*Co-operation.*—Gauge records previous to June 2, 1914, supplied by Campbell River Power Company. A cable car was also established in conjunction with this power company.

*Discharge Measurements of Campbell River at Campbell Lake for 1915.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
May 16	H. C. Hughes	1,953	188	620	4.21	3.74	3,524
Aug. 6	C. G. Cline	1,048	107	490	2.80	1.60	1,260
Oct. 9	H. C. Hughes	1,505	97	455	1.54	1.15	536
Oct. 11	H. C. Hughes	1,505	97	428	1.88	1.01	716
Oct. 20	Webb & Balls	1,087	170	1,267	6.48	6.45	8,180
Oct. 27	Webb & Balls	1,087	171	1,520	7.87	8.10	11,500

Gauge lowered 1.0.  
New section for 1916 measurements

SESSIONAL PAPER No. 26a

Daily Gauge Height and Discharge of Campbell River at Lake for 1915.

(Drainage area, 730 square miles)

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
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	1.37	1,100	1.23	930	2.07	1,620	2.37	3,040	2.60	2,160	3.10	3,720
2	1.87	1,430	1.42	1,070	2.05	1,600	4.15	4,140	2.47	2,020	2.93	3,530
3	2.02	1,870	1.80	1,130	3.09	1,550	5.70	6,760	2.45	3,000	2.47	2,440
4	2.22	1,770	1.37	1,100	2.00	1,550	6.47	8,240	2.53	2,100	2.80	2,360
5	2.32	1,470	1.37	1,270	2.00	1,350	6.45	8,200	2.75	2,330	2.82	2,400
6	2.22	1,370	1.77	1,350	7.00	1,550	6.00	7,300	2.97	2,570	3.00	2,600
7	2.27	1,420	1.90	1,450	1.97	1,520	6.65	8,600	3.42	3,100	3.27	2,920
8	2.27	1,620	2.12	1,670	1.92	1,470	5.20	5,840	3.85	2,690	3.52	3,230
9	2.30	1,850	2.37	1,970	1.87	1,430	4.80	5,140	4.19	4,060	3.60	3,340
10	2.32	1,670	2.32	2,070	1.80	1,370	4.47	4,650	4.20	4,220	3.62	2,230
11	3.57	3,130	2.30	2,180	1.72	1,310	4.15	4,140	4.20	4,220	2.35	3,020
12	3.94	2,350	2.30	2,100	1.70	1,290	3.90	3,760	4.20	4,220	3.17	2,800
13	3.10	2,720	2.43	3,070	1.33	1,230	3.90	3,760	4.10	4,060	3.10	2,720
14	3.07	2,880	2.42	1,970	1.82	1,220	3.82	3,650	4.00	3,900	2.10	2,720
15	2.92	2,510	2.40	1,930	1.90	1,450	3.72	3,510	3.93	3,800	3.10	2,720
16	2.77	2,350	2.35	1,900	2.42	1,970	3.62	3,370	3.75	3,550	3.10	2,730
17	2.52	2,070	2.20	1,850	3.10	2,720	3.60	3,340	3.50	3,200	3.10	2,720
18	2.40	1,950	2.27	1,820	4.55	4,780	2.67	3,440	3.35	3,030	3.10	2,730
19	2.20	1,750	2.22	1,770	5.87	6,710	3.77	3,580	3.37	3,040	2.07	2,630
20	2.00	1,350	2.12	1,370	7.08	7,480	3.90	3,760	3.45	3,140	3.02	2,330
21	1.87	1,430	3.02	1,570	5.72	8,800	3.90	3,760	3.53	3,240	2.92	2,510
22	1.75	1,330	3.00	1,560	5.55	6,490	3.90	3,760	3.55	3,270	4.82	3,400
23	1.87	1,270	1.93	1,300	5.55	3,490	3.80	3,620	3.50	3,200	2.73	2,300
24	1.87	1,190	1.97	1,520	5.45	6,310	3.55	3,270	3.42	3,100	2.63	2,190
25	1.47	1,110	2.02	1,570	5.22	5,900	3.27	3,040	3.32	2,980	2.80	2,160
26	1.40	1,060	3.10	1,650	4.87	5,300	3.25	2,900	3.30	2,960	2.60	2,180
27	1.32	990	2.10	1,650	4.40	4,540	3.12	2,740	3.25	2,900	2.52	2,070
28	1.25	930	2.10	1,330	3.92	3,790	3.02	2,620	3.27	2,920	2.42	1,940
29	1.20	890	.....	.....	3.47	3,440	2.97	2,460	3.30	2,960	2.23	1,680
30	1.13	850	.....	.....	3.55	2,270	2.77	2,350	3.30	2,960	2.25	1,300
31	1.16	850	.....	.....	3.27	3,040	.....	.....	3.25	2,900	.....	.....

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	3.35	1,600	1.70	1,290	1.30	970	0.60	450	9.10	15,700	3.0	2,600
2	3.37	1,620	1.85	1,250	1.25	930	0.70	510	8.42	12,200	3.0	2,600
3	3.47	3,030	1.87	1,270	1.25	930	0.95	690	7.47	10,200	3.1	2,730
4	3.55	2,100	1.70	1,390	1.20	890	1.15	850	6.55	8,400	3.5	3,300
5	3.65	3,240	1.65	1,250	1.15	850	1.27	960	5.75	6,850	4.2	4,320
6	3.77	2,540	1.60	1,210	1.10	810	1.30	970	5.05	5,590	4.7	5,020
7	2.78	3,360	1.80	1,210	1.05	770	1.30	970	4.50	4,700	4.95	5,420
8	2.70	3,370	1.88	1,170	1.05	770	1.22	910	4.02	3,930	4.87	5,290
9	2.63	2,130	1.47	1,110	1.02	750	1.15	850	3.90	3,340	4.52	4,730
10	2.63	2,070	1.45	1,090	1.00	730	1.07	790	3.25	2,900	4.22	4,360
11	2.43	1,980	1.40	1,080	1.00	730	1.00	730	3.02	2,620	4.02	3,630
12	2.32	1,870	1.37	1,030	0.95	890	1.00	730	2.82	2,400	3.75	3,660
13	2.28	1,830	1.32	990	0.93	890	1.05	770	2.60	2,130	2.77	3,680
14	2.16	1,730	1.30	970	0.92	870	1.17	870	2.50	2,050	3.1	3,410
15	2.07	1,620	1.30	970	0.90	850	1.30	970	3.42	1,970	.....	.....
16	2.05	1,600	1.25	920	0.87	820	1.40	1,050	3.33	1,870	3.13	2,780
17	2.00	1,550	1.25	930	0.85	810	1.40	1,050	3.30	1,870	2.87	2,460
18	1.95	1,500	1.25	920	0.82	590	1.40	1,040	3.37	1,920	2.88	2,810
19	1.90	1,450	1.25	960	0.80	570	1.42	1,070	2.83	2,100	2.85	2,100
20	1.90	1,450	1.25	930	0.75	540	1.70	1,290	2.80	2,100	3.62	2,400
21	1.85	1,410	1.25	830	0.75	540	3.12	2,740	2.55	2,100	3.40	3,080
22	1.85	1,410	1.30	870	0.70	510	5.50	6,400	2.52	2,070	3.82	3,370
23	1.65	1,410	1.30	970	0.70	510	6.42	6,140	2.87	2,240	3.37	3,440
24	1.62	1,390	1.40	970	0.70	510	6.42	6,140	2.72	2,290	3.43	3,460
25	1.80	1,370	1.30	970	0.65	480	8.12	7,540	2.95	2,540	3.82	3,660
26	1.75	1,330	1.30	870	0.65	490	8.30	7,900	3.12	2,740	3.65	3,410
27	1.75	1,330	1.40	970	0.60	450	8.27	11,800	4.30	3,840	3.32	3,080
28	1.75	1,330	1.25	930	0.30	450	10.42	18,700	3.30	2,840	3.92	3,420
29	1.75	1,330	1.25	930	0.60	450	11.50	19,200	3.17	2,500	2.85	2,420
30	1.72	1,310	1.25	930	0.60	450	10.72	17,400	3.12	2,740	2.80	2,160
31	1.70	1,290	1.25	930	.....	.....	9.62	14,800	.....	.....	2.35	1,900

**Monthly Discharge of Campbell River near Lake for 1915.**  
(Drainage area, 780 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January	2,720	680	1,650	3.11	3.43	101,000
February	3,180	630	1,680	2.11	3.30	61,800
March	7,460	1,220	3,250	4.17	4.81	300,000
April	8,900	3,350	4,390	5.50	6.14	358,000
May	4,320	3,000	3,150	4.04	4.66	194,000
June	3,240	1,800	2,560	3.28	3.66	153,000
July	2,260	1,290	1,700	3.18	2.51	108,000
August	1,290	920	1,040	1.32	1.53	64,000
September	970	480	650	0.83	0.93	38,700
October	19,300	480	4,460	5.72	6.59	274,000
November	13,700	1,860	3,940	5.05	5.63	334,000
December	5,420	1,900	3,300	4.33	4.88	203,000
The year	19,200	480	3,640	3.26	48.67	1,913,300

**CHEMAINUS RIVER.—(1027).**

*Location.*—Upstream side of Esquimalt and Nanaimo Railway bridge, 5 miles from Chemainus—low water measurements made by wading.

*Records Available.*—Daily discharges May 13, 1914, to December 31, 1915. (Records for 1915 are given herein; those for 1914 are tabulated in a previous report.)

*Drainage Area.*—One hundred and twenty square miles.

*Gauge.*—Eighteen-foot wooden staff, located on left bank, 100 feet below bridge. Read daily by Mr. R. C. Mainguy.

*Channel.*—Straight for 150 feet above and 300 feet below section. Gravel and sand bed.

*Discharge Measurements.*—Six in 1914, three in 1915, covering all but highest stage.

*Winter Flow.*—Open all year.

*Accuracy.*—"A" (up to discharge of 600 cubic feet per second). "C" (above 600 cubic feet per second).

**Discharge Measurements of Chemainus River 1 Mile above Mouth for 1915.**

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
Mar. 30	Cline & Webb	1,633	110	531	1.80	4.15	925 0
Aug. 31	H. C. Hughes	1,595	34	15	0.67	1.93	10 8
Dec. 10	C. E. Webb	1,068	123	665	3.80	5.17	1,660 0

<sup>1</sup> Not at regular station.

SESSIONAL PAPER No. 25a

Daily Gauge Height and Discharge of Chemainus River 1 Mile above Mouth for 1915.

(Drainage area, 120 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	3.93	640	3.70	490		380	5.70	2,520		250	8.20	260
2	4.88	1,110	4.10	740	3.73	510	3.03	3,580	3.13	240	3.15	240
3	4.40	990	3.80	340	3.53	410	3.00	2,900	3.15	240	3.07	210
4	4.21	830	3.70	480	3.73	510		2,000	3.10	220	3.06	210
5	4.10	740	3.82	550	3.78	530	4.55	1,130	3.09	190	3.05	200
6												
7	3.80	540	4.80	1,400	3.85	570	4.35	940	3.08	210	3.00	190
8	3.93	620	4.80	1,400		550	4.34	930	3.08	210	3.00	190
9	5.30	2,640	4.80	1,180	3.73	530		910			2.95	180
10	5.33	2,320	4.52	1,170	3.69	470	4.30	900	3.18	250	2.98	170
11	5.53	2,710	4.40	980	3.49	380	4.28	880	3.20	260	2.90	160
12												
13	6.37	3,730	4.20	820	2.43	380	4.13	790	3.25	280	2.87	150
14	5.80	2,880	4.00	780	2.42	350	4.10	740	3.25	280	2.83	150
15	4.90	1,820	4.00	660	3.43	360	4.18	800	3.25	280	2.80	140
16	4.32	940	3.80	800	2.77	520	4.11	730	3.20	280	2.80	140
17	4.19	810	3.78	530	3.32	3,700	3.93	820	3.10	220	2.83	130
18												
19	4.00	660	3.85	480	5.15	1,820	3.88	580	3.05	200	2.75	130
20	3.90	800	4.10	740	5.37	2,080	3.84	580	3.05	210		130
21	3.80	340	4.14	770	5.00	1,840	3.78	530	3.00	190	2.75	130
22	3.72	490	4.00	860	4.30	900	3.74	500	3.00	190	2.73	130
23	3.80	480	3.81	550	4.30	900	3.70	480	3.00	190	2.80	140
24	3.55	410	3.70	480	4.42	1,000	3.60	430	3.10	220	2.73	140
25	3.45	380	2.85	480	4.53	1,180	3.80	430	3.22	270	2.75	130
26	3.35	380	2.65	480	4.53	1,180	3.40	348	3.25	280	2.70	130
27	3.35	280	3.76	580	3.90	800	3.30	300	3.28	290	2.68	110
28	3.22	270	4.28	880	4.45	1,030	3.20	280	3.29	290	2.64	110
29												
30	3.20	240	3.87	580	3.82	530	3.15	240	3.32	310	2.60	100
31	3.19	280	3.80	540	3.70	480	3.10	220	3.34	320	2.55	90
1	3.18	240	3.90	600	3.63	450	3.00	190	3.34	320	2.54	80
2	3.15	240			3.63	440	3.20	260	3.36	320	2.50	80
3	3.14	240			4.16	790	3.20	280	3.38	330	2.48	80
4	3.14	240			4.18	800			3.30	300		
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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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	2.48	72	2.82	44	1.94	12	2.03	16	5.70	2,520	4.42	1,020
2	2.41	32	2.32	44	1.92	12	2.03	16	4.78	1,360	3.85	570
3	2.38	36	2.30	40	1.92	11	2.40	69	4.34	930	5.20	1,880
4	2.36	56	2.26	36	1.92	11	2.29	39	4.08	720	5.80	2,380
5	2.38	58	2.34	34	1.92	11	2.10	20	4.00	680	5.90	2,700
6												
7	2.38	56	2.22	32	1.95	12	2.18	28	3.77	520	6.48	2,480
8	2.40	60	2.20	30	1.95	13	2.18	28	3.62	440	5.70	2,320
9	2.41	62	2.20	30	2.00	15	2.18	28	3.58	420	8.45	8,130
10	2.43	66	2.20	30	2.04	17	2.18	28	3.44	360	6.00	2,900
11	2.45	70	2.18	28	1.98	14		24	3.35	320	5.40	8,130
12												
13	2.45	70	2.13	23	1.98	14	2.00	15	3.30	300	5.00	1,040
14	2.43	66	2.10	20	2.00	15	2.05	17	3.20	260	4.90	1,320
15	2.43	66	2.10	20	2.03	16	2.04	17	3.27	290	4.52	1,100
16	2.42	64	2.10	20	2.03	17	2.22	39	3.07	210	4.31	1,090
17												
18	2.42	64	2.10	20	2.03	16	2.35	50	3.80	540	4.35	940
19	2.41	62	2.10	20	2.00	15	2.31	42	4.27	880	4.20	820
20	2.41	62	2.10	20	2.00	15	2.28	88	4.58	1,130	4.11	760
21	2.39	58	2.10	20	2.00	15	2.45	70	5.04	1,690	4.25	880
22	2.38	58	2.07	18	2.03	16	3.80	260	3.40	340	5.00	2,900
23												
24	2.38	56	2.07	18	2.04	17	4.00	560	4.21	830	5.81	3,950
25	2.34	48	2.07	18	2.04	17	3.85	570	3.40	340	6.31	3,290
26	2.30	40	2.07	18	2.07	18	3.70	480	5.08	1,740	5.22	1,900
27	2.30	40	2.07	18	2.00	20	4.40	980	5.08	1,740	4.89	1,510
28	2.35	50	2.07	18	2.02	16	5.10	1,760	4.90	1,520	4.30	900
29												
30	2.34	46	2.04	17	2.02	16	6.40	8,400	5.90	2,730	4.37	960
31	2.34	48	2.04	17	2.02	16	5.87	2,480	4.45	1,080	4.20	820
1	2.34	48	2.04	17	2.02	16	6.55	3,810	4.11	730	4.20	320
2	2.35	50	2.04	17	2.02	16		2,370	4.40	980	4.10	740
3	2.35	50					5.57	2,340	4.43	980	4.00	300
4	2.35	50	2.00	15			7.25	4,520			4.99	1,820

**Monthly Discharge of Chemainus River 1 Mile above Mouth for 1915.**

(Drainage area, 120 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January	3,760	240	916	7.83	5.80	56,300
February	1,600	480	713	8.94	8.18	39,600
March	3,700	350	840	7.00	8.07	51,600
April	5,530	190	932	7.78	8.88	58,600
May	330	190	255	2.11	2.42	13,600
June	280	80	148	1.23	1.37	5,310
July	72	40	58	0.48	0.88	3,340
August	44	15	24	0.20	0.23	1,450
September	20	11	15	0.13	0.14	893
October	4,520	18	795	6.83	7.64	45,900
November	2,760	210	897	7.47	8.33	33,400
December	6,130	570	1,810	15.10	17.40	111,000
The year	6,130	11	617	5.14	69.80	448,923

**COWICHAN RIVER. (1054).**

*Location.*—Near outlet from Cowichan lake, 500 feet below Canadian Northern Pacific Railway bridge, except for low water.

*Records Available.*—Daily discharges January 31, 1913, to December 31, 1915. (Records for 1915 are given herein; preceding records are tabulated in previous reports.)

*Drainage Area.*—Two hundred and thirty-five square miles.

*Gauge.*—Twelve foot wooden staff at highway bridge at outlet from lake, near left bank. Gauge read twice daily by Mr. C. E. Sherwood and Mr. H. T. Hardinge.

*Channel.*—Gravel and small boulder bed. Channel straight for 200 feet above and below section.

*Discharge Measurements.*—Five in 1913, by Provincial Water Rights Branch, four in 1914 and four in 1915, covering all stages.

*Winter Flow.*—Open all year.

*Accuracy.*—"B"—*Note:*—The accuracy of 1914 discharges is not good owing to errors in gauge records.

*Co-operation.*—Provincial Water Rights Branch established station in 1913

**Discharge Measurements of Cowichan River at Cowichan Lake for 1915.**

Date.	Engineer	Meter No.	Width	Area of Section.	Mean Velocity.	Gauge Height.	Discharge
			Feet	Sq. ft.	Ft. per sec.	Feet	Sec. ft.
Mar. 23	Cline & Webb	1,933	191	1,310	1.60	4.65	2,080
Aug. 30	H. C. Hughes	1,505	170	1,150	0.72	0.61	1,000
Dec. 9	C. E. Webb	1,058	199	1,780	2.71	7.54	4,820
Dec. 9	C. E. Webb	1,056	199	1,630	2.72	7.71	4,900

<sup>1</sup> Not at regular section



SESSIONAL PAPER No. 26a

Daily Gauge Height and Discharge of Cowichan River near Cowichan Lake for 1915.

(Drainage area, 234 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	3.30	1,280	3.40	1,240	4.00	1,740	4.50	2,120	3.10	1,160	2.16	655
2	3.30	1,400	3.50	1,400	4.00	1,740	5.20	2,700	3.00	1,100	2.14	642
3	3.30	1,600	3.60	1,460	3.90	1,670	5.80	2,220	2.90	1,045	2.12	635
4	3.60	1,600	3.60	1,460	3.90	1,670	5.65	3,260	2.85	1,020	2.10	622
5	3.60	1,600	3.70	1,530	3.90	1,670	5.80	3,220	2.80	990	2.08	613
6	2.90	1,670	3.80	1,600	3.80	1,600	5.70	3,130	2.75	960	2.06	602
7	4.00	1,740	4.00	1,740	3.80	1,600	5.70	3,130	2.70	925	2.04	595
8	4.10	1,810	4.10	1,810	3.80	1,600	5.60	3,050	2.65	910	2.02	585
9	4.40	2,040	4.10	1,810	3.70	1,530	5.50	2,960	2.60	880	2.00	575
10	4.70	2,280	4.10	1,810	3.70	1,530	5.40	2,870	2.60	880	1.96	565
11	5.00	2,540	4.20	1,880	3.60	1,460	5.40	2,870	2.60	880	1.96	553
12	5.30	2,790	4.20	1,880	3.60	1,460	5.30	2,790	2.60	880	1.94	545
13	5.30	2,790	4.20	1,880	3.50	1,400	5.30	2,790	2.60	880	1.92	536
14	5.20	2,700	4.00	1,740	3.50	1,400	5.20	2,700	2.60	880	1.90	525
15	5.10	2,620	4.20	1,880	3.80	1,600	5.10	2,620	2.60	880	1.88	513
16	5.00	2,540	4.20	1,880	4.30	1,960	4.90	2,150	2.60	880	1.86	505
17	4.90	2,450	4.10	1,810	4.00	2,200	4.80	2,360	2.50	825	1.84	495
18	4.80	2,360	4.10	1,810	4.70	2,280	4.70	2,280	2.40	775	1.82	485
19	4.60	2,200	4.00	1,740	4.80	2,360	4.55	2,160	2.40	775	1.80	475
20	4.50	2,120	4.00	1,740	4.80	2,360	4.35	2,000	2.35	750	1.78	465
21	4.40	2,040		1,740	4.80	2,360	4.20	1,880	2.35	750	1.76	455
22	4.20	1,880	4.00	1,740	4.70	2,280	4.10	1,810	2.35	750	1.73	445
23	4.10	1,810	4.00	1,740	4.70	2,280	4.00	1,740	2.30	725	1.70	430
24	4.00	1,740	4.00	1,740	4.70	2,280	3.90	1,670	2.30	725	1.62	400
25	3.90	1,670	4.00	1,740	4.60	2,200	3.80	1,600	2.30	725	1.55	370
26	3.80	1,600	4.00	1,740	4.50	2,120	3.70	1,530	2.28	715	1.53	360
27	3.60	1,460	4.00	1,740	4.10	2,040	3.55	1,430	2.26	705	1.50	350
28	3.70	1,550	4.00	1,740	4.30	1,960	3.40	1,340	2.24	695	1.48	345
29	3.50	1,400	4.20	1,880	4.20	1,880	3.30	1,280	2.22	685	1.44	330
30	3.40	1,340	4.10	1,810	4.10	1,810	3.20	1,220	2.20	675	1.40	320
31	3.30	1,280	4.10	1,810	4.10	1,810			2.18	665		
	July.		August.		September.		October.		November.		December.	
1	1.35	305	0.87	167	0.57	93	0.28	32	6.36	3,720	5.47	2,930
2	1.34	300	0.86	165	0.56	90	0.37	15	6.45	3,800	5.47	2,930
3	1.33	300	0.85	162	0.55	87	0.45	62	6.31	3,680	5.65	3,090
4	1.32	295	0.84	160	0.54	85	0.49	73	6.20	3,580	6.05	3,440
5	1.31	295	0.83	157	0.53	83	0.50	75	5.90	3,310	6.33	3,700
6	1.30	290	0.82	155	0.52	80	0.50	75	5.75	3,170	6.73	4,060
7	1.29	290	0.81	152	0.51	77	0.50	75	5.55	3,000	6.90	4,210
8	1.28	285	0.81	152	0.48	70	0.47	68	5.45	2,910	7.53	4,830
9	1.28	280	0.80	150	0.46	65	0.45	62	5.16	2,670	7.98	4,980
10	1.24	270	0.79	147	0.44	60	0.43	57	4.97	2,510	7.58	4,680
11	1.22	265	0.78	145	0.42	55	0.41	50	4.79	2,350	7.43	4,780
12	1.20	260	0.77	143	0.40	50	0.45	62	4.50	2,190	7.34	4,640
13	1.18	255	0.76	140	0.39	48	0.48	70	4.53	2,140	7.15	4,450
14	1.16	250	0.75	137	0.38	47	0.50	75	4.42	2,060	6.95	4,250
15	1.14	240	0.74	135	0.37	45	0.50	75	4.36	2,010	6.70	4,030
16	1.12	235	0.73	133	0.36	44	0.55	87	4.33	1,980	6.60	3,940
17	1.10	230	0.72	130	0.35	42	0.55	87	4.51	2,130	6.28	3,650
18	1.08	225	0.71	127	0.35	42	0.60	100	4.61	2,210	6.03	3,470
19	1.04	210	0.70	125	0.35	42	0.60	100	4.64	2,230	5.90	3,310
20	1.00	200	0.69	122	0.35	42	1.00	200	4.65	2,240	6.25	3,620
21	0.98	195	0.69	120	0.35	42	1.50	350	4.67	2,260	6.74	4,070
22	0.96	190	0.67	117	0.34	41	1.80	475	4.71	2,290	7.25	4,580
23	0.95	185	0.66	115	0.33	39	2.10	625	4.87	2,420	7.33	4,630
24	0.94	185	0.65	112	0.32	38	2.30	725	4.94	2,490	7.18	4,460
25	0.93	180	0.64	110	0.31	36	2.63	895	5.09	2,610	7.03	4,330
26	0.92	180	0.63	107	0.30	35	3.02	1,110	5.53	2,990	6.60	4,120
27	0.91	177	0.62	105	0.29	33	4.05	1,760	5.59	2,040	6.70	4,020
28	0.90	175	0.61	103	0.29	33	5.14	2,650	5.51	2,970	6.45	3,800
29	0.89	172	0.60	100	0.29	31	5.20	2,700	5.59	2,960	6.27	3,640
30	0.88	170	0.59	97	0.28	31	5.35	2,610	5.52	2,980	6.04	2,440
31	0.88	170	0.58	95			6.05	3,440			5.80	3,220

## Monthly Discharge of Cowichan River near Cowichan Lake for 1915.

(Drainage area, 235 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-Off.	
	Maximum.	Minimum	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January .....	2,790	1,280	1,920	8.21	9.46	119,000
February .....	1,880	1,340	1,720	7.32	7.52	95,500
March .....	2,360	1,490	1,870	7.96	9.16	118,000
April .....	3,260	1,220	2,340	9.96	11.11	129,500
May .....	1,180	655	842	3.58	4.12	51,500
June .....	655	320	500	2.13	2.38	29,500
July .....	305	170	234	1.00	1.15	14,400
August .....	187	95	132	0.56	0.63	8,120
September .....	93	32	54	0.23	0.26	3,190
October .....	3,440	22	616	2.62	3.02	37,900
November .....	3,800	1,980	2,700	11.50	12.80	16,100
December .....	4,980	2,920	3,950	16.90	19.50	245,000
The year .....	4,980	22	1,410	6.00	81.24	874,610

## ENGLISHMANS RIVER.—(1030).

*Location.*—One-half mile above mouth, 2 miles from Parksville.

*Records Available.*—Daily discharges February 15, 1913, to December 31, 1913, May 19, 1914, to September 21, 1914, December 9, 1914, to December 31, 1915. (Records for 1915 are given herein; preceding records are tabulated in previous reports.)

*Drainage Area.*—One hundred and eleven square miles.

*Gauge.*—Twelve-foot enamelled staff in 2 sections, located on right bank, 100 feet upstream from metering section. Read daily by Mr. L. Mandley.

*Channel.*—Straight for 300 feet above and below section, even gravel bed.

*Discharge Measurements.*—Four in 1913, by Provincial Water Rights Branch, four in 1914, and three in 1915.

*Winter Flow.*—Open all year.

*Accuracy.*—"B" (between discharge of 100 and 600 cubic feet per second "C" (below discharge of 100 and above 600 cubic feet per second). This accuracy is kept low on account of the shifting of channel each year.

*Co-operation.*—Provincial Water Rights Branch established station in 1913.

## Discharge Measurements of Englishmans River 1½ Mile above Mouth for 1915.

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
April 14	Milner & Webb	1,933	110	279	2.02	3.00	563 0
Sept 3	H. C. Hughes	1,505	38	24	0.45	1.60	10.7 <sup>1</sup>
Nov. 2	Webb & Ball	1,057	72	453	2.18	3.50	986 0 <sup>1</sup>

<sup>1</sup> Not at regular section.

SESSIONAL PAPER No. 25a

Daily Gauge Height and Discharge of Englishmans River 1 1/2 Mile above Mouth for 1915.

(Drainage area, 111 square miles.)

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
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.
1	3.00	1,000	2.60	440	2.90	400	3.75	1,440	2.15	155	2.10	
2	3.50	980	3.10	640	2.70	390	3.10	2,840	2.10	150	2.05	
3	3.95	1,400	2.95	580	3.00	249	4.90	2,349	2.10	150	2.05	
4	2.89	800	2.55	470	2.70	390	3.65	1,130	2.10	150	2.05	
5	2.95	535	2.90	500	2.60	240	5.20	730	2.20	160	2.15	
6	2.90	500	2.15	550	2.60	540	2.10	640	2.40	250	2.10	150
7	2.75	415	3.65	1,550	2.55	520	2.00	560	2.40	250	2.00	120
8	2.45	935	3.70	1,180	2.55	320	3.00	560	2.50	290	2.00	120
9	3.25	750	3.65	1,130	2.50	290	3.00	560	2.50	290	2.00	120
10	3.40	890	3.40	890	2.45	270	3.00	560	2.50	340	1.95	105
11	3.25	2,920	3.10	640	2.40	250	2.90	500	2.65	365	2.00	120
12	2.90	1,400	3.00	580	2.60	250	3.00	580	2.55	315	2.00	120
13	3.50	950	2.90	570	2.40	250	3.20	720	2.50	290	2.00	120
14	3.20	725	2.50	440	3.00	550	3.00	560	2.45	270	1.95	105
15	3.95	550	2.75	420	4.90	2,600	2.85	470	2.40	250	1.95	105
16	2.60	440	2.75	430	3.90	1,400	2.30	440	2.30	210	1.95	105
17	2.70	290	2.10	640	4.10	1,640	2.80	440	2.40	250	1.95	105
18	2.50	340	2.00	550	4.20	1,760	2.85	470	2.40	250	1.95	105
19	2.60	340	2.90	500	4.00	1,520	2.80	440	2.40	250	1.95	105
20	2.50	290	2.80	440	3.30	800	2.65	370	2.40	250	1.95	105
21	2.40	250	2.75	420	3.30	800	2.50	290	2.50	210	1.90	90
22	2.25	230	2.70	390	3.50	950	2.40	250	2.50	210	1.90	90
22	2.35	230	2.50	440	3.30	800	2.40	250	2.25	195	1.90	90
24	2.20	210	2.90	500	5.10	640	2.35	230	2.20	180	1.90	90
25	2.80	210	3.25	750	2.90	500	2.20	180	2.30	210	1.90	90
26	2.20	210	2.00	550	2.75	420	2.20	160	2.30	210	1.85	75
27	2.30	150	3.00	550	2.65	380	2.15	165	2.50	290	1.80	65
28	2.20	180	3.00	500	2.50	290	2.20	180	2.30	210	1.80	65
29	2.15	155			2.50	290	2.20	180	2.20	180	1.60	65
30	2.15	165			2.65	360	2.20	180	2.15	165	1.80	65
31	2.20	180			2.70	290			2.10	150		

	July.		August.		September		October		November.		December.	
1	1.80	65	1.60	30	1.57	25	1.57	25	4.10	1,640	2.90	500
2	1.80	65	1.60	30	1.57	25	1.60	30	3.45	935	3.00	550
3	1.80	65	1.60	30	1.57	25	1.60	30	3.20	720	5.20	2,900
4	1.80	65	1.60	30	1.57	25	1.60	30	3.00	560	4.40	2,000
5	1.75	55	1.60	30	1.57	25	1.60	30	2.85	470	4.65	2,200
6	1.75	55	1.60	30	1.57	25	1.80	30	2.80	440	4.50	2,120
7	1.75	55	1.60	30	1.57	25	1.60	30	2.60	340	3.80	1,290
8	1.75	55	1.60	30	1.57	25	1.60	30	2.50	290	5.75	3,620
9	1.75	55	1.60	30	1.57	25	1.67	40	2.40	250	4.40	2,000
10	1.70	45	1.60	30		25	1.67	40	2.30	210	3.75	1,240
11	1.70	45	1.60	30		24	1.67	40	2.28	200	3.40	690
12	1.70	45	1.60	30		24	1.67	40	2.20	180	3.40	890
13	1.70	45	1.60	30		24	1.67	40	2.18	170	3.40	890
14	1.65	37	1.60	30		24	1.67	40	2.20	180	3.20	730
15	1.65	37	1.60	30		24	1.67	40	2.40	250	2.20	730
16	1.70	45	1.60	30		24	1.70	45	2.70	390	2.90	500
17	1.70	45	1.57	25		24	1.70	45	3.40	890	2.80	440
18	1.65	37	1.57	25		24	1.87	85	3.30	800	2.70	390
19	1.65	37	1.57	25		24	2.65	365	3.30	800	2.70	590
20	1.65	37	1.57	25	1.55	23	2.80	440	3.00	560	4.50	2,120
21	1.65	37	1.57	25	1.55	23	3.40	890	2.90	500	5.40	3,200
22	1.65	37	1.57	25	1.55	23	3.30	800	3.10	640	4.40	2,000
23	1.65	37	1.57	25	1.55	23	3.20	720	3.95	1,460	3.90	1,400
24	1.65	37	1.57	25	1.55	23	3.60	1,080	3.65	1,130	3.50	980
25	1.65	37	1.57	25	1.55	23	4.50	2,480	3.60	1,080	3.20	720
26	1.65	37	1.57	25		23	4.60	2,240	3.80	1,290	3.10	640
27	1.60	30	1.57	25		23	5.60	3,440	3.40	890	2.90	500
28	1.60	30	1.57	25		23	3.80	1,290	3.20	720	2.90	500
29	1.60	30	1.57	25		23	3.60	1,080	3.10	640	3.00	550
30	1.60	30	1.57	25		23	3.30	800	3.15	560	2.55	475
31	1.60	30	1.57	25		23	5.10	2,840			2.85	470

*Monthly Discharge of Englishmans River 1½ Mile above Mouth for 1915.*

(Drainage area, 111 square miles.)

MONTH	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January	2,020	165	513	5.52	6.22	27,700
February	1,250	390	609	5.49	3.72	22,800
March	2,600	250	656	5.81	5.51	40,200
April	2,840	165	604	2.44	6.07	25,900
May	265	150	220	2.07	2.29	14,100
June	165	65	107	0.96	1.07	6,270
July	35	20	44	0.40	0.46	2,700
August	20	22	28	0.25	0.29	1,720
September	25	22	24	0.22	0.25	1,430
October	2,640	25	518	5.57	6.42	28,000
November	1,640	170	644	5.50	5.47	28,300
December	2,060	390	1,220	11.00	12.70	75,000
The year	2,020	22	480	4.05	58.03	325,320

HASLAM CREEK.—(1929).

*Location.*—Low water section 500 feet below Canadian Collieries Railway bridge, 6 miles from Ladysmith.

High water section downstream side of bridge.

*Records Available.*—Daily discharges July 3, 1914, to July 31, 1915. Station discontinued as stream was considered of little importance. (Records for 1915 are given herein; those for 1914 are tabulated in a previous report.)

*Drainage Area.*—Twenty-seven square miles.

*Gauge.*—Six-foot enamel staff on piling of railway bridge, left bank, read bi-weekly by Mr. J. B. Wier.

*Channel.*—Low water section—gravel bed, channel straight 50 feet above and below section.

High water section—stream flows at small angle to bridge, gravel bed.

*Discharge Measurements.*—Four in 1914, one in 1915, covering all but high stage.

*Winter Flow.*—Open all year.

*Accuracy.*—"B" (up to discharge of 160 cubic feet per second). "C" (above 160 cubic feet per second).

*Discharge Measurements of Haslam Creek 2 Miles above Mouth for 1915*

Date	Engineer	Meter No.	Width	Area of Section.	Mean Velocity.	Gauge Height.	Discharge
			Feet	Sq. ft.	Ft. per sec.	Feet	Sec.-ft.
Mar. 26	Cline & Webb	1933				1.35	119.0

NOTE.—Station discontinued July, 1915

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Daily Gauge Height and Discharge of Haslam Creek 2 Miles above Mouth for 1915.

(Drainage area, 27 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1		80		60		120		250	0 6	18		26
2		120		90	1 4	120		480		18	0 7	24
3		160	1 2	100		120	2 5	600		18		22
4		200		200		120		600		18		20
5	1 7	220		300		140		800	0 6	18	0 6	18
6		280	2 2	480	1 5	140		400		18		18
7		340		420		120	1 9	310		18	0 0	18
8		400	2 0	360		110		260	0 6	18		18
9	2 2	480		320	1 3	100	1 7	220		18	0 6	18
10		450		260		90		200		16		18
11		420		240		60		180		18		16
12		190		190	1 2	80		140	0 6	18	0 6	16
13	2 0	360	1 5	140		100		140		18		18
14		300		160		200	1 4	120		18		16
15		240		190		300		100	0 6	18	0 5	14
16	1 0	180		200		450		90		18		14
17		160	1 7	220	2 4	600	1 2	60		18		16
18		120		190		500		70		18		18
19	1 3	100		150		400	1 1	60	0 6	18	0 6	18
20		90	1 4	120	1 9	310		60		18		16
21		80		120		310		50		20	0 5	14
22		70		120		210	1 0	50	0 7	24		14
23	1 1	60		100	1 9	310		45		24		12
24		55	1 3	100		250	0 9	40		24	0 4	10
25	1 0	50		106		200		35		24		12
26		45		120		150		30	0 7	24	0 5	14
27		40	1 4	120	1 3	100		27		32		12
28	0 9	40		120		100	0 7	24	0 9	40	0 4	10
29		50				100		22		36		10
30		60				120		20		32	0 4	10
31		79			1 4	120				28		

	July.	August	September.	October.	November.	December.
1		10				
2	0 40	10				
3		10				
4		8				
5		6				
6		6				
7		6				
8	0 30	6				
9		6				
10		6				
11		6				
12	0 30	6				
13		6				
14		6				
15		6				
16		6				
17		6				
18		6				
19		6				
20		6				
21	0 20	6				
22		6				
23	0 20	6				
24	0 20	6				
25		6				
26		6				
27		6				
28	0 20	6				
29		6				
30		6				
31	0 20	6				

*Monthly Discharge of Haslam Creek 2 Miles above Mouth for 1915.*

(Drainage area, 37 square miles.)

MONTH	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile	Depth in inches on Drainage area.	Total in acre-feet.
January	480	40	184 0	6 81	7 55	11,300
February	480	80	190 0	7 04	7 33	10,600
March	600	80	202 0	7 48	8 62	12,400
April	660	20	178 0	8 48	7 23	10,400
May	40	18	21 5	0 80	0 92	1,320
June	26	10	18 0	0 59	0 66	982
July	10	4	5 9	0 22	0 25	363
The period	660	4	113 4	4 20	32 86	47,335

NOTE.—Station discontinued July, 1915.

## KOKSILAH RIVER.—(1026).

*Location.*—Two miles from mouth, upstream side of Esquimalt and Nanaimo Railway bridge.

*Records Available.*—Daily discharges May 12, 1914, to December 31, 1915. (Records for 1915 are given herein; those for 1914 are tabulated in a previous report.)

*Drainage Area.*—One hundred and twenty-four square miles.

*Gauge.*—Fourteen-foot staff on left bank, 600 feet above bridge, read daily by Koksilah Charlie.

*Channel.*—Gravel bed, channel straight for 100 feet above and 300 feet below section, 2 channels at low water.

*Discharge Measurements.*—Six in 1914, three in 1915, covering all stages.

*Winter Flow.*—Open all year.

*Accuracy.*—"A" (up to discharge of 400 cubic feet per second). "B" (between discharge of 400 and 2,000 cubic feet per second). "C" (above discharge of 2,000 cubic feet per second).

*Discharge Measurements of Koksilah River 2 Miles above Mouth for 1915.*

Date.	Engineer	Meter No.	Width	Area of Section.	Mean Velocity	Gauge Height	Discharge
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
Mar. 23	Cline & Webb	1,933	100	135	2 15	2 43	291 0
Aug. 28	H. C. Hughes	1,505	38	26	0 40	1 03	10 5
Dec. 8	C. E. Webb	1,056	146	1,210	4 83	0 50	5,840 0 <sup>1</sup>

<sup>1</sup> Not at regular section.<sup>2</sup> Extreme high water.

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Daily Gauge Height and Discharge of Koksilah River 2 Miles above Mouth for 1915.

(Drainage area, 124 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	2.0	180	2.0	800	2.6	340	4.0	1,030	2.1	180	1.6	80
2	2.0	180	2.0	800	2.6	240	4.6	1,420	2.0	160	1.5	80
3	2.0	180	2.0	800	2.6	240	4.6	1,860	2.0	160	1.3	80
4	2.2	210	2.6	420	2.7	380	4.8	1,420	2.0	160	1.5	80
5	2.2	240	2.6	240	2.7	280	4.0	1,030	1.8	120	1.5	80
6	2.6	240	2.6	500	2.7	360	3.6	790	1.8	120	1.5	80
7	2.8	420	2.4	270	2.8	240	3.4	600	1.7	100	1.5	80
8	3.0	500	2.5	300	2.6	240	3.0	500	1.6	80	1.5	80
9	2.3	640	2.5	300	2.6	420	2.6	420	1.5	60	1.6	80
10	4.0	1,020	2.6	340	2.8	420	2.6	240	1.5	80	1.6	80
11	4.6	1,420	2.6	340	3.2	590	2.4	270	1.6	80	1.5	60
12	3.0	1,700	2.7	360	3.4	690	2.3	240	1.6	80	1.5	80
13	4.5	1,360	2.8	420	3.5	740	2.3	240	1.6	80	1.4	48
14	4.2	1,150	2.8	420	3.4	690	2.3	240	1.6	80	1.4	48
15	3.6	910	2.7	380	2.3	640	2.2	240	1.6	80	1.35	40
16	2.5	740	2.6	340	2.2	590	2.2	210	1.6	80	1.25	40
17	2.0	500	2.6	540	3.0	500	2.2	210	1.6	80	1.2	25
18	2.6	420	2.6	340	3.0	500	2.2	210	1.8	120	1.2	25
19	2.6	240	2.5	200	3.0	500	2.2	210	1.6	120	1.2	25
20	2.6	340	2.7	380	2.8	420	2.2	210	2.0	160	1.2	25
21	2.6	340	2.7	380	2.8	420	2.1	180	2.0	160	1.2	25
22	2.5	300	2.8	340	2.8	420	2.0	180	2.0	160	1.2	25
23	2.5	300	2.6	340	2.7	360	2.0	160	2.0	160	1.2	25
24	2.4	270	2.5	200	2.7	380	2.0	180	1.9	140	1.15	21
25	2.4	270	2.5	300	2.8	420	2.0	160	1.8	120	1.15	21
26	2.8	420	2.5	300	2.8	420	2.0	160	1.8	120	1.15	21
27	3.0	500	2.5	300	2.8	420	2.1	180	1.8	120	1.1	17
28	3.0	500	2.5	300	2.8	420	2.1	160	1.8	120	1.1	17
29	2.8	420			3.2	590	2.1	160	1.8	120	1.1	17
30	2.5	420			3.4	690	2.1	160	1.6	80	1.1	17
31	2.5	420			3.6	790			1.6	80		

	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	1.00	12	1.10	17	0.90	9	1.30	25	5.20	2620	3.80	910
2	1.00	12	1.10	17	0.90	9	1.30	25	3.40	690	3.30	910
3	1.00	12	1.10	17	0.90	9	1.30	25	3.20	590	4.20	1,150
4	1.00	12	1.10	17	0.90	9	1.30	25	2.80	420	6.40	2,760
5	1.00	12	1.10	17	0.90	9	1.30	25	2.80	420	5.20	1,340
6	1.10	17	1.10	17	0.90	9	1.30	25	2.80	420	4.40	1,230
7	1.10	17	1.10	17	0.90	9	1.30	25	3.00	500	6.20	2,530
8	1.15	21	1.10	17	0.90	9	1.30	25	2.20	590	6.30	2,700
9	1.20	25	1.10	17	0.90	9	1.30	25	2.90	460	4.80	1,560
10	1.20	25	1.10	17	0.85	8	1.30	25	2.90	460	4.20	1,210
11	1.20	25	1.10	17	0.85	8	1.30	25	2.80	420	4.20	1,210
12	1.20	25	1.10	17	0.85	8	1.30	25	2.80	420	4.20	1,160
13	1.20	25	1.10	17	0.85	8	1.30	25	2.80	420	4.40	1,280
14	1.20	25	1.10	17	0.85	8	1.20	25	5.40	660	3.80	610
15	1.20	25	1.03	14	0.85	8	1.20	25	3.60	790	3.60	790
16	1.20	25	1.13	19	0.85	8	1.20	25	4.40	1,280	3.80	790
17	1.20	25	1.05	15	0.85	8	1.20	25	5.80	790	3.80	910
18	1.20	25	1.05	15	0.85	8	1.20	25	3.40	690	3.80	910
19	1.20	25	1.00	12	0.80	7	2.40	270	2.20	590	3.80	790
20	1.20	25	1.00	12	0.80	7	2.80	540	2.00	500	3.90	970
21	1.20	25	1.00	12	0.80	7	2.80	340	4.20	1,150	8.80	5,100
22	1.20	25	1.00	12	0.80	7	5.00	500	3.80	910	6.40	2,760
23	1.20	25	1.00	12	0.80	7	5.00	500	4.40	1,280	3.60	780
24	1.20	25	1.00	12	0.80	7	2.20	590	4.60	1,420	3.40	690
25	1.20	25	1.00	12	0.80	7	3.80	910	5.40	1,980	3.40	590
26	1.20	25	1.00	12	0.80	7	2.80	910	5.00	1,700	3.20	590
27	1.17	22	0.95	11	0.80	7	4.20	1,150	4.20	1,150	3.20	590
28	1.16	23	0.95	11	0.80	7	4.20	1,150	4.80	1,560	3.20	590
29	1.17	23	0.95	11	0.80	7	4.20	1,150	5.20	1,840	3.00	500
30	1.15	23	0.95	11	0.80	7	4.20	1,150	4.00	1,030	5.00	660
31	1.15	21	0.63	11			5.20	2,520			3.00	500

*Monthly Discharge of Koksilah River 2 Miles above Mouth for 1915.*

(Drainage area, 124 square miles.)

MONTH	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January	1,700	100	550.0	4.44	3.12	55,500
February	690	270	380.0	2.99	3.02	20,600
March	790	340	480.0	3.87	4.45	29,500
April	1,600	160	460.0	3.68	3.55	55,200
May	190	60	114.0	0.92	1.05	7,010
June	30	17	48.0	0.39	0.55	5,500
July	33	12	21.5	0.18	0.21	1,250
August	18	11	14.8	0.12	0.14	588
September	9	7	7.8	0.06	0.07	4,700
October	2,620	55	300.0	2.41	5.63	56,000
November	5,660	420	954.0	7.47	8.32	55,100
December	5,520	500	1,290.0	11.20	12.90	55,500
The year	5,920	7	304.7	2.53	42.91	590,558

LITTLE QUALICUM RIVER.—(1031).

*Location.*—At outlet from Cameron lake, downstream side of highway bridge.

*Records Available.*—Daily discharges February 27, 1913, to December 31, 1915. (Records for 1915 are given herein; preceding records are tabulated in previous reports.)

*Drainage Area.*—Fifty-four square miles.

*Gauge.*—Twelve foot wooden staff nailed to crib near shore of lake, 500 feet from head of river. Read twice daily by Mr. T. B. McBey.

*Channel.*—Straight on both sides of section for 100 feet. Even gravel bed. Confined by bridge abutments in high water.

*Discharge Measurements.*—Eight in 1913 and 1914, by Provincial Water Rights Branch, seven in 1914 and 1915, covering all stages.

*Winter Flow.*—Open all year.

*Accuracy.*—"A" (between discharge of 30 and 600 cubic feet per second) "B" (between discharge of 600 and 1,000 cubic feet per second.) "C" (above discharge of 1,000 cubic feet per second).

*Co-operation.*—Provincial Water Rights Branch established station in 1913.

*Discharge Measurements of Little Qualicum River at Cameron Lake for 1915*

Date	Engineer	Meter No.	Width	Area of Section	Mean Velocity	Gauge Height	Discharge
			Feet	Sq. ft.	Ft. per sec.	Feet.	Sec. ft.
April 16	Milner & Webb	1,933	60	160	2.75	2.80	437
Sept. 5	H. C. Hughes	1,505	44	33	0.94	0.39	31



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Daily Gauge Height and Discharge of Little Qualicum River at Cameron Lake for 1915.

(Drainage area, 84 square miles.)

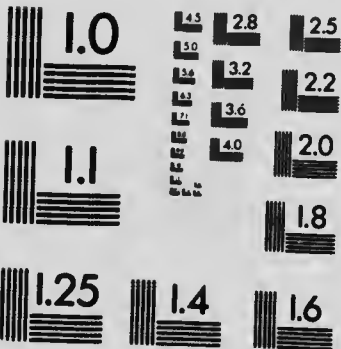
Day.	January.		February.		March.		April.		May.		June.	
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	1.22	172	1.46	168	1.83	840	8.88	880	1.66	196	1.60	122
2	2.04	268	1.46	170	1.66	228	4.83	808	1.84	190	1.60	188
3	2.86	380	1.28	172	1.63	820	8.0	1,080	1.62	190	1.82	172
4	2.86	328	1.67	180	1.79	218	4.78	980	1.61	188	1.48	170
5	2.82	322	1.60	186	1.78	208	4.8	970	1.60	188	1.42	168
6												
7	2.84	808	1.82	190	1.70	800	3.75	688	1.65	190	1.46	168
8	2.16	860	1.84	828	1.69	200	3.46	860	1.73	208	1.46	168
9	2.88	800	2.02	268	1.68	198	3.22	840	1.79	218	1.69	128
10	2.88	810	2.22	300	1.64	190	8.18	808	1.83	220	1.87	180
11	2.82	820	2.26	320	1.89	168	8.97	460	1.89	228	1.28	142
12	8.74	410	2.28	330	1.86	178	3.89	448	2.2	298	1.26	168
13	8.62	408	2.28	330	1.84	178	2.82	420	2.12	260	1.61	168
14	8.68	448	2.18	290	1.5	170	2.99	470	2.18	290	1.19	168
15	8.74	410	2.11	878	1.61	218	2.98	468	2.10	278	1.17	180
16	8.88	878	2.04	268	2.70	400	2.94	488	2.06	268	1.17	120
17												
18	2.49	268	2.0	288	3.22	848	2.82	428	2.0	288	1.17	180
19	2.26	310	2.06	268	3.49	880	2.77	418	1.80	238	1.10	110
20	8.16	288	2.06	270	3.90	700	2.7	400	1.88	280	1.10	110
21	8.04	268	2.06	268	3.74	680	2.66	390	1.80	218	1.10	110
22	1.61	228	2.0	288	3.36	880	2.64	388	1.78	210	1.10	110
23												
24	1.84	228	1.67	280	3.8	888	2.49	388	1.76	210	1.10	110
25	1.77	210	1.90	880	3.24	620	2.26	328	1.73	208	1.10	110
26	1.70	200	1.84	228	2.99	470	2.23	300	1.73	208	1.00	100
27	1.68	160	1.62	220	2.98	460	2.10	278	1.70	200	1.00	100
28	1.88	168	1.96	248	2.79	420	2.07	270	1.70	200	0.90	68
29												
30	1.46	170	1.87	220	2.78	410	1.97	280	1.71	200	0.90	68
31	1.46	168	1.86	228	2.88	390	1.89	238	1.70	200	0.87	60
1	1.39	188	1.99	288	2.48	848	1.79	218	1.70	200	0.68	78
2	1.88	160			2.48	308	1.78	210	1.70	200	0.80	70
3	1.28	180			2.18	290	1.71	200	1.70	200	0.80	70
4	1.41	188			2.20	298			1.70	200		

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	0.60	78	0.57	47	0.42	32	0.40	30	4.81	978	8.80	868
2	0.79	69	0.56	46	0.42	32	0.49	39	4.30	820	3.28	300
3	0.79	69	0.52	42	0.41	31	0.50	40	3.69	688	2.60	420
4	0.79	68	0.52	42	0.41	31	0.50	40	3.28	620	3.67	680
5	0.78	66	0.60	40	0.42	32	0.50	40	2.98	488	3.64	710
6												
7	0.76	68	0.49	39	0.41	31	0.50	40	2.69	400	8.68	688
8	0.74	64	0.48	28	0.39	29	0.49	39	2.47	380	3.78	660
9	0.71	61	0.46	24	0.40	30	0.49	39	2.20	318	3.68	688
10	0.69	69	0.46	24	0.45	38	0.49	39	2.08	270	3.78	688
11	0.69	59	0.46	28	0.46	36	0.48	38	1.98	280	8.68	628
12	0.66	66	0.48	28	0.46	36	0.46	38	1.67	220	3.67	600
13	0.66	66	0.48	28	0.47	37	0.47	37	1.77	210	3.22	818
14	0.66	66	0.48	28	0.47	37	0.49	39	1.67	198	3.96	466
15	0.66	66	0.48	28	0.47	37	0.49	39	1.60	188	2.68	480
16	0.67	67	0.47	37	0.44	34	0.61	41	1.60	168	8.68	868
17	0.67	67	0.46	86	0.41	81	0.52	42	1.60	168	8.68	270
18	0.67	87	0.46	86	0.40	30	0.52	42	1.60	168	8.68	888
19	0.66	86	0.46	46	0.40	30	0.68	58	1.78	210	3.11	878
20	0.66	66	0.48	26	0.40	30	0.70	60	1.88	228	2.80	318
21	0.67	87	0.46	36	0.40	80	0.98	92	1.90	236	2.68	480
22												
23	0.66	66	0.50	40	0.40	30	8.00	288	1.90	228	8.28	880
24	0.83	62	0.80	40	0.39	29	2.78	410	1.92	240	8.68	628
25	0.61	81	0.88	42	0.39	29	2.90	448	2.20	298	3.68	888
26	0.60	60	0.80	40	0.39	29	2.92	480	2.10	278	8.88	680
27	0.89	49	0.48	38	0.89	89	3.00	470	2.28	806	8.88	848
28												
29	0.88	48	0.48	36	0.89	29	3.38	848	2.44	248	2.98	488
30	0.88	48	0.48	32	0.40	30	4.70	940	2.48	248	2.76	418
31	0.88	48	0.40	30	0.40	30	8.80	1,020	2.30	318	8.68	388
1	0.88	48	0.40	30	0.39	29	6.40	1,180	8.32	320	2.62	360
2	0.88	48	0.40	30	0.38	28	4.72	980	2.30	318	2.40	328
3	0.88	48	0.40	20			4.83	980			2.28	210



# MICROCOPY RESOLUTION TEST CHART

(ANSI and ISO TEST CHART No. 2)



**APPLIED IMAGE Inc**

1653 East Main Street  
Rochester, New York 14609 USA  
(716) 462 - 0300 - Phone  
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*Monthly Discharge of Little Qualicum River at Cameron Lake for 1915.*

(Drainage area, 54 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January.....	465	150	272.0	5.04	5.81	16,700
February.....	330	165	245.0	4.54	4.73	13,600
March.....	700	170	344.0	6.37	7.34	21,200
April.....	1,030	200	465.0	8.62	9.62	27,700
May.....	295	185	216.0	4.04	4.66	13,400
June.....	185	70	124.0	2.30	2.57	7,380
July.....	70	47	57.0	1.05	1.21	3,500
August.....	47	30	37.5	0.69	0.80	2,310
September.....	37	28	31.4	0.58	0.65	1,870
October.....	1,530	30	290.0	5.37	6.19	17,800
November.....	975	185	334.0	6.18	6.90	19,900
December.....	710	295	485.0	8.98	10.40	29,800
The year.....	1,530	28	242.0	4.48	60.88	175,160

NANAIMO RIVER.—(1028).

*Location.*—Six miles from mouth, 800 feet upstream from Canadian Collieries Railway bridge, 8 miles from Ladysmith.

*Records Available.*—Daily discharges February 11, 1913, to December 31, 1915. (Records for 1915 are given herein; preceding records are tabulated in previous reports.)

*Drainage Area.*—Two hundred and forty-nine square miles.

*Gauge.*—Twelve-foot wooden staff nailed to tree, left bank, 25 feet above section. Gauge read daily by Miss Jeane Whisker.

*Channel.*—Straight for 200 feet on either side of section, even gravel bed, good control 400 feet downstream.

*Discharge Measurements.*—One in 1911, four in 1913, and two in 1914, by Provincial Water Rights Branch; two in 1914 and three in 1915, covering all but highest stage.

*Winter Flow.*—Open all year.

*Accuracy.*—"B" (up to discharge of 3,000 cubic feet per second). "C" (above discharge of 3,000 cubic feet per second).

*Co-operation.*—Provincial Water Rights Branch established station in 1913.

*Discharge Measurements of Nanaimo River 6 Miles above Mouth for 1915.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
Mar. 25	Chnr & Webb.....	1,933	135	467	3.40	3.27	1,620.0
Sept. 1	H. C. Hughes.....	1,506	110	78	0.46	0.40	35.6
Dec. 11	C. E. Webb.....	1,056	140	556	4.64	4.01	2,580.0

Daily Gauge Height and Discharge of Nanaimo River 6 Miles above Mouth for 1915.

(Drainage area, 249 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	3.82	1,880	2.49	810	2.95	1,160	5.01	4,600	1.81	425	1.93	485
2	4.24	2,900	3.01	1,210	2.77	1,020	7.22	9,880	1.74	395	1.85	445
3	4.27	2,970	3.00	1,200	2.68	950	5.48	5,650	1.85	445	1.79	415
4	3.71	1,990	2.80	1,040	2.74	990	4.66	3,800	1.92	480	1.73	390
5	3.29	1,490	2.78	1,020	2.71	970	3.92	2,290	2.01	525	1.72	390
8	3.01	1,210	3.73	2,020	2.79	1,030	3.48	1,870	2.10	580	1.75	400
7	3.08	1,280	3.87	2,220	2.79	1,030	3.85	1,910	2.13	600	1.62	350
8	3.74	2,040	3.98	2,370	2.69	950	3.64	1,900	2.10	580	1.59	335
9	3.58	1,820	3.99	2,390	2.58	880	3.55	1,790	2.02	530	1.59	335
10	3.78	2,060	3.85	2,190	2.48	810	3.34	1,540	2.23	880	1.54	315
11	5.08	4,750	3.56	1,800	2.40	760	3.12	1,320	2.44	780	1.47	290
12	4.55	3,560	3.29	1,490	2.39	750	3.29	1,490	2.53	840	1.43	280
13	3.97	2,380	3.17	1,370	2.39	750	3.58	1,820	2.40	760	1.30	240
14	3.55	1,780	2.95	1,160	3.39	1,590	3.41	1,810	2.30	700	1.33	250
15	3.20	1,400	2.80	1,040	5.86	8,070	3.13	1,330	2.12	590	1.82	245
16	2.94	1,150	2.71	970	4.90	4,350	2.99	1,900	2.00	520	1.27	230
17	2.74	990	3.15	1,350	4.93	4,420	2.95	1,160	1.95	485	1.26	230
18	2.57	870	3.28	1,480	4.95	4,470	2.94	1,150	2.03	540	1.27	230
19	2.45	790	3.13	1,330	4.28	2,950	2.82	1,080	2.02	530	1.27	230
20	2.37	740	2.90	1,120	3.74	2,040	2.73	980	1.99	515	1.25	225
21	2.29	690	2.72	980	3.77	2,080	2.53	840	1.81	475	1.15	195
22	2.20	640	2.62	900	3.93	2,300	2.38	750	1.90	470	1.10	180
23	2.14	600	2.67	940	3.86	2,200	2.22	650	1.91	475	1.14	190
24	2.08	570	3.04	1,240	3.55	1,790	2.15	610	1.89	465	1.15	195
25	2.02	530	3.55	1,900	3.23	1,430	2.11	590	1.91	475	1.22	215
26	1.99	520	3.37	1,570	2.92	1,140	2.07	560	1.99	515	1.07	170
27	1.90	470	3.21	1,410	2.69	950	1.99	510	2.38	750	1.06	170
28	1.88	456	3.09	1,290	2.51	830	1.93	490	2.47	800	1.04	160
29	1.81	420	.....	.....	2.54	850	1.92	480	2.33	720	0.99	150
30	1.79	420	.....	.....	2.92	1,140	1.88	460	2.13	600	0.96	140
31	1.80	420	.....	.....	2.99	1,190	.....	.....	2.01	530	.....	.....
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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	0.94	140	0.80	80	0.40	60	0.39	60	5.38	5,430	3.30	1,500
2	0.93	135	0.58	78	0.40	60	0.56	75	4.43	3,300	3.10	1,300
3	0.89	130	0.57	77	0.40	60	0.97	145	3.72	2,010	5.54	5,790
4	0.88	125	0.56	78	0.41	81	0.86	120	3.42	1,620	5.54	5,790
5	0.87	125	0.55	75	0.35	55	0.93	135	3.18	1,380	5.52	5,750
6	0.84	120	0.54	74	0.38	58	0.94	140	3.04	1,240	5.50	5,700
7	0.80	110	0.53	73	0.42	62	0.91	130	2.70	960	4.80	4,120
8	0.79	110	0.53	73	0.43	63	0.87	125	2.54	850	6.72	8,510
9	0.79	110	0.52	72	0.45	85	0.80	110	2.42	770	5.70	6,160
10	0.77	105	0.50	70	0.40	60	0.77	105	2.30	700	4.76	4,030
11	0.77	105	0.50	70	0.40	60	0.74	100	2.26	875	4.00	2,400
12	0.78	105	0.48	68	0.40	80	0.72	95	2.11	585	3.65	1,910
13	0.82	115	0.46	66	0.40	60	0.83	115	2.02	530	3.56	1,800
14	0.81	110	0.45	85	0.41	61	1.20	210	2.02	530	3.44	1,650
15	0.83	115	.....	65	0.40	60	1.12	185	2.21	645	3.18	1,380
16	0.85	120	0.44	64	0.41	61	1.14	190	2.85	1,080	3.10	1,300
17	0.89	130	0.44	64	0.39	59	1.12	185	3.35	1,550	2.86	1,090
18	0.84	120	0.42	62	0.40	60	1.14	190	3.46	1,670	2.73	985
19	0.81	110	0.42	82	0.39	59	1.18	205	3.65	1,910	3.86	2,200
20	0.80	110	0.40	60	0.40	80	2.50	820	5.70	1,080	4.48	3,410
21	0.79	110	0.41	81	0.41	61	4.05	2,500	3.20	1,400	5.85	8,500
22	0.74	100	0.40	60	0.38	58	4.60	3,670	3.25	1,450	5.65	6,040
23	0.72	95	0.40	60	0.38	58	4.00	2,400	3.06	2,340	4.74	3,980
24	0.71	90	0.41	61	0.38	58	3.57	1,810	3.76	2,060	4.16	2,740
25	0.69	90	0.40	80	0.37	57	4.21	2,840	3.95	2,330	3.58	1,820
26	0.67	87	0.42	62	0.38	58	5.26	5,160	4.47	3,380	3.25	1,450
27	0.66	86	0.37	57	0.37	57	6.06	6,950	4.25	2,920	2.97	1,180
28	0.65	85	0.37	57	0.37	57	7.08	9,330	3.44	1,650	3.18	1,380
29	0.64	84	0.37	57	0.37	57	5.10	4,800	3.56	1,800	3.06	1,250
30	0.63	83	0.39	59	0.37	57	4.18	2,780	3.44	1,650	2.85	1,080
31	0.61	81	0.40	60	.....	.....	6.08	7,030	.....	.....	2.78	1,020

*Monthly Discharge of Nanaimo River 6 Miles from Mouth for 1915.*

(Drainage area, 249 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January . . . . .	4,750	420	1,410.0	5.67	6.54	86,700
February . . . . .	2,390	810	1,420.0	5.70	5.94	78,900
March . . . . .	6,070	750	1,740.0	6.98	8.05	107,000
April . . . . .	9,660	460	1,795.0	7.21	8.04	107,000
May . . . . .	840	395	573.0	2.30	2.65	35,200
June . . . . .	485	140	269.0	1.08	1.21	16,000
July . . . . .	140	81	108.0	0.43	0.50	6,640
August . . . . .	80	57	66.0	0.27	0.31	4,060
September . . . . .	65	55	59.4	0.24	0.27	3,530
October . . . . .	9,330	60	1,700.0	6.83	7.87	105,000
November . . . . .	5,430	530	1,680.0	6.75	7.53	100,000
December . . . . .	8,510	985	3,070.0	12.30	14.20	189,000
The year . . . . .	9,660	55	1,157.0	4.65	63.11	839,030

OYSTER RIVER.—(1040).

*Location.*—One mile above mouth, upstream side of Island Highway bridge, 18 miles from Courtenay.

*Records Available.*—Daily discharges June 1, 1914, to December 31, 1915. (Records for 1915 are given herein; those for 1914 are tabulated in a previous report.)

*Drainage Area.*—Seventy square miles.

*Gauge.*—Twelve-foot enamel staff, nailed to cribbing on right bank, 20 feet downstream from bridge.

*Channel.*—Straight for 100 feet above and 400 feet below section; stream flows at a small angle to bridge.

*Discharge Measurements.*—Four in 1914, four in 1915, covering all but highest stage.

*Winter Flow.*—Open all year.

*Accuracy.*—Channel shifts each year. "B" (up to discharge of 1,900 cubic feet per second). "C" (above discharge of 1,900 cubic feet per second).

*Discharge Measurements of Oyster River 1 Mile above Mouth for 1915.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
April 21	Milner & Webb . . . . .	1,933	133	240	2.80	2.45	666.0
Sept. 26	H. C. Hughes . . . . .	1,505	38	38	0.79	0.52	29.9
Oct. 28	Webb & Balls . . . . .	1,057	145	656	7.56	5.50	4,960.0
Oct. 29	Webb & Balls . . . . .	1,057	137	408	4.36	3.85	1,780.0

<sup>1</sup> Channel shifted since 1914.

<sup>2</sup> Not at regular section.

BRITISH COLUMBIA HYDROMETRIC SURVEY

SESSIONAL PAPER No. 25a

Daily Gauge Height and Discharge of Oyster River 1 Mile above Mouth for 1915.

(Drainage area, 70 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	2.60	740	2.00	430	1.95	410	3.30	1,240	1.65	290	1.90	390
2	2.75	830	2.20	530	1.85	370	4.25	2,300	1.60	270	1.90	390
3	2.80	860	1.90	390	1.80	350	3.85	1,780	2.05	455	1.90	390
4	2.30	580	1.70	310	1.80	350	3.35	1,280	2.40	630	2.00	430
5	2.30	580	1.85	370	1.70	310	3.00	1,000	2.65	770	2.50	680
6	2.40	630	2.50	680	1.75	330	2.85	895	2.80	860	2.50	680
7	2.40	630	3.00	1,000	1.60	270	2.80	860	2.95	965	2.45	655
8	2.70	800	3.00	1,000	1.60	270	2.65	770	2.90	930	2.25	555
9	2.35	605	3.00	1,000	1.60	240	2.50	650	2.80	860	2.00	430
10	2.90	930	2.85	895	1.40	215	2.40	630	2.90	930	1.90	390
11	3.20	1,160	2.60	740	1.40	215	2.30	580	2.75	800	1.80	350
12	2.65	770	2.35	605	1.40	215	2.45	655	2.65	770	1.95	410
13	2.40	630	2.15	505	1.40	215	2.55	710	2.55	710	1.95	410
14	2.25	555	1.90	390	1.85	370	2.35	605	2.45	655	1.90	390
15	1.95	410	1.90	390	3.35	1,280	2.35	605	2.30	580	1.85	370
16	1.80	350	1.75	330	3.00	1,000	2.50	680	2.15	505	1.95	370
17	1.70	310	1.70	310	4.05	2,020	2.75	830	2.10	480	1.85	410
18	1.60	270	1.60	270	4.05	2,020	2.80	860	2.30	580	1.70	310
19	1.50	240	1.55	255	3.30	1,240	2.85	895	2.65	770	1.60	270
20	1.40	215	1.50	240	3.00	1,000	2.65	770	2.50	680	1.70	310
21	1.30	190	1.50	240	3.25	1,200	2.45	655	2.45	655	1.60	270
22	1.20	165	1.50	240	3.30	1,240	2.30	580	2.35	605	1.55	255
23	1.20	165	1.60	270	3.30	1,240	2.20	530	2.40	630	1.50	240
24	1.20	165	2.05	455	3.00	1,000	2.20	530	2.40	630	1.50	240
25	1.15	150	2.70	800	2.75	930	2.10	480	2.30	580	1.45	225
26	1.10	140	2.35	605	2.50	680	2.10	480	2.30	580	1.40	215
27	1.10	140	2.30	580	2.30	580	2.00	430	2.40	630	1.35	200
28	1.10	140	2.15	505	2.10	480	2.00	430	2.45	655	1.30	190
29	1.10	140	.....	.....	2.10	480	2.00	430	2.25	555	1.30	190
30	1.10	140	.....	.....	2.40	630	1.85	370	2.05	455	1.30	190
31	1.10	140	.....	.....	2.60	740	.....	.....	2.00	430	.....	.....

	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	1.40	215	0.90	100	0.70	65	0.5	35	3.35	1,260	2.25	550
2	1.40	215	0.90	100	0.70	65	0.7	65	3.05	1,040	2.60	740
3	1.50	240	0.90	100	0.70	65	0.8	80	2.90	930	4.45	2,600
4	1.50	240	0.85	90	0.70	65	0.8	80	2.65	770	3.60	1,520
5	1.40	215	0.80	80	0.70	65	0.8	80	2.50	680	.....	1,400
6	1.40	215	0.80	80	0.70	65	0.7	65	2.40	630	3.35	1,280
7	1.30	190	0.80	80	0.70	65	0.7	65	2.40	630	3.05	1,040
8	1.20	165	0.80	80	0.70	65	0.7	65	2.30	580	.....	960
9	1.20	165	0.80	80	0.70	65	0.6	50	2.25	550	.....	880
10	1.15	150	0.80	80	0.70	65	0.6	50	2.20	530	2.70	800
11	1.10	140	0.80	80	0.70	65	0.6	50	2.10	480	2.70	800
12	1.10	140	0.70	65	0.60	50	.....	50	2.10	480	3.40	1,330
13	1.00	120	0.70	65	0.60	50	0.6	50	2.05	450	3.65	1,570
14	1.00	120	0.70	65	0.60	50	0.7	65	2.35	600	3.05	1,040
15	1.05	130	0.70	65	0.60	50	0.7	65	2.50	680	2.65	770
16	1.30	190	0.70	65	0.60	50	0.7	65	2.50	680	2.45	650
17	1.20	165	0.70	65	0.60	50	0.7	65	2.50	680	3.30	580
18	1.20	165	0.70	65	0.55	40	0.8	80	.....	880	2.30	580
19	1.10	140	0.70	65	0.50	35	0.8	80	2.50	680	2.30	580
20	1.10	140	0.70	65	0.50	35	2.0	430	2.35	600	3.50	1,420
21	1.10	140	0.70	65	0.50	35	.....	.....	2.30	580	3.30	1,240
22	1.10	140	0.70	65	0.50	35	4.55	2,760	2.30	580	3.00	1,000
23	1.00	120	0.70	65	0.50	35	3.80	1,730	2.70	800	2.70	800
24	1.00	120	0.70	65	0.50	35	3.35	1,280	2.50	680	.....	710
25	1.00	120	0.70	65	0.50	35	3.05	1,040	2.80	860	2.40	630
26	1.00	120	0.70	65	0.50	35	3.15	1,120	.....	.....	.....	.....
27	1.00	120	0.70	65	0.50	35	5.40	4,690	2.85	890	2.30	580
28	0.90	100	0.70	65	0.50	35	4.80	3,200	2.55	710	2.20	530
29	0.90	100	0.70	65	0.50	35	.....	2,370	2.40	630	2.30	580
30	0.90	100	.....	.....	0.50	35	3.80	1,730	2.50	680	.....	350
31	0.90	100	.....	.....	0.50	35	3.25	1,200	.....	620	1.00	120
							3.60	1,520	.....	.....	0.95	110

*Monthly Discharge of Oyster River 1 Mile above Mouth for 1915.*

(Drainage area, 70 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January.....	1,160	140	444.0	6.34	7.31	27,300
February.....	1,000	240	512.0	7.31	7.61	28,400
March.....	2,020	215	703.0	10.04	11.58	43,200
April.....	2,300	370	785.0	11.21	12.51	46,700
May.....	965	270	743.0	9.17	10.57	39,500
June.....	680	190	360.0	5.14	5.74	21,400
July.....	240	100	153.0	2.19	2.52	9,410
August.....	100	65	72.5	1.04	1.20	4,460
September.....	65	35	49.2	0.70	0.78	2,930
October.....	4,690	35	783.0	11.20	12.90	48,100
November.....	1,280	450	689.0	9.84	10.98	41,000
December.....	2,600	110	895.0	12.80	14.80	55,000
The year.....	4,690	35	507.4	7.25	98.50	367,400

PUNTLIDGE RIVER AT COURTENAY.—(1036).

*Location.*—One mile from mouth, downstream side of highway bridge, 1 mile from Courtenay.

*Records Available.*—Daily discharges May 30, 1914, to December 31, 1915. (Records for 1915 are given herein; those for 1914 are tabulated in a previous report.)

*Drainage Area.*—Two hundred square miles.

*Gauge.*—Fourteen-foot wooden staff nailed to piling of right abutment of railway bridge.

*Channel.*—Straight for 800 feet upstream and 200 feet downstream from section, 2 channels at extreme high water.

*Discharge Measurements.*—Four in 1914, three in 1915, covering all but highest stage.

*Winter Flow.*—Open all year.

*Accuracy.*—"B" (between discharge of 400 and 4,000 cubic feet per second). "C" (below 400 and above 4,000 cubic feet per second).

*Discharge Measurements of Puntledge River 1 Mile above Mouth for 1915.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
April 21	Milner & Webb.....	1,933	140	284	4.20	2.80	1,190
Sept. 26	H. C. Hughes.....	1,505	115	155	2.27	1.45	352
Oct. 30	Webb & Balls.....	1,067	325	611	6.35	4.71	3,880



BRITISH COLUMBIA HYDROMETRIC SURVEY

SESSIONAL PAPER No. 26a

Daily Gauge Height and Discharge of Puntledge River near Mouth for 1915.

(Drainage area, 200 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	2.36	846	2.21	760	3.27	1,660	4.27	2,980	2.97	1,340	2.90	1,280
2	2.66	990	2.76	1,160	3.06	1,420	4.80	3,890	2.95	1,320	2.90	1,280
3	2.60	960	2.17	720	2.76	1,150	4.72	3,760	2.90	1,280	2.86	1,230
4	2.30	810	2.30	810	2.80	950	4.62	3,570	2.90	1,280	2.85	1,230
6	2.30	810	2.68	1,070	2.88	990	4.47	3,300	2.90	1,280	2.80	1,190
6	2.30	810	2.82	1,210	2.55	990	4.37	3,140	2.92	1,300	2.80	1,190
7	2.36	846	2.87	1,260	2.62	965	4.00	2,660	2.95	1,320	2.80	1,190
8	2.40	880	2.86	1,236	2.50	950	4.60	3,530	2.95	1,320	2.75	1,160
9	2.40	880	2.82	1,210	2.45	915	4.60	3,530	2.90	1,280	2.76	1,160
10	2.75	1,150	2.77	1,170	2.40	880	4.00	2,550	2.86	1,230	2.70	1,110
11	3.20	1,570	2.67	1,090	2.42	896	4.00	2,550	2.80	1,190	2.67	1,090
12	3.10	1,470	2.60	1,030	2.45	915	3.97	2,510	2.80	1,190	2.63	1,070
13	2.96	1,330	2.60	1,030	2.62	966	3.95	2,480	2.80	1,190	2.66	1,070
14	2.90	1,280	2.60	1,030	2.65	1,070	3.85	2,350	2.78	1,170	2.60	1,030
16	2.86	1,240	2.60	1,030	3.36	1,740	3.70	2,160	2.77	1,170	2.60	1,030
16	2.80	1,190	2.60	1,030	4.20	2,870	3.70	2,160	2.75	1,150	2.56	990
17	2.76	1,150	2.60	1,030	4.86	3,980	3.70	2,160	2.75	1,150	2.50	960
18	2.65	1,070	2.60	1,030	4.90	4,070	3.70	2,160	2.80	1,190	2.50	960
19	2.46	915	2.65	990	4.60	3,530	3.70	2,160	2.90	1,280	2.60	950
20	2.26	776	2.65	990	4.42	3,220	3.72	2,190	2.90	1,280	2.60	960
21	2.16	700	2.65	990	4.40	3,190	3.75	2,220	2.85	1,230	2.50	960
22	2.10	670	2.60	950	4.40	3,190	3.75	2,220	2.90	1,280	2.45	916
23	2.10	670	2.60	950	4.35	3,110	3.65	2,090	2.90	1,280	2.45	916
24	2.10	670	2.66	990	4.25	2,950	3.55	1,960	2.90	1,280	2.40	880
25	2.10	670	2.76	1,150	4.12	2,740	3.47	1,870	2.90	1,280	2.40	880
26	2.05	635	3.35	1,740	3.87	2,380	3.42	1,810	2.90	1,280	2.40	880
27	2.05	636	3.60	2,030	3.72	2,190	3.32	1,700	2.90	1,280	2.36	846
28	2.00	600	3.45	1,850	3.62	2,060	3.22	1,590	2.90	1,280	2.36	845
29	1.97	580	.....	.....	3.65	2,090	3.12	1,490	2.90	1,280	2.30	810
30	1.95	670	.....	.....	3.85	2,350	3.05	1,420	2.90	1,280	2.30	810
31	1.95	570	.....	.....	3.97	2,610	.....	.....	2.90	1,280	.....	.....

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	2.30	810	1.70	440	1.50	340	1.80	490	4.60	3,530	3.07	1,440
2	2.30	810	1.70	440	1.50	340	1.70	440	4.45	3,270	3.25	1,620
3	2.25	775	1.65	415	1.50	340	1.55	365	4.25	2,950	3.45	1,840
4	2.28	775	1.60	390	1.50	340	1.65	365	4.15	2,790	3.66	2,090
5	2.25	775	1.55	365	1.50	340	1.50	340	3.95	2,480	3.85	2,350
6	2.20	740	1.60	340	1.50	340	1.50	340	3.60	2,030	4.06	2,630
7	2.20	740	1.50	340	1.55	365	1.50	340	3.35	1,740	4.16	2,790
8	2.20	740	1.50	340	1.60	390	1.50	340	3.20	1,670	4.35	3,110
9	2.20	740	1.50	340	1.75	465	1.50	340	3.10	1,470	4.40	3,191
10	2.20	740	1.50	340	1.70	440	1.45	320	3.00	1,370	4.47	3,300
11	2.15	765	1.60	340	1.60	390	1.45	320	2.90	1,280	4.37	3,140
12	2.16	705	1.60	340	1.50	340	1.45	320	2.90	1,190	3.90	2,420
13	2.00	600	1.60	340	1.50	340	1.50	340	2.80	1,190	3.55	1,965
14	1.95	570	1.50	340	1.50	340	1.50	340	2.80	1,190	3.35	1,740
15	1.95	570	1.50	340	1.50	340	1.50	340	2.85	1,230	3.15	1,620
16	1.90	540	1.50	340	1.50	340	1.50	340	2.90	1,280	2.95	1,320
17	1.90	540	1.50	340	1.46	320	1.50	340	2.85	1,230	2.80	1,190
18	1.90	540	1.50	340	1.46	320	1.52	350	2.86	1,230	2.80	1,190
19	1.85	616	1.50	340	1.45	320	1.55	365	2.80	1,190	2.90	1,280
20	1.85	515	1.60	340	1.45	320	1.82	500	2.80	1,190	3.28	1,660
21	1.80	490	1.60	340	1.45	320	2.65	1,070	2.75	1,150	3.15	1,520
22	1.80	490	1.60	340	1.46	320	3.45	1,840	2.75	1,150	3.10	1,470
23	1.80	490	1.50	340	1.45	320	4.12	2,740	2.80	1,190	3.00	1,370
24	1.80	490	1.60	340	1.45	320	4.05	2,630	2.80	1,190	3.00	1,370
25	1.80	490	1.60	340	1.45	320	4.45	3,270	2.82	1,210	3.00	1,370
26	1.80	490	1.60	340	1.45	320	5.05	4,350	2.87	1,250	2.90	1,280
27	1.80	490	1.50	340	1.45	320	4.80	3,890	2.90	1,280	2.85	1,230
28	1.80	490	1.60	340	1.45	320	5.05	4,350	2.90	1,280	2.75	1,150
29	1.75	465	1.60	340	1.45	320	4.85	3,980	2.97	1,340	2.68	1,090
30	1.75	468	1.50	340	1.55	365	4.75	3,800	3.00	1,370	2.65	1,070
31	1.70	440	1.50	340	.....	.....	4.60	3,530	.....	.....	2.68	1,010

*Monthly Discharge of Puntledge River near Mouth for 1915.*

(Drainage area, 200 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January	1,870	570	901	4.50	5.19	58,400
February	2,030	720	112	5.60	5.83	6,220
March	4,070	550	2,030	10.15	11.70	128,000
April	3,890	1,420	2,470	12.35	13.78	147,000
May	1,340	1,150	1,260	6.30	7.26	77,500
June	1,380	810	1,030	5.15	5.78	61,300
July	810	440	505	3.02	3.48	37,200
August	440	340	351	1.76	2.03	21,600
September	455	320	344	1.72	1.92	20,800
October	4,350	320	1,380	6.90	7.96	84,800
November	3,530	1,150	1,590	7.95	8.87	94,600
December	3,300	1,010	1,800	9.00	10.40	111,000
The year	4,350	320	1,156	6.20	84.17	842,120

**PUNTLUDGE RIVER AT DIVERSION DAM.—(1063).**

*Location.*—At Diversion dam of Puntledge River Hydro-Electric Installation, Canadian Collieries (Dunsmuir), Ltd.

*Records Available.*—Daily discharges June 7, 1913, to December 31, 1915. Supplied by Canadian Collieries, Ltd. (Records for 1915 are given herein; preceding records are tabulated in previous reports.)

*Drainage Area.*—One hundred and seventy-five square miles.

*Gauge.*—Wooden staff located on right bank 50 feet above diversion dam.

*Channel.*—Even flow over crest of dam. Water flowing through flume to intake is added, giving total flow of stream.

*Discharge Measurements.*—Daily discharges obtained by weir measurements over dam plus water to flume.

*Winter Flow.*—Open all year.

*Co-operation.*—All data on this station supplied by Canadian Collieries (Dunsmuir), Ltd.

SESSIONAL PAPER No. 25a

Daily Gauge Height and Discharge of Puntledge River at Diversion Dam for 1915.

(Drainage area, 175 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	.....	400	.....	450	.....	740	.....	1,860	.....	1,200	.....	1,250
2	.....	400	.....	600	.....	740	.....	1,860	.....	1,100	.....	1,250
3	.....	520	.....	660	.....	650	.....	1,740	.....	1,100	.....	1,250
4	.....	520	.....	560	.....	650	.....	1,640	.....	1,000	.....	1,250
6	.....	520	.....	600	.....	650	.....	2,250	.....	1,000	.....	1,250
6	.....	520	.....	620	.....	650	.....	2,500	.....	1,000	.....	1,250
7	.....	520	.....	620	.....	650	.....	2,500	.....	1,000	.....	1,250
8	.....	520	.....	660	.....	650	.....	2,280	.....	1,000	.....	1,250
9	.....	680	.....	660	.....	600	.....	2,280	.....	880	.....	1,250
10	.....	680	.....	660	.....	600	.....	2,160	.....	800	.....	1,250
11	.....	7,000	.....	800	.....	600	.....	2,060	.....	800	.....	1,250
12	.....	1,000	.....	800	.....	600	.....	2,050	.....	940	.....	1,200
13	.....	1,080	.....	800	.....	540	.....	2,050	.....	1,100	.....	1,100
14	.....	1,080	.....	720	.....	530	.....	1,760	.....	1,100	.....	1,000
15	.....	1,000	.....	800	.....	650	.....	1,640	.....	1,100	.....	1,000
16	.....	1,000	.....	800	.....	1,160	.....	1,540	.....	1,040	.....	1,000
17	.....	920	.....	800	.....	1,470	.....	800	.....	1,040	.....	1,000
18	.....	920	.....	800	.....	2,480	.....	800	.....	1,100	.....	1,000
19	.....	620	.....	740	.....	2,600	.....	800	.....	1,100	.....	1,000
20	.....	460	.....	710	.....	2,690	.....	800	.....	1,100	.....	1,000
21	.....	460	.....	740	.....	2,500	.....	720	.....	1,250	.....	1,000
22	.....	560	.....	740	.....	2,500	.....	720	.....	1,250	.....	1,000
23	.....	660	.....	740	.....	2,400	.....	1,350	.....	1,250	.....	1,000
24	.....	560	.....	740	.....	2,280	.....	1,740	.....	1,250	.....	1,000
25	.....	560	.....	1,200	.....	2,200	.....	1,540	.....	1,250	.....	1,000
26	.....	460	.....	740	.....	2,200	.....	1,460	.....	1,250	.....	1,000
27	.....	460	.....	740	.....	2,050	.....	1,460	.....	1,250	.....	1,000
28	.....	460	.....	740	.....	1,840	.....	1,460	.....	1,250	.....	1,000
29	.....	460	.....	.....	.....	1,640	.....	1,360	.....	1,250	.....	1,000
30	.....	460	.....	.....	.....	1,540	.....	920	.....	1,260	.....	1,000
31	.....	460	.....	.....	.....	1,280	.....	.....	.....	1,250	.....	.....

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	.....	1,100	.....	280	.....	240	.....	220	.....	3,500	.....	1,100
2	.....	1,100	.....	280	.....	240	.....	240	.....	3,600	.....	1,040
3	.....	1,100	.....	280	.....	240	.....	240	.....	3,500	.....	1,340
4	.....	1,100	.....	280	.....	240	.....	240	.....	3,600	.....	1,340
5	.....	1,100	.....	280	.....	240	.....	240	.....	2,000	.....	1,950
6	.....	1,000	.....	280	.....	240	.....	240	.....	1,800	.....	2,380
7	.....	1,100	.....	280	.....	280	.....	240	.....	1,600	.....	2,380
8	.....	1,100	.....	280	.....	280	.....	240	.....	1,350	.....	2,380
9	.....	750	.....	240	.....	280	.....	240	.....	1,200	.....	2,000
10	.....	750	.....	240	.....	280	.....	240	.....	1,100	.....	2,000
11	.....	700	.....	240	.....	280	.....	240	.....	1,040	.....	2,000
12	.....	670	.....	240	.....	280	.....	210	.....	1,040	.....	2,000
13	.....	600	.....	240	.....	280	.....	210	.....	1,040	.....	2,000
14	.....	400	.....	240	.....	280	.....	210	.....	1,040	.....	1,700
15	.....	370	.....	240	.....	280	.....	220	.....	1,040	.....	1,570
16	.....	370	.....	240	.....	280	.....	240	.....	1,100	.....	1,300
17	.....	370	.....	240	.....	240	.....	240	.....	1,100	.....	1,400
18	.....	370	.....	240	.....	240	.....	210	.....	1,100	.....	1,300
19	.....	370	.....	240	.....	240	.....	210	.....	1,100	.....	1,200
20	.....	370	.....	240	.....	240	.....	1,500	.....	1,100	.....	1,100
21	.....	370	.....	240	.....	240	.....	2,600	.....	1,100	.....	1,120
22	.....	370	.....	240	.....	240	.....	2,280	.....	1,100	.....	1,080
23	.....	370	.....	240	.....	240	.....	2,280	.....	1,100	.....	1,080
24	.....	370	.....	240	.....	240	.....	2,280	.....	1,040	.....	1,100
25	.....	370	.....	240	.....	240	.....	2,400	.....	1,040	.....	1,000
26	.....	370	.....	240	.....	240	.....	2,700	.....	1,040	.....	1,000
27	.....	370	.....	240	.....	240	.....	3,800	.....	1,100	.....	1,000
28	.....	370	.....	240	.....	240	.....	3,800	.....	1,100	.....	1,000
29	.....	370	.....	240	.....	240	.....	3,800	.....	1,100	.....	1,000
30	.....	370	.....	240	.....	210	.....	3,800	.....	1,100	.....	1,000
31	.....	300	.....	240	.....	.....	.....	3,500	.....	.....	.....	1,200

*Monthly Discharge of Puntledge River at Diversion Dam for 1915.*

(Drainage area, 178 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January.....	1,080	400	639	3.55	4.21	39,300
February.....	1,200	460	710	4.03	4.22	39,400
March.....	2,600	530	1,360	7.70	8.95	83,600
April.....	2,500	720	1,500	9.15	10.21	95,200
May.....	1,280	800	1,100	6.29	7.25	67,500
June.....	1,280	1,000	1,100	6.29	7.02	65,800
July.....	1,100	300	605	3.48	4.01	37,400
August.....	280	240	250	1.43	1.65	15,400
September.....	280	210	252	1.44	1.61	15,000
October.....	3,500	210	1,250	7.20	8.30	77,500
November.....	3,500	1,040	1,490	8.52	9.51	88,700
December.....	2,380	1,000	1,450	8.28	9.55	89,200
The year.....	3,500	210	954	5.53	75.49	713,500

NOTE.—This data was supplied by the Canadian Collieries Co. (Dunsmuir) Ltd.

SHAWNIGAN CREEK.—(1025).

*Location.*—Five hundred feet from outlet of Shawnigan lake. Upstream side of Esquimalt and Nanaimo Railway bridge.

*Records Available.*—Daily discharges May 11, 1914, to December 31, 1915. (Records for 1915 are given herein; those for 1914 are tabulated in a previous report.)

*Drainage Area.*—Twenty-two square miles.

*Gauge.*—Nine foot enamel staff, nailed to piling on left downstream side of highway bridge at outlet from lake. Gauge read daily by Mr. G. B. Aitkens.

*Channel.*—Straight for 50 feet on either side of section, gravel and sand bed.

*Discharge Measurements.*—Four in 1914, three in 1915, covering all stages.

*Winter Flow.*—Open all year.

*Accuracy.*—"A" (up to discharge of 280 cubic feet per second). "B" (above 280 cubic feet per second).

*Discharge Measurements of Shawnigan Creek at Shawnigan Lake for 1915.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
Mar. 22	Cline & Webb.....	1,933	20	44.8	0.90	2.20	41.1
Aug. 27	H. C. Hughes.....					0.23	0.0 <sup>1</sup>
Dec. 7	C. E. Webb.....	1,057	33	104.0	2.55	4.59	288.0

<sup>1</sup> No flow.

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Daily Gauge Height and Discharge of Shawnigan Creek at Shawnigan Lake for 1915.

(Drainage area, 22 square miles.)

Day.	January.		February.		March.		April.		May.		June.	
	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	2.9	52	2.6	73	2.35	55	2.2	46	1.85	26	1.5	14
2	2.35	55	2.6	73	2.3	52	2.3	52	1.85	28	1.5	14
3	2.40	58	2.6	72	2.3	52	2.25	55	1.6	20	1.5	14
4	2.4	56	2.6	73	2.3	52	2.4	58	1.75	24	1.45	12
5	2.4	58	2.6	73	2.3	52	2.4	58	1.75	24	1.45	12
6	2.45	62	2.65	77	2.3	52	2.4	58	1.7	22	1.4	11
7	2.5	65	2.7	81	2.3	52	2.4	58	1.7	22	1.4	11
8	2.65	77	2.8	89	2.3	52	2.4	58	1.65	20	1.4	11
9	2.75	85	2.6	69	2.3	52	2.4	58	1.65	20	1.4	11
10	2.9	97	2.7	61	2.25	49	2.4	56	1.65	20	1.35	10
11	3.2	125	2.75	85	2.25	49	2.4	58	1.6	18	1.35	10
12	3.4	145	2.75	85	2.2	46	2.35	55	1.6	18	1.3	9
13	3.5	155	2.7	81	2.2	46	2.35	55	1.6	18	1.3	9
14	2.6	105	2.7	81	2.2	46	2.3	52	1.6	18	1.3	9
15	3.6	165	2.65	77	2.2	46	2.25	49	1.6	18	1.3	9
16	3.6	165	2.65	77	2.2	46	2.25	49	1.6	18	1.3	9
17	2.85	160	2.6	73	2.25	49	2.2	46	1.6	18	1.3	9
18	3.5	155	2.6	73	2.25	49	2.2	46	1.6	18	1.25	6
19	3.4	145	2.55	69	2.2	46	2.15	43	1.6	18	1.25	6
20	3.3	135	2.5	65	2.2	46	2.15	43	1.6	18	1.2	7
21	3.25	130	2.5	65	2.2	46	2.1	40	1.6	18	1.2	7
22	3.2	125	2.5	65	2.2	46	2.1	40	1.6	18	1.2	7
23	3.1	115	2.5	65	2.15	43	2.05	37	1.6	18	1.2	7
24	3.05	110	2.45	62	2.15	43	2.0	34	1.6	18	1.2	7
25	3.0	105	2.4	56	2.1	40	1.95	32	1.6	18	1.2	7
26	2.9	97	2.4	56	2.1	40	1.9	30	1.55	16	1.2	7
27	2.85	93	2.4	58	2.1	40	1.85	28	1.55	16	1.15	6
28	2.8	89	2.35	55	2.05	37	1.85	28	1.55	16	1.15	6
29	2.7	81	2.3	55	2.05	37	1.85	28	1.50	14	1.15	6
30	2.65	77	2.3	55	2.05	37	1.85	28	1.50	14	1.15	6
31	2.6	73	2.3	55	2.1	40	1.85	28	1.50	14	1.15	6

Day.	July.		August.		September.		October.		November.		December.	
	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.
1	1.10	5.0	0.85	2.2	0.20	0.1	0.0	0.0	1.3	9	4.45	257
2	1.10	5.0	0.85	2.3	0.15	0.1	0.0	0.0	1.4	11	4.40	250
3	1.10	5.0	0.80	2.0	0.15	0.1	0.0	0.0	1.5	12	4.20	230
4	1.10	5.0	0.80	2.0	0.16	0.0	0.0	0.0	1.5	14	4.10	220
5	1.10	5.0	0.80	2.0	0.10	0.0	0.0	0.0	1.5	16	4.10	220
6	1.05	4.0	0.80	2.0	0.10	0.0	0.0	0.0	1.5	16	4.4	250
7	1.05	4.0	0.75	1.7	0.10	0.0	0.0	0.0	1.5	18	4.6	275
8	1.05	4.0	0.75	1.8	0.10	0.0	0.0	0.0	1.5	18	5.3	350
9	1.05	4.0	0.75	1.7	0.10	0.0	0.0	0.0	1.5	18	5.5	375
10	1.00	3.0	0.70	1.5	0.10	0.0	0.0	0.0	1.5	18	5.4	360
11	1.00	3.0	0.70	1.5	0.05	0.0	0.0	0.0	1.5	20	5.2	340
12	1.00	3.0	0.70	1.8	0.05	0.0	0.0	0.0	1.5	20	5.0	320
13	1.00	3.0	0.65	1.2	0.05	0.0	0.0	0.0	1.5	22	4.9	305
14	1.00	3.0	0.65	1.3	0.0	0.0	0.0	0.0	1.5	22	4.7	285
15	1.00	3.0	0.60	1.0	0.0	0.0	0.0	0.0	1.5	24	4.5	265
16	1.00	3.0	0.60	1.0	0.0	0.0	0.0	0.0	1.5	26	4.4	250
17	1.00	3.0	0.55	0.8	0.0	0.0	0.0	0.0	1.5	34	4.2	230
18	0.95	2.7	0.55	0.8	0.0	0.0	0.0	0.0	1.5	34	4.1	220
19	0.95	2.8	0.50	0.6	0.0	0.0	0.0	0.0	1.5	34	4.1	220
20	0.95	2.7	0.50	0.6	0.0	0.0	0.0	0.0	1.5	33	4.2	230
21	0.95	2.8	0.40	0.3	0.0	0.0	0.05	0.0	1.5	31	5.4	360
22	0.95	2.7	0.40	0.3	0.0	0.0	0.10	0.0	1.5	31	5.8	405
23	0.95	2.8	0.35	0.3	0.0	0.0	0.15	0.0	1.5	15	5.7	395
24	0.90	2.5	0.35	0.2	0.0	0.0	0.2	0.1	1.5	15	5.7	375
25	0.90	2.5	0.30	0.2	0.0	0.0	0.3	0.2	1.5	15	5	355
26	0.90	2.5	0.30	0.2	0.0	0.0	0.5	0.6	1.5	15	5	355
27	0.90	2.5	0.25	0.2	0.0	0.0	0.6	1.0	1.5	15	5	355
28	0.90	2.5	0.25	0.1	0.0	0.0	0.8	2.0	1.5	15	5	355
29	0.90	2.5	0.20	0.1	0.0	0.0	0.85	2.2	1.5	15	5	355
30	0.85	2.2	0.20	0.1	0.0	0.0	0.90	2.5	1.5	15	5	355
31	0.85	2.3	0.15	0.1	0.0	0.0	1.10	5.0	1.5	15	5	355

## Monthly Discharge of Shawnigan River at Shawnigan Lake for 1915.

(Drainage area, 22 square miles.)

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF	
	Maximum	Minimum	Mean	Per square mile	Depth in inches on Drainage area	Total in acre feet
January	165.0	52.0	106.00	4.82	5.56	6,520.0
February	89.0	58.0	73.00	3.32	3.46	4,050.0
March	55.0	37.0	46.00	2.09	2.41	2,830.0
April	58.0	28.0	46.00	2.09	2.33	2,740.0
May	24.0	11.0	19.00	0.86	0.99	1,170.0
June	14.0	6.0	9.00	0.41	0.46	536.0
July	5.0	2.2	3.56	0.15	0.17	200.0
August	2.1	0.1	1.02	0.05	0.06	62.7
September	0.1	0.0	0.01	0.00	0.00	6.0
October	5.0	0.0	0.14	0.02	0.02	27.0
November	265.0	9.0	75.30	1.43	3.83	4,480.0
December	405.0	220.0	293.00	13.30	15.30	18,000.0
The year	405.0	0.0	56.00	2.55	34.59	40,621.7

## SPROUT RIVER. (1051).

*Location.* Eight hundred feet below outlet from Sproat lake, 8 miles from Alberni.

*Records Available.*—Daily discharges March 1, 1913, to December 31, 1915. (Records for 1915 are given herein; preceding records are tabulated in previous reports.)

*Drainage Area.*—One hundred and twenty-eight square miles.

*Gauge.*—Twelve-foot wooden staff nailed to crib on lake shore, 300 feet to right of outlet. Gauge read daily by Mr. H. Weiner.

*Channel.*—Slight curve at section, straight for 500 feet above and below section, gravel and boulder bed, solid rock on left side, good control.

*Discharge Measurements.*—Six in 1913, by Provincial Water Rights Branch, four in 1914, and two in 1915.

*Winter Flow.*—Open all year.

*Accuracy.*—"A" (up to discharge of 2,500 cubic feet per second). "B" (between discharge of 2,500 and 6,000 cubic feet per second). "C" (above 6,000 cubic feet per second).

*Co-operation.*—Provincial Water Rights Branch established station in 1913.

## Discharge Measurements of Sproat River at Sproat Lake for 1915.

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
April 17	Milner & Webb	1,932	134	744	3.31	6.50	2,460
Sept. 7	H. C. Hughes	1,505	80	105	0.94	1.15	100

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Daily Gauge Height and Discharge of Sproat River at Sproat Lake for 1915.

(Drainage area, 128 square miles)

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
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet	Sec.-ft.	Feet	Sec.-ft.	Feet	Sec.-ft.	Feet.	Sec.-ft.
1	4 10	1,000	3 75	860	5 10	1,540	6 23	2,260	4 47	1,190	3 90	920
2	4 69	1,300	3 98	950	5 00	1,480	7 65	3,520	4 33	1,110	3 86	900
3	4 92	1,430	4 15	1,030	4 90	1,420	8 20	4,120	3 29	1,100	3 82	890
4	5 00	1,480	4 20	1,050	4 88	1,410	8 15	4,070	4 25	1,080	3 78	870
5	5 07	1,520	4 20	1,050	4 85	1,390	7 00	3,790	4 25	1,060	3 75	860
6	5 16	1,580	4 35	1,130	4 88	1,110	7 50	3,370	4 19	1,050	3 68	830
7	5 27	1,640	4 70	1,300	4 80	1,360	7 30	3,180	4 15	1,030	3 64	820
8	5 30	1,660	4 80	1,360	4 75	1,330	7 20	3,090	4 13	1,020	3 60	800
9	5 43	1,740	4 88	1,410	4 69	1,290	7 10	3,000	4 10	1,000	3 55	780
10	5 55	1,810	4 95	1,450	4 63	1,270	7 00	2,910	4 31	1,110	3 50	760
11	6 37	2,380	5 00	1,480	4 59	1,250	6 90	2,820	4 45	1,170	3 45	740
12	6 55	2,520	5 10	1,510	4 45	1,180	6 80	2,730	4 60	1,260	3 40	720
13	6 45	2,440	5 20	1,600	4 38	1,140	6 86	2,780	4 60	1,250	3 35	710
14	6 32	2,340	5 20	1,600	4 92	1,430	7 00	2,910	4 55	1,230	3 30	690
15	6 10	2,170	5 25	1,630	5 68	1,890	6 85	2,780	4 50	1,200	3 28	680
16	5 90	2,030	5 29	1,650	6 05	2,140	6 70	2,640	4 43	1,170	3 18	650
17	5 58	1,836	5 30	1,660	6 68	2,620	6 50	2,480	4 39	1,150	3 13	640
18	5 40	1,720	5 30	1,660	7 15	3,050	6 38	2,380	4 36	1,130	3 08	620
19	5 25	1,630	5 21	1,610	7 10	3,000	6 21	2,250	4 30	1,100	3 04	610
20	5 12	1,550	5 10	1,510	7 00	2,910	6 04	2,130	4 23	1,060	3 00	600
21	5 00	1,480	5 00	1,480	6 95	2,870	5 87	2,010	4 15	1,030	2 95	590
22	4 85	1,390	4 95	1,450	6 89	2,810	5 67	1,880	4 11	1,010	2 91	570
23	4 70	1,300	4 98	1,470	6 86	2,730	5 48	1,770	4 10	1,000	2 86	560
24	4 55	1,230	5 00	1,480	6 60	2,660	5 31	1,670	4 12	1,010	2 82	550
25	4 40	1,150	5 15	1,570	6 40	2,400	5 15	1,570	4 13	1,010	2 78	530
26	4 28	1,090	5 18	1,590	6 20	2,240	5 00	1,480	4 15	1,020	2 74	520
27	4 15	1,030	5 20	1,600	6 00	2,100	4 92	1,430	4 15	1,030	2 69	510
28	4 00	960	5 15	1,570	5 85	2,000	4 75	1,330	4 15	1,030	2 65	500
29	3 90	920	.....	.....	5 76	1,940	4 65	1,280	4 16	1,030	2 60	450
30	3 82	890	.....	.....	5 65	1,870	4 55	1,220	4 05	980	2 55	470
31	3 79	880	.....	.....	5 60	1,810	.....	.....	3 95	940	.....	.....

	July.		August.		September.		October.		November.		December.	
1	2.50	450	1.78	245	1.22	135	1.05	100	0.25	5,280	5.65	1,870
2	2.49	445	1.76	240	1.23	135	1.38	165	8.90	4,990	5.58	1,890
3	.....	445	1.73	235	1.21	130	1.42	175	8.45	4,400	5.97	2,880
4	2.48	445	1.70	230	1.21	130	1.44	180	8.05	3,950	7.55	3,420
5	2.45	435	1.57	225	1.21	130	1.46	180	7.65	3,520	8.01	3,910
6	2.41	425	1.54	220	1.20	130	1.46	180	7.35	2,230	8 04	3,940
7	2.39	415	1.61	210	1.20	130	1.45	180	7.10	3,000	7 90	3,790
8	2.35	405	1.58	205	1.19	130	1.43	175	6.80	2,730	7 70	3,570
9	2.32	395	1.57	205	1.18	125	1.39	170	6.50	2,480	7 50	3,370
10	2.31	395	.....	200	1.18	120	1.40	170	6.22	2,260	7 30	3,180
11	2.30	390	1.55	200	1.15	120	1.45	180	6.10	2,170	7 10	3,000
12	2.29	385	1.53	195	1.13	115	1.49	180	5.62	1,850	7 30	3,180
13	2.28	385	1.51	190	1.12	115	1.58	205	5.35	1,690	7 20	3,090
14	2.25	375	1.49	190	1.10	110	1.65	220	5.30	1,660	7 00	2,910
15	2.23	370	1.47	185	1.09	110	1.70	230	5.28	1,550	5 75	2,580
16	2.20	360	1.45	180	1 07	105	1 71	236	5 35	1,690	6 40	2,400
17	2.16	350	1 44	180	1 06	100	1 72	235	5 35	1,810	6 25	2,280
18	2 12	335	1 43	175	1 04	100	1 75	240	5 50	1,780	6 18	2,230
19	2 08	325	1 42	175	1 03	95	1 90	270	5 45	1,750	6 50	2,480
20	2 04	310	1 41	170	1 01	90	2 50	450	5 42	1,730	6 80	2,730
21	2 00	300	1 40	170	0 99	90	4 22	1,060	5 41	1,730	7 05	2,950
22	1 96	290	1 39	170	0 99	90	5 20	1,600	5 48	1,770	6 95	2,850
23	1 93	280	1 38	165	0 98	85	5 45	1,750	5 51	1,790	6 84	2,770
24	1 90	270	1 37	165	0 98	85	5 58	1,830	5 50	1,780	6 72	2,650
25	1 88	265	1 36	160	0 98	85	5 85	2,000	5 48	1,770	6 62	2,580
26	1 86	260	1 35	160	0 97	85	6 21	2,250	5 50	1,780	5 51	2,490
27	1 85	260	1 30	150	0 99	90	7 80	3,820	5 55	1,810	5 40	2,400
28	1 84	260	1 25	140	0 98	85	9 31	5,350	5 58	1,830	5 65	2,500
29	1 82	255	1 23	135	0 98	85	9 15	5,170	5 60	1,840	5 92	2,840
30	1 80	250	1 23	135	1 00	90	8 90	4,990	5 63	1,850	6 12	2,150
31	1 79	250	1 22	135	.....	.....	9 45	5,520	.....	.....	5 38	1,710



*Monthly Discharge of Sproat River at Sproat Lake for 1915.*

(Drainage area, 128 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January.....	2,520	880	1,550	12.10	13.95	95,300
February.....	1,660	860	1,420	11.10	11.56	78,900
March.....	3,050	1,140	1,930	15.07	17.37	119,000
April.....	4,120	1,220	2,490	19.45	21.70	148,000
May.....	1,250	940	1,080	8.44	9.73	66,400
June.....	920	470	680	5.31	5.92	40,500
July.....	450	250	345	2.72	3.14	21,400
August.....	245	135	185	1.45	1.67	11,400
September.....	135	85	108	0.84	0.94	6,430
October.....	5,520	100	1,270	9.93	11.45	78,100
November.....	5,280	1,650	2,390	18.70	20.90	142,000
December.....	3,940	1,710	2,800	21.90	25.20	172,000
The year.....	5,520	85	1,350	10.60	143.53	979,430

**STAMP RIVER AT GREAT CENTRAL LAKE.—(1052).**

*Location.*—Three hundred feet below outlet from Great Central lake, 16 miles from Alberni.

*Records Available.*—Daily discharges February 20, 1913, to December 31, 1915. (Records for 1915 are given herein; preceding records are tabulated in previous reports.)

*Drainage Area*—One hundred and seventy-seven square miles.

*Gauge.*—Twelve-foot wooden staff nailed to crib in lake, 300 feet to right of outlet. Gauge read twice daily by Mr. J. Drinkwater.

*Channel.*—Straight for 300 feet above and 100 feet below section, rocky bed, some boulders. At extreme high water stage there is a discharge from slough 1,000 feet to right of stream.

*Discharge Measurements.*—Seven in 1913, by Provincial Water Rights Branch; four in 1914, and two in 1915, covering all but highest stage.

*Winter Flow.*—Open all year.

*Accuracy.*—"A" (between discharge of 250 and 3,500 cubic feet per second). "B" (below 250 and between 3,500 and 5,000 cubic feet per second). "C" (above 5,000 cubic feet per second).

*Co-operation.*—Station established in 1913 by Provincial Water Rights Branch.

*Discharge Measurements of Stamp River at Great Central Lake for 1915.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
April 17	Milner & Webb.....	1,933	141	827	3.36	5.00	2,780
Sept. 7	H. C. Hughes.....	1,595	100	310	0.93	0.92	248



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Daily Gauge Height and Discharge of Stamp River at Great Central Lake for 1915.

(Drainage area, 177 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	2.47	980	2.18	820	3.34	1,530	5.03	2,790	3.38	1,550	3.29	1,490
2	2.88	1,230	2.35	910	3.33	1,520	6.35	4,000	3.28	1,490	3.24	1,460
3	3.00	1,300	2.44	960	3.27	1,480	5.82	4,500	3.27	1,480	3.16	1,400
4	3.04	1,320	2.49	990	3.24	1,460	6.74	4,410	3.25	1,470	3.10	1,360
5	3.01	1,310	2.58	1,050	3.15	1,400	5.54	4,190	3.28	1,490	3.05	1,340
6	2.99	1,290	2.72	1,130	3.19	1,420	6.25	3,900	3.30	1,500	3.05	1,340
7	3.05	1,340	2.88	1,230	3.22	1,440	6.00	3,660	3.37	1,550	3.08	1,350
8	3.17	1,410	3.12	1,370	3.14	1,390	6.01	3,670	3.40	1,570	3.10	1,360
9	3.19	1,420	3.35	1,540	2.99	1,290	5.92	3,590	3.41	1,580	3.08	1,350
10	3.36	1,540	3.53	1,550	2.94	1,260	5.67	3,360	3.55	1,580	3.05	1,330
11	3.59	1,770	3.57	1,590	2.87	1,220	5.54	3,250	3.94	1,950	2.99	1,290
12	3.78	1,830	3.57	1,590	2.83	1,200	5.55	3,250	4.06	2,030	2.93	1,250
13	3.74	1,810	3.48	1,530	2.80	1,180	5.58	3,370	4.02	2,000	2.87	1,220
14	3.69	1,770	3.38	1,560	2.98	1,280	5.60	3,300	3.99	1,980	2.85	1,210
15	3.57	1,590	3.44	1,600	3.96	1,950	5.42	3,140	3.93	1,940	2.81	1,190
16	3.45	1,510	3.39	1,560	4.34	2,240	5.15	2,900	3.82	1,850	2.78	1,170
17	3.34	1,530	3.41	1,580	4.98	2,750	5.02	2,790	3.75	1,820	2.75	1,150
18	3.20	1,430	3.39	1,560	5.56	3,260	4.99	2,760	3.68	1,770	2.72	1,130
19	3.10	1,350	3.33	1,520	5.48	3,370	4.94	2,720	3.51	1,720	2.69	1,110
20	2.99	1,290	3.25	1,470	5.52	3,230	4.84	2,640	3.57	1,590	2.61	1,070
21	2.39	1,230	3.13	1,380	5.50	3,210	4.72	2,550	3.54	1,670	2.58	1,050
22	2.74	1,140	3.10	1,350	5.48	3,190	4.56	2,420	3.49	1,630	2.52	1,010
23	2.58	1,110	3.15	1,400	5.45	3,170	4.39	2,280	3.47	1,620	2.45	980
24	2.59	1,050	3.19	1,420	5.38	3,100	4.31	2,220	3.40	1,570	2.48	990
25	2.48	990	3.47	1,620	5.34	2,980	4.16	2,100	3.38	1,550	2.47	980
26	2.32	890	3.43	1,590	5.03	2,790	4.01	2,000	3.36	1,540	2.44	950
27	2.28	870	3.48	1,530	4.82	2,630	3.88	1,900	3.43	1,590	2.38	930
28	2.22	840	3.49	1,530	4.67	2,510	3.78	1,840	3.51	1,650	2.33	900
29	2.19	830	.....	.....	4.45	2,330	3.61	1,720	3.51	1,650	2.24	850
30	2.11	780	.....	.....	4.38	2,270	3.52	1,650	3.43	1,590	2.19	830
31	2.08	770	.....	.....	4.47	2,350	.....	.....	3.35	1,540	.....	.....

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	2.18	820	1.48	480	0.80	240	0.58	205	7.90	5,820	3.73	1,800
2	2.17	815	1.43	450	0.80	240	0.81	245	7.52	5,330	3.89	1,910
3	2.15	805	1.39	445	0.80	240	0.86	260	7.08	4,800	4.78	2,590
4	2.13	795	1.37	440	0.80	240	1.11	335	6.61	4,270	5.31	3,040
5	2.10	780	1.37	440	0.80	240	1.30	410	6.27	3,920	5.51	3,310
6	2.13	795	1.38	440	0.79	240	1.13	340	5.92	3,590	5.87	3,540
7	2.09	775	1.32	420	0.84	250	1.10	330	5.53	3,240	5.74	3,430
8	2.09	775	1.31	415	0.80	240	1.06	320	5.24	2,980	5.75	3,440
9	2.09	775	1.29	405	0.88	265	1.02	305	4.95	2,730	5.52	3,230
10	2.07	755	1.23	380	0.88	265	1.01	305	4.67	2,510	5.32	3,050
11	2.06	750	1.22	380	0.81	245	0.95	285	4.47	2,350	5.11	2,850
12	2.06	750	1.20	370	0.80	240	1.08	325	4.23	2,150	5.01	2,780
13	2.02	740	1.19	365	0.88	255	1.18	350	4.01	2,000	4.95	2,740
14	1.99	725	1.14	345	0.88	265	1.27	400	3.84	1,880	4.79	2,500
15	1.95	710	1.12	340	0.70	210	1.28	400	3.80	1,850	4.53	2,470
16	1.90	580	1.10	330	0.70	210	1.28	400	3.75	1,820	4.39	2,280
17	1.87	555	1.09	330	0.70	210	1.30	410	3.74	1,810	4.22	2,150
18	1.80	530	1.08	325	0.70	210	1.35	430	3.85	1,890	4.15	2,100
19	1.79	525	1.05	320	0.70	210	1.44	465	3.77	1,830	4.00	1,990
20	1.76	510	1.06	320	0.70	210	1.98	720	3.68	1,770	4.19	2,120
21	1.74	600	1.06	320	0.58	205	3.79	1,840	3.56	1,680	4.39	2,280
22	1.70	580	1.02	305	0.66	200	4.52	2,390	3.53	1,660	4.55	2,410
23	1.58	570	1.00	300	0.64	190	4.88	2,670	3.65	1,750	4.50	2,370
24	1.63	545	0.98	295	0.64	190	4.99	2,750	3.59	1,700	4.42	2,310
25	1.60	530	0.95	290	0.50	180	5.16	2,900	3.82	1,860	4.30	2,210
26	1.55	515	0.94	280	0.50	180	5.93	3,600	4.16	2,100	4.15	2,100
27	1.55	510	0.94	280	0.60	180	6.94	4,630	3.97	1,970	4.11	2,070
28	1.56	515	0.92	275	0.60	180	8.22	6,360	4.06	2,030	3.94	1,950
29	1.52	500	0.90	270	0.60	180	8.10	6,090	3.94	1,950	3.81	1,850
30	1.55	510	0.84	250	0.62	185	7.77	5,650	3.87	1,900	3.49	1,530
31	1.49	485	0.80	240	.....	.....	7.97	5,910	.....	.....	3.44	1,500

*Monthly Discharge of Stamp River at Great Central Lake for 1915.*

(Drainage area, 177 square miles.)

MONTH.	DISCHARGE IN SECOND-FOOT.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January	1,830	770	1,280	7.23	8.33	78,700
February	1,690	820	1,410	7.96	8.29	78,300
March	3,370	1,180	2,140	12.09	13.93	132,000
April	4,500	1,650	2,960	16.72	18.65	176,000
May	2,030	1,470	1,670	9.43	10.87	108,000
June	1,490	830	1,170	6.61	7.37	69,600
July	320	485	677	3.82	4.40	41,600
August	480	240	350	1.98	2.28	21,500
September	265	180	220	1.24	1.38	13,100
October	6,360	205	1,680	9.49	10.90	108,000
November	5,820	1,660	2,570	14.50	16.20	153,000
December	3,540	1,600	2,460	13.90	16.00	151,000
The year	6,360	180	1,550	8.75	118.60	1,120,800

STAMP RIVER AT STAMP FALLS.—(1053).

*Location.*—One-quarter mile above falls, 8 miles from Alberni, on Beaver Creek road.

*Records Available.*—Daily discharges March, 1913, to May 31, 1914. Messrs. Ritchie Agnew, engineers, Victoria, B.C. Daily discharges June 1, 1914, to December 31, 1915. (Records for 1915 are given herein; preceding records are tabulated in previous reports.)

*Drainage Area.*—Three hundred and thirty-six square miles.

*Gauge.*—Fourteen-foot wooden staff on left bank, 80 feet below measuring section. Gauge read daily by Mr. Robt. Darby.

*Channel.*—Straight for 600 feet above and 300 feet below section. Rock bed with gravel, good condition.

*Discharge Measurements.*—Numerous measurements made by Messrs. Ritchie Agnew Co., during 1913 and 1914, three in 1914 and one in 1915, covering all stages.

*Winter Flow.*—Open all year.

*Accuracy.*—"B".

*Co-operation.*—Station established in 1913 by Messrs. Ritchie Agnew Co.

*Discharge Measurements of Stamp River near Stamp Falls for 1915.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
Sept. 8	H. C. Hughes	1,505	140	810	0.47	0.31	384

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Daily Gauge Height and Discharge of Stamp River at Falls for 1915.

(Drainage area, 336 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	2.5	2,340	1.5	1,130	2.7	2,680	4.1	5,800	3.1	3,390	2.0	1,670
2	2.6	2,510	1.5	1,130	2.5	2,340	5.3	10,400	3.1	3,390	2.1	1,806
3	3.0	3,190	1.5	1,130	2.5	2,340	5.0	9,120	2.8	2,850	2.1	1,809
4	3.4	4,020	1.8	1,450	2.6	2,840	4.6	7,640	2.6	2,610	2.1	1,890
5	3.5	4,240	2.0	1,670	2.3	2,060	4.4	6,790	2.6	2,610	2.1	1,800
6	3.6	4,240	2.0	1,670	2.3	2,060	4.0	6,530	2.4	2,200	2.1	1,800
7	3.7	4,750	2.4	2,200	2.2	1,930	4.0	6,530	2.4	2,200	2.0	1,670
8	3.4	4,020	2.4	2,200	2.2	1,930	3.7	4,760	2.4	2,200	2.0	1,670
9	3.1	3,390	2.8	2,850	2.2	1,930	3.7	4,750	2.4	2,200	2.0	1,670
10	2.9	3,020	3.3	3,800	2.1	1,800	3.6	4,240	2.4	2,200	1.9	1,560
11	4.2	6,100	2.9	3,020	2.1	1,800	3.6	4,240	2.3	2,040	1.9	1,560
12	3.8	5,010	2.7	2,680	2.1	1,800	3.1	3,590	2.3	2,060	1.9	1,560
13	2.9	3,020	2.4	2,200	2.0	1,670	3.1	3,390	2.4	2,200	1.8	1,450
14	2.6	2,510	2.4	2,200	2.0	1,670	3.7	4,760	2.4	2,200	1.8	1,460
16	2.4	2,200	2.4	2,200	3.0	3,190	3.3	3,800	2.4	2,200	1.9	1,450
16	2.4	2,200	2.3	2,060	4.2	6,100	3.3	3,800	2.4	2,200	1.8	1,450
17	2.2	1,930	2.3	2,060	5.4	10,800	3.1	3,390	2.3	2,060	1.8	1,450
18	2.2	1,930	2.3	2,060	5.0	9,120	3.4	4,020	2.3	2,060	1.6	1,230
19	2.2	1,930	2.2	1,930	4.8	8,320	3.0	3,190	2.3	2,060	1.6	1,230
20	1.9	1,560	2.2	1,930	3.9	5,270	3.0	3,190	2.2	1,930	1.6	1,230
21	1.8	1,450	2.2	1,930	3.8	5,010	2.8	2,850	2.2	1,930	1.6	1,230
22	1.8	1,460	2.4	2,200	3.8	5,010	2.6	2,510	2.2	1,930	1.6	1,230
23	1.6	1,230	2.4	2,200	3.4	4,020	2.6	2,510	2.2	1,930	1.4	1,040
24	1.6	1,230	2.4	2,200	3.2	3,590	2.4	2,200	2.2	1,930	1.4	1,040
25	1.5	1,130	2.5	2,340	3.2	3,590	2.4	2,200	2.1	1,800	1.4	1,040
26	1.5	1,130	2.5	2,340	3.0	3,190	2.4	2,200	2.1	1,800	1.4	1,040
27	1.4	1,040	2.6	2,510	3.0	3,190	2.6	2,610	2.1	1,800	1.4	1,040
28	1.4	1,040	2.6	2,610	2.8	2,850	2.8	2,850	2.1	1,800	1.4	1,040
29	1.3	960	.....	.....	2.8	2,850	3.0	3,190	2.1	1,800	1.4	1,040
30	1.3	960	.....	.....	2.8	2,850	3.1	3,390	2.0	1,670	1.3	960
31	1.3	960	.....	.....	3.0	3,190	.....	.....	2.0	1,670	.....	.....

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	1.3	960	0.7	560	0.3	370	0.6	510	5.3	10,400	3.3	3,800
2	1.3	960	0.7	560	0.3	370	0.7	560	4.9	8,720	4.3	6,430
3	1.3	960	0.7	560	0.3	370	0.6	510	4.3	6,430	5.0	9,120
4	1.3	960	0.7	560	0.2	340	0.7	560	4.0	5,530	5.1	9,520
5	1.2	880	0.7	560	0.2	340	0.7	560	3.9	5,270	4.9	8,720
6	1.2	880	0.6	510	0.2	340	0.5	460	3.8	5,010	4.7	7,920
7	1.2	880	0.6	510	0.1	320	0.5	460	3.4	4,020	4.5	7,160
8	1.2	880	0.6	510	0.1	320	0.4	410	3.0	3,190	4.5	7,160
9	1.2	880	0.6	510	0.1	320	0.4	410	2.9	3,020	4.1	5,800
10	1.1	800	0.6	510	0.1	320	0.3	370	2.7	2,680	4.0	5,530
11	1.1	800	0.5	460	0.1	320	0.3	370	2.7	2,680	4.0	5,530
12	1.1	800	0.5	460	0.1	320	0.3	370	2.7	2,680	3.8	5,010
13	1.1	800	0.5	460	0.1	320	0.3	370	2.6	2,510	3.2	3,590
14	1.1	800	0.5	460	0.1	320	0.4	410	2.4	2,200	3.2	3,590
15	1.1	800	0.5	460	0.1	320	0.6	510	2.8	2,850	3.1	3,390
16	1.1	800	0.5	460	0.1	320	1.0	720	2.9	3,020	3.0	3,190
17	1.1	800	0.5	460	0.1	320	1.0	720	3.0	3,190	2.8	2,860
18	1.1	800	0.5	460	0.1	320	1.6	1,230	2.9	3,020	2.7	2,680
19	1.1	800	0.5	460	0.0	300	2.0	1,670	2.7	2,680	4.3	6,430
20	1.0	720	0.5	460	0.0	300	3.9	5,270	2.7	2,680	6.2	14,200
21	1.0	720	0.5	460	0.0	300	4.0	5,530	2.7	2,680	4.0	5,530
22	1.0	720	0.4	410	0.0	300	4.1	5,800	2.9	3,020	3.6	4,490
23	1.0	720	0.4	410	0.0	300	4.1	5,800	2.9	3,020	3.4	4,020
24	0.9	660	0.4	410	0.0	300	4.1	5,800	2.9	3,020	2.8	2,860
25	0.9	660	0.3	370	0.0	300	4.9	8,720	2.8	2,850	2.6	2,510
26	0.8	610	0.3	370	0.0	300	5.4	10,800	2.8	2,850	2.6	2,610
27	0.8	610	0.3	370	0.0	300	5.7	12,100	2.8	2,850	2.4	2,200
28	0.8	610	0.3	370	0.0	300	7.2	19,000	2.8	2,850	2.4	2,200
29	0.8	610	0.3	370	0.0	300	5.8	12,500	2.8	2,850	2.2	1,930
30	0.8	610	0.3	370	0.0	300	5.6	11,700	3.0	3,190	2.2	1,930
31	0.7	660	0.3	370	.....	.....	5.5	11,300	.....	.....	2.2	1,930

## Monthly Discharge of Stamp River at Stamp Falls for 1915.

(Drainage area, 336 square miles.)

MONTH.	DISCHARGE IN SECON-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January	6,100	940	2,470	7.35	8.47	182,000
February	3,800	1,130	2,140	6.37	6.63	119,000
March	19,300	1,670	3,560	10.60	12.22	219,000
April	10,400	2,200	4,270	12.70	14.17	284,000
May	3,390	1,670	2,150	6.40	7.38	132,000
June	1,300	960	1,400	4.17	4.63	83,300
July	960	560	776	2.31	2.66	47,700
August	560	370	459	1.37	1.58	28,200
September	370	300	319	0.95	1.06	19,000
October	19,000	370	4,050	12.10	14.00	249,000
November	10,400	2,200	3,700	11.00	12.30	220,000
December	9,520	1,930	4,960	14.80	17.10	308,000
The year.	19,000	300	2,521	7.51	102.22	1,828,300

## TSOLUM RIVER.—(1039).

*Location.*—Upstream side of foot bridge, 2 miles from Sandwick.

*Records Available.*—Daily discharges May 31, 1914, to December 31, 1915. (Records for 1915 are given herein; those for 1914 are tabulated in a previous report.)

*Drainage Area.*—One hundred and fifty square miles.

*Gauge.*—Twelve foot enamel staff, 20 feet downstream from bridge, on cribbing, right bank. Gauge read twice daily by Mr. W. Calhoun.

*Channel.*—Straight for 500 feet above and 300 feet below section. Gravel bed. Stream confined by cribbing, both banks, in high water.

*Discharge Measurements.*—Four in 1914, and three in 1915.

*Winter Flow.*—Open all year.

*Accuracy.*—"B" (up to discharge of 900 cubic feet per second). "C" (above 900 cubic feet per second).

## Discharge Measurements of Tsolum River 3 Miles above Mouth for 1915.

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
April 21	Milner & Webb	1,933	65	131.0	1.40	5.83	181.0 <sup>1</sup>
Sept. 26	H. C. Hughes	1,505	11	2.2	0.95	4.65	2.1 <sup>2</sup>
Oct. 30	Webb & Balls	1,057	97	212.0	2.63	6.85	558.0

<sup>1</sup> Gauge lowered two feet.<sup>2</sup> Not at regular section.

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Daily Gauge Height and Discharge of Tsolum River 5 Miles from Mouth for 1915.

(Drainage area, 150 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	7.4	930	6.4	450	6.7	590	8.0	1,220	5.4	75	5.6	115
2	8.3	1,360	6.3	400	6.3	400	8.4	1,410	5.4	75	5.6	115
3	7.9	1,170	6.9	690	6.3	400	7.8	1,120	5.5	95	5.5	95
4	7.1	780	7.0	740	6.5	500	7.4	930	5.8	175	5.5	95
5	7.7	1,070	7.5	980	6.3	400	7.1	780	5.8	175	5.4	75
6	7.9	1,170	8.6	1,500	6.6	540	6.8	640	5.8	175	5.4	75
7	7.9	1,170	8.4	1,410	6.5	500	6.7	590	5.7	145	5.4	75
8	8.5	1,460	8.1	1,260	6.4	450	6.6	540	5.7	145	5.3	60
9	8.6	1,500	7.9	1,170	6.2	350	6.4	450	5.8	175	5.2	48
10	9.0	1,700	7.7	1,070	6.1	300	6.2	350	5.9	215	5.2	48
11	9.3	1,850	7.1	780	6.2	350	6.1	300	5.9	215	5.1	38
12	8.5	1,500	6.8	640	6.4	480	6.6	540	6.0	260	5.2	48
13	8.5	1,460	6.5	500	6.9	690	6.5	500	5.9	215	5.1	38
14	8.0	1,220	6.5	500	7.8	1,120	6.4	450	5.8	175	5.1	38
15	7.3	580	6.4	450	8.9	1,650	6.3	400	5.7	145	5.1	38
16	6.9	690	6.3	400	8.0	1,220	6.2	350	5.7	145	5.2	48
17	6.4	450	6.3	400	8.6	1,500	6.3	400	5.7	145	5.2	48
18	6.3	400	6.2	350	8.0	1,220	6.3	400	5.8	175	5.1	38
19	6.2	350	6.2	350	7.2	830	6.2	350	5.8	175	5.0	28
20	6.1	300	6.1	300	6.9	690	6.0	260	5.9	215	5.0	28
21	6.0	260	6.0	260	7.0	740	5.8	175	5.9	215	5.0	28
22	5.9	215	6.2	350	7.0	740	5.7	145	5.8	175	5.0	28
23	5.9	215	6.2	350	7.0	740	5.7	145	5.8	175	5.0	28
24	5.8	175	6.7	590	6.7	590	5.7	145	5.8	175	4.9	28
25	5.7	145	7.8	1,120	6.4	450	5.6	115	5.9	215	4.9	18
26	5.6	115	7.4	930	6.2	350	5.6	115	5.9	215	4.9	18
27	5.6	115	7.1	780	6.1	300	5.6	115	5.8	175	4.8	12
28	5.5	95	6.9	690	6.0	260	5.6	115	5.8	175	4.8	12
29	5.4	75	.....	.....	6.0	260	5.5	95	5.8	175	4.8	12
30	5.9	215	.....	.....	6.4	450	5.4	75	5.7	145	4.7	8
31	6.0	260	.....	.....	7.3	880	.....	.....	5.7	145	.....	.....

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	4.7	8	4.7	8	4.6	5	4.7	8	6.4	450	6.4	450
2	4.7	8	4.7	8	4.3	5	4.8	12	6.0	260	6.8	640
3	4.6	5	4.7	8	4.6	5	4.8	12	5.7	145	7.9	1,170
4	4.6	5	4.7	8	4.6	5	4.8	12	5.6	115	8.9	1,650
5	4.6	5	4.6	5	4.6	5	4.8	12	5.4	75	7.6	1,020
6	4.6	5	4.6	5	4.6	5	4.8	12	5.0	28	7.5	980
7	4.6	5	4.6	5	4.7	8	4.8	12	5.0	28	7.4	930
8	4.7	8	4.6	5	4.9	18	4.8	12	5.0	28	8.4	1,410
9	4.7	8	4.6	5	4.8	12	4.8	12	5.2	48	8.9	1,650
10	4.6	5	4.6	5	4.8	12	4.8	12	5.6	115	8.0	1,220
11	4.6	5	4.6	5	4.7	8	4.8	12	5.8	175	7.6	1,020
12	4.5	5	4.6	5	4.7	8	4.8	12	6.0	260	7.9	1,170
13	4.7	8	4.6	5	4.7	8	4.8	12	6.4	450	8.6	1,500
14	4.9	18	4.5	3	4.7	8	4.8	12	6.4	450	8.4	1,410
15	5.3	60	4.5	3	4.6	5	4.8	12	6.8	640	7.7	1,070
16	5.8	175	4.5	3	4.6	5	4.8	12	7.2	830	7.9	1,170
17	5.4	75	4.5	3	4.6	5	4.8	12	7.1	780	7.5	980
18	5.0	28	4.5	3	4.6	5	4.9	18	7.1	780	7.3	880
19	4.9	18	4.5	3	4.6	5	5.3	60	6.8	640	7.7	1,070
20	4.9	18	4.5	3	4.6	5	5.0	215	6.6	540	8.6	1,500
21	4.8	12	4.5	3	4.6	5	8.4	1,410	6.6	540	8.4	1,410
22	4.8	12	4.5	3	4.6	5	7.8	1,120	7.0	740	8.0	1,220
23	4.8	12	4.5	3	4.6	5	7.3	880	7.5	980	7.4	930
24	4.8	12	4.5	3	4.6	5	8.0	1,220	7.2	830	6.8	640
25	4.7	8	4.5	3	4.6	5	8.6	1,500	7.1	780	6.7	590
26	4.7	8	4.5	3	4.6	5	8.4	1,410	7.4	930	6.7	590
27	4.7	8	4.5	3	4.6	5	8.7	1,550	6.9	690	6.6	540
28	4.7	8	4.5	3	4.6	5	9.2	1,800	6.6	540	6.5	500
29	4.8	12	4.5	3	4.6	5	7.8	1,120	6.7	590	6.5	500
30	4.8	12	4.5	3	4.6	5	-7.0	740	6.6	540	6.4	450
31	4.8	12	4.5	3	.....	.....	6.6	540	.....	.....	6.4	450

† GEORGE V. A. 1917

**Monthly Discharge of Tsolum River 3 Miles from Mouth for 1915.**  
(Drainage area, 150 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January	1,850	75	751.00	5.00	5.76	48,200
February	1,500	280	693.00	4.62	4.81	38,500
March	1,650	260	642.00	4.28	4.93	39,500
April	1,410	75	441.00	2.94	3.28	26,200
May	260	75	171.00	1.14	1.31	10,500
June	115	8	458.00	3.05	3.40	27,300
July	175	5	19.00	0.13	0.15	1,170
August	8	3	4.22	0.03	0.04	259
September	15	5	6.40	0.04	0.04	381
October	1,800	8	444.00	2.96	3.47	27,300
November	980	28	467.00	3.11	3.47	27,800
December	1,850	450	990.00	6.60	7.61	60,900
The year	1,850	3	424.00	2.83	38.21	306,010

**MISCELLANEOUS METERING STATIONS.**

**SOUTHERN DISTRICT.**

Date 1915.	Stream.	Tributary To	Locality.	Engineer	Gaug. Height.	Discharge.
					Feet.	Sec.-ft.
April 29	Black	Howe sound	Howe sound	Hughes	2.32	66.2
April 30	Black	Howe sound	Howe sound	Hughes	2.05	17.5
July 29	Black	Howe sound	Howe sound	Hughes	0.78	2.4
July 10	Bridalveil	Coquihalla		Hughes		1.0
June 25	Capilano intake	Burrard inlet	North Vancouver	Cline		26.0
April 25	Dunville	Fraser river	Rosedale, B.C.	Cline	0.95	3.0
Nov. 23	Dunville	Fraser river	Rosedale, B.C.	Hughes & Webb	0.92	4.3
April 21	Elk above Jackman	Fraser river	Rosedale, B.C.	Cline	1.20	11.1
Nov. 23	Elk above Jackman	Fraser river	Rosedale, B.C.	Hughes & Webb	1.02	8.2
April 21	Elk water works intake	Fraser river	Rosedale, B.C.	Cline	0.70	13.9
Nov. 23	Elk water works intake	Fraser river	Rosedale, B.C.	Hughes & Webb	0.59	10.4
April 23	Hutchison	Dunville creek	Rosedale, B.C.	Hughes & Cline	3.65	7.8
Nov. 23	Hutchison	Dunville creek	Rosedale, B.C.	Hughes & Webb	3.62	4.7
April 21	Jackman	Elk creek	Rosedale, B.C.	Cline		3.7
Nov. 23	Jackman	Elk creek	Rosedale, B.C.	Hughes & Webb		3.3
July 3	Stollcum	Harrison river		Cline	0.96	6.2
June 10	Seymour intake (Upper)	Burrard inlet	North Vancouver	Cline		22.6
June 10	Seymour intake (Lower)	Burrard inlet	North Vancouver	Cline		14.7

**LILLOOET DISTRICT.**

June 25	Island bar	Fraser river	Lillooet	Hughes & Gordon		37.0
Aug. 11	Island bar	Fraser river	Lillooet	Hughes		17.9
Dec. 5	Island bar	Fraser river	Lillooet	Hughes		2.5
June 20	Lillooet	Fraser river	Lillooet water supply	Gordon		0.4
June 20	Lillooet	Fraser river	Lillooet water supply	Gordon		2.1
May 12	Riley	Fraser river	Lillooet	Cline	1.40	14.5
June 25	Riley	Fraser river	Lillooet	Hughes & Gordon		33.0
Aug. 5	Riley	Fraser river	Lillooet	Hughes		13.8
Dec. 5	Riley	Fraser river	Lillooet	Hughes		3.5
June 21	Swartz	Fraser river	Lillooet	Hughes & Gordon	0.80	22.8
Aug. 10	Swartz	Fraser river	Lillooet	Hughes	0.50	9.0
Dec. 4	Swartz	Fraser river	Lillooet	Hughes	0.40	5.0

**VANCOUVER ISLAND DISTRICT.**

Sept. 27	Browne	Puntledge river	Courtenay	Hughes		2.5
Oct. 31	Browne	Puntledge river	Courtenay	Balls & Webb		605.1
Dec. 8	Holt	Cowichan	Duncan	Webb		249.0
Sept. 30	Millard	Puntledge river	Courtenay	Hughes		6.0
Sept. 28	Nanaimo south fork	Nanaimo		Hughes		4.0
Oct. 12	Quinsam	Campbell river	Campbell river	Hughes		28.0
Oct. 27	Quinsam	Campbell river	Campbell river	Balls & Webb		850.0

REPORT  
OF THE  
BRITISH COLUMBIA HYDROMETRIC  
SURVEY FOR 1915.

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CHAPTER VII.  
Kamloops Division.  
HYDROMETRIC DATA.

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## CHAPTER VII.

## KAMLOOPS DIVISION—HYDROMETRIC DATA.

## KAMLOOPS DISTRICT.

## BARRIERE RIVER.—(2084).

*Location.*—Below the city of Kamloops power plant, near the mouth of the river, and forty miles from Kamloops; Water District No. 2.

*Records Available.*—Continuous records have been kept from March 22 to December 31, 1915, which will be available when the station is more completely rated.

*Gauge.*—Chain gauge read three times a week by A. C. Champion.

*Channel.*—Water swift.

*Discharge Measurements.*—Five measurements during 1915, but not well enough distributed to define the rating curve properly.

*Discharge Measurements of Barriere River below Power Plant.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1915							
Mar. 2	Tredcroft & Arcnibald.....	1,923	57	56	1.5		83
Mar. 15	E. H. Tredcroft.....	1,923	54	66	1.6	6.7	104
May 6	E. H. Tredcroft.....	1,923	85	254	4.7	9.5	1,200
Aug. 14	E. H. Tredcroft.....	1,923	73	107	2.6	7.5	280
Sept. 1	E. H. Tredcroft.....	1,923	64	88	2.2	7.0	199

## BOLEAN CREEK.—(2002).

*Location.*—Section 10, township 18, range 12, west 6th meridian.

*Records Available.*—May 23 to December 31, 1911; January 1 to September 16, 1912; April 27 to September 19, 1913; April 1 to December 8, 1914; April 1 to September 30, 1915.

*Drainage Area.*—Eighty square miles.

*Gauge.*—Vertical staff read by Clement Stickney, Falkland, B.C.

*Channel.*—Gravel and sand, about 20 feet wide, which has shown a tendency to shift.

*Discharge Measurements.*—Nine measurements taken during 1912-13-14-15 cover all stages, except the peaks of the freshet.

*Winter Flow.*—Partial ice conditions usually prevail during December and January.

*Accuracy.*—The changes in the channel give a chance for certain inaccuracies, but otherwise the results should be very good.

## Discharge Measurements of Bolean Creek near Mouth.

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1912							
May 12	C. E. Richardson	1,042	25	51.2	4.2	2.55	263
July 10	C. E. Richardson	1,046	25	21.6	1.7	1.20	31
1913							
April 22	H. J. E. Keys	1,057	21	27.1	2.1	1.58	57
June 13	H. J. E. Keys	1,057	25	20.2	2.8	2.10	82
1914							
June 22	C. B. Corbould	1,012	25	28.0	2.4	1.20	63
July 22	C. B. Corbould	1,012	20	15.1	1.4	1.20	21
Sept. 24	C. B. Corbould	1,015	16	5.5	1.1	1.12	8
1915							
Mar. 25	F. R. Archibald	1,572	28	12.1	0.9	1.25	11
June 17	A. L. McNaughton	1,915	27	21.7	2.9	2.02	93

## Daily Gauge Height and Discharge of Bolean Creek near Mouth for 1915.

(Drainage area, 20 square miles.)

Day.	April.		May.		June.		July.		August.		September.	
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	1.50	18.2	2.17	125	1.02	74	2.12	115	1.67	42.0	1.10	8.0
2	1.42	25.0	2.22	140	1.00	71	2.00	58	1.50	28.0	1.10	8.0
3	1.55	42.0	2.32	175	1.82	50	1.02	74	1.70	47.0	1.10	8.0
4	1.70	47.0	2.57	190	1.50	57	1.90	71	1.55	25.0	1.10	8.0
5	1.70	47.0	2.27	190	1.72	49	1.82	80	1.50	30.0	1.05	5.5
6	1.55	42.0	2.35	155	1.70	47	1.78	55	1.45	20.0	1.05	5.5
7	1.55	42.0	2.40	205	1.50	57	1.87	67	1.42	25.0	1.05	5.5
8	1.57	45.0	2.42	210	1.72	49	1.72	49	1.40	24.0	1.05	5.5
9	1.50	38.0	2.37	100	1.52	60	1.57	43	1.28	17.2	1.12	9.0
10	1.50	28.0	2.37	100	1.70	47	1.70	47	1.22	14.0	1.20	13.0
11	1.52	40.0	2.22	140	1.62	40	1.57	45	1.25	15.0	1.12	9.0
12	1.77	54.0	2.15	120	1.52	40	1.72	49	1.25	15.0	1.10	8.0
13	1.87	57.0	2.12	115	1.72	40	2.07	100	1.25	15.0	1.10	8.1
14	1.88	68.0	2.52	250	1.80	57	2.00	88	1.25	15.0	1.17	11.5
15	1.92	74.0	2.70	325	1.80	57	2.20	135	1.25	15.0	1.40	24.0
16	1.97	83.0	2.57	270	1.77	54	2.12	115	1.20	13.0	1.32	19.3
17	2.12	115.0	2.42	210	2.02	92	2.05	98	1.25	16.0	1.25	16.0
18	2.17	125.0	2.50	240	1.05	80	1.02	74	1.30	18.2	1.20	13.0
19	2.27	155.0	2.55	385	1.82	60	1.87	67	1.30	18.2	1.20	13.0
20	2.52	175.0	2.05	425	1.82	60	1.80	57	1.30	18.2	1.20	13.0
21	2.17	125.0	2.75	245	1.72	49	1.72	40	1.25	15.0	1.15	10.5
22	2.10	110.0	2.50	240	1.57	44	1.70	47	1.20	15.0	1.15	10.5
23	2.02	02.0	2.55	185	1.62	40	1.55	42	1.20	13.0	1.15	10.5
24	2.02	02.0	2.20	155	1.70	47	1.50	38	1.20	13.0	1.25	16.0
25	2.10	110.0	2.25	150	1.70	47	1.57	35	1.20	13.0	1.20	13.0
26	2.15	120.0	2.17	125	2.50	280	1.50	38	1.15	10.5	1.20	13.0
27	2.12	115.0	2.10	110	3.05	470	1.67	43	1.10	8.0	1.15	10.5
28	2.12	115.0	2.12	115	2.55	305	1.57	35	1.10	8.0	1.10	8.0
29	2.25	150.0	2.05	08	2.40	205	1.52	52	1.10	8.0	1.10	8.0
30	2.21	140.0	2.02	02	2.20	135	1.60	58	1.10	8.0	1.05	5.5
31	.....	.....	2.00	88	.....	.....	1.77	54	1.10	8.0	.....	.....

SESSIONAL PAPER No. 28a

Monthly Discharge of Bolean Creek near Mouth for 1915.

(Drainage area, 80 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
April.	155	18.2	83.5	1.04	1.16	4,970
May.	428	88.0	192.0	2.40	2.77	11,800
June.	470	40.0	93.0	1.16	1.29	5,530
July.	135	32.0	63.0	0.79	0.91	3,670
August.	47	8.0	19.0	0.24	0.28	1,170
September.	24	5.5	10.5	0.13	0.14	420
The period.	470	5.5	75.8	0.95	6.55	

CAMPBELL CREEK.—(2004).

Location.—Section 26, township 19, range 16, west 6th meridian.

Records Available.—May 27 to October 4, 1911; April 1 to September 10, 1912; May 1 to August 31, 1913; April 1 to August 31, 1914; April 1 to September 20, 1915.

Drainage Area.—Two hundred square miles.

Gauge.—Vertical staff gauge read by A. Holt, of Barnhart Vale.

Channel.—Straight for about 100 feet measuring section. Bed of stream sandy and fairly permanent. Average width of channel about 10 feet.

Discharge Measurements.—Gauge height-discharge curve is very well defined from ten meterings taken during 1914 and 1915.

Winter Flow.—Ice conditions prevail during December, January and February.

Accuracy.—High; results compiled from a well-rated curve.

Discharge Measurements of Campbell Creek at Barnhart Vale.

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1914							
April 17	E. M. Dann	1,055	9	6.7	0.8	0.88	5.5
May 5	Dann & Tredcroft	1,055	9	17.0	1.7	1.50	29.7
May 15	E. H. Tredcroft	1,055	20	33.9	2.1	2.60	72.0
June 20	C. B. Corbould	1,915	9	10.0	1.1	1.05	11.0
July 16	C. B. Corbould	1,915	11	12.1	1.5	1.25	19.0
July 21	C. B. Corbould	1,915	11	10.7	1.3	1.15	13.8
Sept. 26	C. B. Corbould	1,915	5	1.1	0.7	0.55	0.8
1915							
Mar. 23	F. R. Archibald	1,573	9	2.9	0.4	0.50	1.1
June 19	A. L. McNaughton	1,915	9	8.7	0.8	0.94	6.8
July 28	A. L. McNaughton	1,915	8	7.9	1.1	1.00	7.9

## Daily Gauge Height and Discharge of Campbell Creek at Barnhart Vale for 1915.

(Drainage area, 800 square miles.)

Day.	April.		May.		June.		July.		August.		September.	
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	0.33	0.3	0.73	3.3	0.33	7.4	1.70	34.0	0.90	6.4	0.72	3.0
2	0.63	0.3	0.77	3.3	0.97	3.0	1.78	37.0	0.30	4.4	0.72	3.0
3	0.33	0.3	0.73	3.0	1.22	18.4	1.78	37.0	0.33	3.0	0.70	2.3
4	0.33	0.3	0.70	3.6	1.37	17.2	1.76	33.0	0.32	4.8	0.70	2.6
5	0.38	0.3	0.72	3.0	1.80	18.3	1.72	33.0	0.30	4.4	0.70	2.6
6	0.38	0.3	0.73	3.3	1.20	14.7	1.60	30.0	0.80	4.4	0.70	2.6
7	0.86	0.3	0.76	3.3	1.20	14.7	1.60	26.0	0.72	3.0	0.70	2.6
8	0.37	1.0	0.76	3.3	1.30	14.7	1.46	24.0	0.70	2.6	0.70	2.3
9	0.38	1.1	0.75	3.3	1.17	13.7	1.42	23.0	0.70	2.6	0.70	2.6
10	0.60	1.8	0.78	8.3	1.13	13.1	1.40	22.0	0.70	2.6	0.70	3.6
11	0.60	1.3	0.73	3.3	1.07	10.7	1.43	23.0	0.72	3.0	0.57	2.2
12	0.60	1.3	0.73	3.3	1.01	9.0	1.41	22.0	0.72	3.0	0.67	2.2
13	0.30	1.3	0.77	3.9	1.00	8.7	1.40	22.0	0.72	3.0	0.57	2.2
14	0.60	1.8	0.77	3.9	1.00	8.7	1.35	20.0	0.71	2.3	0.70	2.6
15	0.30	1.8	0.90	3.4	0.96	7.6	1.30	13.8	0.70	2.6	0.70	2.6
16	0.30	1.8	0.37	8.0	0.90	6.4	1.30	18.8	0.70	2.3	0.70	2.6
17	0.30	1.3	1.13	13.1	0.97	8.0	1.30	18.3	0.70	2.6	0.70	2.6
18	0.60	1.3	1.30	18.8	1.08	10.1	1.30	13.3	0.70	2.6	0.70	2.6
19	0.60	1.3	1.40	22.0	0.90	6.4	1.30	15.3	1.00	8.7	0.70	2.6
20	0.60	1.3	1.87	21.0	0.93	6.9	1.27	17.2	0.36	7.3	0.69	2.4
21	0.51	1.4	1.45	24.0	0.89	6.3	1.27	17.2	0.83	4	0.55	2.1
22	0.67	3.2	1.47	26.0	0.88	6.0	1.25	16.6	0.80	4	0.35	2.0
23	0.77	3.9	1.42	23.0	0.88	6.0	1.10	11.5	0.80	4	0.62	1.6
24	0.35	5.4	1.53	22.0	0.91	6.6	0.97	8.0	0.77	3.3	0.52	1.6
25	0.57	5.5	1.37	21.0	0.92	6.9	0.90	6.4	0.75	8.7	0.62	1.6
26	0.56	5.4	1.37	17.3	1.13	12.5	1.95	7.5	0.75	8.5	0.60	1.3
27	0.80	4.4	1.06	10.1	1.30	18.3	1.00	8.7	0.75	3.3	0.60	1.3
28	0.75	2.6	0.96	7.8	1.30	15.3	1.00	8.7	0.72	3.0	0.60	1.3
29	0.71	2.8	1.02	9.3	1.40	22.0	0.97	8.0	0.70	3.5	0.60	1.3
30	0.70	2.5	1.00	8.7	1.50	26.0	0.97	8.0	0.70	2.5	0.60	1.3
31	.....	.....	1.00	5.7	.....	.....	0.90	5.4	0.72	3.0	.....	.....

## Monthly Discharge of Campbell Creek at Barnhart Vale for 1915.

(Drainage area, 200 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
April.....	5.8	0.8	2.0	0.01	0.01	119
May.....	27.0	2.6	10.3	0.05	0.06	633
June.....	26.0	6.0	11.6	0.06	0.07	590
July.....	37.0	6.4	19.6	0.10	0.12	1,205
August.....	8.7	2.5	3.9	0.02	0.02	240
September.....	3.0	1.3	2.2	0.01	0.01	131
The period..	37.0	0.8	8.2	0.04	0.29	3,018

## CHERRY CREEK.—(2005).

Location.—Section 14, township 19, range 19, west 6th meridian.

Records Available.—June 5 to September 1, 1911; April 24 to September 15, 1912; April 19 to October 19, 1913; May 1 to August 19, 1914; April 1 to September 30, 1915.

Drainage Area.—Sixty-two square miles.

SESSIONAL PAPER No. 266

**Gauge.**—Standard chain gauge installed during 1914 in canyon, and read daily by F. Bowers, during high water, and twice weekly during low water.

**Channel.**—Straight at measuring section. Velocity swift at all stages. Control is fairly good.

**Discharge Measurements.**—Eight discharge measurements made during 1914 and 1915 define rating curve very well except for discharges between 20 and 50 cubic feet per second.

**Accuracy.**—Results should be quite reliable except for the uncertainty in a portion of the rating curve not definitely located by measurements.

*Discharge Measurements of Cherry Creek above Bowers Ranch.*

Date.	Engineer.	Meter No.	Width.	Area of Section	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1914							
May 12	E. H. Tredcroft	1,055	14	14 0	5 0	1.70	70.3
June 11	C. B. Corbould	1,915	12	5 1	1 8	0.70	9.0
July 8	C. B. Corbould	1,915	7	1 7	0 8	0.50	1.5
1915							
Mar. 9	E. H. Tredcroft	1,923	3	1 2	0 1	0.30	0.1
April 20	F. R. Archibald	1,673	9	3 4	1 1	0.60	3.6
June 2	A. L. McNaughton	1,915	9	4 3	1 0	0.78	8.1
July 20	A. L. McNaughton	1,915	11	4 5	2 3	0.76	10.7
Aug. 18	A. L. McNaughton	1,915	7	2 7	0 8	0.55	2.3

*Daily Gauge Height and Discharge of Cherry Creek at Bowers Ranch for 1915.*  
(Drainage area, 30 square miles.)

Day.	April.		May.		June.		July.		August.		September.	
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	0.40	1.0	0.60	4.2	0.80	10.0	1.20	31.0	1.20	31.0	.....	2.3
2	0.45	1.5	0.60	4.2	0.80	10.0	1.15	28.0	1.05	22.0	.....	2.7
3	0.45	1.5	0.60	4.2	0.80	10.0	1.10	25.0	0.90	14.0	0.55	3.1
4	0.55	3.1	0.60	4.2	0.80	10.0	1.10	25.0	.....	20.0	.....	2.8
5	0.55	3.1	0.60	4.2	0.80	10.0	1.00	19.0	.....	26.0	0.50	2.5
6	0.55	3.1	0.65	5.6	0.75	8.5	0.85	12.0	.....	32.0	.....	2.2
7	0.55	3.1	0.65	5.6	0.80	10.0	0.80	10.0	1.30	38.0	0.50	2.0
8	0.75	3.1	0.65	5.6	0.80	10.0	0.80	10.0	.....	26.0	.....	2.4
9	0.55	3.1	0.85	12.0	0.75	8.5	0.75	8.5	0.90	14.0	.....	2.8
10	0.50	2.0	0.90	14.0	0.70	7.0	0.70	7.0	.....	17.0	0.55	3.1
11	0.50	2.0	0.85	12.0	1.05	22.0	0.75	8.5	.....	20.0	.....	2.8
12	0.50	2.0	0.80	10.0	0.90	14.0	0.70	7.0	1.05	22.0	.....	2.6
13	0.50	2.0	0.90	14.0	0.90	14.0	0.75	8.5	.....	17.0	.....	2.3
14	0.50	2.0	0.90	14.0	0.80	10.0	0.80	10.0	.....	12.0	0.50	2.0
15	0.95	16.5	0.85	12.0	0.85	12.0	0.75	8.5	0.70	7.0	.....	1.9
16	0.55	3.1	0.80	10.0	0.80	10.0	0.75	8.5	.....	6.3	.....	1.8
17	0.50	2.0	0.90	14.0	0.75	8.5	0.75	8.5	.....	5.6	.....	1.6
18	0.50	2.0	1.05	22.0	0.80	10.0	0.75	8.5	.....	4.9	0.45	1.5
19	0.55	3.1	1.10	25.0	0.80	10.0	0.75	8.5	0.60	4.2	.....	1.3
20	0.60	4.2	1.10	25.0	0.85	12.0	0.75	8.5	.....	3.8	.....	1.1
21	0.60	4.2	1.10	25.0	1.05	22.0	0.75	8.5	.....	3.4	0.40	1.0
22	0.65	5.6	1.10	25.0	1.00	19.0	0.70	7.0	.....	3.0	.....	1.2
23	0.65	5.6	1.05	22.0	0.95	16.5	0.70	7.0	.....	2.5	.....	1.5
24	0.60	4.2	1.00	19.0	0.90	14.0	0.70	7.0	0.50	2.0	.....	1.7
25	0.60	4.2	0.95	16.5	0.95	16.5	0.65	5.6	.....	2.0	0.50	2.0
26	0.65	5.6	0.95	16.5	0.95	16.5	0.70	7.0	.....	2.0	.....	2.4
27	0.65	5.6	0.90	14.0	1.30	38.0	0.70	7.0	.....	2.0	.....	2.8
28	0.60	4.2	0.90	14.0	1.55	58.0	0.65	5.6	0.50	2.0	0.55	3.1
29	0.60	4.2	0.90	14.0	1.40	46.0	0.65	5.6	.....	1.7	.....	2.5
30	0.60	4.2	0.90	14.0	1.20	31.0	1.05	22.0	0.45	1.5	0.50	2.0
31	.....	.....	0.90	14.0	.....	.....	1.30	38.0	.....	1.9	.....	.....

## Monthly Discharge of Cherry Creek at Bowers Ranch for 1915.

(Drainage area, 30 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mlie.	Depth in inches on Drainage area.	Total in acre-feet.
April .....	16.0	1.0	3.7	0.12	0.13	220
May .....	25.0	4.2	13.4	0.46	0.62	324
June .....	68.0	7.0	16.5	0.65	0.61	982
July .....	38.0	5.6	12.3	0.41	0.47	766
August .....	38.0	1.6	11.8	0.39	0.46	726
September .....	3.1	1.0	2.2	0.07	0.08	131
The period .....	58.0	1.0	10.0	0.33	2.26	3,639

## CLEARWATER RIVER.—(2047).

*Location.*—Near Raft river: Water District No. 2.

*Records Available.*—August 12 to December 31, 1913; January 1 to December 31, 1914; January 1 to December 31, 1915.

*Drainage Area.*—Two thousand four hundred square miles.

*Gauge.*—Standard chain gauge graduated in feet and tenths, and read by Theo. Brookfield, rancher; repaired and datum changed March 13, 1915.

*Measuring Section.*—Five hundred feet above gauge; width of channel 230 feet. Bed of stream rocky and permanent. Deepest point in measuring section at highest recorded water level 22 feet.

*Discharge Measurements.*—Measurements are made from car suspended from  $\frac{3}{4}$ -inch cable.

*Winter Flow.*—The Clearwater river is seldom frozen during winter to the extent of materially affecting the accuracy of returns.

*Accuracy.*—Results should be very reliable except for discharges between 6,000 and 14,000 cubic feet per second, which are subject to a little uncertainty.

## Discharge Measurements of Clearwater River near Mouth.

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1914							
April 16	K. G. Chisholm .....	1,055	200	2,043	2.04	5.8	4,170
May 30	E. H. Tredcroft .....	1,923	234	2,778	5.84	10.7	16,230
May 31	E. H. Tredcroft .....	1,923	234	2,735	6.75	10.4	15,740
June 1	E. H. Tredcroft .....	1,923	234	2,667	5.66	10.0	14,850
July 25	E. H. Tredcroft .....	1,923	234	2,699	6.66	10.1	14,720
Sept. 19	E. H. Tredcroft .....	1,923	201	2,022	2.61	6.6	5,280
1915							
Mar. 12	E. H. Tredcroft .....	1,923	169	1,373	0.76	3.6	1,050
April 28	E. H. Tredcroft .....	1,923	195	2,382	3.45	8.2	8,230

NOTE.—All measurements are referred to the new gauge installed March 13, 1916.

SESSIONAL PAPER No. 25e

Daily Gauge Height and Discharge of Clearwater River near Mouth for 1915.

(Drainage area 2,400 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	4.17	1,740	3.60	1,130	3.40	950	4.70	2,380	8.55	9,300	10.60	16,400
2	4.17	1,740	3.70	1,230	3.40	950	5.00	2,790	8.66	9,600	10.50	16,000
3	4.17	1,740	3.70	1,230	3.40	950	5.40	3,350	8.60	9,740	10.30	15,300
4	4.05	1,600	3.80	1,330	3.40	950	6.10	4,400	8.70	10,000	10.20	15,000
5	4.05	1,600	3.80	1,330	3.50	1,040	6.30	4,730	8.90	10,600	10.15	14,800
6	4.05	1,600	3.80	1,330	3.50	1,040	6.40	4,900	9.20	11,600	10.25	15,200
7	4.05	1,600	3.80	1,330	3.50	1,040	6.50	5,070	9.55	12,700	10.45	15,900
8	4.17	1,740	3.80	1,330	3.50	1,040	6.65	5,330	10.00	14,300	10.35	15,500
9	4.17	1,740	3.80	1,330	3.50	1,040	6.05	5,330	10.37	15,600	10.20	15,000
10	4.17	1,740	3.80	1,330	3.50	1,040	6.60	5,240	11.02	17,900	9.90	13,900
11	4.17	1,740	3.70	1,230	3.50	1,040	6.60	5,240	11.45	19,400	9.70	13,300
12	4.10	1,660	3.70	1,230	3.50	1,040	6.80	5,600	11.15	18,300	9.60	12,900
13	4.17	1,740	3.70	1,230	3.50	1,040	7.10	6,140	10.95	17,600	9.50	12,600
14	4.05	1,600	3.60	1,130	3.60	1,140	7.20	6,340	10.90	17,400	9.45	12,400
15	4.05	1,600	3.60	1,130	3.70	1,230	7.30	6,540	10.80	17,100	9.60	12,900
16	4.05	1,600	3.00	1,130	3.75	1,280	7.40	6,740	10.75	16,900	9.80	13,600
17	3.90	1,440	3.60	1,130	3.70	1,230	7.60	7,170	10.60	16,400	10.10	14,600
18	3.90	1,440	3.60	1,130	3.80	1,330	7.80	7,630	10.50	16,000	10.15	14,800
19	3.80	1,330	3.60	1,130	3.80	1,330	7.90	7,850	10.60	16,400	10.20	15,000
20	3.80	1,330	3.60	1,130	3.90	1,440	8.10	8,350	11.05	18,000	10.10	14,600
21	3.80	1,330	3.50	1,040	4.00	1,550	8.20	8,600	11.20	18,500	10.10	14,600
22	3.70	1,230	3.50	1,040	4.10	1,660	8.10	8,350	11.50	19,500	9.90	13,900
23	3.70	1,230	3.50	1,040	4.10	1,660	8.10	8,350	11.65	20,100	9.80	13,600
24	3.60	1,130	3.50	1,040	4.20	1,770	8.10	8,350	11.60	19,900	9.90	13,900
25	3.60	1,130	3.50	1,040	4.20	1,770	8.15	8,480	11.50	19,500	9.95	14,100
26	3.60	1,130	3.40	950	4.20	1,770	8.20	8,600	11.50	19,500	10.40	15,700
27	3.60	1,130	3.40	950	4.20	1,770	8.25	8,740	11.35	19,000	10.60	16,400
28	3.50	1,040	3.40	950	4.30	1,880	8.25	8,740	11.35	19,000	10.40	15,700
29	3.50	1,040	.....	.....	4.30	1,880	8.40	9,150	11.30	18,800	10.25	15,200
30	3.50	1,040	.....	.....	4.40	2,000	8.55	9,600	10.95	17,600	10.10	14,600
31	3.50	1,040	.....	.....	4.50	2,120	.....	.....	10.70	16,700	.....	.....

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	10.05	14,500	10.20	15,000	9.20	11,600	6.00	4,240	6.55	5,160	4.90	2,650
2	10.00	14,300	10.40	15,700	9.00	10,900	6.00	4,240	6.55	5,160	4.90	2,650
3	10.00	14,300	10.45	15,900	8.80	10,300	6.00	4,240	6.50	5,070	4.90	2,650
4	10.10	14,600	10.45	15,900	8.65	9,900	5.95	4,100	6.45	4,900	4.95	2,720
5	10.10	14,600	10.30	15,300	8.55	9,590	5.90	4,090	6.35	4,810	4.95	2,720
6	10.15	14,800	10.20	15,000	8.40	9,150	5.80	3,940	6.30	4,730	4.90	2,650
7	10.20	15,000	10.10	14,600	8.25	8,740	5.70	3,790	6.25	4,650	4.95	2,720
8	10.20	15,000	10.00	14,300	8.15	8,470	5.65	3,710	6.10	4,400	5.05	2,860
9	10.30	15,300	10.00	14,300	7.90	7,850	5.60	3,640	6.00	4,240	5.00	2,790
10	10.50	16,000	9.95	14,100	7.65	7,280	5.55	3,560	5.90	4,090	4.95	2,720
11	10.50	16,000	9.90	13,900	7.40	6,730	5.50	3,490	5.80	3,940	4.90	2,650
12	10.45	15,900	9.80	13,600	7.15	6,230	5.45	3,420	5.70	3,790	4.85	2,580
13	10.40	15,700	9.70	13,300	7.00	5,940	5.45	3,420	5.60	3,640	4.80	2,510
14	10.70	16,700	9.60	12,900	6.90	5,770	5.50	3,490	5.50	3,490	4.80	2,510
15	11.00	17,800	9.55	12,700	6.80	5,590	5.45	3,420	5.40	3,350	4.80	2,510
16	11.30	18,800	9.50	12,600	6.70	5,420	5.45	3,420	5.40	3,350	4.75	2,450
17	11.30	18,800	9.55	12,700	6.75	5,500	5.40	3,350	5.45	3,420	4.75	2,450
18	11.00	17,800	9.60	12,900	6.75	5,500	5.55	3,560	5.40	3,350	4.75	2,450
19	10.80	17,100	9.65	13,100	6.75	5,500	5.65	3,710	5.35	3,280	4.75	2,450
20	10.60	16,400	9.70	13,300	6.70	5,420	5.75	3,860	5.30	3,210	4.70	2,380
21	10.50	16,000	9.80	13,600	6.65	5,330	5.75	3,860	5.25	3,140	4.70	2,380
22	10.40	15,700	9.75	13,400	6.60	5,240	5.80	3,940	5.25	3,140	4.70	2,380
23	10.35	15,500	9.75	13,400	6.50	5,070	5.85	4,010	5.25	3,140	4.65	2,310
24	10.30	15,300	9.70	13,300	6.40	4,900	5.95	4,160	5.20	3,070	4.65	2,310
25	10.25	15,200	9.60	12,900	6.30	4,730	6.05	4,320	5.15	3,000	4.65	2,310
26	10.20	15,000	9.55	12,700	6.20	4,560	6.20	4,560	5.10	2,930	4.65	2,310
27	10.15	14,800	9.50	12,600	6.05	4,320	6.30	4,730	5.05	2,860	4.65	2,310
28	10.15	14,800	9.40	12,200	6.10	4,500	6.40	4,900	5.00	2,790	4.60	2,250
29	10.10	14,600	9.30	11,900	6.00	4,240	6.45	4,980	4.95	2,720	4.60	2,250
30	10.10	14,600	9.25	11,700	5.95	4,160	6.50	5,070	4.90	2,650	4.60	2,250
31	10.15	14,800	9.25	11,700	.....	.....	6.55	5,160	.....	.....	4.60	2,250



## Monthly Discharge of Clearwater River near Mouth for 1915.

(Drainage area, 2,400 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet
January . . . . .	1,740	1,040	1,445	0.60	0.69	89,000
February . . . . .	1,330	950	1,163	0.48	0.50	65,000
March . . . . .	2,120	950	1,354	0.56	0.55	83,000
April . . . . .	9,600	2,380	6,603	2.75	3.07	393,000
May . . . . .	20,100	9,600	16,234	6.76	7.79	998,000
June . . . . .	16,400	12,400	14,580	5.07	5.77	868,000
July . . . . .	18,800	14,200	15,558	6.53	7.53	963,000
August . . . . .	15,900	11,700	13,555	5.55	6.51	834,000
September . . . . .	11,600	4,160	6,611	2.75	3.07	393,000
October . . . . .	5,160	3,350	4,014	1.67	1.92	247,000
November . . . . .	5,160	2,650	3,716	1.55	1.73	221,000
December . . . . .	2,860	2,250	2,496	1.04	1.20	153,000
The year . . . . .	20,100	950	7,287	3.03	41.43	5,307,000

## EDWARDS CREEK.—(2082).

*Location.*—Three miles from mouth, in section 26, township 22, range 16, west of the 6th meridian.

*Records Available.*—June 24 to October 31, 1911; April 20 to September 21, 1912; April 13 to September 30, 1915.

*Drainage Area.*—Fifteen square miles above gauging station.

*Gauge.*—Vertical staff read daily by H. Devick.

*Channel.*—Gravel.

*Discharge Measurements.*—Two in 1915 and six in 1911 and 1912 agree fairly well and cover all stages.

*Accuracy.*—Not sufficient measurements in 1915 to warrant a very high accuracy value being assigned. It should be noted that water was being drawn off from Edwards creek, above the gauging station, through Lyon's diversion (station No. 2083), and also 2 cubic feet per second through Devick's diversion, from June 8 to 16, 1915.

## Discharge Measurements of Edwards Creek 3 Miles from Mouth.

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1911							
June 24	C. G. Cline . . . . .	1,046	5.0	1.5	0.7	0.64	1.2
Aug. 14	C. G. Cline . . . . .	1,046	5.5	1.5	0.4	0.58	0.6
1912							
May 2	Cline & Dann . . . . .	1,046	9.0	9.4	2.1	1.45	19.7
May 14	E. M. Dann . . . . .	1,044	10.0	17.2	2.0	2.10	34.5
May 29	E. M. Dann . . . . .	1,044	8.5	7.3	1.8	1.50	13.5
Aug. 20	H. J. E. Keys . . . . .	1,037	7.5	3.5	1.1	1.01	4.2
1915							
April 13	F. R. Archibald . . . . .	1,673	7.3	1.6	1.4	0.90	2.2
May 11	F. R. Archibald . . . . .	1,673	7.0	1.6	1.1	0.85	1.7



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Daily Gauge Height and Discharge of Edwards Creek 3 Miles from Mouth for 1915.

(Drainage area, 15 square miles.)

Day.	April.		May.		June.		July.		August.		September.	
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1			0.90	2	1.25	9	1.40	13	1.05	5	0.90	2
2			0.90	2	1.25	9	1.30	10	1.05	5	0.90	2
3			0.90	2	1.20	8	1.20	8	1.00	4	0.90	2
4			0.90	2	1.20	8	1.15	7	1.00	4	0.90	2
5			0.90	2	1.15	7	1.15	7	1.05	5	0.90	2
5			0.90	2	1.15	7	1.10	5	1.05	5	0.90	2
7			0.90	2	1.15	7	1.10	6	1.00	4	0.90	2
8			0.95	3	1.15	7	1.10	5	1.00	4	0.90	2
9			0.95	3	1.10	6	1.10	6	1.00	4	0.90	2
10			0.95	3	1.05	5	1.10	6	1.00	4	0.90	2
11			0.85	2	1.05	5	1.10	5	1.00	4	0.90	2
12			0.90	2	1.00	4	1.10	5	0.95	3	0.90	2
13	0.90	2	0.95	3	1.00	4	1.10	6	0.95	3	0.90	2
14	0.90	2	1.05	5	1.00	4	1.10	5	0.95	3	0.90	2
15	0.95	3	1.50	15	1.00	4	1.30	10	0.95	3	0.90	2
15	0.90	2	1.85	25	1.00	4	1.52	15	0.95	3	0.85	2
17	0.85	2	1.50	18	1.20	8	1.50	15	0.95	3	0.85	2
18	0.80	1	1.40	13	1.25	9	1.40	13	0.95	3	0.85	2
19	0.80	1	1.55	16	1.25	9	1.30	10	0.95	3	0.85	2
20	0.80	1	1.72	22	1.25	9	1.25	9	0.95	3	0.85	2
21	0.82	2	1.72	22	1.30	10	1.20	8	0.95	3	0.85	2
22	1.05	5	1.55	16	1.25	9	1.15	7	0.90	2	0.85	2
23	1.15	7	1.45	14	1.20	8	1.10	6	0.90	2	0.85	2
24	1.02	4	1.40	13	1.20	8	1.10	6	0.90	2	0.85	2
5	0.97	3	1.40	13	1.15	7	1.05	5	0.90	2	0.85	2
26	0.85	2	1.40	13	1.30	10	1.05	5	0.90	2	0.85	2
27	0.85	2	1.30	10	2.60	58	1.05	5	0.90	2	0.85	2
28	0.85	2	1.30	10	2.05	32	1.05	5	0.90	2	0.85	2
29	0.85	2	1.25	9	1.70	21	1.05	5	0.90	2	0.85	2
30	0.85	2	1.25	9	1.50	15	1.05	5	0.90	2	0.85	2
31			1.25	9			1.05	5	0.90	2		

Monthly Discharge of Edwards Creek 3 Miles from Mouth for 1915.

(Drainage area, 15 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
May	25	2	9			550
June	58	4	11			550
July	15	5	8			490
August	5	2	3			180
September	2	2	2			120
The period	58	2	6.5			1,900

NOTE.—Water was being diverted from Edwards creek above this station through Lyons diversion from April 13 to August 4 with interruptions. A regular gauging station has been maintained on this diversion (No. 2083). From June 8 to 16, 1915, 2 cubic feet of water per second was diverted through Devick's ditch.

## GUICHON CREEK.—(2014).

*Location.*—Near Mamit lake; Water District No. 3.

*Records Available.*—June 3 to December 31, 1911; January 1 to November 14, 1912; April 26 to September 29, 1913; April 1 to November 30, 1914; March 1 to September 30, 1915.

*Drainage Area.*—Three hundred and fifteen square miles.

*Gauge.*—Standard vertical staff gauge read daily by Miss O. Quenville.

*Channel.*—Channel is straight at measuring section. Velocities fairly high. Bed of stream composed of sand and gravel, and considered permanent.

*Discharge Measurements.*—Twenty-six discharge measurements have been taken on this creek during 1911-12-13-14-15. They agree very well and cover all stages.

*Winter Flow.*—Ice conditions generally prevail on this stream throughout January and February.

*Accuracy.*—Results should be very reliable at all stages.

*Discharge Measurements of Guichon Creek above Mamit Lake.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1911							
June 3	W. M. Carlyle	1,044	27	41.7	1.50	2.16	61.3
Jun. 27	W. M. Carlyle	1,044	16	10.1	0.73	0.96	7.4
July 18	W. M. Carlyle	1,044	16	9.2	0.51	0.87	4.7
Aug. 2	W. M. Carlyle	1,044	10	4.1	0.64	0.80	2.6
Aug. 9	W. M. Carlyle	1,044	15	7.4	1.30	1.02	9.8
1912							
April 28	H. J. E. Keys	1,057	21	27.4	1.84	1.95	50.0
May 11	H. J. E. Keys	1,057	63	279.0	1.50	6.0	420.0
May 22	H. J. E. Keys	1,057	54	178.0	1.36	5.20	260.0
June 1	H. J. E. Keys	1,057	26	68.8	1.75	3.11	121.0
June 9	H. J. E. Keys	1,057	28	37.7	1.46	1.98	55.1
June 24	H. J. E. Keys	1,057	22	20.8	1.07	1.41	22.4
July 1	H. J. E. Keys	1,057	26	19.2	1.13	1.30	21.6
July 13	H. J. E. Keys	1,057	26	29.1	1.40	1.72	39.0
July 14	H. J. E. Keys	1,057	26	29.3	1.30	1.62	39.0
July 29	H. J. E. Keys	1,057	26	21.1	1.28	1.48	29.1
Aug. 15	H. J. E. Keys	1,057	22	20.3	1.20	1.44	24.5
Aug. 31	H. J. E. Keys	1,057	24	18.0	1.09	1.30	19.5
Sept. 14	H. J. E. Keys	1,057	24	14.5	1.04	1.24	18.1
Sept. 24	H. J. E. Keys	1,057	24	14.6	0.82	1.18	12.1
1913							
May 28	H. J. E. Keys	1,057	26	77.6	1.60	3.44	126.0
Aug. 3	H. J. E. Keys	1,057	26	21.2	1.10	1.49	25.5
Aug. 17	H. J. E. Keys	1,057	24	16.3	1.06	1.20	17.3
1914							
June 16	C. B. Corbould	1,915	26	58.4	1.70	2.90	98.9
1915							
April 2	E. H. Tredcroft	1,916	22	18.6	0.81	1.48	15.1
June 7	A. L. McNaughton	1,915	22	37.6	1.65	2.20	62.0
July 23	A. L. McNaughton	1,915	21	33.9	1.70	2.13	57.5



*Monthly Discharge of Guichon Creek above Mamit Lake for 1915.*

(Drainage area, 315 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acrn. feet.
March.....	32	12	21.6	0.07	0.08	1,330
April.....	50	23	38.1	0.12	0.13	2,250
May.....	240	32	94.8	0.30	0.35	5,830
June.....	250	50	115.8	0.35	0.40	6,900
July.....	155	55	83.6	0.27	0.31	5,140
August.....	58	19	36.5	0.12	0.14	2,240
September.....	23	19	21.2	0.07	0.08	1,250
The period.....	250	12	58.8	0.18	1.49	24,950

NOTE.—There are a few small irrigation diversions above this station.

**HEFFLEY CREEK, BELOW HEFFLEY LAKE.—(2019).**

*Location.*—Section 9, township 22, range 16, west 6th meridian.

*Records Available.*—May 25 to December 8, 1911; April 1 to September 20, 1912; May 11 to September 19, 1913; May 1 to December 9, 1914; April 1 to September 30, 1915.

*Drainage Area.*—Twenty-eight square miles.

*Gauge.*—Standard vertical staff gauge read daily by F. S. Lawrence.

*Channel.*—Straight at measuring section and permanent bed.

*Discharge Measurements.*—Seven measurements during 1914 and 1915 agree very well and cover the whole range of stage.

*Winter Flow.*—Ice conditions generally prevail during January and February.

*Accuracy.*—Results should be quite reliable at all stages.

*Discharge Measurements of Heffley Creek below Heffley Lake.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1914							
April 28	K. G. Chisholm.....	1,055	8.0	5.30	0.77	3.75	4.1
June 3	C. B. Corbould.....	1,915	10.0	7.03	0.90	3.92	6.2
June 30	C. B. Corbould.....	1,915	10.0	5.50	0.91	3.90	5.9
Aug. 11	C. B. Corbould.....	1,915	10.0	10.50	2.10	4.24	22.3
Oct. 29	C. B. Corbould.....	1,573	8.0	3.47	0.28	3.40	1.0
1915							
April 13	F. R. Archibald.....	1,673	9.0	3.35	0.50	3.60	1.6
May 12	F. R. Archibald.....	1,673	9.5	7.92	1.15	4.03	9.2

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Daily Gauge Height and Discharge of Hefley Creek below Hefley Lake for 1915.

(Drainage area, 23 square miles.)

Day.	April.		May.		June.		July.		August.		September.	
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	3.51	1.9	3.73	4.0	3.83	4.8	3.72	3.1	4.04	9.9	4.03	9.5
2	3.61	1.9	3.73	4.0	3.82	4.6	3.71	3.0	4.04	9.9	4.03	9.4
3	3.61	1.3	3.78	4.0	3.80	4.2	3.70	2.9	4.03	9.6	4.02	9.2
4	3.60	1.2	3.78	4.0	3.78	4.0	3.70	2.9	4.03	9.6	4.02	9.2
6	3.49	1.2	3.78	4.0	3.76	3.7	3.68	2.7	4.02	9.2	4.00	8.4
6	3.49	1.2	3.78	4.0	3.78	3.7	3.66	2.4	4.02	9.2	4.00	8.4
7	3.67	1.7	3.78	4.0	3.75	3.6	3.65	2.4	4.02	9.2	4.00	8.4
8	3.86	1.6	3.81	4.4	3.73	3.3	3.66	2.4	4.02	9.2	4.00	8.4
9	3.82	1.4	3.91	6.2	3.72	3.1	3.64	2.3	4.01	8.8	4.03	9.6
10	3.61	1.3	4.00	8.4	3.70	2.9	3.64	2.3	4.01	8.8	4.08	11.4
11	3.51	1.3	4.04	9.9	3.69	2.8	3.83	4.8	4.01	8.8	4.08	11.4
12	3.63	1.5	4.03	9.6	3.68	2.7	3.80	4.5	4.01	8.8	4.06	10.3
13	3.61	2.0	4.14	14.8	3.68	4.2	3.80	4.2	4.01	8.8	4.00	8.4
14	3.61	2.0	4.22	20.6	3.53	5.6	3.92	6.3	4.07	11.1	3.98	7.9
16	.....	2.1	4.24	22.3	3.88	6.6	3.98	7.9	4.09	11.8	3.97	7.6
16	3.63	2.2	4.26	24.1	3.88	5.6	3.98	7.9	4.09	11.8	3.95	7.1
17	3.67	2.6	4.23	21.4	3.90	6.9	2.77	3.9	4.09	11.8	.....	6.6
18	3.68	2.7	4.06	10.3	3.91	6.0	3.4	4.09	11.8	.....	3.91	6.1
19	3.68	2.7	4.05	10.3	3.90	6.9	3.69	2.8	4.09	11.8	3.89	5.8
20	3.72	3.1	4.25	23.2	3.89	5.8	3.66	2.5	4.08	11.4	3.89	6.8
21	3.72	3.1	4.25	23.2	3.89	5.8	3.65	2.4	4.08	11.4	3.89	6.8
22	3.72	3.1	4.19	18.0	3.86	5.3	3.65	2.4	4.08	11.4	3.89	6.8
23	3.70	2.9	4.16	16.1	3.82	4.6	3.65	2.4	4.07	11.1	3.89	6.8
24	3.70	2.9	4.10	12.2	3.84	4.9	3.65	2.4	4.07	11.1	.....	6.8
26	3.70	2.9	4.06	10.3	3.80	4.2	3.65	2.4	4.06	10.7	3.89	6.8
26	3.70	2.9	4.00	8.4	3.78	4.0	3.70	2.9	4.06	10.7	3.88	6.6
27	3.71	3.0	3.96	7.2	3.81	4.4	3.76	3.6	.....	10.3	3.88	6.6
28	3.70	2.9	3.94	6.9	3.81	4.4	3.76	3.7	4.04	9.9	3.87	6.4
29	3.75	3.6	3.91	6.2	3.79	4.1	.....	3.6	4.04	9.9	3.87	5.4
30	3.78	4.0	3.90	6.9	3.75	3.6	.....	3.6	4.03	9.5	3.87	5.4
31	.....	.....	3.88	6.6	.....	.....	3.96	7.1	4.05	9.5	.....	.....

Monthly Discharge of Hefley Creek below Hefley Lake for 1915.

(Drainage area, 23 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
April.....	4.0	1.2	2.2	0.08	0.09	133
May.....	24.1	4.0	10.8	0.38	0.44	664
June.....	6.0	2.7	4.5	0.16	0.18	268
July.....	7.9	2.3	3.6	0.13	0.15	221
August.....	11.8	8.8	10.2	0.36	0.41	627
September.....	11.4	6.4	7.5	0.27	0.30	446
The period.....	24.1	1.2	6.4	0.23	1.57	2,369

NOTE.—The flow at this station is regulated by a storage dam on Hefley lake.

## HEFFLEY CREEK, ABOVE DIVERSIONS AT MOUTH.—(2018).

*Location.*—Section 11, township 22, range 17, west 6th meridian.

*Records Available.*—August 19 to October 31, 1911; April 3 to September 15, 1912; April 13 to September 15, 1913; April 1 to December 6, 1914; March 1 to September 30, 1915.

*Drainage Area.*—Sixty-five square miles.

*Gauge.*—Vertical staff gauge read daily by Mrs. J. Austin.

*Channel.*—About 15 feet wide, with rocky bed.

*Discharge Measurements.*—Three measurements in 1915, at low stages, and fourteen during 1911-12-13-14. There seems to have been some change in the channel and only the 1915 measurements are used for defining the lower part of the curve.

*Accuracy.*—Results affected somewhat by changes in channel. The flow is regulated on Heffley lake, and there are diversions in the upper part of the watershed.

*Discharge Measurements of Heffley Creek above Diversions at Mouth.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1911							
Aug. 19	C. G. Cline.....	1,045	5.5	3.0	0.4	0.61	1.3
Sept. 13	C. G. Cline.....	1,045	7.0	3.6	0.5	0.66	1.9
1912							
April 3	C. G. Cline.....	1,067	5.0	3.5	0.8	1.00	3.0
May 13	E. M. Dann.....	1,044	12.5	16.1	3.5	2.06	54.6
May 14	E. M. Dann.....	1,044	16.5	19.2	3.7	2.20	71.7
May 30	E. M. Dann.....	1,044	9.0	8.2	2.9	1.50	23.6
June 10	E. M. Dann.....	1,044	8.0	8.6	1.0	1.00	3.6
Aug. 19	H. J. E. Keys.....	1,057	6.6	3.4	1.7	1.06	5.8
1913							
June 26	H. J. E. Keys.....	1,067	13.0	10.1	1.0	1.32	10.5
1914							
June 1	C. B. Corbould.....	1,916	10.0	5.7	1.3	1.20	7.5
June 20	C. B. Corbould.....	1,916	8.0	5.5	1.2	1.10	5.7
Aug. 14	C. B. Corbould.....	1,915	8.0	5.7	1.2	1.15	5.9
Sept. 8	Tredcroft & Corbould.....	1,923	7.0	2.6	0.3	0.80	0.8
Oct. 20	C. B. Corbould.....	1,673	7.6	4.6	0.6	1.00	2.5
1915							
April 12	F. R. Archibald.....	1,673	7.0	6.1	0.5	0.94	1.5
April 17	F. R. Archibald.....	1,576	7.5	3.7	0.5	1.07	2.3
May 11	F. R. Archibald.....	1,673	9.0	6.1	1.1	1.30	6.5

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Daily Gauge Height and Discharge of Heffley Creek above Diversions, near Mouth, for 1915.

(Drainage area, 65 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1					0.97	2	1.00	2	1.05	2	1.28	8
2					1.00	2	0.98	2	1.03	2	1.23	7
3					1.00	2	0.91	1	1.05	2	1.22	7
4					1.07	3	0.92	1	1.00	2	1.20	5
5					1.00	2	0.92	1	1.00	2	1.16	5
6					1.00	2	0.92	1	0.90	1	1.15	4
7					1.00	2	1.01	2	0.90	1	1.18	5
8					1.00	2	1.12	3	0.90	1	1.15	4
9					1.00	2	1.10	3	0.90	1	1.13	3
10					1.00	2	1.06	3	1.14	4	1.00	2
11					1.00	2	0.95	2	1.10	5	1.07	3
12					1.00	2	0.93	2	1.22	5	1.15	4
13						2	1.02	2	1.37	11	1.17	4
14					1.02	2	1.05	2	1.60	22	1.18	4
15					1.06	3	1.10	3	1.75	31	1.20	5
16												
17					1.08	3	1.01	2	1.80	35	1.22	5
18					1.05	2	1.02	2	1.77	33	1.31	8
19					1.07	3	1.05	2	1.60	22	1.37	11
20					1.07	3	0.97	2	1.67	26	1.35	10
21					1.05	3	0.95	1	1.80	35	1.40	12
22					1.07	3	1.05	2	1.72	30	1.40	12
23					1.05	3	1.02	2	1.65	25	1.38	11
24					1.06	3	1.28	7	1.50	22	1.37	11
25					1.03	2	1.02	2	1.55	19	1.30	8
26					0.98	2	1.02	2	1.55	19	1.29	8
27												
28					1.15	4	1.01	2	1.50	16	1.28	8
29					1.05	3	0.97	2	1.42	13	1.80	35
30					0.98	2	0.98	2	1.40	12	1.85	40
31					0.98	2	1.00	2	1.34	10	1.51	22
					1.00	2	1.00	2	1.31	8	1.47	15
					1.00	2			1.28	8		

Day.	July.		August.		September.		October	November	December
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.			
1	1.41	12	1.05	2	1.15	4			
2	1.37	11	1.12	3	1.15	4			
3	1.31	8	1.20	5	1.15	4			
4	1.27	7	1.21	5	1.15	4			
5	1.21	5	1.15	4	1.15	4			
6	1.16	4	1.15	4	1.15	4			
7	1.07	3	1.18	4	1.15	4			
8	1.07	3	1.17	4	1.15	4			
9	1.10	3	1.15	4	1.20	5			
10	1.12	3	1.12	3	1.20	5			
11	1.17	4	1.12	3	1.20	5			
12	1.20	5	1.12	3	1.20	5			
13	1.21	5	1.12	3	1.15	4			
14	1.23	6	1.12	3	1.16	4			
15	1.45	14	1.15	4	1.16	4			
16	1.57	20	1.15	4		4			
17	1.47	15	1.15	4	1.15	4			
18	1.39	12	1.17	4	1.15	4			
19	1.35	10	1.17	4	1.15	4			
20	1.32	9	1.17	4	1.12	4			
21	1.23	6	1.17	4	1.15	4			
22	1.15	4	1.16	4	1.16	4			
23	1.08	3	1.15	4		4			
24	1.09	3	1.15	4	1.15	4			
25	1.02	2	1.15	4	1.16	4			
26	1.00	2	1.17	4	1.18	5			
27	1.00	2	1.17	4	1.20	5			
28	1.00	2	1.15	4	1.20	5			
29	1.02	2	1.15	4	1.19	5			
30	1.00	2	1.15	4	1.17	5			
31	1.00	2	1.13	4					

*Monthly Discharge of Hefley Creek above Diversions, near Mouth, for 1915.*

(Drainage area, 66 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
March.....	4	2	2			130
April.....	7	1	2			120
May.....	35	1	14			860
June.....	40	2	10			590
July.....	20	2	6			370
August.....	5	3	4			250
September.....	5	4	4			240
The period.....	40	1	6			2,560

NOTE.—The flow is regulated by a storage dam on Hefley lake and there are diversions in the upper part of the watershed.

INGRAM CREEK.—(2020).

*Location.*—Section 23, township 17, range 13, west 6th meridian.

*Records Available.*—April 1 to October 4, 1911; April 1 to August 31, 1912; April 1 to September 16, 1913; May 6 to November 11, 1914; April 1 to September 30, 1915.

*Drainage Area.*—Twenty-five square miles.

*Gauge.*—The gauge is a vertical staff gauge read daily by Miss S. King.

*Channel.*—Rocky, steep gradient and swift water.

*Discharge Measurements.*—Five measurements made during 1914-15 agree very well and cover the whole range of stage.

*Winter Flow.*—Ice conditions usually exist during December, January and February.

*Accuracy.*—The general accuracy of results is considered high for all stages.

*Discharge Measurements of Ingram Creek above Diversions.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1914							
May 6	Dann & Tredcroft	1,055	18	14.0	3.14	1.92	43.9
June 23	C. B. Corbould	1,915	17	7.1	1.70	1.25	12.2
July 23	C. B. Corbould	1,915	8	4.7	0.65	1.00	3.2
Sept. 24	C. B. Corbould	1,915	7	2.8	0.40	0.88	1.1
1915							
June 17	A. L. McNaughton	1,915	8	5.3	3.35	1.45	17.7



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Daily Gauge Height and Discharge of Ingram Creek near Grand Prairie for 1915.

(Drainage area, 25 square miles.)

Day.	April.		May.		June.		July.		August.		September.	
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	1.10	6.4	1.48	16.8	1.60	26.0	1.75	32.0	1.10	5.4	1.00	2.9
2	0.90	2.2	1.40	16.7	1.50	21.0	1.60	26.0	1.05	5.1	1.05	5.1
3	0.95	2.0	1.40	16.7	1.60	21.0	1.60	35.0	1.05	5.1	1.05	5.1
4	1.15	7.9	1.40	16.7	1.45	18.6	1.65	28.0	1.00	3.9	1.06	5.1
5	1.00	3.9	1.40	16.7	1.45	18.6	1.60	26.0	1.00	3.9	1.05	5.1
6	1.05	5.1	1.35	14.8	1.50	21.0	1.50	21.0	1.00	3.9	1.10	6.4
7	1.10	6.4	1.35	14.8	1.60	26.0	1.50	21.0	0.95	3.0	1.10	5.4
8	1.10	6.4	1.25	14.8	1.70	30.0	1.40	16.7	0.90	2.2	1.10	6.4
9	1.00	2.9	1.20	13.0	1.50	21.0	1.35	14.8	0.90	2.2	1.15	7.9
10	1.05	5.1	1.25	11.2	1.40	16.7	1.25	11.2	0.85	1.6	1.20	9.4
11	1.10	6.4	1.30	13.0	1.35	14.6	1.30	13.0	0.90	2.2	1.16	7.9
12	1.15	7.9	1.30	13.0	1.40	16.7	1.40	16.7	0.90	2.2	1.16	7.9
13	1.20	9.4	1.36	14.8	1.35	14.8	1.45	18.6	0.85	1.5	1.10	6.4
14	1.20	9.4	1.40	16.7	1.60	26.0	1.60	21.0	0.85	1.5	1.20	9.4
15	1.25	11.2	1.40	16.7	1.35	14.8	1.40	16.7	0.80	0.8	1.30	12.0
16	1.15	7.9	1.40	16.7	1.40	16.7	1.30	13.0	0.95	3.0	1.30	13.0
17	1.20	9.4	1.40	16.7	1.50	21.0	1.25	11.2	1.00	3.9	1.25	11.2
18	1.25	11.2	1.45	18.6	1.50	21.0	1.25	11.2	1.05	6.1	1.20	9.4
19	1.20	12.0	2.00	47.0	1.60	21.0	1.20	9.4	1.00	3.9	1.10	6.4
20	1.35	14.8	2.10	63.0	1.45	18.6	1.20	9.4	1.10	6.4	1.10	6.4
21	1.25	11.2	2.10	53.0	1.40	16.7	1.20	9.4	1.00	3.9	1.05	5.1
22	1.30	13.0	2.00	47.0	1.35	14.8	1.15	7.9	1.00	3.9	1.05	5.1
23	1.30	13.0	1.90	41.0	1.36	14.8	1.15	7.9	1.00	3.9	1.10	6.4
24	1.35	14.8	1.80	36.0	1.30	13.0	1.10	6.4	0.95	3.0	1.20	9.4
25	1.36	14.8	1.70	30.0	1.25	11.2	1.20	9.4	0.95	3.0	1.10	6.4
26	1.30	13.0	1.60	26.0	1.60	21.0	1.10	6.4	0.90	2.2	1.05	5.1
27	1.20	12.0	1.65	28.0	2.00	47.0	1.10	6.4	0.85	1.5	1.00	2.9
28	1.35	14.6	1.65	28.0	2.20	60.0	1.15	7.9	0.85	1.5	1.00	3.9
29	1.40	16.7	1.60	26.0	2.20	60.0	1.20	9.4	0.85	1.5	1.10	6.4
30	1.40	16.7	1.55	23.0	1.75	32.0	1.10	6.4	0.80	0.8	1.15	7.9
31	.....	.....	1.60	26.0	.....	.....	1.10	6.4	0.85	1.5	.....	.....

Monthly Discharge of Ingram Creek above Diversion for 1915.

(Drainage area, 25 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
April.....	16.7	2.2	9.7	0.39	0.43	577
May.....	53.0	11.2	24.0	0.96	1.11	1,476
June.....	60.0	11.2	23.2	0.93	1.04	1,380
July.....	35.0	6.4	14.7	0.59	0.68	904
August.....	6.4	0.6	3.0	0.12	0.14	184
September.....	13.0	3.9	7.0	0.28	0.31	416
The period.....	60.0	0.8	13.6	0.54	3.71	4,937

## JAMIESON CREEK.—(2022).

*Location.*—Section 21, township 22, range 17, west of the 6th meridian.

*Records Available.*—June 22 to October 30, 1911; April 3 to October 30, 1912; May 1 to October 1, 1913; January 1 to January 24, and April 1 to December 9, 1914; April 1 to September 30, 1915.

*Drainage Area.*—Sixty-six square miles.

*Gauge.*—Vertical staff gauge situated above British Columbia Fruitlands Diversion, and read daily by J. Crack, rancher.

*Channel.*—Is approximately 30 feet in width, with rocky bed.

*Discharge Measurements.*—Are made from highway bridge at high water and by wading at low water. Fourteen measurements made during 1911-12-13-14-15 agree very well and cover the whole range of stage.

*Accuracy.*—Results should be quite reliable for all stages.

*Discharge Measurements of Jamieson Creek above B.C. Fruitland's Diversion.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft
1911							
June 20	C. G. Cline	1,046	24	28	2.2	2.35	61.0
Aug. 20	C. G. Cline	1,046	19	13	0.6	1.78	8.4
Oct. 7	C. G. Cline	1,046	20	15	0.5	1.82	7.6
1912							
May	E. M. Dann	1,046				3.60	354.0
July	H. J. E. Keys	1,057	23	31	1.8	2.33	56.0
1913							
June 11	H. J. E. Keys	1,057	26	26	3.5	2.65	103.0
July 16	H. J. E. Keys	1,057	31	57	2.8	2.88	167.0
1914							
May 10	E. H. Tredcroft	1,055	28	63	7.5	3.50	490.0
May 25	Tredcroft & Corbould	1,923	30	54	5.6	3.50	343.0
June 30	E. H. Tredcroft	1,923	35	34	1.9	2.36	65.5
Aug. 5	C. B. Corbould	1,923	24	40	0.6	2.00	26.6
Aug. 26	Tredcroft & Corbould	1,923	20	18	0.5	1.81	8.6
1915							
Mar. 8	E. H. Tredcroft	1,923	19	15	0.2	1.76	3.3
May 4	E. H. Tredcroft	1,923	43	50	3.1	2.90	154.0

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Daily Gauge Height and Discharge of Jamieson Creek above B.C. Fruitland's Diversion for 1915.

(Drainage area, 56 square miles.)

Day.	April.		May.		June.		July.		August.		September.	
	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	1.00	0.1	2.80	130	2.85	90	2.38	80	2.30	63	2.30	40
2	1.00	0.1	3.70	110	2.80	82	2.38	80	2.10	63	2.15	34
3	1.05	0.1	2.80	130	3.40	67	2.40	67	2.38	48	2.20	40
4	1.10	0.2	2.90	180	2.85	80	2.46	74	2.28	48	2.30	40
5	2.20	40.0	2.80	170	3.30	58	3.48	74	2.20	40	2.10	28
6	2.30	55.0	3.00	170	2.80	83	2.40	67	2.18	34	2.15	35
7	3.55	60.0	3.05	185	3.80	53	2.40	67	2.18	34	2.10	29
8	2.40	67.0	3.00	170	2.38	80	2.40	67	2.10	29	2.10	28
9	3.40	67.0	3.00	170	3.40	67	2.28	60	2.10	29	2.15	35
10	2.38	50.0	3.00	170	3.40	67	2.40	67	2.10	29	2.10	29
11	2.55	60.0	2.85	140	2.55	60	2.38	60	3.10	38	2.10	29
12	2.50	62.0	2.70	110	3.30	53	3.55	60	2.10	29	2.15	55
13	2.55	69.0	3.10	158	3.80	58	3.50	65	2.55	60	2.10	28
14	2.65	105.0	3.10	195	2.28	46	2.40	67	2.40	67	2.10	29
15	2.60	97.0	3.10	195	2.45	74	2.60	97	2.40	67	2.10	29
16	2.90	150.0	3.80	250	2.40	67	2.75	120	2.40	67	2.10	29
17	3.00	170.0	3.25	255	2.45	74	2.60	97	2.40	67	2.00	30
18	5.10	200.0	3.20	320	2.80	62	3.50	62	2.55	60	2.00	30
19	3.35	235.0	3.45	305	2.60	67	3.45	74	2.35	60	3.00	20
20	3.40	255.0	3.30	220	2.55	69	2.45	74	2.35	60	1.95	15
21	3.60	375.0	3.05	165	2.45	74	3.40	67	2.25	60	1.95	15
22	2.80	150.0	3.00	170	2.40	67	2.40	67	2.30	63	1.90	13
23	3.00	170.0	2.95	160	2.40	67	2.40	67	2.30	63	1.90	13
24	2.60	150.0	2.80	120	2.35	60	2.35	60	2.30	53	1.90	15
25	5.20	270.0	2.75	120	2.30	63	2.30	65	2.30	63	1.85	10
26	3.40	255.0	2.70	110	2.90	160	2.30	63	3.25	46	1.85	10
27	3.00	170.0	2.80	97	3.15	210	2.30	63	2.25	46	1.65	10
28	2.80	150.0	2.65	105	2.95	160	3.50	53	2.20	40	1.65	10
29	2.65	140.0	3.60	97	3.70	112	2.30	53	2.20	40	1.80	5
30	2.80	150.0	2.60	97	2.65	104	2.30	63	2.30	40	1.80	5
31	.....	.....	2.65	105	.....	.....	2.50	63	3.20	40	.....	.....

Monthly Discharge of Jamieson Creek above B.C. Fruitland's Diversion for 1915.

(Drainage area, 56 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
April	375	0.1	124	1.88	3.10	7,380
May	305	97.0	160	2.43	2.79	9,840
June	210	46.0	80	1.21	1.36	4,760
July	130	63.0	67	1.01	1.16	4,120
August	67	29.0	48	0.73	0.84	3,960
September	40	8.0	24	0.36	0.40	1,420
The period	575	0.1	94	1.27	8.64	50,480

NOTE.—Retained by a storage dam.

## LITTLE CLEARWATER CREEK.—(2056).

*Location.*—Near Raft river; Water District No. 2.

*Records Available.*—June 17 to December 31, 1914; January 1 to September 30, 1915.

*Drainage Area.*—One hundred square miles.

*Gauge.*—Standard vertical staff gauge set near footbridge, at crossing of Murtle river trail, and read by P. McDougall, rancher.

*Channel.*—Average width 40 feet. The velocities are low even at high water, seldom exceeding 2.0 feet per second. Bed of stream at measuring section composed of mud and silt.

*Discharge Measurements.*—Four measurements made during 1914 and 1915 cover practically the whole range of stage, but leave certain intermediate parts somewhat indefinite.

*Winter Flow.*—Partial ice conditions exist during latter end of January and beginning of February.

*Accuracy.*—The results are probably quite reliable but, before a very high accuracy value can be assigned, a few more measurements will be needed at intermediate stages.

*Discharge Measurements of Little Clearwater Creek 5 Miles from Mouth.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1914 June 6	E. H. Tredcroft	1,923	41	147	1.8	2.50	272
1915 May 20	E. H. Tredcroft	1,923	43	188	2.5	3.75	472
Aug. 10	E. H. Tredcroft	1,923	35	77	0.7	0.77	53
Nov. 1	A. L. McNaughton	1,915	37	79	0.8	0.85	62



*Monthly Discharge of Little Clearwater Creek 5 Miles above Mouth for 1915.*

(Drainage area, 84 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January . . . . .	38	30	34	0.40	0.46	2,090
February . . . . .	38	22	29	0.34	0.35	1,610
March . . . . .	85	22	45	0.53	0.61	2,770
April . . . . .	270	85	187	2.22	2.48	11,130
May . . . . .	470	200	316	3.75	4.32	19,400
June . . . . .	440	105	180	2.14	2.39	10,730
July . . . . .	550	90	203	2.41	2.78	12,480
August . . . . .	90	30	50	0.59	0.68	3,070
September . . . . .	60	30	41	0.49	0.55	2,440
The period . . . . .	550	22	120.5	1.43	14.62	65,720

LOUIS CREEK.—(2023).

*Location.*—Section 33, township 23, range 15, west 6th meridian.

*Records Available.*—July 16 to October 31, 1911; April 1 to November 16, 1912; May 1 to October 14, 1913; April 1 to December 11, 1914; April 1 to September 30, 1915.

*Drainage Area.*—One hundred square miles.

*Gauge.*—Standard vertical staff gauge read daily by D. G. McKnight.

*Channel.*—The width of stream averages 25 to 35 feet at measuring section. The section seems to be shifting somewhat.

*Discharge Measurements.*—Twelve measurements made during 1911-12-13-14-15 seem to indicate a gradual scouring at the control from year to year. The low part of the rating curve used for 1915 is determined from 1915 measurements.

*Winter Flow.*—Ice conditions obtain on this stream usually throughout January, February and March.

*Accuracy.*—The accuracy of the results is somewhat impaired by the shifting channel.

*Discharge Measurements of Louis Creek near Railway Belt Boundary.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1912							
April 30	Cline & Dann . . . . .	1,046	26	49	1.7	1.50	94
May 16	E. M. Dann . . . . .	1,044	31	108	4.0	3.80	439
May 29	E. M. Dann . . . . .	1,044	28	90	3.6	3.20	328
June 8	E. M. Dann . . . . .	1,044	28	82	3.4	2.72	276
June 9	E. M. Dann . . . . .	1,044	28	85	3.4	2.81	288
Aug. 22	H. J. E. Keys . . . . .	1,057	30	19	2.8	1.02	52
1913							
June 28	H. J. E. Keys . . . . .	1,057	33	58	2.6	2.10	155
1914							
Aug. 13	C. B. Corbould . . . . .	1,915	21	27	1.0	0.59	26
1915							
April 18	F. R. Archibald . . . . .	1,673	36	22	2.3	0.82	51
May 13	F. R. Archibald . . . . .	1,673	41	58	2.9	1.82	168

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Daily Gauge Height and Discharge of Louis Creek near Railway Belt Boundary  
of 1915.

(Drainage area, 100 square miles.)

Day.	April.		May.		June.		July.		August.		September.	
	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	0.40	15	1.35	96	1.77	145	2.02	175	1.30	91	0.60	29
2	0.40	15	1.35	96	1.70	135	1.82	150	1.25	86	0.60	29
3	0.50	22	1.47	110	1.57	120	1.70	135	1.20	81	0.60	29
4	0.57	26	1.55	115	1.50	110	1.62	125	1.10	71	0.60	29
5	0.60	29	1.60	120	1.45	105	1.45	105	1.05	66	0.60	29
6	0.60	29	1.72	135	1.45	105	1.40	100	1.00	62	0.60	29
7	0.65	33	1.92	160	1.65	130	1.37	98	0.95	57	0.60	29
8	0.70	37	2.17	190	1.50	110	1.30	91	0.90	53	0.60	29
9	0.65	33	2.20	195	1.42	105	1.27	88	0.90	53	0.60	29
10	0.60	29	2.50	235	1.32	93	1.32	93	0.85	49	0.60	29
11	0.65	33	2.12	185	1.27	88	1.37	98	0.80	45	0.60	29
12	0.75	41	1.92	150	1.20	81	1.35	96	0.80	45	0.60	29
13	0.85	49	1.87	155	1.40	100	1.55	120	0.75	41	0.60	29
14	0.85	49	2.97	300	1.45	105	1.50	110	0.75	41	0.70	37
15	0.80	45	3.40	365	1.37	98	1.95	165	0.70	37	0.80	45
16	0.90	53	3.02	310	1.30	91	2.52	240	0.70	37	0.75	41
17	1.05	66	2.77	275	1.62	125	2.22	200	0.75	41	0.70	37
18	1.12	73	2.77	275	1.57	120	1.07	165	0.80	45	0.70	37
19	1.25	86	3.22	340	1.50	110	1.85	155	0.95	57	0.70	37
20	1.40	101	3.45	375	1.52	115	1.65	130	0.80	45	0.70	37
21	1.30	81	3.05	315	1.47	110	1.57	120	0.75	41	0.65	33
22	1.20	81	2.77	275	1.35	96	1.47	110	0.75	41	0.65	33
23	1.10	71	2.55	250	1.25	86	1.37	98	0.70	37	0.65	33
24	1.15	76	2.50	250	1.27	88	1.30	91	0.70	37	0.65	33
25	1.15	76	2.60	250	1.27	88	1.30	91	0.70	37	0.65	33
26	1.25	86	2.30	210	2.75	270	1.32	93	0.70	37	0.60	29
27	1.25	86	2.15	190	3.35	360	1.40	101	0.65	33	0.60	29
28	1.25	86	2.20	195	2.75	270	1.35	96	0.60	20	0.60	29
29	1.25	105	2.05	175	2.37	220	1.30	91	0.60	29	0.60	29
30	1.42	100	1.87	155	2.17	195	1.30	91	0.60	29	0.60	29
31	1.42	100	1.80	145	1.20	81	1.20	81	0.60	29	0.60	29

Monthly Discharge of Louis Creek near Railway Belt Boundary for 1915.  
(Drainage area, 100 square miles.)

MONTH.	DISCHARGE IN SECOND FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
April.....	105	15	57	0.57	0.64	3,390
May.....	375	96	213	2.13	2.46	13,100
June.....	360	81	132	1.32	1.47	7,850
July.....	240	81	119	1.19	1.37	7,320
August.....	91	29	48	0.48	0.55	2,950
September.....	45	29	32	0.32	0.36	1,900
The period.....	375	15	100	1.00	6.85	36,510

## LYONS DIVERSION FROM EDWARDS CREEK.—(2083).

*Location.*—Near Edwards creek, in section 34, township 22, range 16, west of 6th meridian.

*Records Available.*—April 13 to September 30, 1915.

*Gauge.*—Vertical staff read by H. Devick.

*Discharge Measurements.*—Two in 1915.

*Accuracy.*—Result: quite reliable except for discharges above 1.0 cubic foot per second.

## Discharge Measurements of Lyons Diversion from Edwards Creek.

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1915							
April 13	F. R. Archibald.	1,673	1.5	0.3	0.7	0.15	0.2
May 11	F. R. Archibald.	1,673	2.0	0.5	2.2	0.20	1.1

## Daily Gauge Height and Discharge of Lyons Diversion from Edwards Creek for 1915.

Day.	April.		May.		June.		July.		August.		September.	
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1				Dry								Dry
2									0.20	1.0		
3					0.15	0.2						
4								Dry				
5										Dry		
6					0.10	0.1						
7												
8												
9				Dry								
10			0.25	2.5	0.10	0.1						
11			0.25	2.5								
12												
13	0.15	0.2			0.10	0.1					Dry	Dry
14			0.25	2.5								
15												
16			0.30	4.0	0.10	0.1						
17												
18	0.10	0.1										
19												
20			0.20	1.0								
21	0.05	0.1										
22												
23			0.20	1.0			0.15	0.2				
24												
25	0.25	2.5					0.15					
26												
27			0.15	0.2			0.15	0.2				
28	0.12	0.1					0.15	0.2				
29												
30		Dry									Dry	Dry
31			0.20	1.0								

## MONTE CREEK, BELOW DIVERSION TO SUMMIT LAKE.—(2025).

*Location.*—Section 22, township 18, range 14, west 6th meridian.

*Records Available.*—May 25 to September 30, 1911; April 1 to September 17, 1912; June 20 to September 30, 1913; April 1 to November 17, 1914; April 1 to September 30, 1915.

*Drainage Area.*—Forty-five square miles.

*Gauge.*—Standard vertical staff gauge read daily by E. C. Lewis.

*Channel.*—Width of channel averages 10 feet. Bed of stream gravelly and permanent.

*Discharge Measurements.*—Fourteen measurements made during 1912-15. 14-15 indicate a shift in the channel. Only the 1915 measurements have been used to locate the lower part of the rating curve.



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*Winter Flow.*—Ice conditions generally prevail throughout winter months.  
*Accuracy.*—There is a certain amount of indefiniteness about the location of the rating curve between discharges of 20 and 60 cubic feet per second. The curve is quite indefinite above 80 cubic feet per second also, but the discharge only exceeded that amount for two days.

*Discharge Measurements of Monte Creek below Diversion to Summit Lake.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
<b>1912</b>							
May 11	C. E. Richardson	1,048	15	24.7	3.0	4.70	73.3
July 15	C. E. Richardson	1,048	13	9.1	0.5	3.98	4.9
July 17	C. E. Richardson	1,048	12	7.3	0.4	3.93	2.9
Aug. 27	C. E. Richardson	1,048	13	4.2	0.4	3.74	1.6
<b>1913</b>							
April 24	H. J. E. Keys	1,057	14	13.2	0.8	4.17	11.0
June 20	H. J. E. Keys	1,057	14	11.9	1.1	4.18	12.8
Sept. 19	H. J. E. Keys	1,057	6	2.4	0.8	3.80	1.9
<b>1914</b>							
June 22	C. B. Corbould	1,915	13	8.7	0.5	4.00	4.7
July 22	C. B. Corbould	1,915	12	7.5	0.4	3.93	3.1
Sept. 23	C. B. Corbould	1,915	11	5.8	0.2	3.83	0.9
<b>1915</b>							
Mar. 24	F. R. Archibald	1,673	14	6.3	0.3	3.96	1.8
June 16	A. L. McNaughton	1,915	13	10.9	0.9	4.18	10.0
July 5	Tredcroft & McNaughton	1,915	13	0.1	0.9	4.10	8.1
Oct. 9	A. L. McNaughton	1,955	4	0.8	1.0	3.80	0.7

*Daily Gauge Height and Discharge of Monte Creek below Diversion to Summit Lake for 1915.*

(Drainage area, 45 square miles.)

Day.	April.		May.		June.		July.		August.		September.	
	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	3.70	0.5	4.30	18.4	4.00	3.5	3.90	1.6	3.80	0.7	3.70	0.5
2	3.80	0.7	4.30	18.4	4.05	5.2	3.85	1.1	3.80	0.7	3.70	0.5
3	3.90	1.6	4.30	18.4	4.10	7.0	3.80	0.7	3.80	0.7	3.70	0.5
4	3.85	1.1	4.30	18.4	4.10	7.0	3.90	1.6	3.80	0.7	3.70	0.5
5	3.80	0.7	4.30	18.4	4.00	3.5	4.05	5.2	3.80	0.7	3.70	0.5
6	3.80	0.7	4.25	14.9	4.00	3.5	4.10	7.0	3.80	0.7	3.70	0.5
7	3.85	1.1	4.22	12.9	4.10	7.0	4.10	7.0	3.80	0.7	3.70	0.5
8	3.90	1.6	4.27	16.3	4.20	11.5	4.10	7.0	3.80	0.7	3.70	0.5
9	3.80	0.7	4.30	18.4	4.15	9.2	4.10	0	3.80	0.7	3.70	0.5
10	3.80	0.7	4.20	11.5	4.15	9.2	4.05	5.2	3.80	0.7	3.70	0.5
11	3.80	0.7	4.17	10.1	4.15	9.2	4.00	3.5	3.80	0.7	3.70	0.5
12	3.90	1.6	4.10	7.0	4.15	9.2	4.05	5.2	3.80	0.7	3.70	0.5
13	3.95	2.5	4.20	11.5	4.10	9.2	4.05	5.2	3.80	0.7	3.75	0.6
14	4.00	3.5	4.22	12.9	4.17	10.1	4.00	3.5	3.80	0.7	3.80	0.7
15	4.00	3.5	4.30	18.4	4.17	10.1	4.00	3.5	3.75	0.6	3.80	0.7
16	4.10	7.0	4.20	11.5	4.15	9.2	3.90	1.6	3.70	0.5	3.80	0.7
17	4.02	4.2	4.20	11.5	4.25	14.9	3.90	1.6	3.80	0.7	3.80	0.7
18	4.50	42.0	4.30	18.4	4.20	11.5	3.90	1.6	3.80	0.7	3.80	0.7
19	4.50	42.0	4.41	29.0	4.20	11.5	3.90	1.6	3.80	0.7	3.80	0.7
20	4.50	42.0	4.46	36.0	4.20	11.5	3.90	1.6	3.80	0.7	3.80	0.7
21	4.00	3.5	4.40	28.0	4.17	10.1	3.90	1.6	3.80	0.7	3.80	0.7
22	4.23	13.5	4.30	18.4	4.15	9.2	3.90	1.6	3.70	0.5	3.80	0.7
23	4.35	23.0	4.30	18.4	4.17	10.1	3.85	1.1	3.70	0.5	3.80	0.7
24	4.35	23.0	4.20	11.5	4.20	11.5	3.80	0.7	3.70	0.5	3.80	0.7
25	4.35	23.0	4.20	11.5	4.37	25.0	3.80	0.7	3.70	0.5	3.80	0.7
26	4.30	18.4	4.10	7.0	4.92	112.0	3.80	0.7	3.70	0.5	3.80	0.7
27	4.30	18.4	4.10	7.0	5.17	157.0	3.80	0.7	3.70	0.5	3.80	0.7
28	4.30	18.4	4.10	7.0	4.73	78.0	3.80	0.7	3.70	0.5	3.80	0.7
29	4.32	20.0	4.02	4.2	4.33	21.0	3.80	0.7	3.70	0.5	3.80	0.7
30	4.30	18.4	4.00	3.5	4.05	5.2	3.80	0.7	3.70	0.5	3.80	0.7
31	.....	.....	4.00	3.5	.....	.....	3.80	0.7	3.70	0.5	.....	.....

*Monthly Discharge of Monte Creek below Diversion to Summit Lake for 1915.*

(Drainage area, 45 square miles.)

MONTH	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
April	42.0	0.5	11.2			666
May	36.0	3.5	14.6			698
June	157.0	3.5	20.4			1,214
July	7.0	0.7	2.7			166
August	0.7	0.5	0.6			37
September	0.7	0.5	0.6			36
The period	157.0	0.5	8.3			3,017

MONTE CREEK, ABOVE BOSTOCK'S DIVERSION.—(2024).

*Location.*—Section 25, township 19, range 15, west 6th meridian.

*Records Available.*—May 20 to June 30, 1911; August 8, 1911; April 8 to September 7, 1912; April 16 to September 13, 1913; April 1 to December 4, 1914; April 7 to September 30, 1915.

*Drainage Area.*—One hundred and ten square miles.

*Gauge.*—Standard vertical staff gauge read semi-weekly by T. F. Teagle.

*Channel.*—About 15 feet wide, with rocky bed.

*Discharge Measurements.*—Seventeen measurements made during 1911-12-13-14-15 agree fairly well and cover the whole range of stage.

*Winter Flow.*—Ice conditions prevail during December, January and February.

*Accuracy.*—Gauge readings are only taken twice a week, which tends to lessen the accuracy of the results.

*Discharge Measurements of Monte Creek above Bostock's Diversion.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1911							
May 20	C. E. Richardson	1,048	15.0	16.7	1.4	1.45	23.1
May 20	C. G. Cline	1,044	15.0	19.4	1.2	1.45	24.2
June 28	C. E. Richardson	1,048	8.5	6.9	0.6	0.66	3.7
Aug. 8	C. E. Richardson	1,048	6.0	2.4	0.4	0.60	1.0
1912							
May 8	C. E. Richardson	1,048	15.0	26.8	1.20	1.50	32.9
May 9	C. E. Richardson	1,048	16.0	31.2	1.30	1.57	39.6
May 15	C. E. Richardson	1,048	18.0	39.4	2.20	2.05	88.8
July 15	C. F. Richardson	1,048	8.5	6.7	0.80	1.05	5.3
1913							
April 22	H. J. E. Keys	1,057	13.0	12.9	1.30	1.35	17.5
June 17	H. J. E. Keys	1,057	14.0	8.1	1.40	1.23	11.4
1914							
May 7	E. H. Tredcroft	1,055	22.0	28.4	1.71	1.70	48.6
June 21	C. B. Corbould	1,915	10.0	11.4	0.54	0.90	6.2
July 21	C. B. Corbould	1,915	8.0	7.6	0.32	0.70	2.5
Sept. 22	C. B. Corbould	1,915	7.5	2.9	0.66	0.59	1.9
1915							
Mar. 26	F. R. Archibald	1,673	10.0	2.4	0.81	0.72	2.0
May 21	F. R. Archibald	1,673	10.5	12.4	1.94	1.30	23.9
Oct. 9	A. L. McNaughton	1,055	4.0	0.8	0.66	0.50	0.5

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Daily Gauge Height and Discharge of Monte Creek above Bostock's Diversion for 1915.

(Drainage area, 110 square miles.)

Day.	April.		May.		June.		July.		August.		September.	
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	0.70	2.8	1.12	13.1	.....	9.0	.....	30.0	.....	3.0	0.45	0.5
2	.....	3.6	.....	13.0	0.98	8.3	.....	20.0	.....	3.0	.....	0.5
3	0.81	4.4	.....	12.7	.....	7.0	1.19	16.1	.....	3.0	.....	1.0
4	.....	4.2	.....	12.5	.....	6.0	.....	13.0	0.70	2.8	0.53	1.1
5	.....	4.0	1.10	12.3	0.84	5.0	.....	10.0	.....	2.5	.....	1.0
6	.....	3.5	.....	12.0	.....	5.0	.....	8.0	.....	2.5	.....	1.0
7	0.72	3.1	.....	10.0	.....	5.5	0.87	5.6	0.65	2.3	.....	0.5
8	.....	3.0	1.03	9.6	.....	6.0	.....	5.0	.....	2.0	0.45	0.5
9	.....	2.9	.....	9.5	0.90	6.2	.....	5.0	.....	2.0	.....	0.5
10	0.70	2.8	.....	9.0	.....	6.0	0.82	4.6	.....	2.0	.....	1.0
11	.....	3.0	.....	8.5	.....	6.0	.....	4.5	0.60	1.8	0.52	1.0
12	.....	3.5	0.97	8.1	0.90	6.2	.....	4.5	.....	1.8	.....	1.0
13	.....	4.0	.....	8.5	.....	6.0	.....	4.5	.....	1.5	.....	1.0
14	0.82	4.6	.....	9.0	.....	6.0	0.82	4.6	0.57	1.5	.....	1.5
15	.....	4.5	1.01	9.2	.....	6.0	.....	5.0	.....	1.5	0.60	1.8
16	.....	4.5	.....	11.0	0.90	6.2	.....	5.0	.....	1.5	.....	1.0
17	0.81	4.4	.....	13.0	.....	7.0	0.85	5.2	.....	1.8	.....	1.0
18	.....	4.4	.....	16.0	.....	9.0	.....	4.0	0.60	1.8	0.40	0.2
19	.....	4.5	1.21	17.0	1.02	9.6	.....	4.0	.....	1.8	.....	0.2
20	.....	4.6	.....	18.0	.....	9.5	.....	4.0	.....	2.0	.....	0.2
21	0.82	4.6	.....	20.0	.....	9.5	0.72	3.1	0.62	2.0	.....	0.3
22	.....	5.0	1.30	21.0	.....	9.0	.....	3.5	.....	2.0	0.42	0.3
23	.....	6.0	.....	20.0	1.00	8.9	.....	4.0	.....	1.5	.....	1.0
24	0.91	6.5	.....	19.0	.....	9.0	0.80	4.2	.....	1.0	.....	1.5
25	.....	8.0	.....	18.0	.....	10.0	.....	4.0	0.50	0.8	0.60	1.8
26	.....	9.0	1.21	17.0	1.05	10.6	.....	4.0	.....	0.8	.....	1.5
27	.....	10.0	.....	15.0	.....	18.0	.....	3.5	.....	0.8	.....	1.5
28	1.06	10.9	.....	12.0	.....	25.0	0.75	3.5	0.50	0.8	.....	1.0
29	.....	12.0	1.05	10.6	.....	32.0	.....	3.5	.....	0.5	0.45	0.5
30	.....	12.0	.....	10.8	1.58	39.0	.....	3.0	.....	0.5	.....	0.5
31	.....	.....	.....	9.0	.....	.....	0.72	3.1	.....	0.5	.....	.....

Monthly Discharge of Monte Creek above Bostock's Diversion for 1915.

(Drainage area, 110 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
April	10.9	2.8	5.3	.....	.....	320
May	21.0	8.1	13.0	.....	.....	800
June	39.0	6.2	10.2	.....	.....	610
July	16.1	3.1	6.6	.....	.....	410
August	2.8	0.8	1.7	.....	.....	100
September	1.8	0.2	0.9	.....	.....	50
The period	39.0	0.2	6.3	.....	.....	2,290

NOTE.—There are other diversions in the upper part of the watershed.

## MURTLE RIVER.—(2069).

*Location.*—At the Clearwater trail crossing, 15 miles below Murtle lake and about 50 miles by trail from the Canadian Northern Railway, at Raft River post office. A 50-mile trip by pack trail is necessary after leaving the railway

*Records Available.*—Gauge readings have been taken since September 1914, which will be available when the station is completely rated.

*Drainage Area.*—Only part of the watershed of the Murtle river has been surveyed, and there is hardly enough data available to make a close estimate of the drainage area.

*Gauge.*—A Gurley Automatic Water Stage Register was installed in November 1915. This gauge prints the stage to the nearest hundredth of a foot every 15 minutes. Before November, a chain gauge was in use, read four times a week by P. McDougall.

*Channel.*—The bed of the stream is composed of rocks and gravel and is very smooth and even. The water is quite swift.

*Discharge Measurements.*—Three measurements have been made during 1914 and 1915 which locate the rating curve for low stages. A cable car was erected in May 1915 and it will now be possible to get high water measurements.

*Accuracy.*—The results computed should be fairly accurate. In future, with an automatic gauge and a cable car, it should be possible to get very precise results.

*Discharge Measurements of Murtle River 20 Miles above Helmcken Falls.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1914 Sept. 1	Tredcroft & Corbould.....	1,923	254	321	2.6	3.10	850
1915 Aug. 8	E. H. Tredcroft.....	1,923	272	507	3.1	3.82	1,610
Nov. 20	A. L. McNaughton.....	1,915	250	297	2.2	2.83	650

NOTE.—All measurements are referred to the datum of the Automatic Gauge installed in November, 1915.



## Daily Gauge Height and Discharge of Murtle River above Helmcken Falls for 1915.

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1					2 70	550			4 25		5 55	
2												
3												
4	3.05	810					2.80	620			5 40	
5	3.05	810	Ice								5 35	
6			Ice									
7			Ice		2 50							
8					2 50							
9									5 15			
10												
11												
12												4 85
13			Ice									4 95
14	2.85	650	Ice						5 55			
15	2.85	650			2 60				5 55			4 80
16					2 50		3 40	1,130	5 55			4 85
17							3 50	1,240	5 50			
18							3 60	1,350	5 40			4 70
19							3 05	1,400				4 75
20							3 70	1,460				
21	2.85	650	Ice		2 50		3 75	1,520				4 60
22	2.85	650	Ice				3 80	1,580				4 65
23							3 80	1,580				
24							3 85	1,640				
25												
26												5 80
27									5 75			5 75
28	Ice		2 75		2 50				5 80			
29					2 50							
30												4 55
31							4 35					
									5 55			

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.
	Feet.	Sec.-ft.	Feet.	Discharge.	Feet.	Discharge.	Feet.	Discharge.	Feet.	Discharge.	Feet.	Discharge.
1	4.45						2.85	650				
2			4.00	1,840	3 25	980	2.85	650	3 10	850		
3			4.00	1,840	3 22	960			3 05	810		
4	4.35											
5	4.30		3.85	1,640								
6			3.85	1,640	3 17	910						
7			3.80	1,580	3 15	890	2 75	580	3 05	810		
8			3.80	1,580			2 75	580	3 05	810		
9			3 75	1,520	3 05	810			3 00	770		
10					3 35	810	2 72	560				
11												
12	4.45		3 55	1,300			2 70	550	2 95	730		
13	4.45		3 65	1,400					2 90	690		
14					3 00	770						
15					3 00	770						
16			3 50	1,240								
17			3 55	1,300	2 98	750						
18	5.05				2 95	730	2 80	620				
19	5.00						2 85	650	2 84	650		
20			3 42	1,150					2 83	640		
21			3 45	1,180	2 90	690						
22					2 90	690	2 95	730				
23	4.35		3 37	1,100			2 95	730				
24	4.30		3 40	1,130	2 85	650						
25					2 85	650						
26	4.25											
27	4.25		3 30	1,030			3 15	890				
28	4.25		3 32	1,050			3 15	890				
29	4.20				2 80	620						
30			3 30	1,030	2 80	620						
31			3 28	1,010								

NOTE.—Station not completely rated this season.

SESSIONAL PAPER No. 22a

## NORTH THOMPSON RIVER.—(2085).

*Location.*—Forty miles north of Kamloops and one mile above the mouth of Barriere river: Provincial Water District No. 2.

*Records Available.*—June 1 to December 31, 1915.

*Drainage Area.*—Above gauging station, about 7,000 square miles. Above mouth, about 7,400 square miles.

*Gauge.*—Chain gauge on highway bridge read daily by A. C. Champion.

*Channel.*—Stream confined by bridge abutments, velocity moderate at all stages.

*Discharge Measurements.*—Made from highway bridge. Five measurements have been made during 1915 and the winter months of 1916, and the discharge curve is well defined between gauge heights 2.0 and 5.0 and between 10.0 and 11.0. At other stages the curve is not so well defined and the figures for the discharge less accurate.

*Discharge Measurements of North Thompson River above Barriere River.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1915							
Mar. 15	E. H. Tredcroft	1,923	307	2,730	1.04	2.93	2,660
Aug. 13	E. H. Tredcroft	1,923	366	4,840	4.15	10.93	20,100
Sept. 1	F. H. Tredcroft	1,923	374	4,790	4.32	10.70	20,700
1916							
Mar. 28	A. L. McNaughton	1,923	315	2,934	1.20	3.63	3,488
April 6	C. G. Cline & A. L. McNaughton	1,923	311	3,141	1.48	4.16	4,664

Daily Gauge Height and Discharge of North Thompson River above Barriere River for 1915.

(Drainage area, 7,000 square miles.)

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.
	Feet	Sec. ft.	Feet	Sec. ft.	Feet	Sec. ft.	Feet	Sec. ft.	Feet	Sec. ft.	Feet	Sec. ft.
1											12 0	23 600
2											11 8	23 100
3											11 6	22 550
4											11 4	22 050
5											11 3	21 800
6											11 4	22 050
7											11 6	22 550
8											12 1	23 850
9											12 1	23 850
10											11 6	22 550
11											10 9	20 750
12											10 4	19 450
13											10 3	19 200
14											10 4	19 450
15											10 7	20 200
16											11 1	21 250
17											11 7	22 800
18											12 3	24 400
19											12 2	24 100
20											11 8	23 100
21											11 6	22 550
22											11 5	22 300
23											11 3	21 800
24											11 3	21 800
25											11 5	22 300
26											11 8	23 100
27											13 4	27 250
28											13 1	26 450
29											12 6	25 150
30											12 3	24 400
31												
	July		August.		September		October.		November.		December	
1	12 1	23 850	12 0	23 600	10 5	19 700	4 8	6 060	6 1	9 040	3 6	3 670
2	12 1	23 850	12 1	23 850	10 1	20 200	5 0	6 500	5 9	8 560	3 4	3 340
3	12 0	23 600	12 2	24 100	9 1	15 250	5 2	6 980	5 6	7 840	3 4	3 340
4	12 0	23 600	12 7	25 400	8 9	15 750	1	6 740	5 5	7 600	3 4	3 340
5	12 0	23 600	12 4	24 650	8 9	15 750	0	6 500	5 3	7 220	3 4	3 340
6	12 1	23 850	11 9	23 350	8 8	15 500	4 8	6 060	5 2	6 980	3 5	3 500
7	12 5	24 900	11 5	22 300	8 7	14 800	4 7	5 840	5 2	6 980	3 6	3 670
8	12 3	24 400	11 3	22 300	7 9	13 350	4 6	5 620	5 1	6 740	3 6	3 670
9	12 2	24 100	11 5	22 300	7 5	12 400	4 4	5 190	4 9	6 280	3 6	3 670
10	12 2	24 100	11 4	22 050	7 0	11 500	4 3	4 980	4 7	5 840	3 5	3 500
11	12 2	24 100	11 3	21 800	6 6	10 400	4 2	4 800	4 5	5 400	3 5	3 500
12	12 0	23 600	11 3	21 800	6 1	9 700	4 1	4 600	4 5	5 400	3 4	3 340
13	11 7	22 800	11 1	21 250	5 6	9 000	4 0	4 400	4 2	4 780	3 4	3 340
14	11 8	23 100	10 9	20 750	5 2	8 300	3 9	4 200	4 1	4 600	3 4	3 340
15	12 1	23 850	10 9	20 750	4 8	7 600	3 8	4 000	4 1	4 600	3 4	3 340
16	13 3	27 000	10 6	20 200	4 3	7 840	3 7	4 800	4 2	4 800	3 4	3 340
17	14 0	28 800	10 3	19 700	3 8	7 200	3 6	4 800	4 2	4 800	3 3	3 190
18	13 5	27 500	10 2	19 200	3 3	6 500	3 5	4 980	4 2	4 800	3 2	3 100
19	12 9	25 900	10 0	18 700	2 8	5 800	3 4	5 400	4 2	4 800	Ice	3 000
20	12 5	24 900	9 7	18 200	2 3	5 100	3 3	7 220	4 1	4 600		3 000
21	12 2	24 100	9 4	17 700	1 8	4 400	3 2	6 980	4 0	4 400		3 000
22	12 3	24 400	9 1	17 200	1 3	3 700	3 1	6 740	3 9	4 200		3 000
23	12 3	24 400	10 0	19 200	0 8	3 000	3 0	7 220	3 9	4 200		3 000
24	12 4	24 650	10 0	19 200	0 3	2 300	2 9	7 460	3 8	4 030		3 000
25	11 9	23 350	9 7	18 700	0 0	1 600	2 8	7 460	3 8	4 030		3 000
26	11 9	23 350	9 4	18 200	0 0	900	2 7	7 840	3 9	4 200		3 000
27	11 7	22 800	9 1	17 700	0 0	200	2 6	8 400	3 9	4 200		3 000
28	11 7	22 800	8 8	17 200	0 0	100	2 5	9 040	3 8	4 030		3 000
29	11 7	22 800	8 5	16 700	0 0	0	2 4	10 000	3 8	4 030		3 000
30	11 8	23 100	8 2	16 200	0 0	0	2 3	10 000	3 7	3 850		3 000
31	11 8	23 100	7 9	15 700	0 0	0	2 2	9 520			Ice	3 000



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## Monthly Discharge of North Thompson River above Barriere River for 1915.

(Drainage area, 7,000 square miles.)

MONTH.	DISCHARGE IN SECOND-FeET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
June	27,250	19,200	22,660	3.23	2.60	1,347,500
July	28,800	22,800	24,210	3.45	3.98	1,489,000
August	25,400	19,200	21,230	3.03	3.49	1,305,000
September	20,200	6,660	16,660	1.50	1.67	623,000
October	10,000	4,600	6,800	0.93	1.07	398,440
November	9,940	3,850	5,428	0.78	0.87	333,750
December	3,670	3,000	3,240	0.46	0.53	199,220
The period	28,800	3,000	13,388	1.91	15.21	5,605,910

## PAUL CREEK. —(2032).

*Location.*—Section 31, township 20, range 16, west 6th meridian.

*Records Available.*—July 1 to October 6, 1911; May 12 to September 25, 1912; May 18 to September 30, 1913; April 20 to September 27, 1914; April 25 to September 30, 1915.

*Drainage Area.*—Sixty-five square miles.

*Gauge.*—Vertical staff gauge read weekly by E. L. Ridout.

*Channel.*—Channel is rocky, and current is very swift at high stages.

*Discharge Measurements.*—The gauge height curve is fairly well defined except at very low stages (below 10 cubic feet per second discharge). The flow is artificially controlled by a dam on Paul lake.

*Winter Flow.*—Stream usually dries up during winter, or ice conditions obtain.

*Accuracy.*—Some uncertainty in regard to low water discharges; gauge readings only once a week.

## Discharge Measurements of Paul Creek below Paul Lake.

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1914							
April 27	E. M. Dann	1,595	5.5	4.60	9.02	2.25	41.4
May 19	C. B. Corbould	1,673	5.7	6.05	11.50	2.75	89.9
July 14	C. B. Corbould	1,915	7.0	2.70	5.50	1.95	14.8
July 25	Dann & Webb	1,915	5.8	1.98	6.44	1.73	12.7
Aug. 8	C. B. Corbould	1,915	6.0	3.26	7.90	2.12	25.7
1915							
May 25	A. L. McNaughton	1,915	5.8	4.06	6.53	2.10	26.4
Aug. 3	McNaughton & Mason	1,915	5.8	2.63	6.40	1.90	16.8

NOTE.—The flow of Paul creek is regulated by the storage dam at Paul lake.

## Daily Gauge Height and Discharge of Paul Creek near Paul Lake for 1915.

(Drainage area, 65 square miles.)

Day.	April.		May.		June.		July.		August.		September.	
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1			2.30	36		25		11	1.75	12	1.70	11
2				33		27		12		12		10
3				30		30		13		13		9
4				27		32	1.80	14		13		8
5				25		35		17		13	1.50	7
6				22	2.35	40		22		13		7
7				20		35		25		14		6
8				17		30		27	1.80	14		6
9			1.85	15		25		30		12		6
10				17		20		33		10		6
11				20		15	2.30	36		7		5
12				23		10		26	1.30	5	1.30	5
13				25	1.60	9		36		8		5
14				27		9		36		10		5
15				30		8		37	1.75	12		5
16			2.25	33		8		37		12		5
17				33		8		37		12		5
18				34		8	2.32	37		12		5
19				34		7		36		12	1.30	5
20				35	1.50	7		35		12		5
21				35		7		32		12		5
22				36		7		30	1.75	12		5
23			2.30	36		7		27		12		4
24				34		7		25		12		4
25	2.30	36		32		7	2.00	20		12		4
26				30		7		18		12	1.20	4
27				27	1.45	7		17		12		4
28				25		8		16		11		4
29				22		9		15		11		4
30			2.00	20		10		14		11		4
31				22				13		11		

## Monthly Discharge of Paul Creek below Paul Lake for 1915.

(Drainage area, 65 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
May.....	36	15	27.6	0.40	0.56	1,700
June.....	40	7	15.5	0.24	0.27	920
July.....	36	14	25.5	0.39	0.45	1,570
August.....	14	5	11.5	0.18	0.21	710
September.....	11	4	5.6	0.09	0.10	330
The period.....	36	4	17.1	0.26	1.49	5,230

NOTE.—The flow in Paul creek is regulated by the storage dam on Paul lake.

## RAFT RIVER.—(2055).

*Location.*—Raft river; Water District No. 2.

*Records Available.*—June 1, 1914, to December 14, 1914; February 21 to December 31, 1915.

*Drainage Area.*—Three hundred square miles.

*Gauge.*—Standard chain gauge on highway bridge, graduated in feet and tenths, having a range from 3.0 to 9.0 and read by J. McLennan, Raft River P.O.

*Channel.*—Average width of channel 150 feet. Bed of stream composed of rock, sand and gravel, and permanent.

*Discharge Measurements.*—Six measurements made during 1914 and 1915 agree very closely and cover practically the entire range of stage for 1915.

*Winter Flow.*—Ice conditions obtain on this river during the latter part of December, throughout January, and during the first half of February.

*Accuracy.*—The results for 1915 should be quite reliable at all stages except for discharges below 40 cubic feet per second.

*Discharge Measurements of Raft River 1 Mile from Mouth.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1914							
June 2	E. H. Tredcroft.....	1,923	109	494	5.47	8.00	2,703
July 26	E. H. Tredcroft.....	1,923	80	135	2.05	4.35	277
Aug. 28	E. H. Tredcroft.....	1,923	67	72	1.18	3.55	85
1915							
April 27	E. H. Tredcroft.....	1,923	108	322	4.17	6.25	1,340
May 24	E. H. Tredcroft.....	1,923	106	480	5.70	8.05	2,700
Oct. 26	A. L. McNaughton.....	1,915	73	121	2.31	4.20	280

## Daily Gauge Height and Discharge of Raft River 1 Mile from Mouth for 1915.

(Drainage area, 300 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1					3.0	20	4.2	235	5.1	1,240	5.2	1,310
2					3.1	30	4.4	295	6.2	1,300	6.0	1,170
3					3.2	40	4.9	500	6.6	1,600	5.9	1,100
4					3.2	40	6.1	1,240	6.8	1,750	5.8	1,030
5					3.2	40	5.9	1,100	6.9	1,830	5.8	1,030
6					3.1	30	5.7	960	7.5	2,300	5.7	950
7					3.0	20	5.65	930	7.8	2,540	6.2	1,310
8					2.9	10	5.6	890	7.8	2,540	5.9	1,100
9					3.0	20	5.6	890	8.1	2,780	5.7	960
10					3.2	40	5.4	770	8.6	3,190	5.5	830
11					3.3	50	5.4	770	7.8	2,540	5.3	710
12					3.3	50	5.6	890	6.9	1,830	5.3	710
13					3.3	50	6.0	1,170	6.8	1,750	5.2	650
14					3.35	57	6.1	1,240	6.8	1,750	5.2	650
15					3.5	80	6.0	1,170	6.8	1,750	5.2	650
16					3.7	115	6.2	1,310	6.7	1,680	5.3	710
17					3.8	135	6.5	1,530	6.6	1,600	5.3	710
18					3.8	135	6.6	1,600	6.6	1,600	5.2	650
19					3.8	135	6.8	1,750	7.2	1,960	5.2	650
20					3.8	135	6.8	1,750	7.5	2,300	5.2	650
21			3.0	20	3.85	145	6.3	1,380	7.7	2,460	4.9	500
22			3.0	20	4.0	180	6.0	1,170	8.0	2,700	4.8	455
23			3.0	20	4.2	235	6.0	1,170	8.0	2,700	4.6	370
24			3.2	40	4.3	265	6.1	1,240	7.8	2,540	4.4	295
25			3.3	50	4.4	295	6.1	1,240	7.3	2,140	4.3	265
26			3.2	40	4.3	265	6.2	1,310	6.9	1,830	5.7	960
27			3.1	30	4.2	235	6.15	1,270	6.6	1,600	5.5	830
28			2.9	10	4.0	180	6.0	1,170	6.8	1,750	5.3	710
29					3.9	155	6.2	1,310	6.6	1,600	5.1	605
30					3.9	155	7.05	1,940	6.3	1,380	5.0	555
31					4.0	180			6.2	1,310		
July.												
Day.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.
Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.
1	4.9	500		250	3.3	50	3.60	95	4.20	225	3.90	155
2	4.7	410	4.2	235	3.3	50	3.70	115		220	3.80	135
3	4.6	370	4.2	235	3.3	50	3.70	115	4.10	205	3.80	135
4	4.6	370	4.2	235	3.25	45	3.60	95	4.00	180	3.70	115
5	4.5	330	4.2	235	3.25	45	3.60	95	3.90	155	3.60	95
6	4.5	330	4.1	205	3.25	45	3.50	80	3.80	155	3.50	80
7	4.4	295	4.1	205	3.25	45	3.50	80	3.90	155	3.60	95
8	4.3	265	4.0	180	3.30	50	3.60	95	3.85	145	3.60	95
9	4.4	295	3.9	155	3.30	50	3.60	95	3.80	135	3.60	95
10	4.9	500	3.7	115	3.30	50	3.50	80	3.70	115	3.50	80
11	4.9	500	3.7	115	3.35	57	3.50	80	3.70	115	3.50	80
12	5.0	550	3.6	95	3.40	65	3.50	80	3.80	135	3.50	80
13	5.4	770	3.6	95	3.40	65	3.50	80	4.00	180	3.60	95
14	5.9	1,100	3.5	80	3.50	80	3.60	95	3.90	155	3.60	95
15	5.5	1,530	3.5	80	3.50	80	3.65	105	3.90	155	3.60	95
16	7.0	1,900	3.5	80	3.60	95	3.65	105	3.80	135	3.70	115
17	6.5	1,530	3.6	95	3.70	115	3.65	105	3.70	115	3.70	115
18	6.1	1,240	3.6	95	3.70	115	3.70	115	3.70	115	3.60	95
19	5.7	960	3.6	95	3.60	95	4.30	265	3.60	95	3.60	95
20	5.5	830	3.5	80	3.60	95	4.00	180	3.50	80	3.50	80
21	5.3	710	3.5	80	3.55	87	4.00	180	3.70	115	3.40	75
22	5.2	650	3.5	80	3.55	87	4.30	265	3.70	115	3.40	75
23	5.2	650	3.5	80	3.50	80	4.40	295	3.70	115	3.00	20
24	4.8	455	3.5	80	3.50	80	4.30	265	3.70	115	2.90	10
25		430	3.5	80	3.90	65	4.20	235	3.60	95		10
26	4.7	410	3.4	55	3.40	65	4.20	235	3.60	95		10
27	4.5	330	3.4	65	3.40	65	5.00	550	3.60	95		10
28	4.4	295	3.4	65	3.40	65	4.60	370	3.60	95		10
29	4.4	295	3.4	65	3.35	57	4.40	295	3.80	135	Ice	10
30	4.3	265	3.35	57	3.30	50	4.30	265	3.70	115		10
31	4.3	265	3.35	57			4.20	235				10

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## Monthly Discharge of Raft River 1 Mile from Mouth for 1915.

(Drainage area, 300 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
March.....	295	10	114	0.38	0.44	7,000
April.....	1,940	235	1,140	3.80	4.24	67,800
May.....	3,190	1,240	1,998	6.66	7.68	122,800
June.....	1,310	265	769	2.56	2.86	45,800
July.....	1,900	265	524	2.08	2.40	38,400
August.....	250	57	120	0.40	0.45	7,400
September.....	115	45	68	0.23	0.26	4,300
October.....	550	80	172	0.57	0.66	10,600
November.....	235	80	137	0.46	0.51	8,100
December.....	155	10	73	0.24	0.28	4,500
The period..	3,190	10	521.5	1.74	19.79	316,400

## SALMON RIVER.—(2078).

*Location.*—Below the mouth of Bolean creek, section 2, township 18, range 12, west of the 6th meridian.

*Records Available.*—May 23 to December 31, 1911; January 1 to September 13, 1912; April 1 to September 30, 1915.

*Drainage Area.*—Three hundred and fifty square miles.

*Gauge.*—Vertical staff read daily by M. White.

*Channel.*—Stream confined between bridge abutments; water fairly swift.

*Discharge Measurements.*—Thirteen measurements made during 1911-12-13 and -15 agree fairly well and cover the whole range of stage.

*Winter Flow.*—Usually open water conditions obtained all winter.

*Accuracy.*—The results depend mainly on measurements made in previous years. The two made during 1915 agree fairly well with the old ones.

## Discharge Measurements of Salmon River at Falkland.

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1911							
May 23	C. E. Richardson	1,648	30	96	4.4	8.37	422
May 23	C. G. Cline.....	1,046	30	94	4.3	8.37	407
June 16	W. M. Carlyle..	1,044	30	74	3.2	7.68	238
July 11	W. M. Carlyle..	1,044	30	54	2.8	7.50	175
July 25	W. M. Carlyle..	1,044	30	44	1.6	7.00	72
Aug. 19	W. M. Carlyle..	1,044	30	42	1.2	5.81	52
Aug. 21	W. M. Carlyle..	1,044	29	42	1.2	5.80	49
1912							
May 13	C. E. Richardson	1,048	30	120	5.9	8.90	708
July 15	C. E. Richardson	1,048	29	58	2.7	7.25	155
Aug. 28	C. E. Richardson	1,049	24	34	1.5	6.80	51
1913							
Apr. 23	H. J. E. Keys....	1,057	29	63	2.5	7.30	152
1915							
Mar 25	F. R. Archibald...	1,573	29	36	0.9	6.65	31
June 17	A. L. McNaughton..	1,915	29	54	2.9	7.40	183

NOTE.—All measurements are referred to new gauge installed March 25, 1915.

7 GEORGE V. A. 1917

## Daily Gauge Height and Discharge of Salmon River at Falkland for 1915.

(Drainage area, 360 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1							5.7	40	7.2	130	7.6	190
2							5.7	40	7.25	146	7.46	160
3							5.65	67	7.25	145	7.46	160
4							5.9	77	7.3	150	7.4	170
5							5.9	77	7.3	160	7.36	160
6							5.8	58	7.35	160	7.26	140
7							5.55	57	7.65	150	7.25	140
8							6.65	57	7.35	150	7.20	160
9							6.85	57	7.36	160	7.20	130
10							5.80	56	7.4	170	7.20	130
11							6.56	57	7.35	160	7.26	140
12							5.96	86	7.25	146	7.20	130
13							7.00	95	7.36	160	7.16	125
14							7.00	95	7.60	190	7.20	130
15							5.96	66	7.50	210	7.25	140
16												
16							6.95	66	7.60	210	7.30	160
17							7.06	102	7.5	190	7.40	170
18							7.10	115	7.65	200	7.35	160
19							7.20	136	7.8	250	7.45	160
20							7.26	140	5.1	360	7.40	170
21							7.20	135	8.3	396	7.40	170
22							7.15	125	8.2	350	7.85	160
23							7.10	116	8.1	330	7.66	160
24							7.10	115	8.0	305	7.3	150
25							7.05	105	7.9	280	7.25	140
26							7.15	125	7.75	245	8.2	350
27							7.15	125	7.65	225	8.35	415
28							7.15	125	7.50	210	8.25	380
29							7.20	135	7.56	200	8.25	380
30							7.25	140	7.5	190	8.20	350
31									7.5	190		
	July.		August.		September.		October.		November.		December.	
1	8.15	350	7.10	115	6.75	49	5.80	58	5.75	49	6.70	40
2	8.10	330	7.10	115	6.75	49	5.80	58	5.75	49	6.70	40
3	7.95	295	7.15	125	6.75	49	6.75	49	6.75	49	6.70	40
4	7.85	270	7.15	125	5.75	49	6.80	58	6.75	49	5.70	40
5	7.75	250	7.20	130	5.75	49	5.75	49	5.76	49	5.75	49
6												
5	7.50	210	7.10	115	5.75	49	6.75	49	6.76	49	5.70	40
7	7.50	210	7.00	96	5.75	49	6.75	49	6.76	49	6.70	40
8	7.45	180	5.95	85	5.75	49	5.75	49	5.75	49	5.70	40
9	7.45	180	5.95	85	6.75	49	6.75	49	5.70	40	5.75	40
10	7.40	170	6.90	77	5.80	58	6.75	49	5.70	40	5.70	40
11												
11	7.36	150	6.90	77	6.80	56	5.75	49	6.70	40	6.70	40
12	7.35	150	5.86	67	5.60	56	6.75	49	6.70	40	5.70	40
13	7.60	190	5.86	67	6.80	58	6.80	58	6.75	49	6.70	40
14	7.50	190	6.86	57	5.65	58	6.86	58	5.75	49	5.70	40
15	7.66	220	6.80	58	5.90	77	6.80	58	5.76	49	5.70	40
16												
16	7.50	190	5.80	58	5.86	63	5.80	58	5.70	40	5.70	40
17	7.46	160	5.90	77	5.50	68	5.75	49	6.70	40	5.70	40
18	7.46	150	5.90	77	5.75	49	6.75	49	5.70	40	5.70	40
19	7.40	170	5.90	77	5.76	49	5.75	49	6.70	40	5.56	31
20	7.30	150	5.90	77	5.76	49	5.75	40	5.70	40	5.65	31
21												
21	7.26	140	5.90	77	5.75	49	6.75	49	6.70	40	5.70	40
22	7.20	130	6.86	67	6.75	49	6.75	49	5.70	40	5.70	40
23	7.15	125	6.80	58	6.75	49	5.75	49	5.70	40	6.70	40
24	7.10	115	6.80	58	5.80	55	5.75	49	5.70	40	6.70	40
25	7.05	105	5.80	58	6.80	68	5.80	56	5.70	40	6.70	40
26												
26	7.10	115	5.80	58	5.76	49	6.85	58	5.70	40	6.65	31
27	7.15	125	6.75	49	5.75	49	5.85	58	5.70	40	5.66	40
28	7.10	115	6.75	49	6.75	49	6.20	58	5.70	40	6.75	49
29	7.10	115	6.75	49	5.75	49	5.80	58	5.70	40	5.50	55
30	7.10	116	6.75	49	6.76	49	5.75	49	5.70	40	ice	50
31	7.20	160	5.75	49			5.76	49			ice	50

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## Monthly Discharge of Salmon River at Falkland for 1915.

(Drainage area, 350 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
April.....	140	40	96	0.27	0.30	5,710
May.....	395	130	210	0.60	0.69	12,910
June.....	415	125	191	0.55	0.61	11,360
July.....	350	105	179	0.51	0.59	11,000
August.....	130	49	77	0.22	0.25	4,730
September.....	77	49	53	0.15	0.17	3,150
October.....	68	49	53	0.15	0.17	3,260
November.....	49	40	43	0.12	0.13	2,560
December.....	58	31	41	0.12	0.14	2,250
The period.....	415	31	105	0.30	3.08	57,200

## SIWASH CREEK.—(2058).

*Location.*—Section 12, township 22, range 16, west 6th meridian.

*Records Available.*—June 7 to July 28, 1914; April 1 to September 30, 1915. (Records for 1915 are given herein; preceding records are tabulated in a previous report.)

*Drainage Area.*—Seven square miles.

*Gauge.*—Standard vertical staff gauge installed above Cippoletti weir and read daily by J. S. Wardell.

*Channel.*—Straight above weir. Velocity, medium.

*Discharge Measurements.*—Weir formula used for calculating discharges. Two meter measurements made during 1915 agree fairly well with the weir results.

*Winter Flow.*—Stream usually runs dry in the fall.

*Accuracy.*—Accuracy of results compiled from weir discharge table should be quite high.

## Discharge Measurements of Siwash Creek near Heffley Lake.

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1915							
April 14	F. R. Archibald.....	1,673	6.5	4.0	0.23	2.8	0.9
May 12	F. R. Archibald.....	1,673	7.0	5.0	0.50	2.9	2.5

NOTE.—Measurements made to check results from weir formula.

## Daily Gauge Height and Discharge of Siwash Creek near Heffley Lake for 1915.

(Drainage area, 7 square miles.)

Day.	April.		May.		June.		July.		August.		September.	
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	.....	0.1	2.00	3.8	6.00	2.6	3	3.3	2.65	2.0	2.50	0.1
2	.....	0.1	3.00	3.6	3.00	3.8	2	3.2	2.30	1.5	2.60	0.1
3	.....	0.1	2.00	2.6	2.95	6.2	2	3.2	2.60	1.5	2.50	0.1
4	2.50	0.1	3.00	3.8	2.95	3.2	2.95	3.2	2.80	1.5	2.60	0.1
5	2.50	0.1	3.00	3.6	2.90	2.5	2.90	2.5	2.80	1.5	2.50	0.1
6	2.50	0.1	3.00	3.8	2.90	2.6	2.90	2.5	2.60	1.5	2.50	0.1
7	2.65	0.4	3.00	3.8	2.90	2.5	2.90	2.6	2.75	1.1	2.60	0.1
8	2.55	0.4	2.95	6.2	2.90	2.5	2.85	2.1	2.75	1.1	2.50	0.1
9	2.65	0.4	2.95	6.2	2.90	2.6	2.85	2.1	2.75	1.1	2.50	0.1
10	2.55	0.4	2.95	6.2	2.90	2.6	2.85	2.1	2.75	1.1	2.60	0.1
11	2.65	0.4	2.95	3.2	2.90	2.5	2.85	2.1	2.70	0.7	2.60	0.1
12	2.65	0.7	2.90	2.5	2.85	2.1	2.85	2.1	2.70	0.7	2.60	0.1
13	2.75	1.1	2.92	2.8	2.65	2.1	2.90	2.6	2.70	0.7	2.60	0.1
14	2.60	1.5	6.00	6.8	2.85	2.1	2.90	2.6	2.55	0.4	2.55	0.4
15	2.80	1.5	3.12	5.5	2.85	2.1	3.00	3.8	2.55	0.4	2.55	0.4
15	2.92	2.8	3.25	7.5	2.85	2.1	3.20	5.7	2.55	0.4	2.65	0.4
17	2.70	3.4	3.15	5.9	2.90	2.5	3.00	3.8	2.55	0.4	2.60	0.1
18	3.02	4.1	3.15	5.9	2.90	2.6	2.90	2.5	2.55	0.4	2.60	0.1
19	3.05	4.5	3.32	8.7	2.90	2.5	2.90	2.5	2.70	0.7	2.50	0.1
20	3.05	4.5	3.50	12.0	2.90	2.5	3.00	3.6	2.65	0.4	2.60	0.1
21	3.05	4.5	3.40	10.2	2.90	2.5	2.95	3.2	2.55	0.4	2.60	0.1
22	3.00	3.8	3.35	9.3	2.90	2.6	2.90	2.6	2.55	0.4	2.60	0.1
23	3.00	3.8	3.27	7.8	2.85	2.1	2.90	2.5	2.55	0.4	2.50	0.1
24	3.00	3.8	3.20	5.7	2.90	2.5	2.85	2.1	2.55	0.4	2.55	0.4
25	6.00	3.8	3.25	7.5	2.85	2.1	2.85	2.1	2.55	0.4	2.65	0.4
25	3.00	3.8	3.15	5.9	2.95	3.2	2.90	2.5	2.60	0.1	2.50	0.1
27	6.00	3.8	3.10	5.1	3.35	9.3	2.90	2.5	2.60	0.1	2.50	0.1
28	3.00	3.8	6.10	5.1	3.25	7.5	2.90	2.5	2.50	0.1	2.50	0.1
29	3.00	3.8	3.00	3.8	3.15	5.9	2.85	2.1	2.60	0.1	2.50	0.1
30	3.00	3.8	2.95	3.2	2.95	3.2	2.85	2.1	2.60	0.1	2.50	0.1
31	.....	.....	2.90	2.5	.....	.....	2.85	2.1	2.50	0.1	.....	.....

## Monthly Discharge of Siwash Creek near Heffley Lake for 1915.

(Drainage area, 7 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet
April	4.5	0.1	2.2	0.31	0.35	131
May	12.0	2.6	5.2	0.74	0.85	320
June	9.3	2.1	3.2	0.46	0.51	190
July	5.7	2.1	2.8	0.40	0.45	172
August	2.0	0.1	0.7	0.10	0.11	43
September	0.4	0.1	0.1	0.21	0.24	9
The period	12.0	0.1	2.4	0.37	2.52	865



THREE MILE CREEK.—(2080).

*Location.*—Section 23, township 20, range 21, west 6th meridian: Water District No. 2.

*Records Available.*—Gauge readings from June 21 to September 30, 1915.

*Drainage Area.*—Fifty-five square miles.

*Gauge.*—Standard 3-foot staff read daily by L. Harris.

*Channel.*—Gravel and large stones; fairly permanent; water generally less than one foot deep.

*Discharge Measurements.*—Three measurements made during 1915 only cover part of the range of stage. High and low water measurements required.

*Accuracy.*—Discharges between 3 and 8 cubic feet per second are probably quite reliable.

*Discharge Measurements of Three Mile Creek near Savona for 1915.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1915							
June 4	A. L. McNaughton.	1,915	9.5	4.6	0.85	0.90	3.9
July 21	A. L. McNaughton.	1,915	10.7	5.1	1.31	1.00	6.6
Aug. 27	A. L. McNaughton.	1,915	10.3	5.0	1.00	0.96	5.0

*Daily Gauge Height and Discharge of Three Mile Creek near Savona for 1915.*  
(Drainage area, 55 square miles.)

Day.	June.		July.		August.		September.		October.		November.	
	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1			1.40		1.10	7.9	1.00	5.8				
2			1.40		1.10	7.9	1.00	5.8				
3			1.40		1.00	5.8	1.00	5.8				
4	0.90		1.40		1.00	5.8	1.00	5.8				
5			1.30		1.00	5.8	1.00	5.8				
6			1.30		1.00	5.8	1.00	5.8				
7			1.30		1.00	5.8	1.00	5.8				
8			1.20		1.00	5.8						
9			1.10	7.9	1.30		1.00	5.8				
10			1.10	7.9	1.30		1.00	5.8				
11					1.30		1.00	5.8				
12			1.10	7.9	1.30		1.00	5.8				
13			1.10	7.9	1.30		1.00	5.8				
14			1.20		1.30		1.00	5.8				
15			1.20		1.30		0.90	4.1				
16			1.20		1.30			4.1				
17			1.10	7.9	1.30			4.1				
18			1.10	7.9	1.30		0.90	4.1				
19			1.10	7.9	1.30		0.80	2.7				
20			1.00	5.8	1.30		0.80	2.7				
21	1.40		1.00	5.8	1.30		0.80	2.7				
22			1.00	5.8	1.10	7.9	0.80	2.7				
23	1.40		0.90	4.1	1.00	5.8						
24	1.40		0.90	4.1	1.00	5.8						
25	1.40		1.10	7.9	1.00	5.8						
26			1.20		1.00	5.8		0.75				
27			1.20		1.00	5.8		0.75				
28			1.20		1.00	5.8		0.75				
29			1.20		1.00	5.8		0.75				
30			1.20		1.00	5.8		0.75				
31					1.00	5.8						

NOTE.—Station only partly rated as yet.

## TRANQUILLE RIVER.—(2043).

*Location.*—Section 30, township 20, range 19, west 6th meridian.

*Records Available.*—July 4 to October 21, 1911; March 29 to September 7, 1912; May 1 to October 31, 1913; May 3 to November 14, 1914; April 1 to September 30, 1915.

*Drainage Area.*—Two hundred and thirty square miles.

*Gauge.*—Standard vertical staff read daily by Eug. Cooney.

*Channel.*—Straight at the gauge section, about 20 feet wide. Bed of stream composed of stone and boulders and control is good.

*Discharge Measurements.*—Gauge height discharge curve was well defined for 1914 and assumed unchanged for 1915.

*Winter Flow.*—Ice conditions prevail during December, January and February.

*Accuracy.*—No measurements during 1915. Section apparently remained unchanged from 1911 to 1914 and it is assumed it did not change during 1915.

*Discharge Measurements of Tranquille River above Diversions.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq ft.	Ft. per sec.	Feet.	Sec.-ft.
1911							
July 4	C. G. Cline	1,046	14	17.7	1.1	0.94	19
Sept. 11	C. G. Cline	1,046	13	9.4	0.2	0.60	2
1912							
April 3	Cline & Dann	1,046	11	15.2	1.2	0.96	18
May 7	E. M. Dann	1,044	34	59.2	7.7	2.50	456
May 12	E. M. Dann	1,044	36	74.5	7.7	2.70	576
May 25	E. M. Dann	1,044	34	52.0	6.0	2.10	314
June 1	E. M. Dann	1,044	21	30.5	4.5	1.52	136
Aug. 2	H. J. E. Keys	1,057	18	10.3	2.0	0.88	21
Sept. 10	H. J. E. Keys	1,057	18	19.2	1.7	1.01	33
1913							
May 5	H. J. E. Keys	1,057	28	29.0	4.0	1.43	115
May 30	H. J. E. Keys	1,057	18	45.8	5.2	2.02	237
1914							
May 30	C. B. Corbould	1,915	18	31.0	4.2	1.35	132
Aug. 4	C. B. Corbould	1,915	15	14.5	0.6	0.65	9

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Daily Gauge Height and Discharge of Tranquille River above Diversions for 1915.

(Drainage area, 290 square miles.)

Day.	April.		May.		June.		July.		August.		September.	
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	0.80	13	1.30	80	1.25	70	1.48	120	0.97	27	0.62	7
2	0.32	13	1.30	80	1.27	75	1.40	100	0.35	25	0.62	7
3	0.90	20	1.30	80	1.20	60	1.30	80	0.92	22	0.62	7
4	0.92	22	1.30	80	1.17	52	1.25	70	0.90	20	0.62	7
5	0.35	25	1.33	90	1.12	50	1.17	55	0.37	19	0.62	7
6	0.35	23	1.37	95	1.12	50	1.12	50	0.35	16	0.62	7
7	1.00	30	1.40	100	1.12	50	1.10	45	0.85	18	0.62	7
8	1.02	34	1.42	105	1.10	45	1.05	40	0.82	16	0.62	7
9	1.02	34	1.37	95	1.05	40	1.05	40	0.80	15	0.62	7
10	1.02	34	1.35	90	1.05	40	1.05	40	0.77	14	0.62	7
11	1.07	41	1.37	95	1.05	40	1.02	35	0.77	14	0.62	7
12	1.12	50	1.37	75	1.05	40	1.02	35	0.75	13	0.62	7
13	1.20	60	1.32	65	1.05	40	1.02	35	0.72	11	0.62	7
14	1.25	70	1.40	100	1.05	40	1.05	40	0.70	10	0.65	8
15	1.25	70	1.60	150	1.05	40	1.25	70	0.70	10	0.67	9
16	1.30	80	1.65	150	1.02	35	1.40	100	0.70	10	0.67	8
17	1.40	100	1.62	155	1.10	45	1.35	90	0.75	13	0.65	8
18	1.45	110	1.62	155	1.20	60	1.28	75	0.75	13	0.65	6
19	1.30	125	1.95	250	1.17	55	1.22	65	0.77	14	0.65	6
20	1.60	150	2.20	340	1.22	65	1.15	50	0.80	15	0.62	7
21	1.55	135	2.05	260	1.20	60	1.10	45	0.75	13	0.62	7
22	1.52	130	2.00	255	1.15	50	1.02	35	0.72	11	0.62	7
23	1.47	120	1.75	190	1.10	45	1.00	30	0.70	10	0.62	7
24	1.45	115	1.65	160	1.10	45	0.92	22	0.67	9	0.65	8
25	1.40	100	1.62	155	1.07	40	0.97	27	0.67	9	0.62	7
26	1.42	105	1.52	130	1.60	150	0.97	27	0.67	9	0.62	7
27	1.40	100	1.47	110	2.10	300	0.97	27	0.67	9	0.62	7
28	1.35	90	1.35	90	1.95	250	1.00	30	0.65	8	0.60	7
29	1.37	95	1.35	90	1.80	205	1.00	30	0.62	7	0.60	7
30	1.35	90	1.30	80	1.60	150	1.00	30	0.62	7	0.60	7
31	.....	.....	1.27	75	.....	.....	0.97	27	0.62	7	.....	.....

*Monthly Discharge of Tranquille River above Diversions for 1915.*

(Drainage area, 330 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
April.....	128	15	73	0.22	0.28	4,340
May.....	340	65	131	0.37	0.88	8,080
June.....	300	25	75	0.22	0.27	4,520
July.....	120	32	50	0.22	0.25	3,140
August.....	27	7	12	0.06	0.07	800
September.....	9	7	7	0.02	0.02	420
The period.....	340	7	58	0.25	1.74	21,280

## WHITEWOOD CREEK.—(2066).

*Location.*—Twenty-five miles north of Kamloops, on the west bank of the North Thompson river; Water District No. 2.

*Records Available.*—September 1 to December 12, 1914; March 10 to September 30, 1915.

*Drainage Area.*—Twenty-five square miles.

*Gauge.*—Vertical staff read daily by G. Mayson.

*Channel.*—Rocky; water fairly swift.

*Discharge Measurements.*—Three measurements made during 1914 and 1915 define the lower part of the curve up to a discharge of 9 cubic feet per second.

*Accuracy.*—Discharges above 9 cubic feet per second are subject to considerable uncertainty.

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Discharge Measurements of Whitewood Creek 2 Miles from Mouth.

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1914 Aug. 25	Corbould & Tredcroft.	1,923	8.0	1.5	1.04	0.54	1.7
1915 Mar. 9	E. H. Tredcroft.	1,923	4.8	2.3	0.48	0.74	1.0
May 4	E. H. Tredcroft.	1,923	8.0	8.1	1.05	1.40	8.5

Daily Gauge Height and Discharge of Whitewood Creek 2 Miles from Mouth for 1914.

(Drainage area, 25 square miles.)

Day.	September.		October.		November.		December.					
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	0.70	0.8	0.70	0.8	0.90	2.3	1.00	3.2				
2	0.70	0.8	0.70	0.8	0.90	2.3	1.00	3.2				
3	0.70	0.8	0.70	0.8	0.90	2.3	1.00	3.2				
4	0.70	0.8	0.70	0.8	0.90	2.3	1.00	3.2				
5	0.70	0.8	0.70	0.8	0.90	2.3	1.00	3.2				
6	0.70	0.8	0.70	0.8	0.90	2.3	1.00	3.2				
7	0.70	0.8	0.70	0.8	0.90	2.3	1.00	3.2				
8	0.70	0.8	0.55	0.8	0.90	2.3	1.00	3.2				
9	0.70	0.8	0.55	0.8	0.90	2.3	1.00	3.2				
10	0.70	0.8	0.55	0.8	0.90	2.3	1.00	3.2				
11	0.70	0.8	0.75	1.1	0.90	2.3	1.00	3.2				
12	0.70	0.8	0.80	1.5	0.90	2.3	1.00	3.2				
13	0.70	0.8	0.80	1.5	0.90	2.3						
14	0.70	0.8	0.80	1.5	0.90	2.3						
15	0.70	0.8	0.80	1.5	0.90	2.3						
16	0.70	0.8	0.80	1.5	0.90	2.3						
17	0.75	1.1	0.80	1.5	0.90	2.3						
18	0.80	1.5	0.85	2.0	0.95	2.8						
19	0.80	1.5	0.90	2.3	1.00	3.2						
20	0.80	1.5	0.90	2.3	1.00	3.2						
21	0.75	1.1	0.90	2.3	1.00	3.2						
22	0.75	1.1	0.90	2.3	1.00	3.2						
23	0.70	0.8	0.90	2.3	1.00	3.2						
24	0.70	0.8	0.90	2.3	1.00	3.2						
25	0.70	0.8	0.90	2.3	1.00	3.2						
26	0.70	0.8	0.90	2.3	1.00	3.2						
27		0.8	0.90	2.3	1.00	3.2						
28		0.8	0.90	2.3	1.00	3.2						
29		0.8	0.90	2.3	1.00	3.2						
30		0.8	0.90	2.3	1.00	3.2						
31			0.90	2.3								

Monthly Discharge of Whitewood Creek 2 Miles from Mouth for 1914.

(Drainage area, 25 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
September.....	1.5	0.8	0.9	0.04	0.04	540
October.....	2.3	0.8	1.5	0.05	0.07	980
November.....	3.2	2.3	2.7	0.10	0.11	1,510
The period.....	3.2	0.8	1.7	0.07	0.22	3,130

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## Daily Gauge Height and Discharge of Whitewood Creek 2 Miles from Mouth for 1915.

(Drainage area, 25 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1							0.50	1.5	1.40	8.6	1.52	10.9
2							0.60	1.5	1.40	8.6	1.60	10.4
3							0.60	1.5	1.40	8.6	1.50	10.4
4							0.55	1.9	1.40	8.6	1.45	9.5
5							0.90	2.3	1.40	6.6	1.40	8.6
6							0.92	2.5	1.40	8.6	1.40	8.6
7							0.95	2.8	1.40	8.6	1.40	8.6
8							1.00	3.2	1.40	8.6	1.40	8.6
9							1.00	3.2	1.42	9.0	1.35	7.6
10					0.75	1.1	1.00	3.2	1.42	9.0	1.35	7.6
11					0.75	1.1	1.02	3.5	1.42	9.0	1.35	7.8
12					0.75	1.1	1.02	3.6	1.45	9.5	1.35	7.6
13					0.75	1.1	1.06	3.6	1.45	9.6	1.30	6.9
14					0.75	1.1	1.10	4.3	1.47	9.9	1.35	7.6
15					0.75	1.1	1.17	5.1	1.47	9.9	1.35	7.5
16					0.75	1.1	1.22	5.8	1.50	12.5	1.30	6.9
17					0.75	1.1	1.27	6.5	1.55	13.6	1.30	6.9
18					0.75	1.1	1.30	6.9	1.70	14.7	1.35	7.8
19					0.75	1.1	1.32	7.2	1.70	14.7	1.40	8.6
20					0.75	1.1	1.35	7.6	1.60	16.9	1.40	8.6
21					0.75	1.1	1.35	7.8	1.77	18.3	1.40	8.6
22					0.75	1.1	1.35	7.8	1.77	16.3	1.40	8.6
23					0.75	1.1	1.37	8.1	1.75	18.6	1.40	8.6
24					0.75	1.1	1.37	8.1	1.75	18.5	1.40	8.6
25					0.80	1.5	1.40	8.6	1.72	15.1	1.40	8.6
26					0.80	1.5	1.40	8.6	1.70	14.7	1.40	8.6
27					0.60	1.5	1.40	8.6	1.65	13.6	1.50	10.4
28					0.80	1.5	1.40	8.6	1.62	12.9	1.60	12.5
29					0.80	1.5	1.40	8.6	1.60	12.5	1.70	14.7
30					0.80	1.5	1.40	8.6	1.55	11.5	1.70	14.7
31					0.80	1.6	.....	.....	1.55	11.5	.....	.....
	July.		August.		September.		October.		November.		December.	
1		13.5	1.40	8.6	0.87	2.0						
2	1.60	12.5	1.40	8.6	0.87	2.0						
3	1.60	12.5	1.40	8.6	0.87	2.0						
4	1.50	10.4	1.35	7.8	0.87	2.0						
5	1.40	8.6	1.30	7.0	0.82	1.6						
6	1.40	8.6	1.30	7.0	0.80	1.5						
7	1.37	8.1	1.25	6.2	0.80	1.5						
8	1.37	8.1	1.20	5.5	0.80	1.5						
9	1.37	8.1	1.20	5.5	0.80	1.5						
10	1.40	8.6	1.20	5.5	0.80	1.5						
11	1.40	8.6	1.15	4.9	0.80	1.5						
12	1.40	8.6	1.10	4.3	0.80	1.5						
13	1.40	8.6	1.10	4.3	0.80	1.5						
14	1.40	8.6	1.10	4.3	0.80	1.5						
15	1.50	10.4	1.10	4.3	0.80	1.5						
16	1.70	14.7	1.10	4.3	0.80	1.5						
17	1.70	14.7	1.07	4.0	0.80	1.5						
18	1.70	14.7	1.07	4.0	0.80	1.5						
19	1.70	14.7	1.07	4.0	0.80	1.5						
20	1.65	13.6	1.07	4.0	0.80	1.5						
21	1.60	12.5	1.07	4.0	0.80	1.5						
22	1.55	11.5	1.02	3.5	0.80	1.5						
23	1.50	10.4	1.00	3.2	0.80	1.5						
24	1.50	10.4	1.00	3.2	0.80	1.5						
25	1.45	9.5	0.95	2.8	0.80	1.5						
26	1.40	8.6	0.95	2.8	0.80	1.5						
27	1.40	8.6	0.90	2.3	0.80	1.5						
28	1.40	8.6	0.90	2.3	0.80	1.5						
29	1.45	9.5	0.90	2.3	0.77	1.3						
30	1.40	8.6	0.90	2.3	0.77	1.3						
31	1.40	8.6	0.90	2.3	.....	.....						

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*Monthly Discharge of Whitewood Creek 2 Miles from Mouth for 1915.*

(Drainage area, 25 square miles.)

MONTH	DISCHARGE IN SECOND-FEET.				RUN-OFF	
	Maximum.	Minimum.	Mean	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
April .....	8.6	1.5	5.4	0.22	0.24	320
May .....	16.9	8.6	11.7	0.47	0.54	720
June .....	14.7	6.9	9.1	0.36	0.40	540
July .....	14.7	8.1	10.4	0.42	0.48	640
August .....	8.6	2.3	4.6	0.18	0.21	283
September .....	2.0	1.3	1.6	0.06	0.07	95
The period .....	16.9	1.3	7.13	0.28	1.94	2,898

## OKANAGAN DISTRICT.

## ADAMS RIVER.—(2000).

*Location.*—Section 6, township 23, range 12, west 6th meridian.

*Records Available.*—July and August 1911; and continuous records since January 1, 1912.

*Drainage Area.*—One thousand six hundred square miles.

*Gauge.*—Gurley Automatic Gauge installed October 17, 1914, to replace vertical staff gauge previously in use. The frequent changes of the gates in the dam at the outlet of the lake made it difficult to get reliable results without an automatic gauge.

*Channel.*—The meter measurements are made just above the dam where the channel is suitable; width from 300 to 500 feet, with velocity less than 3.0 feet per second. The gauge is located below the dam with a permanent natural control and swift water.

*Discharge Measurements.*—Twelve meter measurements taken during 1911, -13-14-15, well distributed over the whole range of stage except for discharges above 6000 cubic feet per second.

*Winter Flow.*—Even in very cold weather river does not seem to freeze over at the gauge, nor does the water freeze in the gauge well, so that open water conditions obtain all winter.

*Accuracy.*—With a rating curve very well defined except for very high discharges and an automatic gauge recording the stage to the nearest hundredth of a foot every fifteen minutes, the records should be exceptionally accurate. The recorded flow, however, is not the natural flow of the stream, as it is regulated by the storage dam at the outlet of the lake.

*Discharge Measurements of Adams River below Adams Lake.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec-ft.
1911							
Nov. 8	Richardson & Carlyle.	1,055	330	1,770	0.3	1.24	484
Nov. 9	Richardson & Carlyle.	1,055	350	1,700	0.4	1.54	692
Nov. 9	Richardson & Carlyle.	1,055	350	1,720	1.2	3.29	1,966
Nov. 11	Richardson & Carlyle.	1,055	410	1,670	0.7	2.40	1,180
Dec. 12	Richardson & Carlyle.	1,055	100	96	1.4	0.26	130
1913							
Aug. 19	C. E. Richardson.	1,048	162	2,078	2.4	5.40	5,669
Aug. 19	C. E. Richardson.	1,048	182	2,081	1.7	4.35	3,306
Aug. 19	C. E. Richardson.	1,048	172	2,087	1.5	4.40	3,286
Aug. 19	C. E. Richardson.	1,048	442	2,096	1.0	3.60	2,226
1914							
July 3	E. H. Tredcroft.	1,923	443	2,355	2.4	5.40	5,659
1915							
Feb. 25	Tredcroft & Archibald.	1,923	306	871	0.3	0.74	272
July 3	Tredcroft & McNaughton.	1,915	433	2,026	2.5	5.25	5,146

NOTE.—All measurements referred to datum of Automatic gauge.



BRITISH COLUMBIA HYDROMETRIC SURVEY

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Daily Gauge Height and Discharge of Adams River below Adams Lake for 1915.

(Drainage area, 1,600 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	2.10	930	0.80	290	0.74	375	1.01	370	4.19	3,030	5.45	5,380
2	2.0	900	0.80	290	0.74	275	1.00	370	4.25	3,100	5.40	5,270
3	2.0	900	0.80	290	0.74	275	1.02	370	4.31	3,180	5.35	5,160
4	2.06	900	0.79	290	0.74	275	1.06	390	4.37	3,260	5.32	5,050
5	2.04	900	0.79	290	0.74	275	1.09	410	4.43	3,420	5.27	4,940
6	2.02	860	0.78	290	0.74	275	1.14	430	4.49	3,500	5.22	4,840
7	2.00	860	0.78	290	0.75	275	1.18	450	5.54	3,580	5.21	4,840
8	1.95	830	0.77	275	0.75	275	1.18	450	4.57	3,580	5.22	4,840
9	1.39	530	0.76	275	0.75	275	1.19	450	4.61	3,660	5.18	4,840
10	0.71	260	0.74	275	0.76	275	1.21	450	4.66	3,740	4.98	4,420
11	0.72	260	0.74	275	0.76	275	1.25	470	4.73	3,920	4.97	4,310
12	0.72	260	0.74	275	0.78	290	1.30	490	5.02	4,420	4.93	4,310
13	0.72	260	0.73	275	0.79	290	1.33	520	6.04	6,930	4.90	4,210
14	0.72	260	0.73	275	0.83	310	1.36	520	5.95	6,640	4.91	4,210
15	0.72	260	0.73	275	0.83	310	2.95	1,600	5.94	6,640	4.92	4,210
16	0.72	260	0.73	275	0.83	310	3.65	2,300	5.84	6,390	4.92	4,210
17	0.72	260	0.73	275	0.85	310	3.67	2,300	5.78	6,260	5.01	4,420
18	0.72	260	0.73	275	0.85	310	3.69	2,360	5.70	6,000	4.53	3,580
19	0.73	275	0.73	275	0.92	330	3.73	2,420	5.67	5,870	3.81	2,480
20	0.73	275	0.74	275	0.94	350	3.76	2,420	5.66	5,870	3.87	2,540
21	0.74	275	0.74	275	0.92	330	3.80	2,480	5.67	5,870	3.92	2,610
22	0.78	290	0.74	275	0.92	330	3.82	2,480	5.68	6,000	3.96	2,680
23	0.80	290	0.74	275	0.94	350	3.85	2,540	5.69	6,000	4.39	3,340
24	0.80	290	0.74	275	0.93	350	3.84	2,540	5.68	6,000	4.71	3,830
25	0.81	290	0.74	275	0.87	310	3.83	2,540	5.66	5,870	4.83	3,260
26	0.82	290	0.74	275	0.88	330	3.89	2,610	5.63	5,870	4.89	3,840
27	0.82	290	0.74	275	0.91	330	3.95	2,680	5.58	5,740	4.47	3,420
28	0.82	290	0.74	275	0.95	350	4.01	2,750	5.50	5,620	4.53	3,580
29	0.79	290	.....	.....	0.97	350	4.07	2,820	5.54	5,620	4.71	3,830
30	0.78	290	.....	.....	1.00	370	4.13	2,960	5.54	5,620	5.32	5,050
31	0.79	290	.....	.....	1.00	370	.....	.....	5.51	5,500	.....	.....

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	5.30	5,050	4.32	3,180	3.88	2,610	1.85	770	2.61	1,306	2.02	875
2	5.29	5,050	3.89	2,010	3.85	2,540	1.85	770	2.82	1,480	2.02	875
3	5.25	4,940	3.91	2,610	3.83	2,540	1.85	770	2.87	1,536	2.02	875
4	5.22	4,840	3.94	2,680	3.81	2,480	1.84	770	2.85	1,522	2.01	870
5	5.18	4,840	3.97	2,680	3.11	1,750	1.85	770	2.23	1,020	2.01	870
6	5.15	4,730	3.98	2,750	2.41	1,150	1.85	770	2.11	940	2.03	880
7	5.14	4,730	3.07	2,680	2.42	1,150	1.86	780	2.23	1,020	2.54	1,250
8	5.13	4,730	3.08	2,750	2.42	1,150	1.87	780	2.08	920	2.70	1,880
9	4.74	3,920	3.09	2,750	2.43	1,170	1.87	780	2.12	940	2.76	1,430
10	4.37	3,260	3.99	2,750	2.42	1,150	1.88	790	2.13	950	2.72	1,400
11	4.37	3,260	3.98	2,750	2.41	1,150	1.87	780	2.16	970	2.81	1,480
12	4.42	3,340	3.98	2,750	2.39	1,130	1.87	780	2.17	980	2.39	1,130
13	4.45	3,420	3.98	2,750	2.37	1,110	1.88	790	2.16	970	2.61	1,300
14	4.48	3,500	3.97	2,680	2.35	1,110	1.90	800	2.16	970	2.55	1,260
15	4.53	3,580	3.97	2,680	3.24	1,900	1.91	810	2.17	980	2.79	1,460
16	5.08	4,630	3.96	2,680	3.31	1,950	1.92	810	2.20	1,000	3.04	1,690
17	5.39	5,270	3.98	2,750	3.68	2,360	1.93	820	2.13	950	2.96	1,610
18	5.48	5,500	3.99	2,750	4.38	3,340	1.79	750	2.16	970	2.75	1,425
19	5.88	6,520	3.99	2,750	4.14	2,960	1.80	750	2.19	990	2.80	1,470
20	6.13	7,270	3.99	2,750	3.73	2,420	1.81	750	2.24	1,030	1.67	675
21	6.04	6,920	3.98	2,750	4.05	2,820	1.83	760	2.21	1,010	1.68	680
22	5.96	6,640	3.99	2,750	3.21	1,850	1.85	760	2.17	980	1.69	690
23	5.91	6,520	3.99	2,750	3.00	1,650	1.95	830	2.12	940	1.69	690
24	3.84	6,390	3.99	2,750	3.40	2,050	2.51	1,230	2.16	970	1.68	680
25	5.80	6,260	3.98	2,750	3.22	1,850	1.89	790	2.19	990	1.69	690
26	5.67	5,870	3.98	2,750	1.87	780	1.91	810	2.24	1,030	1.69	690
27	5.69	5,740	3.97	2,680	3.33	2,000	1.92	810	2.27	1,050	1.69	690
28	5.53	5,620	3.94	2,650	2.90	1,560	1.95	830	2.70	1,375	1.70	690
29	5.09	4,680	3.97	2,610	1.80	750	1.98	850	2.00	860	1.70	690
30	4.87	4,110	3.90	2,610	1.85	780	2.01	870	2.02	875	1.72	700
31	4.84	4,110	3.89	2,610	.....	.....	2.03	880	.....	.....	1.79	740

*Monthly Discharge of Adams River below Adams Lake for 1915.*

(Drainage area, 1,600 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January.....	930	200	441	0.28	0.32	27,100
February.....	290	276	279	0.17	0.16	16,600
March.....	370	276	310	0.19	0.22	19,100
April.....	2,960	370	1,631	0.96	1.07	91,100
May.....	6,930	3,030	5,065	3.16	3.64	311,000
June.....	5,380	2,480	4,100	2.56	2.86	244,000
July.....	7,270	3,260	6,006	3.13	3.61	308,000
August.....	3,180	2,610	2,723	1.70	1.96	167,000
September.....	3,340	750	1,774	1.11	1.24	106,500
October.....	1,230	750	807	0.50	0.58	49,600
November.....	1,636	800	1,061	0.66	0.74	62,800
December.....	1,690	676	1,027	0.64	0.74	63,100
The period.....	7,270	260	2,009	1.26	17.16	1,463,600

NOTE.—The run-off from Adams lake is regulated by a storage dam and the water is used for running logs down the river.

BOUNDARY CREEK.—(2048).

*Location.*—At Greenwood: Water District No. 4.

*Records Available.*—January 1 to December 7, 1914; February 21 to December 22, 1915.

*Drainage Area.*—One hundred and twenty-five square miles.

*Gauge.*—Vertical staff gauge graduated in feet and tenths, situated on upstream side of traffic bridge, read daily by P. A. McCarrach.

*Channel.*—Channel is straight for about 300 feet above and below measuring section. Bed of stream is rocky and permanent.

*Discharge Measurements.*—Six discharge measurements made during 1914 and 1915 show very good agreement and define the rating curve very well except for discharges between 100 and 250 and above 400 cubic feet per second.

*Winter Flow.*—Ice conditions exist during January and February.

*Accuracy.*—Except for the higher stages during the freshet, the results should be very accurate.

*Discharge Measurements of Boundary Creek at Greenwood.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1914							
May 20	C. E. Richardson.....	1,527	28	99.8	3.80	2.96	379
June 8	Dann & Chisholm.....	1,913	39	84.0	3.20	2.50	269
July 20	K. G. Chisholm.....	1,913	39	41.1	1.28	1.21	53
Aug. 26	K. G. Chisholm.....	1,913	17	15.6	0.77	0.77	12
1915							
Mar. 23	K. G. Chisholm.....	1,916	33	39.1	1.16	1.20	45
June 9	E. H. Tredcroft.....	1,923	37	79.7	3.43	2.50	273

BRITISH COLUMBIA HYDROMETRIC SURVEY

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Daily Gauge Height and Discharge of Boundary Creek at Greenwood for 1915.

(Drainage area, 125 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1					0.82	14	1.62	90	2.80	350	3.20	460
2					0.85	17	1.82	115	2.90	380	3.10	436
3					0.85	17	2.37	230	2.82	350	2.96	390
4					0.85	17	2.40	245	2.72	325	2.90	380
5					0.85	17	2.40	245	2.66	310	2.80	360
6					0.90	20	2.38	240	2.60	300	2.70	326
7					0.90	20	2.42	245	2.60	300	2.70	325
8					0.90	20	2.50	270	2.65	310	2.60	300
9					0.90	20	2.40	245	2.65	310	2.60	300
10					0.90	20	2.42	245	2.65	310	2.50	270
11					0.85	17	2.42	245	2.77	360	2.40	245
12					0.85	17	2.57	285	2.50	270	2.30	216
13					0.85	17	2.80	350	2.45	255	2.20	190
14					0.90	20	2.75	340	2.82	350	2.20	190
16					0.90	20	2.65	310	2.80	360	2.16	180
16					0.95	24	2.72	325	2.70	325	2.10	170
17					0.95	24	2.85	365	2.70	325	2.10	170
18					1.00	28	2.95	395	2.97	395	2.06	160
19					1.00	28	3.00	405	3.45	530	2.05	160
20					1.00	28	3.05	420	3.42	530	2.05	160
21			0.80	14	1.00	28	2.90	380	3.50	545	2.00	160
22			0.80	14	1.10	36	2.72	325	3.70	600	1.90	136
23			0.80	14	1.11	36	2.62	300		570	1.80	115
24			0.80	14	1.23	50	2.57	280	3.50	545	1.80	115
25			0.80	14	1.35	60	2.50	270	3.50	645	1.70	105
26			0.80	14	1.39	66	2.45	255	3.35	500	1.70	105
27			0.80	14	1.38	66	2.39	245	3.20	465	1.70	105
28			0.80	14	1.35	60	2.39	245	3.25	480	1.70	105
29					1.35	60	2.65	310	3.35	500	1.65	96
30					1.42	66	2.80	350	3.50	500	1.60	90
31					1.55	84			3.35	500		

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	1.60	90		80	0.80	14	0.80	14	0.90	20	0.80	14
2	1.60	90		80	0.80	14	0.80	14	0.90	20	0.80	14
3	1.60	90		80	0.80	14	0.80	14	0.90	20	0.80	14
4	1.65	96		70	0.80	14	0.80	14	0.90	20	0.80	14
5	1.60	90		70	0.70	9	0.80	14	0.90	20	0.80	14
6	1.60	90		70	0.70	9	0.80	14	0.90	20	0.80	14
7	1.70	105		60	0.70	9	0.80	14	0.90	20	0.80	14
8	1.60	90		60	0.70	9	0.80	14	0.90	20	0.80	14
9	1.80	116		60	0.70	9	0.80	14	0.90	20	0.80	14
10	1.70	105	1.50	55	0.70	9	0.80	14	0.90	20	0.85	17
11	1.60	90	1.28	55	0.70	9	0.80	14	0.90	20	0.85	17
12	1.60	90	1.20	45	0.70	9	0.85	17	0.85	17	0.85	17
13	1.60	90	1.20	45	0.80	14	0.90	20	0.85	17	0.85	17
14	1.65	95	1.20	45	0.90	20	0.90	20	0.85	17	0.85	17
15	1.70	105	1.20	45	0.90	20	0.90	20	0.85	17	0.80	14
16	1.70	105	1.20	45	0.90	20	0.90	20	0.85	17	0.80	14
17	1.70	105	1.18	43	0.90	20	0.85	17	0.85	17	0.80	14
18	1.70	105	1.16	41	0.90	20	0.87	18	0.85	17	0.80	14
19	1.70	105	1.16	40	0.90	20	0.87	18	0.85	17	0.80	14
20	1.66	96	1.15	40	0.90	20	0.87	18	0.85	17	0.80	14
21	1.70	105	1.10	36	0.90	20	0.87	18	0.85	17	0.80	14
22	1.70	105	1.00	28	0.90	20	0.87	18	0.85	17	0.80	14
23	1.70	105	1.00	28	0.80	14	0.87	18	0.85	17	Ice	
24	1.60	90	1.00	28	0.80	14	0.87	18	0.85	17	Ice	
25	1.50	80	1.00	28	0.80	14	0.90	20	0.85	17	Ice	
26	1.50	80	0.80	14	0.80	14	0.90	20	0.85	17	Ice	
27	1.60	90	1.00	28	0.80	14	0.90	20	0.85	17	Ice	
28	1.62	90	1.00	28	0.80	14	0.90	20	0.85	17	Ice	
29	1.62	80	1.00	28	0.80	14	0.90	20	0.85	17	Ice	
30	1.50	80	0.90	20	0.80	14	0.90	20	0.85	17	Ice	
31	1.50	80	0.80	14			0.90	20				

*Monthly Discharge of Boundary Creek at Greenwood for 1915.*

(Drainage area, 128 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
March.....	84	14	33	0.26	0.30	2,030
April.....	420	90	286	2.28	2.64	17,000
May.....	600	255	410	3.28	3.78	26,200
June.....	460	90	217	1.74	1.94	12,900
July.....	116	80	94	0.76	0.86	6,780
August.....	80	14	45	0.36	0.41	2,770
September.....	20	0	14	0.11	0.12	830
October.....	20	14	17	0.14	0.16	1,040
November.....	20	17	18	0.14	0.16	1,070
The period.....	600	9	126	1.01	10.27	68,620

**BRASH CREEK.—(2070).**

*Location.*—Section 27, township 18, range 8, west 6th meridian; Water District No. 2; above the intake of the Enderby waterworks system.

*Records Available.*—Regular records from October 28 to December 31, 1915; two meter measurements in April and September, 1915.

*Drainage Area.*—Ten square miles.

*Gauge.*—Standard vertical staff read twice a week by F. H. Hawes, for the city of Enderby.

*Channel.*—Boulders and gravel, water swift at high stages, control should be permanent.

*Discharge Measurements.*—Three measurements in 1915 are sufficient to locate the rating curve for the small range of stage during November and December.

*Winter Flow.*—Ice conditions exist during the three winter months.

*Accuracy.*—The results obtained for the last two months of the year should be quite reliable. The gauge is only read twice a week, but there were no marked fluctuations.

*Co-operation.*—Gauge readings are supplied by the city of Enderby.

*Discharge Measurements of Brash Creek above Intake.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1915							
April 3	K. G. Chisholm.....	1,916	20	19.2	3.29	4.00	63.1
Sept. 8	A. L. McNaughton.....	1,915	9	3.2	0.87	3.90	2.8
Oct. 28	C. G. Cline.....	1,923	10	4.6	1.40	4.10	6.5

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*Daily Gauge Height and Discharge of Brash Creek above Intake for 1915.*  
(Drainage area, 10 square miles.)

Day.							October.		November.		December.	
	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1									4.00	4.4		3.1
2										4.4	3.90	2.8
3										4.4		2.8
4									4.00	4.4		2.8
5										4.4		2.8
6										4.0		2.8
7										3.6	3.90	2.8
8										3.2		3.1
9									3.90	2.8		2.8
10										2.5	3.95	3.6
11										2.1		3.4
12									3.80	1.8		3.2
13										2.0		3.0
14										2.3	3.90	2.8
15										2.6		2.8
16									3.90	2.8		2.8
17										3.3	3.90	2.8
18										3.9		2.8
19									4.00	4.4		2.8
20										4.0		2.8
21										3.6	3.90	2.8
22										3.2		2.8
23									3.90	2.8		2.8
24										2.8	3.90	2.8
25										2.8		2.8
26									3.90	2.8		2.8
27										3.0		2.8
28										3.1	3.90	2.8
29							4.10	6.5		3.4		2.5
30									3.95	3.6		2.3
31										3.3		2.0
											3.80	1.8

*Monthly Discharge of Brash Creek above Waterworks Intake for 1915.*  
(Drainage area, 10 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
November.....	4.4	1.8	3.2	0.32	0.36	190
December.....	3.6	1.8	2.8	0.28	0.32	170
The period.....	4.4	1.8	3.0	0.30	0.68	360

CHASE CREEK.—(2073).

*Location.*—Section 25, township 21, range 13, west of the 6th meridian; Water District No. 2.

*Records Available.*—June 1 to November 9, 1911; March 1 to December 7, 1912; May 9 to September 30, 1915.

*Drainage Area.*—One hundred and twenty square miles.

*Gauge.*—Vertical staff read daily by Geo. Keilty.

*Channel.*—There were some obstructions in the channel which interfered with a free flow of the stream, particularly at high water. These were removed on June 5, causing a change in the rating. Conditions have been stable ever since.

*Discharge Measurements.*—Three measurements were obtained to define the rating curve for high stages previous to June 5, and five measurements for the lower stages occurring after the change.

*Winter Flow.*—Ice conditions obtain during the three winter months.

*Accuracy.*—The results obtained before June 5 are subject to some uncertainty; after that date, they should be quite reliable except for discharges above 100 cubic feet per second.

*Discharge Measurements of Chase Creek near Chase.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1915							
May 5	K. G. Chisholm	1,915	31	65	2.08	1.89	135
May 19	F. R. Archbald	1,878	53	160	1.58	3.08	283
June 2	E. M. Dann	1,055	20	70	1.40	1.80	97
June 12	E. M. Dann	1,055	28	25	1.90	0.60	50
July 4	McNaughton & Tredcroft	1,915	31	37	2.40	0.92	88
July 15	Archbald & Mason	1,055	33	44	1.96	1.07	85
July 25	Archbald & Mason	1,055	31	25	1.59	0.48	40
Oct. 1	A. L. McNaughton	1,915	20	9	1.32	0.00	12

NOTE.—There was a change in the creek bed on June 5, with a corresponding change in the rating curve.

*Daily Gauge Height and Discharge of Chase Creek near Chase for 1915.*

(Drainage area, 120 square miles.)

Day.	April.		May.		June.		July.		August.		September.	
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1					1.40	99	1.40	125	0.80	41	0.00	11
2					1.30	90	1.20	105	0.40	33	0.00	11
3					0.90	57	1.00	85	0.50	41	0.00	11
4					0.80	49	0.90	77	0.50	41	0.00	11
5	June 5	change	of gauge.		0.70	41	0.80	68	0.30	27	0.00	11
6					0.70	59	0.80	68	0.40	38	0.00	11
7					0.80	68	0.70	59	0.30	27	0.00	11
8					0.80	68	0.80	68	0.20	21	0.00	11
9			2.30	180	0.80	58	0.70	59	0.20	21	0.00	11
10			2.30	180	0.70	59	0.60	50	0.20	21	0.00	11
11			2.30	180	0.70	59	0.50	50	0.10	16	0.00	11
12			2.00	150	0.60	50	0.70	59	0.10	16	0.00	11
13			1.80	135	0.70	59	0.80	68	0.10	16	0.00	11
14			1.70	125	0.80	68	0.90	77	0.10	16	0.10	16
15			2.90	235	0.80	68	1.00	86	0.00	11	0.10	16
16			2.90	235	0.80	68	1.40	125	0.00	11	0.10	16
17			2.80	225	1.00	86	1.20	105	0.10	16	0.00	11
18			2.70	220	1.20	105	1.00	86	0.10	16	0.00	11
19			3.20	265	1.00	86	0.90	77	0.10	16	0.00	11
20			3.50	300	1.00	86	0.80	68	0.10	16	0.00	11
21			3.10	255	0.90	77	0.70	59	0.20	21	0.00	11
22			2.90	235	0.80	58	0.60	50	0.10	15	0.00	11
23			2.60	210	0.80	68	0.50	41	0.10	16	0.00	11
24			2.80	180	0.70	59	0.60	50	0.00	11	0.00	11
25			2.20	160	0.70	59	0.50	41	0.00	11	0.00	11
26			2.00	150	0.80	68	5.50	41	0.60	11	0.00	11
27			1.80	135	2.90	278	0.80	41	0.00	11	0.00	11
28			1.80	135	2.00	188	0.60	50	0.00	11	0.00	11
29			1.80	135	1.90	178	0.50	41	0.00	11	0.00	11
30			1.60	115	1.70	165	0.80	41	0.00	11	0.00	11
31			1.50	105			0.50	41	0.00	11		

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## Monthly Discharge of Chase Creek near Chase for 1915.

(Drainage area, 120 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
June.....	275	41	86	0.72	0.80	5,120
July.....	125	41	67	0.56	0.65	4,120
August.....	41	11	19	0.16	0.18	1,170
September.....	16	11	12	0.10	0.11	710
The period.....	275	11	46	0.38	1.74	11,120

## CRAZY CREEK.—(2051).

*Location.*—Section 28, township 23, range 5, west of the 6th meridian.

*Drainage Area.*—Forty-five square miles.

*Records Available.*—March 8 to December 13, 1914; March 24 to December 31, 1915.

*Gauge.*—Standard vertical staff situated on C.P.R. siding bridge.

*Channel.*—The channel averages about 75 feet in width. Bed of stream is rocky, and velocities are high.

*Winter Flow.*—Ice conditions exist on this stream during November, December, January and February.

*Discharge Measurements.*—Five measurements made during 1913-14-15 agree fairly well and cover the whole range of stage.

*Accuracy.*—Results should be quite reliable at all stages.

## Discharge Measurements of Crazy Creek near Taft.

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1913 Oct. 25	Dann & Chisholm.	1,055	46	57.8	2.05	1.60	118
1914 Mar. 3	K. G. Chisholm.	1,505	33	21.8	1.11	0.72	24
May 18	E. H. Tredcroft.	1,055	33	124.7	3.00	2.30	371
July 15	E. H. Tredcroft.	1,923	78	151.2	4.09	2.80	620
1915 July 20	C. H. Mason.	1,055	69	85.5	3.15	2.00	270



7 GEORGE V, A. 1917

## Daily Gauge Height and Discharge of Crazy Creek near Taft for 1915.

(Drainage area, 43 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1							1.25	74	1.90	303	2.10	280
2							1.75	160	2.00	240	2.18	200
3							2.40	418	2.10	280	2.10	285
4							3.20	323	2.10	250	2.15	200
5							2.10	280	3.20	323	2.20	225
6							1.90	208	3.25	350	2.05	250
7							1.90	205	2.40	420	2.50	470
8							1.90	208	2.60	320	2.20	325
9							1.75	160	2.50	320	2.18	200
10							1.70	148	2.80	520	2.00	240
11							1.75	150	2.40	420	1.90	205
12							1.80	178	2.20	325	1.90	205
13							2.00	240	2.20	325	1.90	205
14							1.90	205	2.25	250	1.95	220
15							1.55	190	2.20	325	2.05	250
16							1.90	205	2.10	250	2.00	240
17							2.10	280	2.10	280	2.50	520
18							2.15	300	2.20	325	2.25	350
19							2.20	325	2.40	420	2.10	250
20							2.25	350	2.50	520	2.15	300
21							2.20	325	2.50	470	2.10	280
22							2.10	280	2.70	570	2.05	260
23							2.10	280	2.50	470	2.00	240
24					1.50	98	2.05	260	2.45	440	2.00	240
25					1.45	90	1.80	175	2.40	420	1.95	220
26					1.35	74	1.90	205	2.20	270	2.50	470
27					1.30	67	1.80	175	2.20	325	2.50	470
28					1.20	53	1.75	160	2.65	540	2.40	420
29					1.20	53	1.95	225	2.45	440	2.35	395
30					1.30	67	1.90	205	2.20	325	2.20	325
31					1.30	67			2.10	280		
July.	August.		September.		October.		November.		December.			
1	2.10	280	1.40	82	0.95	32	1.10	43	1.55	110	0.90	29
2	2.00	240	1.40	82	0.90	29	1.15	48	1.50	98	0.85	27
3	1.90	205	1.90	205	0.90	29	1.20	53	1.45	90	0.80	26
4	1.90	205	1.50	100	0.90	29	1.20	53	1.40	82	1.00	35
5	1.85	190	1.40	82	0.85	27	1.30	67	1.45	90	1.00	35
6	1.80	175	1.40	82	0.55	27	1.30	67	1.40	82	0.95	32
7	1.95	225	1.35	74	0.85	27	1.25	60	1.40	82	0.90	29
8	1.80	175	1.30	67	0.85	27	1.20	53	1.85	74	0.90	29
9	2.10	280	1.25	60	0.85	27	1.10	43	1.30	67	1.05	39
10	1.95	225	1.20	53	0.85	27	1.05	39	1.20	53	1.00	35
11	2.25	350	1.20	53	0.85	27	1.00	35	1.20	53	0.95	32
12	2.20	325	1.15	48	0.85	27	1.00	35	1.15	48	0.90	29
13	2.30	370	1.10	43	0.85	27	1.00	35	1.10	43	0.90	29
14	2.20	325	1.10	48	1.00	35	1.40	82	1.00	85	0.90	29
15	2.50	515	1.10	43	1.30	67	1.15	48	1.00	35	0.90	29
16	2.65	540	1.20	53	1.60	120	1.10	43	1.00	35	0.90	29
17	2.40	415	1.25	60	1.30	67	1.10	43	1.10	43	0.85	27
18	2.30	370	1.30	67	1.20	53	1.25	60	1.10	43	0.85	27
19	2.15	305	1.20	58	1.40	82	1.80	98	1.10	43	0.85	27
20	2.00	240	1.10	43	1.20	53	1.40	82	1.05	39	0.85	27
21	1.90	205	1.05	39	1.20	53	1.55	110	1.00	35	0.90	29
22	1.85	190	1.00	35	1.10	43	1.50	98	1.00	35	0.80	26
23	1.80	175	1.00	35	1.10	43	1.50	98	1.00	35	0.80	26
24	1.70	145	1.00	35	1.00	35	1.70	145	1.00	35	0.80	26
25	1.50	120	0.95	32	0.95	32	1.70	145	1.00	35	0.80	26
26	1.55	110	0.95	32	0.95	32	1.65	130	1.00	35	0.80	26
27	1.55	110	0.95	32	0.95	32	1.75	160	1.00	35	0.75	25
28	1.55	110	0.95	32	0.95	32	1.70	145	0.95	32	0.75	25
29	1.55	110	0.95	32	0.95	32	1.60	120	0.90	29	0.75	25
30	1.50	100	0.95	32	0.95	32	1.60	120	0.90	29	0.70	25
31	1.45	90	0.95	32			1.60	120			0.70	25



SESSIONAL PAPER No. 25e

## Monthly Discharge of Crazy Creek near Taft for 1915.

(Drainage area, 45 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
April.....	415	74	280	5.10	5.69	12,700
May.....	620	205	386	6.56	9.69	22,700
June.....	520	205	306	6.80	7.59	18,200
July.....	540	90	239	5.31	6.12	14,700
August.....	205	32	57	1.27	1.46	3,500
September.....	120	27	40	0.89	0.99	2,660
October.....	160	35	60	1.78	2.05	4,920
November.....	110	29	53	1.16	1.32	3,150
December.....	39	25	29	0.64	0.74	1,780
The period.....	620	25	188	3.51	35.85	86,030

## EAGLE RIVER AT MALAKWA.—(2010).

*Location.*—Section 9, township 23, range 6, west 6th meridian.

*Records Available.*—May 14 to December 31, 1913; January 8 to December 12, 1914; February 7 to December 31, 1915.

*Drainage Area.*—Four hundred and twenty square miles.

*Gauge.*—Standard chain gauge situated on highway bridge and read daily by P. C. Cold.

*Channel.*—The channel is uniform and straight for 100 yards above and below the gauge.

*Discharge Measurements.*—Are made from upstream side of highway bridge. Velocities are uniform and not too high. Measurements made during 1913-14-15 agree very well and cover the whole range of stage.

*Winter Flow.*—Partial ice conditions exist on the river during January and February.

*Accuracy.*—The results are considered to be very reliable at all stages.

## Discharge Measurements of Eagle River at Malakwa.

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1913							
May 14	Richardson & Elliott.....	1,048	125	674	4.00	4.80	2,690
May 31	J. A. Elliott.....	1,672	132	1,100	6.46	6.80	7,110
June 7	J. A. Elliott.....	1,672	132	1,090	6.20	6.70	6,750
July 10	J. A. Elliott.....	1,672	128	740	4.14	5.12	6,060
Aug. 27	J. A. Elliott.....	1,672	128	580	2.49	3.70	1,440
Nov. 7	Dann & Chisholm.....	1,505	110	454	1.36	2.61	620
1914							
Mar. 3	K. G. Chisholm.....	1,505	125	206	1.24	1.80	257
May 18	E. H. Tredcroft.....	1,055	111	718	3.98	4.90	2,860
July 16	E. H. Tredcroft.....	1,923	120	719	4.14	5.05	2,972
1915							
July 20	Archibald & Mason.....	1,055	130	667	3.10	4.50	2,085

## Daily Gauge Height and Discharge of Eagle River at Malakwa for 1915.

(Drainage area, 420 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1					1.80	170	2.70	680	4.10	1,750	4.80	2,190
2					1.80	170	3.10	910	4.38	1,900	4.80	2,190
2					1.80	170	3.90	1,580	4.40	2,060	4.48	2,120
4					1.80	170	4.80	2,190	4.40	2,060	4.88	2,250
5					1.80	170	4.20	1,950	4.88	2,280	4.80	2,190
6							1.55	165	4.00	1,650	4.88	2,250
7			1.60	200	1.88	165	4.00	1,680	8.18	3,170	4.28	1,850
8			1.55	165	1.88	165	3.98	1,600	8.80	3,620	4.88	2,600
9			1.80	170	1.88	165	3.88	1,600	8.88	4,120	4.48	2,120
10			1.60	200	1.60	200	3.60	1,260	8.78	4,220	4.18	1,800
11			1.55	185	1.60	200	2.60	1,280	8.18	2,170	4.00	1,680
12			1.50	170	1.60	200	3.90	1,880	4.80	2,220	4.00	1,880
12			1.40	140	1.65	210	4.20	1,880	4.68	2,280	4.18	1,800
14			1.80	170	1.70	225	4.00	1,880	4.80	2,600	4.40	2,060
15			1.50	170	2.20	400	4.00	1,880	4.88	2,880	8.40	3,620
16			1.50	170	2.20	445	4.15	1,600	4.50	2,190	4.80	2,600
17			1.80	170	2.20	400	4.88	2,280	4.40	2,060	8.20	2,440
18			1.88	165	2.20	445	4.78	2,820	4.70	2,480	4.88	2,670
19			1.50	170	2.38	470	4.88	2,680	3.20	4,440	4.50	2,190
20			1.80	170	2.40	498	4.80	2,600	8.48	3,740	4.70	2,480
21			1.80	170	2.50	550	4.40	2,060	8.40	2,620	4.50	2,190
22			1.45	158	2.78	890	4.08	1,700	8.40	2,820	4.40	2,060
23			1.80	170	3.08	680	3.98	1,600	8.10	2,090	4.40	2,060
24			1.80	170	3.00	680	3.98	1,600	4.90	2,780	4.88	2,250
25			1.58	188	2.68	760	2.60	1,480	8.18	3,170	4.80	2,190
26			1.80	170	2.70	660	2.90	1,580	4.68	2,680	8.40	3,620
27			1.58	188	2.88	878	3.80	1,480	4.80	3,190	8.10	2,090
28			1.80	170	2.60	608	3.60	1,260	8.20	2,440	4.90	2,750
29			2.50	580	2.80	580	4.48	2,120	8.00	2,920	4.68	2,670
30			2.60	608	2.60	608	4.40	2,080	4.60	2,220	4.70	2,450
31			2.70	660	2.70	660	2.70	660	4.38	2,000		
	July.		August.		September.		October.		November.		December.	
1	4.60	2,320	3.80	1,480	2.70	660	2.58	580	3.18	980	2.10	358
2	4.80	2,190	3.78	1,400	2.60	608	2.60	600	2.00	880	3.10	358
3	4.38	2,000	4.28	2,000	2.70	660	2.58	580	2.90	780	2.10	358
4	4.40	2,060	2.90	1,580	2.88	878	2.48	828	3.00	880	2.18	378
5	4.48	2,128	3.70	1,360	2.88	878	2.50	580	2.70	660	2.18	378
6	4.20	1,880	3.60	1,280	2.80	550	2.88	680	2.70	660	2.18	378
7	4.38	2,000	3.68	1,320	2.88	470	2.88	470	2.70	660	2.10	358
8	4.38	2,000	2.60	1,280	2.40	498	2.30	440	2.68	620	2.18	378
9	4.78	2,820	3.60	1,280	2.30	448	2.20	400	2.60	600	2.20	400
10	4.38	2,000	3.60	1,280	2.28	420	2.18	378	2.88	660	2.20	400
11	8.00	2,920	3.88	1,340	2.28	420	2.10	358	2.80	650	2.20	400
12	4.80	2,600	3.48	1,160	2.18	378	2.10	358	2.88	470	2.18	378
13	4.90	2,780	3.48	1,160	2.10	358	2.20	400	2.40	500	2.10	358
14	4.98	2,830	3.40	1,120	2.10	358	2.70	660	2.40	500	2.10	358
15	8.60	4,020	3.40	1,120	2.88	750	2.80	580	2.88	470	2.08	340
16	8.48	3,740	3.38	1,080	2.88	750	2.40	800	2.38	470	2.08	340
17	8.00	2,920	3.78	1,400	2.90	780	2.48	828	2.30	440	2.08	340
18	4.90	2,780	3.88	1,340	2.68	630	2.80	880	2.20	440	2.08	340
19	4.70	2,480	3.28	1,010	2.98	818	2.78	700	2.30	440	2.08	340
20	4.80	2,190	3.40	1,120	2.60	608	2.80	728	2.28	420	2.08	340
21	4.40	2,060	3.40	1,120	2.80	550	3.10	910	2.28	420	2.10	358
22	4.30	1,980	3.38	1,080	2.88	578	3.10	910	2.30	440	2.10	358
23	4.18	1,800	3.30	1,080	2.40	498	3.00	880	2.30	440	2.10	358
24	4.00	1,680	3.20	960	2.30	448	3.28	1,020	2.28	420	2.10	358
25	3.90	1,580	3.28	1,010	2.30	448	3.20	980	2.28	420	2.10	358
26	3.90	1,580	3.20	980	2.28	470	3.30	1,080	2.28	420	2.08	340
27	3.88	1,580	3.00	880	2.28	420	3.58	1,240	2.18	378	2.00	320
28	3.90	1,580	3.00	880	2.20	400	3.80	1,200	2.10	358	2.00	320
29	3.88	1,580	2.90	780	2.20	400	3.30	1,080	2.18	378	1.80	288
30	3.80	1,480	3.20	980	2.20	400	3.20	980	2.20	400	1.80	288
31	3.70	1,360	3.00	880	2.20	400	3.20	980			2.00	320

SESSIONAL PAPER No. 26a

## Monthly Discharge of Eagle River at Malakwa for 1915.

(Drainage area, 420 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
March.....	880	170	409	0.97	1.12	35,100
April.....	2,580	590	1,721	4.10	4.57	103,400
May.....	4,330	1,750	2,806	6.71	7.74	173,800
June.....	3,670	1,650	2,365	5.63	6.28	141,000
July.....	4,020	1,360	2,200	5.23	6.03	138,300
August.....	2,000	760	1,174	2.79	3.22	72,200
September.....	815	355	530	1.26	1.41	31,500
October.....	1,240	355	696	1.66	1.91	42,800
November.....	950	355	533	1.27	1.42	31,700
December.....	400	200	348	0.83	0.96	21,400
The period.....	4,330	170	1,278	3.04	34.65	775,900

## GRANITE CREEK.—(2064).

*Location.*—Near Coalmont; Water District No. 4.*Records Available.*—June 19 to December 31, 1914; April 1 to September 30, 1915.*Drainage Area.*—Forty square miles.*Gauge.*—Standard vertical staff gauge graduated in feet and tenths, situated on footbridge. Read daily by Miss Emily Cook.*Channel.*—Channel is straight for 100 feet above and 500 feet below measuring section. Velocity high. Bed of stream is composed of gravel and rock, considered permanent.*Discharge Measurements.*—Six measurements made during 1914 and 1915 agree very well and cover practically all stages.*Accuracy.*—Results should be quite reliable at all stages.*Discharge Measurements of Granite Creek near Mouth.*

Date	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1914							
June 18	K. G. Chisholm.....	1,913	80	92	3.26	2.22	300
July 25	K. G. Chisholm.....	1,913	27	44	0.70	1.32	31
Sept. 3	K. G. Chisholm.....	1,913	26	20	0.51	1.05	12
Nov. 26	K. G. Chisholm.....	1,573	37	36	0.86	1.40	31
1915							
April 9	K. C. Chisholm.....	1,915	31	53	1.09	1.59	58
June 3	E. H. Tredcroft.....	1,923	80	57	2.00	1.75	107

## Daily Gauge Height and Discharge of Granite Creek at Mouth for 1915.

(Drainage area, 40 square miles.)

Day.	April.		May.		June.		July.		August.		September.	
	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	1.30	25	1.90	140	1.87	150	1.20	25	1.32	19.0	0.97	10.7
2	1.80	45	1.80	150	1.50	125	1.27	23	1.20	13.0	1.00	11.0
3	1.55	55	1.97	165	1.80	125	1.27	23	1.15	15.7	1.00	11.0
4	1.70	92	2.00	200	1.77	115	1.30	25	1.10	13.0	0.97	10.7
5	1.55	79	2.12	250	1.72	100	1.22	19	1.10	13.0	0.97	10.7
6	1.80	57	2.22	300	1.70	92	1.20	15	1.07	12.7	0.97	10.7
7	1.55	79	2.30	325	1.70	92	1.22	15	1.05	12.2	0.97	10.5
8	1.55	79	2.27	320	1.57	65	1.30	18	1.08	12.2	0.97	10.5
9	1.60	67	2.25	210	1.87	65	1.20	15	1.05	12.0	0.97	10.5
10	1.80	67	2.17	275	1.87	85	1.20	15	1.02	11	0.97	10.5
11	1.55	79	2.10	240	1.75	110	1.30	12	1.00	11	0.97	10.5
12	1.75	110	2.00	200	1.25	50	1.17	15	1.00	11	0.97	10.5
13	1.55	140	2.07	225	1.50	67	1.25	21	1.09	11	0.97	10.5
14	1.75	110	2.20	290	1.60	67	1.22	22	1.00	11	0.97	10.5
15	1.80	125	2.07	225	1.80	67	1.80	49	1.00	11	0.97	10.5
16	1.90	150	2.00	200	1.55	85	1.42	28	1.00	11	0.97	10.5
17	2.05	220	2.02	205	1.57	50	1.32	27	1.02	10.5	0.97	10.5
18	2.15	255	2.20	290	1.57	50	1.20	28	1.01	11.0	0.97	10.5
19	2.17	275	2.27	320	1.50	49	1.25	21	1.06	11.0	0.97	10.5
20	2.15	255	2.20	290	1.50	49	1.20	15	1.05	11.0	0.97	10.5
21	2.00	200	2.15	255	1.47	45	1.17	15	1.05	12.2	0.97	10.5
22	1.92	155	2.07	225	1.42	38	1.12	14	1.00	11.0	0.97	10.5
23	1.90	160	2.02	205	1.40	35	1.10	13	1.00	11.0	0.97	10.5
24	1.92	155	2.18	255	1.48	42	1.10	13	0.97	10.7	0.97	10.5
25	1.95	150	2.07	225	1.40	35	1.12	14	0.98	10.8	0.97	10.5
26	2.00	200	2.00	200	1.40	35	1.20	15	0.98	10.8	1.10	13.0
27	2.00	200	2.00	200	1.42	38	1.37	32	0.95	10.5	1.00	11.0
28	2.00	200	2.00	200	1.40	35	1.32	25	0.95	10.8	1.00	11.0
29	2.12	250	1.92	155	1.40	35	1.37	32	0.95	10.5	1.00	11.0
30	2.00	200	1.90	150	1.35	30	1.30	25	0.95	10.5	1.00	11.0
31	.....	.....	1.55	140	.....	.....	1.30	25	0.95	10.5	.....	.....

## Monthly Discharge of Granite Creek at Mouth for 1915.

(Drainage area, 40 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mle.	Depth in inches on Drainage area.	Total in acre-feet
April...	275	25	144	3.50	4.02	8,570
May...	335	140	233	5.82	5.71	14,330
June...	150	30	70	1.75	1.95	4,165
July.....	52	13	23	0.57	0.66	1,414
August.....	19	10	12	0.30	0.35	732
September.....	23	10	12	0.30	0.33	714
The period...	335	10	82	2.05	14.02	29,925

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## KETTLE RIVER, NORTH FORK.—(2052).

*Location.*—At Grand Forks; Water District No. 5.

*Records Available.*—June 1 to December 31, 1914; January 1 to December 31, 1915.

*Drainage Area.*—Six hundred and forty square miles.

*Gauge.*—Standard vertical staff gauge situated on footbridge, graduated in feet and tenths, and read daily by Geo. O'Keefe.

*Channel.*—Channel is straight for 100 yards above and below measuring section. Velocity high.

*Discharge Measurements.*—Six discharge measurements made during 1914 and 1915 cover all stages up to 5,000 cubic feet per second.

*Accuracy.*—During the early spring a pile of slag interfered somewhat with the accuracy of the results, but a correction was made to allow for this condition.

*Discharge Measurements of North Fork of Kettle River at Grand Forks.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1914							
May 19	C. E. Richardson..	1.527	132	1,100	4.59	5.08	5,050
June 9	K. G. Chisholm..	1.913	132	847	2.77	4.00	3,848
July 22	K. G. Chisholm..	1.913	132	474	0.90	1.48	426
Aug. 22	K. G. Chisholm..	1.913	79	255	0.35	0.52	88
Aug. 24	K. G. Chisholm..	1.913	110	244	0.35	0.50	86
1915							
Mar. 19	K. G. Chisholm..	1.915	132	152	2.51	2.48	592 <sup>1</sup>
June 10	E. H. Tredcroft.	1.923	133	753	2.80	3.73	2,040

<sup>1</sup> Affected by backwater from slag.

Daily Gauge Height and Discharge of North Fork of Kettle River at Grand Forks for 1915.

(Drainage area, 640 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	1.00	220	0.90	180	1.20	300	5.1	5,100	4.70	3,500	5.30	5,860
2	1.00	220	0.90	180	1.20	300	4.9	4,420	4.40	2,080	5.15	5,290
3	1.00	220	1.00	220	1.30	340	4.5	3,270	4.15	2,570	4.70	3,800
4	1.00	220	1.00	220	1.30	340	4.25	2,750	4.00	2,350	4.40	3,050
5	1.00	220	1.00	220	1.30	340	4.20	2,650	4.15	2,570	4.40	3,050
6	1.00	220	1.00	220	1.30	340	4.20	2,650	4.60	3,520	4.30	2,850
7	1.00	220	1.00	220	1.30	340	4.20	2,650	4.90	4,420	4.20	2,650
8	1.00	220	1.10	260	0.80	150	4.10	2,490	4.80	4,100	4.10	2,490
9	1.00	220	1.10	260	1.30	340	4.00	2,350	4.80	4,100	4.00	2,350
10	1.00	220	1.10	260	1.40	385	4.00	2,350	4.80	4,100	4.00	2,350
11	1.00	220	1.10	260	1.40	385	4.10	2,490	4.90	4,420	3.75	2,030
12	0.90	180	1.10	260	1.50	435	4.20	2,650	5.00	4,750	3.55	1,830
13	0.90	180	1.10	260	1.50	435	4.30	2,850	5.15	5,290	3.40	1,680
14	0.80	150	1.10	260	1.50	435	4.40	3,050	5.30	5,880	3.30	1,590
15	0.80	150	1.10	260	1.50	435	4.50	3,270	5.40	6,300	3.20	1,510
16	0.90	120	1.10	260	1.50	435	4.35	3,320	5.40	6,300	3.10	1,430
17	0.70	120	1.10	260	1.50	435	4.85	4,260	5.55	6,940	3.10	1,430
18	0.70	120	1.10	260	1.50	435	5.35	6,090	5.55	6,940	3.00	1,350
19	0.60	150	1.10	260	1.50	435	5.75	7,790	5.65	7,360	3.00	1,350
20	0.80	150	1.10	260	1.50	435	5.60	7,150	5.80	8,000	3.00	1,350
21	0.80	150	1.10	260	2.00	690	5.00	4,750	5.70	7,570	3.00	1,350
22	0.80	150	1.10	260	3.00	1,350	4.70	3,800	5.60	7,150	2.90	1,270
23	0.80	150	1.20	300	3.20	1,510	4.30	2,850	5.50	6,720	2.80	1,200
24	0.80	150	1.20	300	3.40	1,660	4.15	2,570	5.40	6,300	2.80	1,200
25	0.80	150	1.20	300	3.40	1,660	4.05	2,420	5.20	5,480	2.70	1,130
26	0.80	150	1.20	300	3.20	1,510	4.00	2,350	5.20	5,480	2.60	1,060
27	0.80	150	1.20	300	3.00	1,350	4.00	2,350	5.20	5,480	2.70	1,130
28	0.80	150	1.20	300	3.00	1,350	4.00	2,350	6.10	9,350	2.80	1,200
29	0.80	150	.....	.....	3.30	1,600	4.20	2,650	6.15	9,570	2.80	1,200
30	0.60	150	.....	.....	3.55	1,830	4.90	4,420	5.90	8,450	2.80	1,200
31	0.80	150	.....	.....	3.90	2,200	.....	.....	5.65	7,360	.....	.....
Day.	July.		August.		September.		October.		November.		December.	
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	2.60	1,060	2.30	870	0.70	120	0.50	85	0.60	100	0.60	100
2	2.50	990	2.30	870	0.60	100	0.50	85	0.65	110	0.60	100
3	2.50	990	2.20	810	0.60	100	0.50	85	0.65	110	0.60	100
4	2.60	1,060	2.10	750	0.60	100	0.50	85	0.70	120	0.60	100
5	2.50	990	2.10	750	0.60	100	0.35	60	0.70	120	0.60	100
6	2.50	990	2.00	690	0.60	100	0.35	60	0.70	120	0.60	100
7	2.65	1,090	1.90	640	0.50	85	0.35	60	0.70	120	0.65	110
8	2.85	1,240	1.80	580	0.50	85	0.50	85	0.70	120	0.65	110
9	3.05	1,390	1.80	580	0.50	85	0.50	85	0.70	120	0.65	110
10	3.10	1,430	1.70	530	0.50	85	0.50	85	0.70	120	0.65	110
11	3.00	1,350	1.60	460	0.50	85	0.50	85	0.70	120	0.65	110
12	2.90	1,270	1.50	430	0.55	90	0.55	90	0.70	120	0.65	110
13	2.80	1,200	1.50	430	0.55	90	0.55	90	0.70	120	0.65	110
14	2.90	1,270	1.40	380	0.50	85	0.60	100	0.70	120	0.65	110
15	3.00	1,350	1.40	380	0.50	85	0.60	100	0.70	120	0.65	110
16	3.10	1,430	1.40	380	0.50	85	0.60	100	0.70	120	0.65	110
17	3.10	1,430	1.30	340	0.50	85	0.60	100	0.70	120	0.65	110
18	3.00	1,350	1.30	340	0.50	85	0.55	90	0.70	120	0.65	110
19	3.00	1,350	1.30	340	0.50	85	0.55	90	0.70	120	0.65	110
20	2.90	1,270	1.20	300	0.50	85	0.55	90	0.70	120	0.60	100
21	2.80	1,200	1.20	300	0.50	85	0.55	90	0.65	110	0.60	100
22	2.65	1,090	1.20	300	0.50	85	0.55	90	0.65	110	0.60	100
23	2.50	990	1.10	260	0.50	85	0.55	90	0.65	110	0.60	100
24	2.40	930	1.10	260	0.50	85	0.55	90	0.65	110	0.60	100
25	2.40	930	1.00	220	0.50	85	0.55	90	0.65	110	0.60	100
26	2.40	930	1.00	220	0.50	85	0.55	90	0.65	110	0.60	100
27	2.30	870	0.90	180	0.50	85	0.55	90	0.65	110	0.60	100
28	2.30	870	0.90	180	0.50	85	0.55	90	0.60	100	0.60	100
29	2.30	870	0.80	150	0.50	85	0.55	90	0.60	100	0.60	100
30	2.40	930	0.80	150	0.50	85	0.55	90	0.60	100	0.60	100
31	2.40	930	0.70	120	.....	.....	0.60	100	.....	.....	0.60	100

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## Monthly Discharge of North Fork of Kettle River at Grand Forks for 1915.

(Drainage area, 640 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January.....	220	120	174	0.27	0.81	10,700
February.....	800	180	256	0.40	0.42	14,200
March.....	2,300	180	781	1.22	1.41	48,000
April.....	7,750	2,280	3,477	5.42	5.06	207,000
May.....	9,870	2,280	5,868	8.85	10.20	348,000
June.....	8,880	1,080	2,042	3.18	2.85	121,800
July.....	1,480	870	1,120	1.78	2.08	66,800
August.....	870	120	428	0.66	0.78	28,200
September.....	120	85	89	0.14	0.16	4,800
October.....	100	80	87	0.14	0.16	4,400
November.....	120	100	114	0.18	0.20	6,500
December.....	110	100	104	0.16	0.19	6,400
The year.....	9,870	80	1,195	1.87	26.45	889,000

## KETTLE RIVER, WEST FORK.—(2045).

*Location.*—Near Westbridge; Water District No. 5.

*Records Available.*—February 23 to September 30, 1914; January 1 to February 6 and March 29 to December 31, 1915.

*Drainage Area.*—Six hundred and ninety square miles.

*Gauge.*—Standard vertical staff gauge, graduated in feet and tenths, read daily by R. Demazes.

*Channel.*—Channel is straight for 500 feet above and below measuring section. Bed composed of gravel and boulders.

*Discharge Measurements.*—Five measurements made during 1914 and 1915 agree very well and cover all stages to a discharge of 1,300 cubic feet per second.

*Winter Flow.*—Partial ice conditions prevailed during February and March.

## Discharge Measurements of Kettle River, West Fork, at Westbridge.

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1914							
June 7	Dann & Chisholm.....	1,913	97	304	4.05	2.78	1,225
July 30	K. G. Chisholm.....	1,913	97	122	1.43	0.91	174
Aug. 27	K. G. Chisholm.....	1,913	41	35	1.23	0.39	42
1915							
Mar. 24	K. G. Chisholm.....	1,915	97	125	1.21	1.00	164
June 8	E. H. Tredcroft.....	1,922	97	280	2.80	2.50	582

NOTE.—All measurements are referred to the gauge in use during 1915.



## Daily Gauge Height and Discharge of Kettle River at Westbridge for 1915.

(Drainage area, 690 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	1.1	230	1.05	215	.....	.....	1.30	290	2.65	1,110	3.50	2,020
2	0.9	170	0.95	185	.....	.....	1.50	350	2.70	1,160	3.25	1,750
3	0.85	155	0.95	185	.....	.....	1.85	520	2.70	1,160	3.05	1,530
4	0.65	155	0.90	170	.....	.....	2.00	610	2.55	1,110	2.90	1,370
5	0.90	170	0.90	170	.....	.....	2.10	670	2.65	1,110	2.75	1,210
6	0.90	170	0.90	170	.....	.....	2.10	670	2.67	1,130	2.70	1,160
7	0.90	170	Stream Frozen	.....	.....	.....	2.20	740	2.90	1,270	2.65	1,110
8	0.90	170	Stream Frozen	.....	.....	.....	2.20	740	6.05	1,530	2.55	1,020
9	0.90	170	Stream Frozen	.....	.....	.....	2.15	705	3.05	1,530	2.40	690
10	0.85	155	.....	.....	.....	.....	2.10	670	6.20	1,590	2.30	610
11	1.00	200	.....	.....	.....	.....	2.10	670	3.10	1,590	2.30	610
12	1.00	200	.....	.....	.....	.....	2.35	650	2.75	1,210	2.20	740
13	1.00	200	.....	.....	.....	.....	2.50	975	2.60	1,050	2.25	775
14	0.90	170	.....	.....	.....	.....	2.50	975	6.05	1,530	2.20	740
15	0.90	170	.....	.....	.....	.....	2.45	930	3.35	1,550	2.15	705
16	0.90	170	.....	.....	.....	.....	2.55	1,020	3.05	1,530	2.05	540
17	1.00	200	.....	.....	.....	.....	2.72	1,180	2.90	1,270	1.90	550
18	1.00	200	.....	.....	.....	.....	2.90	1,370	3.35	1,550	1.90	550
19	0.95	185	.....	.....	.....	.....	3.05	1,540	4.10	2,060	1.95	580
20	0.90	170	.....	.....	.....	.....	3.15	1,640	4.60	2,660	1.95	580
21	0.90	170	.....	.....	.....	.....	2.90	1,370	4.00	2,560	1.90	550
22	0.90	170	.....	.....	.....	.....	2.60	1,050	4.15	2,710	1.80	495
23	0.95	185	.....	.....	.....	.....	2.45	930	4.05	2,610	1.75	470
24	1.00	200	.....	.....	.....	155	2.40	890	3.60	2,340	1.60	400
25	0.95	165	.....	.....	.....	.....	2.30	810	6.50	2,440	1.65	420
26	0.75	130	.....	.....	.....	.....	2.30	610	3.85	2,390	1.65	420
27	0.75	130	.....	.....	.....	.....	2.30	810	3.70	2,230	2.50	975
28	0.85	155	.....	.....	.....	.....	2.30	810	4.05	2,510	2.40	890
29	0.90	170	.....	.....	0.9	170	2.55	1,020	4.20	2,770	2.35	850
30	0.90	170	.....	.....	1.7	215	3.00	1,480	6.70	2,230	2.15	705
31	0.90	170	.....	.....	1.7	200	.....	.....	3.45	1,950	.....	.....
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	1.95	560	1.90	550	0.52	105	0.50	80	0.80	145	1.20	260
2	1.75	470	1.90	550	0.50	100	0.50	80	0.80	145	1.10	230
3	1.70	445	1.80	495	0.60	100	0.50	80	0.77	135	1.00	200
4	1.75	470	1.75	470	0.57	94	0.50	80	0.75	130	0.65	155
5	1.70	445	1.55	420	0.55	90	0.50	80	0.75	160	0.65	110
6	1.70	445	1.60	400	0.55	90	0.50	80	0.70	120	0.50	100
7	1.70	445	1.45	340	0.55	90	0.50	80	0.70	120	0.50	100
8	1.70	445	1.40	325	0.52	84	0.50	80	0.70	120	0.50	100
9	1.95	580	1.25	275	0.50	80	0.50	80	0.60	100	0.60	100
10	2.05	640	1.20	250	0.57	94	0.50	80	0.60	100	0.55	110
11	1.85	520	1.20	250	0.60	100	0.50	80	0.55	90	0.80	145
12	1.70	445	1.15	245	0.60	100	0.55	90	0.60	100	0.80	145
13	1.85	525	1.10	230	0.55	110	0.55	90	1.05	215	0.85	155
14	2.00	610	1.05	215	0.55	110	0.50	100	1.10	230	1.00	200
15	2.05	640	1.00	200	0.55	110	0.60	100	0.70	120	1.05	215
16	2.50	975	1.00	200	0.70	120	0.50	100	0.50	80	1.10	230
17	2.40	690	1.00	200	0.65	110	0.50	100	0.80	145	1.20	260
18	2.30	810	1.00	200	0.50	100	0.50	100	0.80	145	1.10	230
19	2.15	705	0.90	200	0.50	100	0.50	100	0.50	100	1.10	230
20	1.95	580	0.92	175	0.50	100	0.50	100	0.55	110	1.10	230
21	1.85	580	0.90	170	0.57	94	0.55	110	0.80	145	1.10	230
22	1.75	470	0.87	160	0.55	90	0.70	120	0.75	130	1.00	200
23	1.70	445	0.82	150	0.55	90	0.75	130	0.70	120	0.90	170
24	1.55	380	0.80	145	0.55	90	0.80	145	0.70	120	0.85	155
25	1.50	350	0.77	135	0.50	80	0.60	145	0.85	155	0.90	170
26	1.45	340	0.75	130	0.50	80	0.80	145	1.00	200	0.90	170
27	1.85	520	0.70	120	0.50	80	0.80	145	1.15	245	0.90	170
28	2.15	705	0.57	115	0.50	80	0.90	170	1.05	215	0.90	170
29	2.10	570	0.55	110	0.50	80	0.95	185	1.25	275	0.90	170
30	2.00	510	0.55	110	0.50	80	0.85	155	1.20	250	0.90	170
31	2.00	510	0.55	110	.....	.....	0.80	145	.....	.....	0.90	170



SESSIONAL PAPER No. 26a

## Monthly Discharge of Kettle River at Westbridge for 1915.

(Drainage area, 690 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January.....	230	130	175	0.26	0.29	10,760
February.....						
March.....						
April.....						
May.....	1,640	290	904	1.30	1.46	63,800
June.....	2,880	1,060	1,848	2.67	3.08	114,000
July.....	2,020	400	857	1.24	1.88	51,000
August.....	975	340	560	0.81	0.98	34,400
September.....	550	110	247	0.36	0.41	16,300
October.....	120	80	94	0.14	0.16	6,590
November.....	185	80	108	0.16	0.18	6,640
December.....	275	80	148	0.21	0.24	8,800
.....	260	100	176	0.25	0.29	10,800
The period.....	2,880	80	512	0.74	8.40	310,990

## KETTLE RIVER, NEAR NICHOLSON'S BRIDGE.—(2046).

*Location.*—Near Kettle Valley Water; District No. 5.*Records Available.*—March 1 to December 11, 1914; February 18 to November 30, 1915.*Drainage Area.*—Two thousand one hundred and eighty square miles.*Gauge.*—Standard vertical staff gauge, graduated in feet and tenths, situated on pier of highway bridge, and read daily by N. Whiting, rancher.*Channel.*—Average width, 150 feet; bed of stream gravel and sand, and considered permanent. Velocity high; control good.*Discharge Measurements.*—Six measurements made during 1914 and 1915 agree very well and cover all ranges of stage up to 7,000 cubic feet per second.*Winter Flow.*—Ice conditions exist during January, February and December.*Accuracy.*—Results should be quite reliable at all stages.

## Discharge Measurements of Kettle River at Nicholson's Bridge.

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1914							
May 20	Richardson & Varcoe.....	1,327	156	1,063	5.75	5.00	6,104
June 7	Dann & Chisholm.....	1,923	170	869	4.88	3.79	4,225
July 19	K. G. Chisholm.....	1,923	154	329	2.03	0.36	668
Aug 27	K. G. Chisholm.....	1,913	137	184	0.78	-0.80	144
1915							
Mar 25	K. G. Chisholm.....	1,915	143	301	1.50	2.05	466
June 9	E. H. Tredecroft ..	1,923	153	682	4.16	4.85	2,844

Daily Gauge Height and Discharge of Kettle River at Nicholson's Bridge for 1915.

(Drainage area, 2,180 square miles.)

Day.	January.		February.		March.		April.		May.		June.	
	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1					2.00	420	2.60	720	3.70	4,040	6.30	6,000
2					2.00	420	2.70	850	6.90	4,860	3.15	4,760
3					1.85	356	3.26	1,290	3.30	4,200	3.92	4,400
4					1.70	290	4.25	2,060	3.72	4,120	6.60	2,880
6					1.60	250	4.28	2,050	3.75	4,120	5.22	2,760
7					1.66	220	4.20	2,000	6.75	4,120	5.30	2,440
8					1.50	210	4.27	2,070	6.10	4,680	3.23	3,610
9					1.46	205	4.42	2,260	6.46	5,240	6.05	3,090
10					1.42	190	4.47	2,310	6.60	5,220	4.82	2,770
11					1.40	180	4.26	2,060	6.90	5,960	4.80	2,470
12					1.40	180	4.16	1,960	6.85	5,880	4.46	2,290
13					1.28	175	4.35	2,170	6.26	4,920	4.20	2,110
14					1.36	170	4.76	2,670	6.76	4,120	4.25	2,050
16					1.40	180	6.15	3,220	5.85	4,280	4.23	2,170
17					1.45	196	5.10	2,180	6.90	6,960	4.20	2,000
18					1.50	210	5.20	2,200	6.25	4,920	4.20	2,000
19					1.50	210	5.30	2,440	6.90	4,260	3.97	1,780
20			1.83	346	1.60	210	5.90	4,260	6.25	5,080	3.85	1,680
21			1.86	365	1.52	220	6.26	4,920	7.87	7,630	3.92	1,740
22			1.95	405	1.66	230	6.30	6,320	8.20	8,080	4.16	1,950
23			2.00	430	1.66	230	6.16	4,760	7.66	7,170	4.06	1,850
24			2.06	460	1.60	260	5.90	4,360	7.60	7,420	3.75	1,660
25			2.05	460	1.65	270	5.26	3,870	7.20	6,440	3.70	1,580
26			2.00	430	1.75	310	5.10	3,160	6.75	5,720	2.70	1,460
27			2.05	460	1.90	380	5.00	2,020	7.15	6,360	3.60	1,480
28			2.12	495	1.90	380	4.87	2,840	6.82	5,860	3.75	1,600
29			2.12	495	1.86	355	4.87	2,840	6.55	5,400	5.20	3,300
30			2.10	486	2.16	610	4.86	2,810	7.05	6,200	6.05	3,090
31					2.25	570	6.20	3,440	8.00	7,750	4.85	2,810
					2.30	600	6.26	6,080	7.00	6,120	4.60	2,470
					2.45	690			6.55	6,400		

	July.		August.		September.		October.		November.		December.	
1	4.35	2,170	8.75	1,600	1.65	270	1.37	175	2.00	420		
2	4.00	1,800	3.60	1,480	1.60	250	1.35	170	2.00	420		
3	3.80	1,640	3.60	1,480	1.60	250	1.32	165	1.96	405		
4	3.60	1,480	3.50	1,400	1.60	250	1.37	175	1.90	380		
5	3.60	1,480	3.35	1,290	1.60	250	1.47	200	1.85	355		
6	3.85	1,680	3.10	1,110	1.56	230	1.50	210	1.80	330		
7	3.90	1,720	3.00	1,040	1.52	215	1.50	210	1.80	330		
8	4.05	1,850	2.60	910	1.50	210	1.50	210	1.82	340		
9	4.15	1,950	2.60	780	1.50	210	1.45	195	1.90	380		
10	4.80	2,740	2.47	710	1.50	210	1.40	180	1.90	380		
11	4.30	2,110	2.46	690	1.50	210	1.40	180	1.90	380		
12	4.10	1,900	2.30	500	1.50	210	1.46	196	1.87	365		
13	4.10	1,900	2.30	600	1.50	210	1.60	210	1.90	380		
14	4.60	2,350	2.22	560	1.53	230	1.50	210	1.92	390		
15	4.36	2,170	2.20	540	1.57	236	1.52	220	1.95	405		
16	5.40	3,550	2.20	540	1.60	250	1.60	250	2.00	430		
17	5.30	3,440	2.17	530	1.62	255	1.60	250	2.00	430		
18	5.30	3,440	2.12	500	1.65	270	1.60	280	1.95	405		
19	4.95	2,950	2.15	510	1.62	255	1.60	250	1.85	355		
20	4.60	2,470	2.10	480	1.60	250	1.50	250	1.80	330		
21	4.45	2,290	2.05	450	1.55	230	1.60	250	1.80	330		
22	4.15	1,950	2.00	430	1.50	210	1.65	270	1.87	365		
23	3.90	1,720	1.97	410	1.50	210	1.65	270	1.92	390		
24	3.70	1,560	1.90	380	1.50	210	1.67	280	1.90	380		
25	3.55	1,440	1.82	349	1.50	210	1.85	355	1.90	380		
26	3.55	1,440	1.80	330	1.50	210	1.92	390	1.92	390		
27	3.65	1,520	1.75	310	1.47	200	2.05	455	2.00	430		
28	3.85	1,680	1.70	290	1.40	180	2.15	515				
29	3.95	1,760	1.70	290	1.40	180	2.15	515				
30	3.85	1,680	1.70	290	1.40	180	2.00	430				
31	3.85	1,680	1.67	280			2.00	480				

SESSIONAL PAPER No. 22e

## Monthly Discharge of Kettle River at Nicholson's Bridge for 1915.

(Drainage area, 2,180 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
March.....	690	170	300	0.14	0.16	18,400
April.....	5,220	720	2,928	1.24	1.50	174,000
May.....	6,060	4,040	5,521	2.53	2.92	339,000
June.....	8,000	1,460	2,603	1.19	1.32	155,000
July.....	2,880	1,440	2,050	0.94	1.08	126,000
August.....	1,600	280	683	0.61	0.26	42,000
September.....	270	180	225	0.10	0.11	12,400
October.....	515	165	268	0.12	0.14	16,500
November.....	420	230	681	0.17	0.19	22,700
The period.....	8,080	165	1,662	0.76	7.79	907,000

## KETTLE RIVER, AT CARSON.—(2049).

*Location.*—At Carson; Water District No. 5.

*Records Available.*—September 5 to December 31, 1913; January 1 to 22, February 25 to December 9, 1914; March 1 to November 30, 1915.

*Drainage Area.*—Three thousand and ten square miles.

*Gauge.*—Chain gauge on highway bridge, 4 miles from Grand Forks.

*Channel.*—Straight at measuring section; bed of stream, gravel and sand; control good.

*Discharge Measurements.*—Measurements are made from highway bridge. Six measurements made during 1914 and 1915 agree very well and cover the whole range up to 8,000 cubic feet per second.

*Winter Flow.*—Partial ice conditions prevail during December, January and February.

*Accuracy.*—Accuracy is considered good, and results should fall within 10 per cent.

## Discharge Measurements of Kettle River at Carson.

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1914							
May 19	C. E. Richardson.....	1,527	169	1,460	5.37	7.45	7,840
June 9	K. G. Chisholm.....	1,913	166	1,160	3.62	5.65	4,200
July 23	K. G. Chisholm.....	1,912	158	693	0.99	2.50	684
Aug. 24	K. G. Chisholm.....	1,913	120	560	3.95	1.70	221
1915							
Mar. 20	K. G. Chisholm.....	1,915	156	615	0.52	1.96	224
June 11	E. H. Tredcroft.....	1,922	162	1,022	4.20	4.98	4,300

NOTE.—All measurements are referred to the new gauge, established March 20, 1915.

Daily Gauge Height and Discharge of Kettle River at Carson for 1915.

(Drainage area, 3,010 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1					3.10	430	3.90	790	5.63	4,450	5.70	6,190
2					3.10	430	5.75	850	5.50	4,100	6.73	6,600
3					5.00	373	3.15	1,300	3.73	4,310	6.77	6,340
4					3.00	373	5.37	1,900	5.45	4,150	6.53	6,330
5					5.00	373	4.15	5,150	3.66	4,190	3.30	4,450
6					2.00	373	4.10	3,130	5.55	4,190	3.55	4,020
7					5.00	373	4.15	2,150	5.40	4,100	5.50	3,940
8					5.00	373	4.38	5,330	6.00	4,310	5.50	3,940
9					5.00	373	4.32	3,590	6.15	3,090	3.17	3,430
10					1.90	350	4.30	5,530	5.50	5,190	3.00	5,500
11					1.90	330	4.30	2,330	5.63	6,030	4.35	2,550
12					1.90	350	4.30	2,340	6.13	3,090	4.70	3,800
13					1.90	350	4.73	5,060	5.73	4,310	4.70	3,900
14					1.90	350	5.06	5,850	3.70	4,370	4.7	5,500
15					1.50	330	4.90	5,060	6.70	5,160	4.70	5,500
16					2.00	375	4.90	3,060	5.37	3,310	4.50	5,350
17					2.00	375	5.13	5,410	5.05	4,900	4.30	5,540
18					2.10	450	5.63	4,180	6.00	4,610	4.35	5,550
19					2.10	430	5.75	4,550	7.05	6,950	4.50	3,330
20					1.95	533	5.00	4,610	3.03	6,130	4.70	5,300
21					1.95	355	6.10	5,000	7.75	3,440	4.40	5,450
22					1.95	355	3.90	4,100	7.77	3,400	4.55	5,500
23					2.05	400	3.25	5,550	7.47	7,880	4.10	3,150
24					2.10	430	5.30	3,480	7.30	7,880	4.00	5,030
25					2.25	520	5.00	3,300	7.50	7,280	3.90	1,920
26					2.30	550	4.90	3,060	7.33	7,390	4.00	5,050
27					2.50	550	4.57	5,050	5.90	6,530	4.30	3,240
28					2.50	530	4.55	2,590	5.35	5,310	5.00	5,500
29					2.50	550	4.90	5,060	6.50	9,550	4.90	3,040
30					2.25	590	5.05	4,900	7.40	7,730	4.55	2,990
31					2.40	550			6.55	6,450		
	July.		August.		September.		October.		November.		December.	
1	4.5	5,550	4.13	5,130	2.15	450	1.90	320	3.40	650		
2	4.25	5,350	5.90	1,950	5.15	450	1.90	330	5.35	590		
3	4.05	3,080	5.55	1,550	2.15	450	1.95	350	2.50	555		
4	4.00	2,060	3.70	1,730	2.10	450	1.55	300	2.20	555		
5	4.00	5,030	3.55	1,550	2.10	450	1.95	550	2.55	520		
6	4.00	5,030	3.50	1,630	5.10	450	1.95	550		535		
7	4.50	5,340	3.45	1,450	5.00	575	1.90	520	5.50	535		
8	4.50	5,340	3.50	1,340	2.00	575	1.90	520	2.55	520		
9	4.50	5,550	5.50	1,540	1.55	545	1.90	320	2.50	490		
10	4.50	5,550	3.10	1,150	1.95	545	1.90	520	2.30	490		
11	4.50	5,550	5.00	1,070	1.95	345	1.90	550	2.50	490		
12	4.50	2,540	2.95	1,030	2.15	460	1.90	520	2.50	490		
13	4.15	2,150	2.90	990	2.00	575	5.00	575	2.00	575		
14	4.55	3,390	2.80	910	2.00	575	2.00	375	1.50	350		
15	4.40	3,450	2.70	830	2.00	575	5.00	575	Ice	330		
16	4.55	3,740	2.70	830	2.00	375	5.00	575	Ice	320		
17	5.57	5,550	2.60	760	2.00	375	2.10	450	2.00	575		
18	5.30	3,650	2.60	750	2.00	375	2.05	400	2.00	575		
19	5.00	3,500	2.60	750	2.55	520	2.05	400	3.05	400		
20	4.75	5,550	5.60	750	2.05	400	2.10	450	3.05	400		
21	4.50	2,580	5.50	650	2.05	400	2.10	430	5.05	400		
22	4.55	2,590	5.40	630	2.00	375	2.10	430	2.55	530		
23	4.15	5,150	2.40	620	2.00	375	5.15	450	2.55	530		
24	5.90	1,530	2.45	650	2.00	575	5.15	450	3.25	550		
25	5.50	1,930	2.50	590	1.95	345	3.15	460	3.50	555		
26	3.75	1,750	3.50	550		345	3.20	490	2.05	400		
27	5.90	1,530	3.30	550	1.95	545	2.40	520	Ice	400		
28	4.02	3,050	3.30	490	1.95	245	2.50	685		400		
29	4.52	3,550	2.30	490	1.95	245	5.45	650		400		
30	4.90	2,330	2.30	490	1.95	345	2.45	550		400		
31	4.15	2,135	2.15	450			2.50	525				

Monthly Discharge of Kettle River at Carson for 1915.

(Drainage area, 3,010 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
March.....	620	320	414	0.14	0.16	25,500
April.....	5,000	760	2,930	0.97	1.08	174,000
May.....	9,260	4,100	5,980	1.98	2.28	368,000
June.....	6,240	1,920	3,274	1.08	1.20	198,000
July.....	3,620	1,720	2,392	0.79	0.91	147,000
August.....	2,180	460	1,003	0.33	0.38	61,000
September.....	520	348	389	0.13	0.14	23,100
October.....	688	320	422	0.14	0.16	26,000
November.....	620	320	460	0.18	0.17	27,400
The period.....	9,860	320	1,918	0.63	6.43	1,047,000

MANSON CREEK.—(2074).

*Location.*—Section 14, township 23, range 10, west 6th meridian.

*Records Available.*—April 26 to September 30, 1915.

*Drainage Area.*—Twenty-four square miles.

*Gauge.*—Vertical staff read daily by H. Noakes.

*Channel.*—Rocks and gravel; current swift at high water.

*Discharge Measurements.*—Four measurements were taken during 1915. The two highest ones do not agree very well and are much below the highest stage for the season.

*Winter Flow.*—This stream is used for irrigation only, and no attempt is made to keep up the records during the winter.

*Accuracy.*—Rather poor except at low water. The stream is not considered of very great importance.

Discharge Measurements of Manson Creek 1 Mile from Mouth.

Date.	Engineer.	Meter No.	v. lth.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1915							
April 26	K. G. Chisholm	1,918	15	19.7	3.6	1.85	70.8
June 5	E. M. Dana	1,055	16	18.9	3.9	1.70	73.4
July 17	Archibald & Mason	1,055	16	18.6	3.2	1.58	59.8
Oct. 7	Tredcroft & Cline	1,915	11	5.1	1.1	0.80	5.3

7 GEORGE V, A. 1917

## Daily Gauge Height and Discharge of Manson Creek 1 Mile above Mouth for 1915.

(Drainage area, 24 square miles.)

Day.	April.		May.		June.		July.		August.		September.	
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec. ft.
1			1.9	79	1.8	78	1.4	40	1.1	20	0.8	8
2			1.8	78	1.7	97	1.9	33	1.1	20	0.9	9
3			1.9	99	1.7	97	1.2	33	1.1	20	0.8	8
4			1.9	99	1.7	97	1.3	98	1.1	20	0.8	9
5			1.9	99	1.8	78	1.9	99	1.1	20	0.8	8
6			9.0	101	1.8	79	1.9	98	1.1	20	0.9	9
7			9.0	101	1.8	79	1.9	99	1.0	18	0.8	9
8			9.0	101	1.7	97	1.9	29	1.0	18	0.9	9
9			2.1	119	1.9	99	1.2	28	1.0	19	0.9	9
10			2.9	129	1.9	98	1.2	98	1.0	19	0.9	8
11			2.0	101	1.9	49	1.3	33	1.0	18	0.8	8
12			1.99	99	1.8	49	1.9	29	0.9	10	0.8	9
13			1.90	89	1.4	40	1.9	99	0.9	10	0.8	9
14			2.10	119	1.8	49	1.9	98	0.9	10	0.8	9
15			9.20	129	1.9	99	1.38	88	0.9	10	0.8	8
16			1.90	89	1.9	49	1.9	89	0.9	10	0.9	8
17			1.90	99	1.88	99	1.7	87	0.9	10	0.8	9
18			1.90	89	1.7	97	1.9	88	0.9	10	0.8	9
19			2.0	101	1.9	89	1.9	49	0.9	10	0.9	8
20			2.19	119	1.9	99	1.4	40	0.9	10	0.9	8
21			2.1	119	1.8	49	1.4	40	0.9	10	0.9	8
22			2.1	112	1.8	49	1.4	40	0.9	10	0.9	8
23			1.9	89	1.4	40	1.9	99	0.9	10	0.8	8
24			1.9	89	1.4	40	1.9	29	0.9	10	0.9	8
25			1.9	89	1.4	40	1.2	26	0.8	9	0.8	9
26	1.9	99	1.9	99	1.7	97	1.9	29	0.8	9	0.9	8
27	1.9	78	1.9	79	1.6	98	1.2	98	0.8	9	0.9	9
28	1.9	89	9.1	119	1.9	98	1.9	99	0.9	8	0.8	9
29	1.9	89	1.9	89	1.8	49	1.2	26	0.8	9	0.8	9
30	1.9	89	1.9	79	1.4	40	1.2	98	0.8	8	0.8	8
31			1.8	78			1.2	26	0.9	9		

## Monthly Discharge of Manson Creek 1 Mile from Mouth for 1915.

(Drainage area, 24 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
May	129	79	97	4.04	4.89	8,960
June	83	40	88	2.49	2.70	3,450
July	89	26	37	1.54	1.77	2,270
August	20	5	12	0.50	0.98	740
September	5	5	5	0.21	0.23	300
The period	139	5	42	1.74	9.94	12,720

## NISKONLITH CREEK.—(2031).

Location.—Section 5, township 21, range 13, west 6th meridian.

Records Available.—September 1 to December 31, 1911; April 1 to September 13, 1912; May 1 to September 30, 1913; April 1 to December 11, 1914; April 1 to September 30, 1915.

Drainage Area.—Fifty square miles.

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**Gauge.**—Vertical staff gauge read semi-weekly by H. Hoffman.

**Channel.**—The stream bed is composed of large rocks and boulders.

**Discharge Measurements.**—Seven measurements made during 1911-12 and 1915 agree very well and cover all ranges of stage for 1915.

**Accuracy.**—Except for the fact that the gauge readings are not taken every day, the results should be quite reliable. However, there are diversions above the station which affect the flow for part of the irrigation season.

**Winter Flow.**—Ice conditions prevail during last half of December, January, February and March.

*Discharge Measurements of Niskonlith Creek near Mouth.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1911							
Aug. 20	C. G. Cline	1,046	10	9.2	0.8	0.66	4.4
F. 1912							
April 11	Cline & Dann	1,046	1	0.2	0.8	0.50	0.1
May 30	E. M. Dann	1,044	8	17.9	5.7	1.92	26.9
1915							
May 20	F. R. Archibald	1,673	11	7.2	1.2	0.85	8.8
June 2	E. M. Dann	1,065	10	6.7	1.3	0.85	8.5
July 14	Archibald & Mason	1,065	10	5.3	0.4	1.50	1.8
July 28	Mason & Archibald	1,065	10	3.2	0.6	0.54	1.8

*Daily Gauge Height and Discharge of Niskonlith Creek near Mouth for 1915.*  
(Drainage area, 50 square miles.)

Day.	April.		May.		June.		July.		August.		September.	
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	0.55	1.9			0.85	9.3						
2							0.50	1.1				
3			1.00	14.7					0.50	1.1	1.00	14.7
4					1.00	14.7						
5	0.55	1.9										
6							0.50	1.1	0.50	1.1		
7												
8			1.00	14.7	1.00	14.7					0.95	12.8
9	0.57	2.2					0.50	1.1				
10									0.70	5.0	0.97	15.6
11			1.00	14.7	1.10	18.8						
12	0.57	2.2										
13							0.50	1.1	0.70	5.0	0.92	11.7
14												
15			0.95	12.8	1.15	21.0						
16	0.52	1.4										
17							0.50	1.1	0.70	5.0	0.90	10.9
18	1.05	16.7	0.90	10.9	1.15	21.0						
19												
20							0.50	1.1	0.75	6.3		
21			0.90	10.9							0.90	10.9
22					1.15	21.0						
23	1.02	15.5					0.50	1.1				
24									0.70	5.0	0.90	10.9
25			0.90	10.9	1.15	21.0						
26	1.02	15.5										
27							0.50	1.1	1.00	14.7		
28			0.90	10.9							0.50	1.1
29					1.15	21.0						
30	1.00	14.7					0.50	1.1				
31									1.05	14.7		

NOTE.—Artificial storage and diversions above station.



## OKANAGAN RIVER, AT OKANAGAN FALLS.—(2088).

*Location.*—Three hundred feet above Okanagan Falls; Water District No. 4.

*Records Available.*—April 8 to December 31, 1914; at original station near Fairview; January 1 to December 31, 1915, at Okanagan Falls.

*Gauge.*—The gauging station was transferred on March 17, 1915, from its original location near Fairview to its present position above Okanagan Falls, on account of the shifting channel at the old station. Gauge readings for 1915, prior to the change, have been transferred to the new station. A standard vertical staff gauge six feet long has been installed and is read four or five times a week by A. S. Hatfield, stage driver.

*Channel.*—The bed of the stream at the gauge is composed of clean gravel and the current is moderately slow at all stages. An excellent control is formed by the brink of the falls.

*Discharge Measurements.*—Four meter measurements have been taken during 1915 and they cover the entire range of stage except between discharges of 500 and 1,000 cubic feet per second.

*Winter Flow.*—Open water conditions obtained all year round during 1915.

*Accuracy.*—The results should be quite reliable and within the limits of error indicated for the various months.

*Discharge Measurements of Okanagan River at Okanagan Falls.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1915							
Mar. 17	K. G. Chisholm	1,015	320	466	0.88	2.33	414
Mar. 26	K. G. Chisholm	1,015	328	467	0.86	2.37	402
April 11	K. G. Chisholm	1,015	328	486	0.96	2.80	468
June 7	E. H. Tredcroft	1,022	350	688	1.47	3.40	1,020



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Daily Gauge Height and Discharge of Okanagan River at Okanagan Falls for 1915.

(Drainage area, 2,000 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	.....	483	3.48	443	3.45	443	3.38	400	2.73	800	3.38	1,130
2	.....	433	3.48	443	3.43	443	3.40	420	.....	600	3.30	1,080
3	.....	433	3.43	443	3.48	443	3.40	420	3.78	800	3.30	1,080
4	3.55	492	3.43	443	3.48	443	.....	430	3.30	520	3.48	1,040
5	3.55	482	.....	443	.....	443	3.43	443	3.30	830	3.48	1,040
6	3.55	433	.....	443	.....	443	3.48	443	3.30	630	.....	1,040
7	3.55	433	.....	443	.....	443	3.45	443	2.50	830	3.40	1,010
8	.....	483	3.43	443	3.48	443	2.48	443	3.58	680	2.40	1,010
9	.....	433	3.43	443	3.48	443	3.45	443	.....	860	3.40	1,010
10	.....	330	3.48	443	3.48	443	3.30	488	3.98	730	3.33	870
11	2.60	830	3.48	443	3.48	443	.....	488	2.98	730	3.38	870
12	2.60	330	.....	443	.....	443	2.50	465	2.95	730	3.38	870
13	2.33	483	.....	443	.....	443	2.55	492	3.00	780	.....	870
14	3.55	483	.....	443	.....	443	3.35	492	3.00	780	3.30	840
15	.....	483	3.43	443	3.43	443	2.58	492	3.08	780	3.30	840
16	.....	482	3.43	443	3.48	443	2.80	830	.....	780	3.30	840
17	.....	483	3.43	443	2.40	430	2.80	830	2.10	810	3.30	940
18	3.38	492	3.40	430	3.40	430	2.50	830	3.15	840	2.30	840
19	2.58	492	.....	420	2.40	420	2.80	830	3.25	910	2.30	840
20	2.33	483	.....	420	2.40	420	2.50	820	3.40	1,010	.....	940
21	3.60	488	.....	420	.....	420	2.50	820	3.40	1,010	3.30	940
22	.....	488	3.40	420	2.40	420	2.68	815	3.45	1,040	3.30	940
23	.....	455	3.40	420	2.35	400	2.55	545	.....	1,040	3.38	910
24	.....	485	2.40	420	2.35	400	2.55	845	3.50	1,080	3.38	910
25	2.50	455	2.40	420	2.38	400	.....	845	2.50	1,060	3.38	910
26	2.80	465	.....	420	2.35	400	2.55	845	3.50	1,080	3.20	850
27	3.80	458	.....	430	3.35	400	2.70	870	2.50	1,080	.....	880
28	3.50	458	.....	420	.....	400	2.70	870	3.58	1,120	3.30	880
29	.....	488	.....	.....	3.38	400	2.70	870	3.60	1,150	3.38	910
30	.....	468	.....	.....	2.38	400	2.75	800	3.58	1,120	3.30	940
31	.....	468	.....	.....	2.38	400	.....	.....	1,120	.....	.....	.....

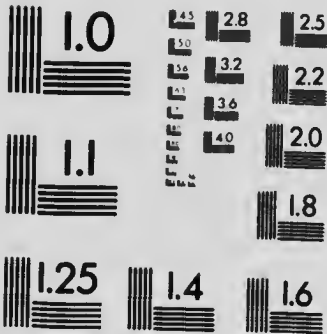
  

	July.		August.		September.		October.		November.		December.	
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.
1	3.35	810	.....	840	3.60	820	2.60	820	2.50	460	3.48	440
2	3.23	910	3.18	840	2.80	630	2.50	520	2.50	450	2.47	450
3	3.33	310	3.13	740	2.80	530	.....	510	3.52	470	2.47	480
4	.....	310	3.10	810	3.80	530	2.67	500	2.52	470	2.50	460
5	3.30	880	3.10	310	.....	670	2.57	800	3.52	470	.....	480
6	3.20	880	3.10	610	3.78	600	2.57	500	2.53	470	3.50	460
7	3.30	880	3.08	780	2.78	500	2.57	800	.....	470	2.50	480
8	3.13	840	.....	780	2.78	500	2.55	490	2.52	470	2.50	480
9	3.30	880	3.00	750	2.75	500	3.52	470	2.52	470	2.47	460
10	3.15	840	3.00	780	2.75	500	.....	470	2.50	460	2.47	430
11	.....	840	3.00	750	2.75	600	2.52	470	2.50	480	3.45	440
12	3.18	840	3.00	750	2.75	500	2.50	450	2.47	450	.....	440
13	3.30	880	3.00	750	2.70	570	2.50	450	2.42	430	2.45	440
14	3.18	840	3.98	720	2.55	845	2.50	460	.....	420	2.45	440
15	.....	840	.....	730	2.58	845	2.50	450	2.42	420	2.42	430
16	3.18	840	3.55	730	3.70	570	2.50	450	2.42	430	2.42	430
17	3.18	840	3.95	730	3.70	570	.....	460	2.42	430	2.40	430
18	.....	840	3.88	730	2.70	570	2.50	450	2.42	420	3.40	420
19	3.20	830	3.98	720	.....	570	2.50	460	2.47	450	2.40	420
20	3.30	880	3.95	720	2.55	845	2.50	460	2.47	480	2.40	430
21	3.20	880	3.95	720	2.55	845	2.50	460	.....	480	2.40	420
22	3.18	840	.....	720	2.65	845	2.80	460	2.47	480	2.37	410
23	3.18	840	2.98	720	2.58	845	3.50	450	2.47	480	2.37	410
24	3.18	840	2.90	690	2.50	820	.....	450	2.47	480	2.37	410
25	.....	840	3.90	690	.....	520	2.50	460	2.47	450	2.37	410
26	3.10	810	2.90	590	2.50	520	2.50	460	2.47	450	.....	405
27	3.10	610	2.90	590	2.60	520	2.50	460	2.47	450	2.35	400
28	3.10	310	2.88	650	2.60	520	2.50	450	.....	440	2.35	400
29	3.10	610	.....	550	2.50	520	2.50	450	2.45	440	2.35	400
30	3.20	650	2.65	560	2.50	520	2.50	450	2.45	440	2.35	400
31	3.15	540	2.85	660	.....	.....	.....	450	.....	.....	2.35	400



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Okanagan falls, Okanagan river.

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## Monthly Discharge of Okanagan River at Okanagan Falls for 1915.

(Drainage area, 3,000 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum	Minimum.	Mean	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January...	520	465	485	0.16	0.19	29,800
February...	442	420	433	0.14	0.15	24,000
March...	442	400	426	0.14	0.16	26,200
April...	600	400	497	0.16	0.18	29,600
May...	1,160	600	850	0.28	0.33	52,300
June...	1,120	880	966	0.32	0.36	57,500
July...	910	810	857	0.28	0.33	52,700
August...	840	660	737	0.25	0.29	45,300
September	630	520	570	0.19	0.21	33,900
October...	520	460	473	0.16	0.18	29,100
November...	470	430	451	0.15	0.17	26,800
December...	460	400	429	0.14	0.16	26,400
The year	1,160	400	598	0.20	2.71	433,600

## ROSS CREEK.—(2077).

*Location.*—Two miles from mouth; section 20, township 23, range 9, west 6th meridian.

*Records Available.*—April 27 to September 30, 1915.

*Drainage Area.*—Fifty-six square miles.

*Gauge.*—Vertical staff read daily by Jas. Tetlow.

*Channel.*—Rocks and gravel, deep pool at the gauge.

*Discharge Measurements.*—Four measurements made during 1915 define the rating curve between discharges of 180 and 240 and also at 7 cubic feet per second.

*Accuracy.*—"C" (on account of insufficient measurements at certain stages). This stream is not considered very important.

## Discharge Measurements of Ross Creek 2 Miles from Mouth.

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1915							
April 27	K. G. Chisholm		27	50	3.78	4.45	189
June 8	E. M. Dann	1,053	28	53	3.71	4.58	197
July 17	Archibald & V. J. Mason	1,055	20	48	4.70	4.70	227
Oct. 7	Tredcroft & Cline	1,915	20	18	0.36	2.95	7

## Daily Gauge Height and Discharge of Ross Creek 2 Miles from Mouth for 1915.

Day.	April.		May.		June.		July.		August.		September.	
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	.....	.....	4.5	190	4.5	245	4.0	125	2.7	54	2.0	11
2	.....	.....	4.5	210	4.7	225	4.0	125	3.5	72	5.0	11
3	.....	.....	4.7	225	4.5	210	3.9	110	3.5	72	2.0	11
4	.....	.....	4.7	225	4.5	210	3.8	97	5.5	72	.....	11
5	.....	.....	4.8	245	4.6	210	3.5	97	3.5	50	5.0	11
5	.....	.....	4.9	255	4.6	210	2.7	84	2.4	49	5.0	11
7	.....	.....	4.9	255	4.5	245	3.7	84	3.4	49	2.0	11
8	.....	.....	5.3	250	4.7	225	2.7	84	3.4	49	3.0	11
9	.....	.....	5.2	320	4.4	175	3.7	24	3.4	49	3.0	11
10	.....	.....	5.4	270	.....	170	2.5	72	3.3	39	3.0	11
11	.....	.....	5.1	305	4.3	155	3.8	97	5.3	59	2.0	11
12	.....	.....	4.9	255	4.3	165	2.9	110	3.3	39	3.0	11
13	.....	.....	4.5	245	4.4	175	4.0	125	2.5	39	5.0	11
14	.....	.....	5.0	285	4.5	210	4.2	150	3.2	29	2.2	29
15	.....	.....	5.2	520	4.5	210	4.8	245	3.2	29	5.2	29
15	.....	.....	4.9	255	4.7	225	5.1	305	3.2	29	5.1	20
17	.....	.....	4.8	245	4.7	225	4.8	245	3.2	29	2.0	11
18	.....	.....	4.8	245	4.4	175	4.5	210	3.2	29	3.0	11
19	.....	.....	5.1	305	4.3	155	4.4	175	3.3	29	3.0	11
20	.....	.....	5.2	330	4.4	175	4.3	155	3.2	29	3.1	20
21	.....	.....	5.2	330	4.3	155	4.2	150	3.2	29	5.1	20
22	.....	.....	5.1	305	4.2	150	4.1	135	3.2	29	5.0	11
22	.....	.....	5.0	285	4.1	135	4.0	125	3.1	20	3.0	11
24	.....	.....	5.0	285	4.1	135	2.9	110	3.1	20	3.0	11
25	.....	.....	5.1	305	4.0	125	3.9	110	3.1	20	5.0	11
25	.....	.....	5.0	285	4.1	135	3.8	97	3.1	20	3.0	11
27	4.2	155	4.9	255	4.3	155	3.8	97	3.0	11	3.0	11
28	4.7	225	5.1	502	4.2	155	3.9	110	3.0	11	5.0	11
29	4.8	245	5.2	330	4.2	150	3.8	97	3.0	11	3.0	11
30	4.9	255	5.0	285	4.2	150	3.7	84	3.0	11	3.0	11
31	.....	.....	4.8	245	.....	.....	3.7	84	3.0	11	.....	.....
	October.		November.		December.							
1	3.00	11	3.50	72	3.10	20	.....	.....	.....	.....	.....	.....
2	3.10	20	3.40	49	2.10	20	.....	.....	.....	.....	.....	.....
3	3.00	11	2.20	50	3.10	20	.....	.....	.....	.....	.....	.....
4	3.00	11	3.50	50	2.10	20	.....	.....	.....	.....	.....	.....
5	3.00	11	3.40	49	3.00	11	.....	.....	.....	.....	.....	.....
5	3.00	11	3.40	49	3.00	11	.....	.....	.....	.....	.....	.....
7	3.00	11	3.30	29	3.10	20	.....	.....	.....	.....	.....	.....
8	2.90	3	2.20	29	3.20	29	.....	.....	.....	.....	.....	.....
9	2.90	2	2.20	29	3.30	39	.....	.....	.....	.....	.....	.....
10	2.90	5	5.20	29	2.10	20	.....	.....	.....	.....	.....	.....
11	2.90	2	3.10	20	2.10	20	.....	.....	.....	.....	.....	.....
12	2.90	5	2.10	20	3.10	20	.....	.....	.....	.....	.....	.....
13	2.95	7	2.00	11	2.10	20	.....	.....	.....	.....	.....	.....
14	3.30	39	2.20	29	3.10	20	.....	.....	.....	.....	.....	.....
15	3.10	20	2.20	29	2.10	20	.....	.....	.....	.....	.....	.....
15	5.00	11	3.20	29	3.00	11	.....	.....	.....	.....	.....	.....
17	2.10	20	2.20	29	3.00	11	.....	.....	.....	.....	.....	.....
18	3.20	39	3.10	20	3.00	11	.....	.....	.....	.....	.....	.....
19	3.30	39	3.10	20	3.00	11	.....	.....	.....	.....	.....	.....
20	3.20	29	2.10	20	3.00	11	.....	.....	.....	.....	.....	.....
21	3.40	49	3.10	20	3.20	29	.....	.....	.....	.....	.....	.....
22	3.30	39	3.10	20	3.10	20	.....	.....	.....	.....	.....	.....
23	3.35	44	.....	20	3.10	20	.....	.....	.....	.....	.....	.....
24	3.40	49	3.20	29	3.00	11	.....	.....	.....	.....	.....	.....
25	3.40	49	3.20	29	3.00	11	.....	.....	.....	.....	.....	.....
26	3.80	97	3.10	20	3.00	11	.....	.....	.....	.....	.....	.....
27	3.60	72	3.10	20	3.00	11	.....	.....	.....	.....	.....	.....
28	3.50	72	3.10	20	2.00	11	.....	.....	.....	.....	.....	.....
29	3.50	72	3.10	20	3.00	11	.....	.....	.....	.....	.....	.....
30	3.50	50	3.10	20	3.10	20	.....	.....	.....	.....	.....	.....
31	3.70	54	.....	.....	3.00	11	.....	.....	.....	.....	.....	.....

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*Monthly Discharge of Ross Creek 2 Miles from Mouth for 1915.*

(Drainage area, 56 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mlie.	Depth in inches on Drainage area.	Total in acre-feet.
May.....	379	190	281	5.02	3.79	17,300
June.....	245	125	183	3.27	3.55	10,900
July.....	305	72	129	2.30	2.65	7,980
August.....	84	11	36	0.64	0.74	3,210
September.....	29	11	13	0.23	0.26	770
October.....	97	8	32	0.57	0.65	1,970
November.....	72	11	31	0.55	0.61	1,340
December.....	29	11	17	0.30	0.35	1,040
The period.....	370	8	90	1.61	14.71	43,960

## SCOTCH CREEK.—(2079).

*Location.*—Three miles from mouth; section 3, township 23, range 11, west 6th meridian; Water District No. 2.

*Records Available.*—April 27 to December 31, 1915.

*Drainage Area.*—Two hundred and forty-five square miles.

*Gauge.*—Standard vertical staff read three times a week by A. Stegel.

*Channel.*—Small boulders, current swift.

*Discharge Measurements.*—Five measurements made during 1915 define the rating curve for discharges between 800 and 1,300 and also for 100 cubic feet per second.

*Winter Flow.*—Ice conditions during winter months.

*Accuracy.*—"C" (on account of insufficient measurements at certain stages). This stream is not considered very important.

*Discharge Measurements of Scotch Creek 3 Miles from Mouth.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1915							
Mar. 4	K. G. Chisholm.	1,915	72	240	4.7	2.60	1,140
April 23	K. G. Chisholm	1,915	72	229	4.4	2.33	1,000
June 4	E. M. Dann.	1,055	83	217	4.0	2.28	860
July 16	Archibald & Mason.	1,055	83	264	4.6	2.80	1,200
Oct. 6	Tredcroft & Cline.	1,915	71	92	1.2	0.45	110

## Daily Gauge Height and Discharge of Scotch Creek 3 Miles above Mouth for 1915.

(Drainage area, 245 square miles.)

Day.	April.		May.		June.		July.		August.		September.	
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1				1,060	2.4	980		810	1.2	405		45
2			2.6	1,030		980		780		380		35
3				1,060		940		890	1.1	380	0.2	25
4			2.6	1,090	2.3	930	1.7	830		330		26
5				1,160		900		880		300	0.2	25
6				1,230	2.2	880	1.6	540	0.9	230		26
7			3.0	1,310	2.6	1,090		510		260	0.2	25
8				1,390	2.4	980		480	0.8	240		36
9			3.3	1,470		910	1.3	450		220		46
10				1,390		840		444	0.7	200	0.3	55
11			3.0	1,310	2.0	780	1.5	640		186		40
12				1,290		780		630		170	0.2	25
13				1,270	1.9	730	1.7	630	0.8	160		40
14			2.9	1,260		730		630		160	0.3	65
16				1,226	2.1	830	2.5	1,030	0.6	180		80
16			2.8	1,200		930	2.8	1,200		160		100
17				1,200	2.5	1,030	2.4	980	0.6	160	0.6	125
18			2.8	1,200	2.2	880		880		180		105
19				1,250		880	2.0	780		180	0.4	90
20				1,310	2.1	330		710	0.8	160		70
21			3.1	1,360		780		640		140	0.3	55
22				1,330	1.9	730	1.6	680	0.5	125		80
23			3.0	1,310		700		640		110		100
24				1,250		670		496	0.4	90	0.5	125
25			2.8	1,200	1.7	630	1.3	480		90		110
26				1,240	2.6	1,030		470		90	0.4	90
27	2.3	980		1,280	2.4	980	1.4	496	0.4	90		70
28		980	3.0	1,310		950		480		70	0.3	55
29		1,030		1,200	2.3	930		466	0.3	66		60
30	2.6	1,090	2.6	1,090		870	1.3	460		55		65
31				1,080				425	0.3	56		
	October.		November.		December.							
1	0.30	55		280		185						
2		70	0.80	240		110						
3	0.40	90		230	0.40	90						
4		90		215		90						
5	0.40	90	0.70	200	0.40	90						
6		80		180		90						
7		70	0.60	160	0.40	90						
8	0.30	55		140		80						
9		55	0.60	126		70						
10	0.30	55		100	0.30	55						
11		55		75		65						
12	0.30	55	0.30	65	0.30	65						
13		75		100		66						
14		100	0.60	160	0.30	55						
16	0.60	125		140		55						
16		110	0.80	125		65						
17	0.40	90		110	0.30	55						
18		125		100		90						
19	0.60	160	0.40	90	0.60	125						
20		175		105		90						
21		190	0.80	125	0.30	55						
22	0.70	200		105		55						
23		220	0.40	90		55						
24	0.80	240		90	0.30	55						
25		300		90		60						
28	1.10	360	0.40	90	Ice	50						
27		350		90		50						
28		335	0.40	90	Ice	50						
29	1.00	320		120		60						
30		320	0.80	160		60						
31	1.00	320			Ice	50						



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## Monthly Discharge of Scotch Creek 3 Miles from Mouth for 1915.

(Drainage area, 245 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
May.....	1,470	1,030	1,235	5.04	5.81	75,900
June.....	1,090	630	869	3.55	3.96	51,700
July.....	1,200	425	632	2.58	2.97	38,860
August.....	405	55	180	0.73	0.84	11,070
September.....	125	25	63	0.26	0.29	3,750
October.....	360	55	159	0.65	0.75	9,780
November.....	280	55	133	0.54	0.60	7,910
December.....	135	50	70	0.28	0.33	4,300
The period.....	1,470	50	417	1.70	15.55	203,270

## SEYMOUR RIVER.—(2061).

*Location.*—Near the head of Seymour Arm; Water District No. 2.

*Records Available.*—August 17 to December 11, 1914; March 8 to December 31, 1915.

*Drainage Area.*—Two hundred and fifty square miles.

*Gauge.*—Chain gauge suspended over river on a substantial pole; read daily during freshet period and three times a week during the rest of the season. F. G. Bergen, gauge reader.

*Channel.*—Rocks and gravel; water swift.

*Discharge Measurements.*—Made from cable car installed May 1, 1915; previous measurements from boat. Nine measurements during 1914 and 1915 agree very well and cover practically all stages except for discharge above 2,200 cubic feet per second.

*Winter Flow.*—Ice conditions obtain during the three winter months.

*Accuracy.*—"C." There was some trouble with the chain gauge; discharges above 2,200 cubic feet per second are somewhat uncertain.

## Discharge Measurements of Seymour River 2 Miles from Mouth.

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1914							
Aug. 15	Chisholm & Tredcroft	1,923	138	427	2.45	2.37	1,051
1915							
Mar. 17	F. R. Archibald	1,673	130	284	2.10	1.65	605
Mar. 11	K. G. Chisholm	1,915	107	471	3.56	3.22	1,680
May 13	K. G. Chisholm	1,915	109	568	3.60	3.65	2,040
June 9	E. M. Dann	1,055	111	571	3.56	3.67	2,040
June 10	E. M. Dann	1,055	108	495	3.21	3.25	1,590
July 18	Archibald & Mason	1,055	114	583	3.60	3.90	2,140
July 25	Archibald & Mason	1,055	104	497	3.02	3.04	1,610
Oct. 8	Tredcroft & Cline	1,915	88	294	1.44	1.22	425

## Daily Gauge Height and Discharge of Seymour River 2 Miles from Mouth for 1914.

(Drainage area, 350 square miles.)

Day.	August.		September.		October.		November.		December.		Gauge Height.	Discharge.
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.		
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.		
1				680		1,400		1,400				
2			1.7	680	8.2	1,820	3.3	1,710	1.7	830		
3				860		1,400		1,800				
4			1.3	680		1,200	2.7	1,220	1.8	840		
5				680	2.3	980		1,300				
6				680		800	3.3	1,320				
7			1.8	680	1.3	860		1,200	1.4	800		
8				660		860		1,000				
9			2.1	660	1.3	640	2.1	820	1.3	480		
10				740		370		320				
11			1.7	820		800	2.0	790	1.3	480		
12				600	1.7	820		760				
13				670		600	1.9	730	Ice			
14			1.8	840	1.6	380		700				
15				460		380		670				
16			1.2	420	1.8	880	1.7	620				
17	2.1	860		480		900		800				
18			1.8	940		1,300	1.8	380				
19	2.1	850		820	3.2	1,680		640				
20				700		1,300	1.4	800				
21	2.3	960	2.0	790	2.2	910		800				
22				760		800		600				
23			1.9	720	1.9	730	1.4	600				
24	2.2	910		760		900		340				
25			2.0	790		1,000	1.8	380				
26	2.1	880		1,000	2.8	1,180		700				
27				1,300		900	2.1	680				
28	2.1	850	3.2	1,320	1.7	880		800				
29				1,400		700		870				
30			2.8	1,110	2.0	790	1.9	720				
31	1.9	730				1,100						

## Monthly Discharge of Seymour River 2 Miles from Mouth for 1914.

(Drainage area, 350 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
September.....	1,630	420	760	3.04	3.39	45,200
October.....	1,630	640	903	3.61	4.16	55,500
November.....	1,710	600	814	3.26	3.64	48,400
The period.....	1,710	420	828	3.30	11.19	149,100

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Daily Gauge Height and Discharge of Seymour River 2 Miles from Mouth for 1915.

(Drainage area, 250 square miles.)

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.	
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	
1							2.25	920	3.30	1,710	3.50	1,950	
2							4.85	2,950		1,750	3.90	2,190	
3							4.95	3,030	3.40	1,790	3.70	2,030	
4							4.05	2,310	3.60	1,950	3.75	2,070	
5							3.75	2,070	4.00	2,270	3.90	2,190	
6								1,890	4.60	2,750		2,700	
7								1,710	4.90	2,990		3,240	
8					0.75	305		1,570	5.20	3,240	5.20	2,700	
9						325		1,430		3,260	3.90	2,190	
10					0.95	350		1,400	5.30	3,320	3.25	1,570	
11						360		1,375		2,990		1,550	
12					1.05	375	2.85	1,350	3.80	2,110	3.20	1,630	
13						430		1,150	3.30	1,710		1,660	
14						500	2.30	950	3.60	1,950	3.70	2,030	
15					1.55	560		1,550	4.20	2,430		2,550	
16						680		3.85	2,150		2,100	5.75	3,690
17					1.65	690		2,175	3.50	1,670		3,140	
18					1.80	680		2,200	4.00	2,270	4.40	2,590	
19					1.90	730	3.95	2,230	4.80	2,910	4.00	2,270	
20						790		2,330	5.30	3,320		2,390	
21						850	4.20	2,430	5.20	3,240	4.30	2,510	
22					2.20	910		1,900	4.90	2,990	6.90	2,190	
23					2.50	1,110	2.95	1,430		2,960	3.60	1,950	
24					2.45	1,070		1,500		2,930	3.80	2,110	
25						900		1,550	4.80	2,910		2,550	
26					1.90	730	3.15	1,590	4.40	2,590	5.50	3,570	
27						680		1,470	4.10	2,350		3,150	
28						630	2.65	1,350	5.00	3,070	4.60	2,750	
29					1.60	580		1,850	4.60	2,750	4.00	2,270	
30					1.75	650	4.05	2,310	4.00	2,270	3.70	3,030	
31					1.85	700			3.80	2,110			

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	3.35	2,150		1,500	2.20	910		680	2.10	850	0.90	340
2	3.70	2,030	3.10	1,550		910		630		820	0.90	340
3	3.50	1,950		1,510	2.20	910		580	2.00	790	0.90	340
4	3.50	1,950	3.00	1,470		850	1.50	540	1.90	730	0.90	340
5	3.75	2,070		1,380		790		530	1.70	630		340
6	3.80	2,110		1,280	1.90	730	1.45	520		600	0.95	350
7		2,110	2.60	1,180		560		470		570		370
8	3.80	2,110		1,070		600	1.20	420	1.50	540	1.10	390
9		2,130	2.30	960	1.50	540		420		530		400
10	3.85	2,150		940		450		420	1.45	520	1.20	420
11		3,170	2.20	910	1.00	360	1.20	420		510		415
12	3.90	2,190		950		390		400		510		410
13		2,390		1,000	1.20	420	1.10	390	1.40	500	1.15	405
14	4.40	2,590	2.40	1,040		520		430		490		330
15		3,050		1,000	1.70	630	1.35	480	1.35	480	1.00	350
16	5.55	3,520	2.30	960		750		580		490	1.05	375
17		3,070		1,140	2.30	960		480		500		360
18		2,630	2.80	1,320		840	2.00	790	1.40	500	0.90	640
19	3.90	2,190		1,250		710	2.25	930		500		650
20		2,130	2.60	1,180	1.60	580	2.10	850	1.40	500	1.00	360
21	3.75	2,070		1,100		520		830		490		345
22		1,930		1,030	1.30	460	2.05	820	1.35	480	0.85	330
23	3.40	1,790	2.30	960		440		920		450		335
24		1,710		940	1.20	420		1,020	1.20	420	0.90	340
25		1,630	2.20	910		410	2.50	1,110		400		330
26	3.10	1,550		820		400		1,070	1.10	390		310
27		1,530	1.90	730	1.10	390	2.40	1,040	1.05	370	0.65	290
28	3.05	1,510		790	1.20	420		1,050		350	0.80	330
29		1,490		850	1.25	440	2.45	1,070	0.90	340		310
30	3.00	1,470	2.20	910	1.90	730		960	0.85	330	0.70	300
31		1,500		910				900			0.60	280

**Monthly Discharge of Seymour River 2 Miles from Mouth for 1915.**  
(Drainage area, 260 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
April.....	0.020	960	1,008	7.61	6.04	107,400
May.....	3,620	1,710	3,646	10.20	11.76	166,900
June.....	3,690	1,630	2,413	6.66	10.77	146,600
July.....	6,820	1,470	3,093	8.67	9.64	126,700
August.....	1,660	730	1,062	4.62	4.96	66,600
September.....	910	680	606	3.43	2.70	66,000
October.....	1,110	680	706	2.63	3.36	46,630
November.....	650	380	519	2.06	3.63	30,680
December.....	420	280	351	1.40	1.61	21,660
The period.....	3,690	280	1,347	6.39	55.06	734,690

**SHUSWAP RIVER, AT ENDERBY.—(2034).**

*Location.*—Section 26, township 18, range 9, west of 6th meridian.

*Records Available.*—August 25 to November 10, 1911; March 1 to December 31, 1912; April 1 to December 31, 1913; January 1 to December 31, 1914; January 1 to December 31, 1915.

*Drainage Area.*—One thousand six hundred and fifty square miles.

*Gauge.*—A standard vertical staff gauge situated on highway bridge, and read daily by D. Mowat.

*Channel.*—The channel is straight for 100 yards at section. The rise and fall of the river each year is about 10 feet. Control is good.

*Winter Conditions.*—During 1915 the river remained open throughout the winter except for a few days in January, February and December.

*Discharge Measurements.*—Thirteen well-distributed measurements have been obtained during 1911-12-13 and -15. Measurements were made from boat except during high water, when they were made from bridge.

*Accuracy.*—"A" and "B." The returns are considered to be quite accurate for practically all stages.

*Discharge Measurements of Shuswap River at Enderby.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec	Feet.	Sec. ft.
1911							
Aug. 25	C. E. Richardson.....	1,048	212	2,120	0.9	4.08	1,950
Oct. 7	C. E. Richardson.....	1,048	205	1,890	0.7	3.15	1,000
1912							
Feb. 28	C. E. Richardson.....	1,047	180	1,680	0.4	1.90	540
May 20	C. E. Richardson.....	1,048	283	4,970	2.3	10.65	11,400
June 16	C. E. Richardson.....	1,048	355	5,550	3.4	12.06	13,100
July 13	C. E. Richardson.....	1,048	275	3,760	1.7	7.34	6,720
Sept. 7	C. E. Richardson.....	1,084	245	3,160	1.1	4.60	3,280
Oct. 5	C. E. Richardson.....	1,055	210	1,710	1.0	3.55	2,220
1913							
May 13	C. E. Richardson.....	1,048	250	2,570	2.2	7.55	5,120
June 5	J. A. Elliott.....	1,672	328	7,016	2.6	14.60	15,760
Aug. 26	J. A. Elliott.....	1,672	230	2,630	1.2	5.20	2,730
1915							
April 3	K. G. Chisholm.....	1,915	212	1,890	1.1	4.03	1,950
Sept. 8	A. L. McNaughton.....	1,915	208	1,900	0.9	3.70	1,690

BRITISH COLUMBIA HYDROMETRIC SURVEY

SESSIONAL PAPER No. 26a

Daily Gauge Height and Discharge of Shuswap River at Enderby for 1915.

(Drainage area, 1,660 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	2.70	1,000	Ice	750	2.00	630	3.10	1,260	7.1	5,770	10.00	10,100
2	2.70	1,000		750	2.00	630	3.40	1,480	7.2	5,910	9.80	9,830
3	2.70	1,000	2.20	730	2.00	630	4.00	2,000	7.3	3,040	3.80	3,530
4	2.70	1,000	2.10	660	2.00	630	4.00	2,000	7.35	8,180	9.50	9,370
5	2.55	870	2.10	630	2.00	630	4.00	2,000	7.40	8,200	9.40	9,210
6	2.60	940	2.10	650	2.00	630	4.05	2,050	7.55	6,420	9.20	8,900
7	2.60	940	2.10	680	2.00	630	4.15	2,150	7.70	6,650	9.10	8,750
8	2.60	940	2.05	650	2.00	630	4.40	2,400	7.90	6,780	9.10	8,750
9	2.30	940	2.05	650	2.00	630	4.40	2,400	6.20	7,400	8.95	8,820
10	2.80	940	2.05	650	2.00	630	4.45	2,450	8.55	7,920	8.35	8,370
11	2.55	910	2.05	650	2.05	650	4.60	2,600	8.70	8,150	8.65	8,070
12	2.55	910	2.05	650	2.05	650	4.70	2,700	8.85	8,370	8.45	7,770
13	2.55	910	2.05	350	2.05	650	5.95	2,970	8.95	6,520	8.20	7,400
14	2.60	880	2.05	650	2.10	680	5.10	3,150	9.10	8,750	3.20	7,400
15	2.50	880	2.05	650	2.25	755	5.20	3,270	9.45	9,290	8.15	7,820
16	2.50	880	2.00	630	2.50	880	5.30	3,390	9.55	9,450	8.05	7,170
17	2.60	880	2.00	630	2.45	850	5.55	3,690	9.55	9,450	8.15	7,320
18	2.45	850	2.00	630	2.45	850	5.75	3,960	9.40	9,210	8.20	7,400
19	2.40	830	2.00	630	2.55	910	5.00	4,280	9.55	9,450	8.20	7,400
20	2.40	830	2.00	630	2.55	910	6.80	4,600	9.35	9,130	8.25	7,470
21	2.40	830	2.00	630	2.60	940	6.40	4.82	9.90	9,980	8.20	7,400
22	2.40	830	2.00	630	2.70	1,000	6.50	4.95	10.25	10,500	8.15	7,320
23	2.40	830	2.00	630	2.85	1,090	6.60	5.09	10.25	10,500	8.05	7,170
24	2.40	830	2.00	630	2.95	1,150	6.50	5.05	10.30	10,600	8.10	7,250
25	2.40	830	2.00	630	2.90	1,120	6.60	5.09	10.40	10,700	8.15	7,320
26	2.40	830	2.00	630	2.85	1,090	6.65	5.150	10.40	10,700	8.55	7,920
27	2.40	830	2.00	630	2.60	1,060	6.65	5.150	10.20	10,500	8.65	9,120
28	Ice	800	2.00	630	2.80	1,060	6.60	5.090	10.40	10,700	9.55	9,450
29		800			2.70	1,090	6.70	5.220	10.35	10,700	9.75	9,750
30		800			2.90	1,120	7.00	5,630	10.20	10,500	9.80	9,830
31		800			3.00	1,190			10.20	10,500		
Day.	July.		August.		September.		October.		November.		December.	
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1		9,700	7.00	5,630	4.05	2,050	3.20	1,340	3.90	1,910	3.05	1,220
2	9.60	9,530	6.90	5,490	4.00	2,000	3.25	1,370	3.90	1,910	3.05	1,190
3	9.40	9,210	6.90	5,490	3.95	1,980	3.20	1,340	3.90	1,910	3.00	1,190
4	9.20	8,900	6.70	5,220	3.90	1,910	3.20	1,340	3.90	1,910	3.00	1,190
5	9.00	8,600	6.60	5,090	3.85	1,860	3.20	1,340	3.90	1,910	2.97	1,190
6	8.90	8,450	6.50	4,960	3.80	1,820	3.15	1,300	3.90	1,910	2.95	1,190
7	8.70	8,180	6.25	4,610	3.80	1,820	3.15	1,300	3.87	1,890	2.90	1,120
8	8.50	7,850	6.10	4,410	3.70	1,730	3.15	1,300	3.85	1,860	2.90	1,120
9	8.30	7,550	6.00	4,280	3.70	1,730	3.10	1,260	3.80	1,820	2.90	1,120
10	8.15	7,320	5.90	4,150	3.65	1,680	3.10	1,260	3.80	1,820	2.90	1,120
11	8.10	7,250	5.80	4,020	3.60	1,640	3.10	1,260	3.75	1,770	2.90	1,120
12	8.05	7,170	5.60	3,760	3.55	1,600	3.10	1,260	3.70	1,730	2.85	1,120
13	8.10	7,250	5.40	3,510	3.55	1,600	3.10	1,260	3.60	1,640	2.80	1,120
14	8.10	7,250	5.35	3,450	3.55	1,600	3.20	1,340	3.60	1,640	2.80	1,120
15	8.30	7,580	5.25	3,330	3.60	1,640	3.20	1,340	3.60	1,640	2.80	1,120
16	8.90	8,450	5.10	3,150	3.65	1,680	3.15	1,300	3.57	1,620	2.77	1,040
17	8.95	8,520	5.05	3,090	3.55	1,600	3.15	1,300	3.50	1,560	2.75	1,030
18	9.05	8,670	5.00	3,030	3.55	1,600	3.20	1,340	3.50	1,560	2.70	1,000
19	9.25	8,970	4.95	2,970	3.50	1,560	3.25	1,370	3.47	1,540	2.70	1,000
20	9.10	8,750	4.90	2,920	3.50	1,560	3.22	1,350	3.40	1,480	2.70	1,000
21	9.00	8,600	4.80	2,810	3.45	1,520	3.30	1,410	3.49	1,480	2.70	1,000
22	8.85	8,370	4.70	2,700	3.40	1,480	3.30	1,410	3.40	1,480	2.70	1,000
23	8.65	8,070	4.60	2,600	3.35	1,440	3.35	1,440	3.35	1,440	2.67	980
24	8.50	7,850	4.55	2,500	3.35	1,440		1,500	3.30	1,410	2.62	950
25	8.25	7,470	4.50	2,500	3.35	1,440	3.50	1,560	3.25	1,370	2.70	1,000
26	7.90	7,020	4.40	2,400	3.35	1,440	3.57	1,620	3.20	1,340	2.65	970
27	7.90	6,950	4.35	2,350	3.30	1,410	3.70	1,730	3.20	1,340	2.60	940
28	7.75	6,720	4.30	2,300	3.25	1,370	3.70	1,730	3.15	1,300	2.65	970
29	7.50	6,350	4.20	2,200	3.20	1,340	3.72	1,750	3.17	1,320	2.65	970
30	7.20	5,910	4.20	2,200	3.20	1,340	3.77	1,790	3.10	1,260	Ice	950
31	7.20	5,910	4.10	2,100			3.80	1,820			Ice	950

*Monthly Discharge of Shuswap River at Enderby for 1915.*

(Drainage area, 1,880 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet
January	1,000	800	885	0.54	0.82	54,400
February	780	630	885	0.40	0.41	36,400
March	1,190	630	876	0.51	0.58	51,400
April	5,630	1,260	3,835	2.14	2.39	210,000
May	10,700	5,770	8,737	4.29	6.10	537,000
June	10,100	7,170	8,386	5.00	5.58	493,000
July	9,700	5,910	7,881	4.77	5.50	485,000
August	5,630	2,100	3,523	2.14	2.47	217,000
September	2,080	1,340	1,628	0.88	1.10	96,900
October	1,820	1,240	1,420	0.86	0.99	87,300
November	1,910	1,350	1,526	0.98	1.09	96,700
December	1,220	940	1,086	0.54	0.74	54,900
The year	10,700	520	3,329	2.02	27.57	2,430,000

**SIMILKAMEEN RIVER.—(2054).**

*Location.*—Near Ashnola; Water District No. 4.

*Records Available.*—April 8 to December 31, 1914; January 1 to December 31, 1915.

*Drainage Area.*—Two thousand three hundred and twenty square miles.

*Gauge.*—Standard vertical staff gauge read by Harry Atherton, of Keremeos.

*Channel.*—Average width of channel at measuring section is about 210 feet. Channel is straight at the station. Bed of stream is very rocky and water turbulent even at low stages.

*Discharge Measurements.*—The gauge height discharge curve is very well rated by well-distributed meterings, except for very low stages (below 350 cubic feet per second).

*Winter Flow.*—Open water conditions obtained all winter during 1915, which was milder than usual.

*Accuracy.*—"B" and "C." Results should be quite reliable at practically all stages.

*Discharge Measurements of Similkameen River at Ashnola.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec. ft.
1914							
April 8	E. M. Dann	1,505	185	552	3.41	1.35	1,287
May 10	K. G. Chisholm	1,913	238	1,097	6.69	3.92	4,307
June 10	K. G. Chisholm	1,913	237	913	8.34	3.10	4,277
June 24	K. G. Chisholm	1,913	226	856	4.81	2.75	2,347
July 29	K. G. Chisholm	1,913	171	282	2.24	0.30	857
Aug. 30	K. G. Chisholm	1,913	155	261	1.38	-0.47	357
Nov. 23	K. G. Chisholm	1,673	175	375	2.08	0.20	754
1915							
April 5	K. G. Chisholm	1,915	183	550	3.97	1.40	1,209
June 5	E. H. Trederoff	1,923	228	729	4.90	2.50	3,645

BRITISH COLUMBIA HYDROMETRIC SURVEY

SESSIONAL PAPER No. 20a

Daily Gauge Height and Discharge of Similkameen River at Ashnola for 1915.

(Drainage area, 2,320 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	-0.33	420	-0.42	220	-0.50	350	0.07	700	1.97	2,530	2.47	3,330
2	-0.33	420	-0.75	230	-0.47	365	0.22	810	1.82	2,443	2.37	3,190
3	-0.40	400	-0.65	290	-0.47	365	1.00	1,500	1.37	2,307	2.33	3,010
4	-0.37	410	-0.55	330	-0.62	340	1.77	2,380	2.07	2,700	2.27	3,040
5	-0.30	450	-0.32	340	0.65	330	1.37	2,140	2.20	2,940	2.37	3,190
6	-0.30	480	-0.32	340	-0.55	330	1.37	1,900	2.45	3,320	2.30	3,330
7	-0.32	440	-0.62	340	0.57	320	1.40	1,940	2.92	4,230	2.35	3,490
8	-0.30	480	-0.85	330	-0.60	310	1.40	1,940	3.15	4,840	2.37	3,190
9	-0.37	410	-0.55	330	-0.60	310	1.22	1,730	3.12	4,750	2.05	2,730
10	-0.32	440	-0.55	330	-0.57	320	1.12	1,630	3.05	4,530	1.92	2,570
11	-0.37	415	-0.55	330	-0.65	330	1.22	1,730	2.60	3,550	1.97	2,330
12	-0.40	400	-0.60	310	-0.60	310	1.22	1,730	2.30	3,090	1.37	2,310
13	-0.40	400	-0.60	310	-0.55	330	1.30	2,420	2.22	2,970	1.35	2,480
14	-0.40	400	-0.60	310	-0.55	330	1.77	2,380	2.65	3,490	1.83	2,430
15	-0.42	390	-0.65	290	-0.52	340	1.75	2,360	2.62	3,440	1.33	2,430
16	-0.47	365	-0.62	300	-0.47	365	2.05	2,735	2.2	3,270	1.77	2,380
17	-0.50	330	-0.50	310	-0.50	400	2.62	3,620	2.22	2,970	1.74	2,340
18	-0.60	330	-0.60	310	-0.35	425	2.96	4,300	2.55	3,490	1.67	2,260
19	-0.50	330	-0.60	310	-0.35	425	3.15	4,540	3.12	4,750	1.33	2,120
20	-0.57	320	-0.60	210	-0.35	425	3.47	5,790	2.40	3,570	1.43	1,960
21	-0.50	310	-0.60	310	-0.35	425	2.80	3,970	3.37	5,480	1.32	1,540
22	-0.70	270	-0.67	280	-0.25	480	2.42	3,270	3.30	5,270	1.30	1,520
23	-0.70	270	-0.72	260	0.02	680	2.20	2,940	3.15	4,840	1.30	1,520
24	-0.70	270	-0.65	290	0.77	770	2.15	2,570	3.10	4,700	1.45	2,000
25	-0.70	270	-0.57	320	0.17	770	2.10	2,800	2.27	3,150	1.42	1,930
26	-0.80	230	-0.56	330	-0.05	680	2.20	2,940	2.97	4,350	1.37	1,790
27	-0.80	230	-0.60	310	-0.06	610	2.20	2,940	2.75	3,870	1.15	1,660
28	-0.90	190	-0.35	330	-0.05	610	2.12	2,530	2.07	4,620	1.15	1,350
29	-0.90	190	.....	.....	-0.62	630	2.30	3,090	2.97	4,350	1.10	1,500
30	-0.90	190	.....	.....	0.05	680	2.20	2,940	2.72	3,810	1.00	1,500
31	-0.90	190	.....	.....	0.10	720	.....	.....	2.47	3,350	.....	.....

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	0.97	1,470	1.15	1,660	-0.37	415	-0.43	375	0.40	930	-0.40	400
2	0.92	1,420	1.01	1,510	-0.22	440	-0.45	376	0.90	1,400	-0.33	435
3	0.87	1,370	0.85	1,350	-0.33	425	-0.40	400	0.70	1,210	-0.20	510
4	0.97	1,470	0.70	1,210	-0.35	425	-0.23	450	0.50	1,030	-0.10	570
5	1.02	1,520	0.57	1,090	-0.40	400	-0.20	510	0.52	1,050	-0.10	570
6	0.97	1,470	0.55	1,080	-0.72	260	-0.20	510	0.47	1,010	-0.15	540
7	0.97	1,470	0.38	930	-0.47	365	-0.20	510	0.40	950	-0.20	510
8	0.82	1,230	0.35	910	-0.47	365	-0.22	500	0.15	750	-0.20	510
9	0.67	1,180	0.32	890	-0.47	365	-0.25	480	0.15	750	-0.15	540
10	0.52	1,140	0.25	830	-0.37	415	-0.27	470	0.12	720	-0.17	530
11	0.50	1,035	0.12	720	-0.30	450	-0.35	425	0.05	580	-0.25	450
12	0.62	1,050	0.10	720	-0.27	470	-0.40	400	0.05	680	-0.25	480
13	0.55	1,080	0.07	700	-0.31	445	-0.40	400	-0.15	540	-0.25	480
14	0.81	1,310	0.02	660	-0.35	425	-0.32	440	-0.07	590	-0.22	500
15	1.20	1,710	0.00	640	-0.25	425	-0.15	540	0.00	540	-0.20	510
16	1.07	1,570	-0.05	610	-0.37	415	-0.20	510	0.02	660	-0.20	510
17	1.07	1,570	-0.02	630	-0.40	400	-0.25	480	0.05	680	-0.27	470
18	0.95	1,450	-0.05	610	-0.42	390	-0.20	450	0.05	680	-0.32	440
19	0.52	1,320	-0.05	610	-0.45	375	-0.30	450	0.30	640	-0.27	470
20	0.57	1,180	-0.11	570	-0.50	350	-0.23	480	-0.07	590	-0.25	450
21	0.55	1,080	-0.12	660	-0.50	350	0.25	830	-0.15	540	-0.22	500
22	0.52	1,050	-0.15	540	-0.61	345	0.10	720	-0.20	510	-0.25	450
23	0.47	1,010	-0.20	510	-0.51	345	0.10	720	-0.15	640	-0.25	450
24	0.42	970	-0.22	600	-0.38	420	0.02	660	-0.05	510	-0.30	480
25	0.35	910	-0.25	480	-0.32	620	0.10	720	-0.10	570	-0.30	450
26	0.45	990	-0.30	450	-0.31	445	0.20	870	-0.15	540	-0.30	450
27	0.67	1,180	-0.30	450	-0.35	425	1.05	1,550	-0.22	590	-0.30	450
28	0.60	1,050	-0.32	440	-0.40	400	1.16	1,650	-0.40	400	-0.32	440
29	0.92	1,420	-0.35	420	-0.37	415	1.40	1,940	-0.40	400	-0.35	425
30	1.00	1,500	-0.37	410	-0.35	425	1.00	1,500	-0.37	415	-0.47	355
31	1.07	1,570	-0.40	400	.....	.....	0.55	1,130	.....	.....	-0.52	340



## Monthly Discharge of Similkameen River at Ashnola for 1915.

(Drainage area, 3,320 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January.....	450	190	343	0.15	0.17	21,100
February.....	340	220	308	0.13	0.14	17,100
March.....	770	310	453	0.19	0.22	27,800
April.....	5,790	750	2,644	1.14	1.27	157,000
May.....	5,570	2,445	3,918	1.59	1.95	241,000
June.....	3,880	1,500	2,422	1.05	1.17	144,000
July.....	1,710	910	1,293	0.56	0.55	79,500
August.....	1,560	400	745	0.32	0.37	45,800
September.....	520	280	404	0.17	0.19	24,000
October.....	1,940	375	594	0.30	0.35	42,700
November.....	1,400	400	575	0.29	0.32	40,200
December.....	570	340	476	0.20	0.23	29,300
The year.....	5,790	190	1,198	0.52	7.03	859,500

## SOUTH SIMILKAMEEN RIVER.—(2063).

*Location.*—At Princeton; Water District No. 4.

*Records Available.*—May 14 to December 19, 1914; March 22 to November 30, 1915.

*Drainage Area.*—Four hundred and forty square miles.

*Gauge.*—Standard chain gauge situated on the highway bridgehead, by J. J. Priest, of Princeton.

*Channel.*—Average width of channel at measuring section is about 170 feet. Bed of stream is of gravel, with a few boulders, and not liable to shift.

*Discharge Measurements.*—Made with cable and 30-pound weight. The gauge height discharge curve is very well rated by well-distributed meterings.

*Winter Flow.*—Ice conditions existed during January, February and December.

*Accuracy.*—"A" and "B." Results should be quite reliable at all stages

## Discharge Measurements of South Similkameen River at Princeton.

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1914							
May 13	K. G. Chisholm.....	1,505	232	475	7.33	3.85	3,499
June 18	K. G. Chisholm.....	1,913	233	511	6.25	4.00	3,191
June 22	K. G. Chisholm.....	1,913	231	380	4.74	3.31	1,796
July 27	K. G. Chisholm.....	1,913	196	118	3.53	1.88	419
Sept. 2	K. G. Chisholm.....	1,913	112	145	1.02	1.23	11
Nov. 23	K. G. Chisholm.....	1,673	125	121	3.19	1.85	355
1916							
April 7	K. G. Chisholm.....	1,915	75	120	4.35	2.26	588
June 5	E. H. Tredcroft.....	1,923	104	573	2.56	2.92	1,497



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Daily Gauge Height and Discharge of South Similkameen River at Princeton for 1915.

(Drainage area, 440 square miles.)

Day.	January.		February.		March.		April.		May.		June.	
	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1							1.4	180	2.58	880	2.95	1,330
2							1.95	415	2.55	850	2.84	1,170
3							2.8	1,120	2.60	900	2.75	1,060
4							2.45	750	2.75	1,060	2.75	1,060
5							2.30	650	2.72	1,030	2.90	1,260
6												
7							2.20	560	2.82	1,150	3.15	1,630
8							2.25	590	3.15	1,630	3.12	1,560
9							2.20	560		1,760	2.90	1,260
10							2.10	500	3.30	1,890	2.82	1,150
							2.05	470	3.25	1,800	2.70	1,010
11												
12							2.20	560	3.04	1,460	2.70	1,010
13							2.30	630	2.92	1,290	2.65	960
14							2.55	850	2.86	1,200	2.60	900
15							2.45	750	3.10	1,550	2.70	1,010
							2.45	750	2.98	1,370	2.70	1,010
16												
17							2.6	900	2.82	1,150	2.66	990
18							2.92	1,290	2.84	1,170	2.64	940
19							2.05	1,470	3.17	1,660	2.55	850
20							3.20	1,710	3.50	2,270	2.42	730
							6.15	1,630	3.45	2,170	2.34	660
21												
22							3.1	1,550	3.35	1,980	2.64	660
23					1.4	180	2.95	1,330	6.35	1,980	2.35	670
24					1.4	180	2.9	1,260	3.25	1,800	2.36	690
25					1.5	210	2.8	1,120	3.20	1,710	2.52	820
					1.4	180	2.75	1,060	6.18	1,660	2.40	710
26												
27					1.55	165	2.75	1,060	3.15	1,660	2.32	640
28					1.35	165	2.75	1,060	5.00	1,400	2.16	550
29					1.65	165	2.68	990	3.60	1,890	2.10	500
30					1.32	155	2.70	1,010	3.10	1,550	2.10	500
31					1.32	155	2.75	1,080	3.00	1,400	2.15	530
					1.35	165			3.00	1,400		

Day.	July.		August.		September.		October.		November.		December.	
	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.
1	2.16	550	2.00	440	1.30	150	1.25	135	1.82	350		
2	2.20	560	1.94	410	1.30	150	1.22	125	1.80	340		
3	2.20	560	1.94	410	1.34	160	1.30	150	1.80	340		
4	2.20	560	1.68	350	1.50	150	1.42	185	1.85	365		
5	2.15	530	1.60	340	1.30	150	1.50	210	1.85	365		
6	2.14	520	1.76	520	1.30	150	1.50	210	1.60	340		
7	2.00	440	1.72	300	1.25	135	1.48	205	1.80	340		
8	1.96	420	1.65	270	1.20	120	1.45	195	1.75	315		
9	1.92	400	1.62	260	1.17	115	1.40	180	1.70	290		
10	1.66	360	1.56	240	1.25	135	1.40	180	1.65	270		
11	1.80	340	1.55	230	1.40	180	1.30	150	1.60	250		
12	1.76	620	1.52	220	1.40	180	1.65	165	1.40	180		
13	1.80	540	1.50	210	1.38	170	1.35	165	1.30	150		
14	1.90	390	1.50	210	1.35	165	1.35	165	1.40	180		
15	1.95	415	1.46	200	1.30	150	1.40	160	1.50	210		
16	1.92	400	1.45	195	1.25	135	1.40	180	1.60	250		
17	1.88	380	1.54	225	1.20	120	1.35	165	1.65	270		
18	1.66	360	1.50	210	1.22	125	1.35	165	1.65	270		
19	1.85	365	1.48	200	1.20	120	1.40	180	1.65	270		
20	1.82	350	1.48	200	1.08	98	1.40	180	1.65	270		
21	1.82	350	1.46	200	1.10	100	1.45	195	1.65	270		
22	1.75	315	1.46	200	1.20	120	1.45	195	1.65	270		
23	1.72	300	1.40	160	1.25	135	1.50	210	1.65	270		
24	1.68	280	1.66	170	1.27	140	1.55	260	1.65	270		
25	1.70	290	1.38	170	1.45	195	1.60	250	1.65	270		
26	1.75	315	1.35	165	1.34	160	1.65	270	1.65	270		
27	1.82	350	1.32	155	1.30	150	1.80	540	1.65	270		
28	1.66	360	1.30	150	1.25	135	2.00	440	1.65	270		
29	1.95	415	1.30	150	1.25	135	2.15	530	1.65	270		
30	2.05	470	1.30	150	1.25	135	1.96	430	1.65	270		
31	2.22	570	1.30	150			1.85	365				

*Monthly Discharge of South Similkameen River at Princeton for 1915.*

(Drainage area, 440 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
April .....	1,710	180	927	2.10	2.24	55,200
May .....	2,270	850	1,505	3.42	3.94	92,500
June .....	1,620	500	928	2.10	2.24	55,200
July .....	570	280	407	0.92	1.07	25,000
August .....	440	150	326	0.74	0.82	14,500
September .....	180	98	142	0.32	0.36	8,450
October .....	520	125	222	0.51	0.59	12,700
November .....	265	150	277	0.63	0.70	18,500
The period .....	2,270	98	521	1.22	11.98	281,080

SESSIONAL PAPER No. 25a

## SOUTH THOMPSON RIVER, AT CHASE.—(2042).

*Location.*—Section 35, township 21, range 13, west 6th meridian.

*Records Available.*—April 22 to July 31, 1911; April 10 to December 31, 1912; April 12 to December 31, 1913; January 1 to 27, March 24 to December 31, 1914; January 1 to December 31, 1915.

*Drainage Area*—Seven thousand square miles.

*Gauge.*—A vertical staff gauge is read daily by Mr. W. H. Spencer of the Adams River Lumber Company, Chase, B.C.

*Channel.*—Above the measuring section river broadens out into Little Shuswap lake. Below section, river is straight for 200 yards.

*Discharge Measurements.*—Twenty well-distributed measurements have been made during 1911-12-13-14-15. Measurements are made from cable and boat.

*Winter Conditions.*—The Thompson, at Chase, remains partially open throughout the year except during severe winters.

*Accuracy.*—"A." The accuracy of returns is considered to be very high for all stages.

## Discharge Measurements of South Thompson River at Chase.

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1911							
Oct. 30	C. E. Richardson	1,048	415	4,450	1.30	3.46	5,780
1912							
Mar. 1	C. E. Richardson	1,047	397	3,710	0.68	1.95	2,380
May 18	C. E. Richardson	1,048	465	6,490	3.03	8.25	19,600
June 13	C. E. Richardson	1,048	465	7,190	4.29	9.91	30,800
June 21	C. E. Richardson	1,048	495	7,600	4.46	10.75	33,800
July 24	C. E. Richardson	1,048	465	6,200	3.18	7.75	19,600
Sept. 5	C. E. Richardson	1,049	445	5,180	2.25	5.73	11,600
1913							
May 12	Richardson & Elliott	1,048	460	5,780	2.26	6.25	13,100
June 10	H. J. E. Keys	1,057	500	8,390	4.50	12.27	38,100
July 7	H. J. E. Keys	1,057	500	7,850	4.10	10.75	32,400
Oct. 22	K. G. Chisholm	1,085	420	4,380	1.51	4.37	6,630
1914							
Mar. 31	Dann & Chisholm	1,505	358	3,610	0.77	2.58	2,790
1915							
Feb. 24	E. H. Tredcroft	1,923	374	3,630	0.69	2.20	2,510
April 20	K. G. Chisholm	1,915	420	4,570	1.70	4.89	7,800
May 20	F. R. Archibald	1,673	515	7,050	3.35	8.50	23,600
June 11	E. M. Dann	1,055	490	7,000	3.49	8.98	24,400
July 3	Tredcroft & McNaughton	1,915	499	5,630	4.02	8.60	22,600
July 13	Tredcroft & McNaughton	1,915	.....	.....	.....	7.75	21,100
July 15	Archibald & Mason	1,055	488	6,630	3.09	8.35	20,500
July 26	Archibald & Mason	1,055	489	6,680	3.42	8.46	22,870

NOTE.—All measurements are referred to new gauge installed March 24th, 1914.

## Daily Gauge Height and Discharge of South Thompson River at Chase for 1915.

(Drainage area, 7,000 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	3.5	4,200	2.6	2,850	2.2	2,510	2.6	2,850	6.0	12,000	9.3	28,300
2	3.5	4,200	2.6	2,850	2.2	2,510	2.7	2,960	6.0	12,000	9.8	26,300
3	3.4	4,010	2.6	2,850	2.2	2,510	2.8	3,080	6.1	12,400	9.2	25,900
4	3.4	4,010	2.6	2,850	2.2	2,510	2.9	3,210	6.2	12,800	9.2	25,900
5	3.4	4,010	2.6	2,850	2.2	2,510	3.1	3,560	6.4	13,600	9.2	25,900
6	3.3	3,830	2.6	2,850	2.2	2,510	3.2	3,660	6.4	13,600	9.2	25,900
7	3.3	3,830	2.6	2,850	2.2	2,510	3.4	4,010	6.5	14,000	9.2	25,900
8	3.3	3,830	2.6	2,850	2.2	2,510	3.5	4,200	6.7	14,800	9.2	25,900
9	3.3	3,830	2.5	2,750	2.2	2,510	3.6	4,400	6.9	15,700	9.1	25,400
10	3.3	3,830	2.5	2,750	2.2	2,510	3.7	4,610	7.1	16,500	9.1	25,400
11	3.3	3,880	2.4	2,670	2.2	2,510	3.8	4,830	7.3	17,400	9.0	25,000
12	3.3	3,830	2.4	2,670	2.2	2,510	3.9	5,060	7.4	17,800	8.9	24,500
13	3.3	3,830	2.4	2,670	2.2	2,510	4.0	5,300	7.6	18,700	8.8	24,000
14	3.2	3,660	2.4	2,670	2.2	2,510	4.0	5,300	7.7	19,100	8.7	23,600
15	3.2	3,660	2.4	2,670	2.2	2,510	4.1	5,560	7.9	20,000	8.8	23,100
16	3.1	3,500	2.4	2,670	2.2	2,510	4.2	5,830	8.0	20,500	8.8	23,100
17	3.1	3,500	2.4	2,670	2.2	2,510	4.4	6,400	8.2	21,300	8.5	22,700
18	3.1	3,500	2.4	2,670	2.2	2,510	4.5	6,700	8.2	21,300	8.6	23,100
19	3.0	3,350	2.3	2,590	2.2	2,510	4.7	7,310	8.3	21,800	8.6	23,100
20	3.0	3,350	2.3	2,590	2.2	2,510	4.8	7,820	8.5	22,700	8.5	22,700
21	3.0	3,350	2.3	2,590	2.3	2,590	5.0	8,250	8.7	23,600	8.5	22,700
22	2.9	3,210	2.3	2,590	2.3	2,590	5.2	8,900	8.9	24,500	8.4	22,200
23	2.8	3,080	2.3	2,590	2.3	2,590	5.3	9,250	.....	25,000	8.8	21,800
24	2.8	3,080	2.3	2,590	2.3	2,590	5.4	9,550	.....	25,500	8.2	21,300
25	2.8	3,080	2.3	2,590	2.4	2,870	5.5	10,000	9.2	25,900	8.2	21,300
26	2.8	3,080	2.3	2,590	2.4	2,670	5.5	10,000	9.2	25,900	8.2	21,300
27	2.7	2,960	2.3	2,590	2.4	2,870	5.6	10,400	9.3	26,300	8.2	21,300
28	2.7	2,960	2.8	2,590	2.5	2,750	5.7	10,750	9.3	26,300	8.4	22,200
29	2.7	2,960	.....	.....	2.5	2,750	5.7	10,750	9.3	26,300	8.5	22,700
30	2.7	2,960	.....	.....	2.5	2,750	5.8	11,200	9.4	26,800	8.5	22,700
31	2.7	2,960	.....	.....	2.6	2,850	.....	.....	9.4	26,800	.....	.....
Day.	July.		August.		September.		October.		November.		December.	
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	8.6	23,100	8.0	20,500	5.5	10,000	4.15	5,700	4.00	5,300	3.80	4,400
2	8.6	23,100	7.9	20,000	5.4	9,650	4.10	5,560	4.00	5,300	3.80	4,400
3	8.6	23,100	7.8	19,600	5.4	9,650	4.05	5,430	4.00	5,300	3.80	4,400
4	8.6	23,100	7.7	19,100	5.4	9,650	4.00	5,300	4.00	5,300	3.60	4,400
5	8.6	23,100	7.6	18,700	5.3	9,250	4.00	5,300	4.00	5,300	3.80	4,400
6	8.5	22,700	7.5	18,300	5.2	8,900	4.00	5,300	4.00	5,300	3.80	4,400
7	8.5	22,700	7.4	17,800	5.2	8,900	4.00	5,300	4.00	5,300	3.50	4,200
8	8.5	22,700	7.2	17,000	5.0	8,250	4.00	5,300	4.00	5,300	3.50	4,200
9	8.4	22,200	7.1	16,500	5.0	8,250	3.90	5,060	3.95	5,180	3.50	4,200
10	8.3	21,800	7.1	16,500	4.9	7,930	3.90	5,060	3.90	5,060	3.50	4,200
11	8.3	21,800	6.9	15,700	4.8	7,620	3.90	5,060	3.90	5,060	3.50	4,200
12	8.3	21,800	6.8	15,300	4.7	7,310	3.85	4,940	3.90	5,060	3.50	4,200
13	8.2	21,300	6.7	14,800	4.6	7,000	3.80	4,830	3.90	5,060	3.50	4,200
14	8.2	21,300	6.7	14,800	4.6	7,000	3.80	4,830	3.90	5,060	3.50	4,200
15	8.3	21,800	6.6	14,400	4.5	6,700	3.80	4,830	3.90	5,060	3.50	4,200
16	8.4	22,200	6.5	14,000	4.5	6,700	3.80	4,830	3.90	5,060	3.50	4,200
17	8.5	22,700	6.4	13,600	4.5	6,700	3.80	4,830	3.90	5,060	3.50	4,200
18	8.6	23,100	6.3	13,200	4.5	6,700	3.80	4,830	3.90	5,060	3.50	4,200
19	8.6	23,100	6.3	13,200	4.5	6,700	3.80	4,830	3.90	5,060	3.50	4,200
20	8.6	23,100	6.2	12,800	4.5	6,700	3.80	4,830	3.90	5,060	3.50	4,200
21	8.6	23,100	6.2	12,800	4.5	6,700	3.80	4,830	3.90	5,060	3.50	4,200
22	8.6	23,100	6.1	12,400	4.5	6,700	3.80	4,830	3.80	4,830	3.50	4,200
23	8.6	23,100	6.1	12,400	4.5	6,700	3.80	4,830	3.80	4,830	3.50	4,200
24	8.6	23,100	6.0	12,000	4.5	6,700	3.80	4,830	3.80	4,830	3.50	4,200
25	8.5	22,700	5.9	11,600	4.4	6,400	3.80	4,830	3.80	4,830	3.50	4,200
26	8.5	22,700	5.9	11,600	4.4	6,400	3.80	4,830	3.70	4,610	3.40	4,000
27	8.4	22,200	5.6	11,200	4.3	6,110	3.85	4,940	3.70	4,610	3.40	4,000
28	8.4	22,200	5.8	11,200	4.3	6,110	3.90	5,060	3.70	4,610	3.40	4,000
29	8.8	21,800	5.7	10,750	4.3	6,110	3.90	5,080	3.70	4,610	3.40	4,000
30	8.2	21,300	5.8	10,400	4.2	5,830	3.90	5,080	3.70	4,610	3.30	3,850
31	8.1	20,900	5.8	10,400	.....	.....	4.00	5,300	.....	.....	3.30	3,850

SESSIONAL PAPER No. 25a

*Monthly Discharge of South Thompson River at Chase for 1915.*

(Drainage area, 7,000 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January .....	4,290	2,960	3,525	0.50	0.58	217,000
February .....	2,850	2,590	2,700	0.39	0.40	150,000
March .....	2,850	2,510	2,570	0.37	0.42	158,000
April .....	11,200	2,850	6,518	0.93	1.04	358,000
May .....	26,800	12,000	20,029	2.86	3.30	1,231,000
June .....	26,300	21,300	23,770	3.40	3.79	1,414,000
July .....	23,100	20,900	22,450	3.20	3.69	1,380,000
August .....	20,500	10,400	14,600	2.08	2.40	898,000
September .....	10,000	5,830	7,445	1.06	1.18	443,000
October .....	5,700	4,830	5,045	0.72	0.83	310,000
November .....	5,300	4,610	5,020	0.72	0.80	299,000
December .....	4,400	3,830	4,100	0.60	0.69	258,000
The year .....	26,800	2,510	9,822	1.40	19.12	7,146,000

## TULAMEEN RIVER.—(2062).

*Location.*—At Coalmont; Water District No. 4.

*Records Available.*—May 15 to October 3, 1914; April 11 to December 31, 1915.

*Drainage Area.*—Four hundred square miles.

*Gauge.*—Chain gauge. Brass jack chain and 3-pound sash weight on downstream side of bridge at measuring section, read by J. J. Currie.

*Channel.*—Straight for about 700 feet at measuring section. Bed of stream of clean gravel and permanent. Average width about 100 feet.

*Discharge Measurements.*—Eight discharge measurements made during 1914 and 1915 agree very well indeed and cover all stages.

*Winter Flow.*—No winter records have been made. Ice conditions prevail on this river during the latter part of December, January and February.

*Accuracy.*—"B." Results should be fairly reliable. The only disturbing element was some trouble with the chain gauge.



Tulameen river. Gauging station at highway bridge.

*Discharge Measurements of Tulameen River at Coalmont.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec-ft.
1914							
May 14	K. G. Chisholm	1,505	143	601	8.82	6.91	5,300
June 14	K. G. Chisholm	1,913	118	387	4.60	5.38	1,778
June 19	K. G. Chisholm	1,913	118	333	3.84	4.98	1,277
July 26	K. G. Chisholm	1,913	80	130	1.05	3.01	137
Sept. 4	K. G. Chisholm	1,913	99	95	0.41	2.58	59
Nov. 25	K. G. Chisholm	1,673	102	151	1.73	3.51	319
1915							
April 9	K. G. Chisholm	1,915	120	257	3.21	4.33	825
June 3	E. H. Tredcroft	1,923	110	205	2.50	3.88	598

NOTE.—All measurements are referred to datum of new gauge installed April 9th, 1915 in same section as old gauge and 2.88 feet lower.

SESSIONAL PAPER No. 26a

Daily Gauge Height and Discharge of Tulameen Creek at Coalmont for 1915.

(Drainage area, 400 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1									4.55	940	4.55	600
2									4.40	840	4.00	370
3									4.45	870	3.90	310
4									4.60	950	4.75	1,130
5									4.89	1,150	4.55	1,130
6												
7									4.95	1,300	4.65	1,040
8									4.90	1,250	4.63	1,000
9									5.00	1,350	4.58	970
10									4.90	1,250	4.55	950
11									4.75	1,100	4.18	590
12							4.35	900	4.80	1,150	4.05	520
13							4.50	910	4.70	1,060	3.58	500
14							4.40	840	4.60	980	3.78	450
15							4.40	840	4.55	940	3.58	330
16							4.60	980	4.50	950	3.53	375
17							4.50	910	4.50	910	3.55	350
18							4.40	840	4.40	840	3.48	300
19							4.60	980	4.40	840	3.55	335
20							4.75	1,100	4.50	910	3.48	300
21							4.80	1,150	4.60	980	3.35	350
22							4.85	1,200	4.65	1,030	5.43	280
23							4.90	1,250	4.50	910	3.48	300
24							4.80	1,150	4.40	840	3.63	325
25							4.85	1,200	4.40	840	3.58	350
26							4.80	1,150	4.30	770	3.53	335
27							4.85	1,300	4.15	660	3.48	500
28							4.80	1,150	4.10	630	3.38	250
29							4.60	980	4.30	770	5.28	233
30							4.60	980	4.45	870	3.83	240
31							4.55	940	4.20	700	5.38	223
									4.00	570		

	July.		August.		September.		October.		November.		December.	
1	3.25	325	2.78	80	3.58	50	2.63	50	4.33	790	3.98	135
2	5.25	210	2.88	105	3.55	50	2.68	60	4.13	650	3.08	165
3	3.18	195	2.88	105	3.68	60	2.68	60	3.88	500	3.08	165
4	3.18	195	2.93	120	2.65	30	2.73	70	3.88	500	3.08	165
5	3.23	210	2.88	105	2.55	50	3.78	80	3.88	500	3.08	165
6	3.18	195	2.88	105	2.58	60	2.78	80	3.78	450	3.18	193
7	3.23	210	2.78	80	2.68	60	2.78	80	3.68	400	3.18	195
8	3.18	195	3.78	80	2.53	50	2.83	92	3.88	350	3.18	195
9	3.13	180	2.78	80	2.68	60	2.88	105	3.48	500	3.18	195
10	3.05	135	2.73	70	2.68	60	2.73	70	3.48	500	3.28	225
11	3.08	150	2.78	80	2.68	60	2.73	70	3.38	260	3.28	225
12	2.98	135	3.73	70	2.63	50	2.88	105	3.38	260	3.23	210
13	3.08	165	2.78	80	2.63	50	2.78	80	3.38	260	3.23	210
14	3.18	195	2.78	80	2.63	50	3.43	280	3.38	260	3.23	210
15	3.18	195	2.78	80	2.58	42	3.43	280	3.38	260	3.23	210
16	3.25	210	3.78	80	2.58	42	3.08	165	3.33	240	3.18	195
17	3.15	195	2.88	105	2.63	50	3.08	165	3.38	260	3.18	195
18	3.13	180	2.78	80	2.63	50	3.08	165	3.33	240	3.13	180
19	3.08	165	2.73	70	2.68	60	3.23	210	3.33	240	3.13	180
20	2.98	135	3.78	80	2.78	80	3.68	375	3.28	225	3.13	180
21	2.98	135	2.78	80	2.78	80	3.58	350	3.28	225	3.18	195
22	2.93	120	2.78	80	2.78	80	3.48	300	3.28	225	3.18	195
23	2.98	120	2.73	70	2.98	105	3.43	280	3.38	260	3.13	180
24	2.88	105	2.68	60	2.78	80	3.38	260	3.38	260	3.13	180
25	2.78	80	2.68	60	2.73	70	3.68	400	3.08	165	3.13	180
26	2.95	135	2.63	50	2.63	50	3.38	350	3.18	195	Ice	160
27	2.88	105	2.73	70	2.68	60	4.53	930	3.28	225		160
28	2.78	80	2.73	70	2.63	50	5.48	1,930	3.28	225		160
29	2.58	105	2.68	60	2.63	50	4.58	970	3.18	195		160
30	2.98	135	2.68	60	2.63	50	4.23	720	2.98	135		160
31	2.88	105	2.68	60			4.43	850				160

*Monthly Discharge of Tulameen River at Coalmont for 1915.*

(Drainage area, 400 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
May.....	1,550	570	942	2.35	2.71	57,900
June.....	1,150	225	309	1.27	1.42	30,300
July.....	225	80	160	0.40	0.48	9,800
August.....	120	60	80	0.20	0.23	4,900
September.....	105	42	59	0.15	0.17	3,800
October.....	1,950	80	329	0.82	0.94	20,200
November.....	790	135	312	0.78	0.87	18,600
December.....	225	135	183	0.46	0.53	11,300
The period.....	1,930	42	322	0.80	7.33	158,500

TWENTYMILE CREEK.—(2081).

*Location.*—Above diversion to the Nickel Plate gold mine power house and four miles from Hedley; Water District No. 4.

*Records Available.*—April 20 to September 30, 1915; also a few meter measurements in 1913 and 1914.

*Drainage Area.*—One hundred and twenty square miles.

*Gauge.*—Standard staff gauge read three times a week.

*Channel.*—Gravel and boulders; permanent control.

*Discharge Measurements.*—Six measurements made during 1913-14-15 agree very well and cover the whole range of stage fairly well except for discharges above 250 cubic feet per second.

*Winter Flow.*—Ice conditions during the winter months.

*Accuracy.*—"C" and "D." Gauge readings only every other day; no measurements above 250 nor between 50 and 130 cubic feet per second.

*Discharge Measurements of Twentymile Creek above Intake.*

Date.	Engineer.	Meter No.	Width.	Area of Section	Mean Velocity.	Gauge Height.	Discharge
			Feet.	Sq. ft.	Ft. per sec.	Feet	Sec. ft.
1913 Nov 5	Dann & Chisholm.....	1,505	25	33	3.95	0.70	13
1914 June 12	K. G. Chisholm.....	1,913	27	75	3.16	2.60	23
June 23	K. G. Chisholm.....	1,913	37	58	2.40	2.00	140
July 28	K. G. Chisholm.....	1,913	24	30	1.02	0.89	30
Aug. 31	K. G. Chisholm.....	1,913	24	22	0.83	0.59	12
1915 April 10	K. G. Chisholm.....	1,915	28	35	1.21	1.10	4



SESSIONAL PAPER No. 20a

Daily Gauge Height and Discharge of Twentymile Creek above Intake for 1915.

(Drainage area, 120 square miles.)

Day.	April.		May.		June.		July.		August.		September.	
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec. ft.
1			2.3	165								
2				150	3.2	235	1.5	76		95	0.9	37
3			2.0	135		320		67	1.3	76		24
4				180	3.0	300	1.3	87		71	0.8	21
5			3.6	230		320	1.5	86	1.4	66		24
6										56	0.9	27
7				300	3.2	335		86	1.4	56		27
8			2.3	180		375	1.6	86		63	0.9	37
9				200	3.6	415		65	1.3	37		34
10			2.6	330		450	1.6	86		57	1.1	41
				230	3.3	353		91	1.2	57		37
11												
12			3.5	230		330	1.7	97		53	1.0	34
13				200	3.0	300		103	1.2	49		34
14			2.3	180		300	1.5	110		49	1.0	34
15				200	3.4	300		115	1.2	49		30
			3.6	230		280	1.9	120		49	0.9	37
16				260								
17				300	2.8	265		100	1.2	49		30
18			3.0	300		250	1.5	75		41	1.0	34
19				330	2.6	230		51	1.0	34		30
20	1.75	105		355		220	1.6	86		41	0.9	27
				355	2.5	310		81	1.2	49		27
31		90	3.3	355		170	1.5	76		49	0.9	27
22	1.5	76		330	2.0	135		71	1.2	49		34
23		90	3.0	300		140	1.4	66		41	1.1	41
24	1.75	105		260	2.1	150		80	1.0	34		37
25		105	2.5	230		110	1.7	97		37	1.0	34
26	1.75	105		240	1.5	76		110	1.1	41		30
27		115	2.7	245		76	1.9	120		44	0.9	27
28	3.0	135		240	1.5	76		125	1.2	49		27
29		135	2.6	230		70	2.0	135		41	0.9	27
30	3.0	135		250	1.4	66		120	1.0	34		27
31			2.8	255			1.8	110		30		

Monthly Discharge of Twentymile Creek above Intake for 1915.

(Drainage area, 120 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in Inches on Drainage area.	Total in acre-feet.
May	355	135	241	2.00	2.31	14,800
June	450	66	240	2.00	2.23	14,300
July	135	57	93	0.77	0.89	5,720
August	95	30	51	0.43	0.43	3,140
September	41	21	30	0.25	0.28	1,780
The period	450	21	131	1.09	6.20	39,740

## ASHCROFT DISTRICT.

## BARNES CREEK.—(2001).

*Location.*—Section 23, township 20, range 24, west 6th meridian.

*Records Available.*—April 26 to September 14, 1912; May 1 to December 14, 1913; April 1 to December 8, 1914; April 1 to September 30, 1915.

*Drainage Area.*—Thirty-eight square miles.

*Gauge.*—Standard vertical staff gauge, graduated in feet and tenths, and read daily by G. Crossley.

*Channel.*—Channel straight at measuring section. Velocity medium. Bed of stream permanent.

*Discharge Measurements.*—Seven measurements made during 1913-14-15 cover all stages but the peak of the freshet, and agree fairly well.

*Winter Flow.*—Ice conditions prevail on this stream during January, February and March.

*Accuracy.*—"C" and "D." Fairly good except for discharges above 50 cubic feet per second.

*Discharge Measurements of Barnes Creek above Barnes Lake.*

Date	Engineer	Meter No.	Width		Mean Velocity.		Gauge Height.	Discharge
			Feet	Sq. ft	Ft. per sec.	Feet.		
1913								
May 2	K. G. Chisholm	1,055	10.0	5.0	1.05	0.43	5.3	
June 13	K. G. Chisholm	1,055	9.0	4.9	1.16	0.45	5.7	
Aug. 14	K. G. Chisholm	1,055	7.5	3.7	1.09	0.40	4.1	
1914								
July 6	C. B. Corbould	1,915	8.0	4.0	0.75	0.35	3.0	
1915								
Mar. 31	F. R. Archibald	1,673	10.0	3.4	1.12	0.45	3.9	
May 3	F. R. Archibald	1,673	12.5	7.6	2.01	0.72	15.4	
Aug. 21	A. L. McNaughton	1,915	6.5	5.0	0.90	0.47	4.5	

SESSIONAL PAPER No. 25c

Daily Gauge Height and Discharge of Barnes Creek above Barnes Lake for 1915.  
(Drainage area, 28 square miles.)

Day.	April.		May.		June.		July.		August.		September.	
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	0.45	5.0	0.70	15.0	0.70	15.0	0.60	9.5	0.60	9.5	0.40	4.0
2	0.47	5.4	0.70	15.0	0.70	15.0	0.60	9.5	0.60	9.5	0.40	4.0
3	0.53	7.1	0.73	17.4	0.70	15.0	0.60	9.5	0.55	7.7	0.40	4.0
4	0.53	7.7	0.75	19.0	0.70	15.0	0.60	9.5	0.50	6.0	0.40	4.0
5	0.55	7.7	0.75	19.0	0.65	12.7	0.52	6.7	0.50	6.0	0.40	4.0
6	0.55	7.7	0.77	20.6	0.60	9.5	0.52	6.7	0.45	5.0	0.40	4.0
7	0.55	7.7	0.80	23.0	0.55	7.7	0.50	6.0	0.40	4.0	0.40	4.0
8	0.55	7.7	0.80	23.0	0.52	6.7	0.50	6.0	0.40	4.0	0.40	4.0
9	0.55	7.7	0.77	21.0	0.55	7.7	0.50	6.0	0.40	4.0	0.35	3.2
10	0.50	5.0	0.75	19.0	0.55	7.7	0.45	5.0	0.40	4.0	0.35	3.2
11	0.50	5.0	0.75	19.0	0.55	7.7	0.45	5.0	0.40	4.0	0.35	3.2
12	0.53	7.1	0.72	16.6	0.50	6.0	0.40	4.0	0.40	4.0	0.35	3.2
13	0.52	10.8	0.77	21.0	0.40	4.0	0.47	5.4	0.35	3.2	0.35	3.2
14	0.55	7.7	0.80	23.0	0.40	4.0	0.52	6.7	0.35	3.2	0.35	3.2
15	0.52	7.1	0.85	28.0	0.40	4.0	0.65	12.7	0.35	3.2	0.35	3.2
16	0.57	8.4	0.85	28.0	0.40	4.0	0.60	9.5	0.35	3.2	0.35	3.2
17	0.63	11.4	0.85	28.0	0.77	21.0	0.60	9.5	0.35	3.2	0.35	3.2
18	0.67	14.0	0.85	28.0	0.73	17.4	0.55	7.7	0.40	4.0	0.35	3.2
19	0.75	19.0	1.60	120.0	0.70	15.0	0.50	5.0	0.40	4.0	0.35	3.2
20	0.80	23.0	1.75	135.0	0.70	15.0	0.50	6.0	0.40	4.0	0.35	3.2
21	0.80	23.0	1.65	125.0	0.52	10.8	0.50	5.0	0.40	4.0	0.35	3.2
22	0.77	20.6	1.45	100.0	0.60	9.5	0.45	5.0	0.40	4.0	0.35	3.2
23	0.70	15.0	1.35	88.0	0.50	9.5	0.40	4.0	0.40	4.0	0.35	3.2
24	0.70	15.0	1.25	75.0	0.55	7.7	0.40	4.0	0.40	4.0	0.35	3.2
25	0.70	15.0	1.15	63.0	0.50	6.0	0.40	4.0	0.40	4.0	0.35	3.2
26	0.70	15.0	1.05	5.0	0.65	12.7	0.40	4.0	0.40	4.0	0.35	3.2
27	0.70	15.0	0.95	39.0	0.85	28.0	0.50	6.0	0.40	4.0	0.35	3.2
28	0.70	15.0	0.90	33.0	0.87	30.0	0.60	9.5	0.40	4.0	0.35	3.2
29	0.72	16.6	0.90	33.0	0.77	21.0	0.70	15.0	0.40	4.0	0.35	3.2
30	0.70	15.0	0.85	28.0	0.70	15.0	0.70	15.0	0.40	4.0	0.35	3.2
31	0.70	15.0	0.79	21.0	0.70	15.0	0.70	15.0	0.40	4.0	0.35	3.2

Monthly Discharge of Barnes Creek above Barnes Lake for 1915.  
(Drainage area, 28 square miles.)

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF.	
	Maximum	Minimum	Mean	Per square mile	Depth in inches on Drainage area.	Total in acre-feet.
April	23.0	5.0	11.6	0.30	0.34	590
May	135.0	15.0	41.7	1.10	1.27	2,560
June	30.0	4.0	12.0	0.32	0.35	714
July	15.0	4.0	7.6	0.20	0.23	467
August	9.5	3.2	4.4	0.12	0.14	277
September	4.0	3.2	3.4	0.09	0.10	303
The period	135.0	3.2	20.1	0.35	2.43	4,910

BEAVER CREEK.—(2069).

Location.—Five miles above Nicola lake; Water District No. 3.

Records Available.—June 12 to September 30, 1915; station only partly rated as yet.

Drainage Area.—Eighty-three square miles.

Gauge.—Standard vertical staff read daily by D. Anderson.

Channel.—Rocks and gravel, water swift at high stages, control should be permanent.

*Discharge Measurements.*—Three measurements made during 1915 do not cover the higher stages (above 21 cubic feet per second), and no attempt has been made to complete these for this report. After another year's field work it should be possible to make use of these higher gauge readings if there is no shift in the channel.

*Winter Flow.*—Ice conditions exist during the three winter months.

*Accuracy.*—"B." The discharges which have been completed should be fairly reliable.

*Discharge Measurements of Beaver Creek 3 Miles from Mouth.*

Date.	Engineer	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1915							
June 11	A. L. McNaughton	1,915	13.0	22	0.75	1.24	16.4
July 27	A. L. McNaughton	1,915	13.5	12	0.72	1.10	8.9
Dec. 17	McNaughton & Ullne	1,915	14.0	6	0.60	0.80	3.5

*Daily Gauge Height and Discharge of Beaver Creek 3 Miles from Mouth for 1915.*

(Drainage area, 83 square miles.)

Day.	June.		July.		August.		September.		Gauge Height.	Discharge.	Gauge Height.	Discharge.
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.				
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.				
1			1.70			12.5	0.92	4.8				
2			1.60		1.15	11.3	0.90	4.5				
3			1.60		1.15	11.3	0.87	4.2				
4			1.50		1.10	8.9	0.85	4.0				
5			1.45		1.05	7.6	0.82	3.6				
6			1.40		1.00	6.2	0.85	4.0				
7			1.35		0.95	5.3	0.85	4.0				
8			1.30	21.0	1.00	6.2	0.90	4.5				
9			1.45		1.00	6.2	0.87	4.2				
10			1.40		0.97	5.7	0.85	4.0				
11			1.30	21.0	1.00	6.2	0.85	4.0				
12	1.25	17.4	1.30	21.0	0.97	5.7	0.85	4.0				
13	1.32		1.25	17.4	0.95	5.3	0.87	4.2				
14	1.30	21.0	1.30	21.0	0.92	4.8	0.87	4.2				
15	1.30	21.0	1.30	21.0	0.90	4.5	0.85	4.0				
16	1.30	17.4	1.30	21.0	0.90	4.5	0.85	4.0				
17	1.55		1.30	21.0	0.90	4.5	0.82	3.6				
18	1.80		1.30	21.0	0.87	4.2	0.85	4.0				
19	1.77		1.25	17.4	0.90	4.5	0.82	3.6				
20	1.85		1.20	13.8	0.87	4.2	0.85	4.0				
21	1.65		1.15	11.3	0.87	4.2	0.82	3.6				
22	1.65		1.10	8.9	0.87	4.2	0.90	4.5				
23	1.60		1.10	8.9	0.87	4.2	0.87	4.2				
24	1.65		1.07	8.1	0.85	4.0	0.85	4.0				
25	1.70		1.05	7.6	0.90	4.5	0.85	4.0				
26	1.75		1.30	21.0	0.87	4.2	0.82	3.6				
27	2.00		1.10	8.9	0.85	4.0	0.82	3.6				
28	2.00		1.15	11.3	0.85	4.0	0.80	3.5				
29	1.90		1.10	8.9	0.85	4.0	0.80	3.5				
30	1.80		1.10	8.9	0.85	4.0	0.82	3.6				
31			1.20	13.8	0.85	4.0						

NOTE.—Discharge curve not yet defined above gauge height 1.3.

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## Monthly Discharge of Beaver Creek 3 Miles from Mouth for 1915.

(Drainage area, 82 square miles.)

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF	
	Maximum	Minimum	Mean	Per square mile	Depth in inches on Drainage area.	Total in acre-feet.
August	12.5	4.0	5.5	0.07	0.06	345
September	4.8	3.5	4.0	0.05	0.06	328
The period	12.5	3.5	4.8	0.06	0.14	673

## BONAPARTE RIVER. —(2003).

*Location.*—Section 18, township 21, range 24, west 6th meridian.

*Records Available.*—June 10 to November 6, 1911; March 25 to December 22, 1912; March 30 to December 31, 1913; January 1 to December 9, 1914; February 20 to December 25, 1915.

*Drainage Area.*—Two thousand square miles.

*Gauge.*—Standard vertical staff gauge read daily by H. Collins.

*Channel.*—Channel straight at measuring section, average width 50 feet. Velocity high.

*Discharge Measurements.*—Twelve measurements made in 1913-14-15 show fair agreement and cover all stages.

*Winter Flow.*—Ice conditions prevail on this stream during January and February.

*Accuracy.*—"B" and "C." Daily gauge readings and a well defined curve should give reliable results.

## Discharge Measurements of Bonaparte River below Cache Creek.

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1912							
April 25	Cline & Chisholm	1.055	54	153	4.35	2.96	557
May 3	Cline & Chisholm	1.055	48	114	3.53	2.30	415
May 10	K. G. Chisholm	1.055	54	154	4.30	2.81	564
May 27	K. G. Chisholm	1.055	54	60	4.55	2.99	745
July 31	K. G. Chisholm	1.055	45	51	2.87	1.75	333
Oct. 3	K. G. Chisholm	1.055	37	51	1.87	1.08	85
1914							
May 22	C. B. Corbould	1.673	42	160	5.28	3.28	1,005
July 9	C. B. Corbould	1.915	48	107	3.30	1.98	360
1915							
Mar. 30	F. R. Archibald	1.573	42	56	1.85	1.15	108
April 24	F. R. Archibald	1.673	49	70	1.94	1.35	135
May 6	F. R. Archibald	1.673	47	60	1.75	1.23	107
Aug. 29	A. L. McNaughton	1.915	31	128	2.21	1.97	284

Daily Gauge Height and Discharge of Bonaparte River near Cache Creek for 1915.

(Drainage area, 2,000 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1					1.40	170	1.22	120	1.35	155	2.55	520
2					1.35	155	1.27	135	1.35	155	2.47	490
3					1.35	155	1.32	145	1.35	155	2.37	455
4					1.30	140	1.32	145	1.35	155	2.35	445
5					1.30	140	1.32	145	1.35	155	2.25	415
6					1.30	140	1.35	155	1.35	155	2.20	400
7					1.30	140	1.37	160	1.30	140	2.17	390
8					1.30	140	1.40	170	1.30	140	2.20	400
9					1.30	140	1.40	170	1.32	145	2.15	385
10					1.25	125	1.40	170	1.42	175	2.20	365
11					1.25	125	1.40	170	1.47	190	2.10	365
12					1.25	125	1.40	170	1.50	195	2.10	365
13					1.25	125	1.40	170	1.50	195	2.05	355
14					1.20	115	1.40	170	1.52	200	2.05	355
15					1.15	100	1.42	175	1.67	245	2.05	355
16					1.20	115	1.45	185	1.72	255	2.02	345
17					1.27	135	1.47	190	1.75	265	2.10	365
18					1.42	175	1.50	200	1.85	295	2.17	390
19					1.32	145	1.52	200	2.17	390	2.17	390
20			1.35	155	1.37	160	1.60	225	3.05	815	2.15	385
21			1.35	155	1.37	160	1.55	210	3.05	815	2.12	375
22			1.35	155	1.37	160	1.55	210	2.95	730	2.10	365
23			1.35	155	1.37	160	1.50	195	2.87	675	2.05	355
24			1.35	155	1.37	160	1.45	185	2.92	710	2.00	335
25			1.40	170	1.37	160	1.45	185	3.00	765	2.09	345
26			1.30	140	1.27	135	1.45	185	2.87	675	2.05	355
27			1.30	140	1.27	135	1.42	175	2.80	630	2.50	500
28			1.35	155	1.27	135	1.40	170	2.77	620	2.72	590
29					1.25	125	1.40	170	2.67	570	2.82	645
30					1.25	125	1.35	155	2.60	540	2.97	745
31					1.27	135			2.60	540		
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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	3.02	785	2.77	615	1.55	210	1.25	130	1.20	115	1.15	100
2	2.95	730	2.72	590	1.55	210	1.25	130	1.25	130	1.20	115
3	2.77	615	2.67	570	1.50	195	1.30	140	1.25	130	1.25	130
4	2.70	580	2.57	530	1.50	195	1.30	140	1.25	130	1.35	155
5	2.65	560	2.47	490	1.50	195	1.30	140	1.25	130	1.25	130
6	2.52	505	2.32	435	1.50	195	1.30	140	1.25	130	1.15	100
7	2.47	490	2.22	400	1.50	195	1.30	140	1.20	115	1.20	115
8	2.32	435	2.15	380	1.50	195	1.25	130	1.20	115	1.20	115
9	2.17	390	2.10	365	1.47	190	1.25	130	1.15	100	1.25	130
10	2.10	365	2.05	350	1.45	185	1.25	130	1.15	100	1.20	115
11	2.10	365	2.00	335	1.45	185	1.25	130	1.30	140	1.15	100
12	2.10	365	1.95	320	1.45	185	1.25	130	1.30	140	1.15	100
13	2.10	365	1.90	305	1.40	170	1.25	130	1.15	100	1.15	100
14	2.23	405	1.85	290	1.40	170	1.25	130	1.15	100	1.15	100
15	2.48	490	1.80	275	1.40	170	1.25	130	1.15	100	1.15	100
16	2.55	520	1.75	265	1.37	160	1.25	130	1.15	100	1.15	100
17	2.60	540	1.77	270	1.35	155	1.25	130	1.20	115	1.20	115
18	2.82	645	1.90	305	1.35	155	1.25	130	1.20	115	Ice	
19	3.02	785	1.90	305	1.35	155	1.25	130	1.20	115	Ice	
20	3.12	880	1.90	305	1.32	145	1.25	130	1.20	115	1.15	100
21	3.15	910	1.87	300	1.50	140	1.25	130	1.20	115	1.10	90
22	3.15	910	1.80	280	1.30	140	1.25	130	1.15	100	1.05	75
23	3.07	830	1.77	270	1.30	140	1.20	115	1.15	100	1.10	90
24	2.97	745	1.75	265	1.30	140	1.20	115	1.20	115	1.20	115
25	2.87	675	1.75	265	1.30	140	1.20	115	1.20	115	1.30	145
26	2.75	605	1.70	250	1.30	140	1.20	115	1.20	115	Ice	
27	2.67	570	1.70	250	1.30	140	1.20	115	1.15	100		
28	2.67	570	1.65	235	1.30	140	1.20	115	1.45	185		
29	2.75	605	1.62	230	1.25	125	1.20	115	1.10	90		
30	2.80	630	1.60	225	1.25	125	1.20	115	1.45	185		
31	2.87	675	1.60	225			1.20	115			Ice	

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**Monthly Discharge of Bonaparte River below Cache Creek for 1915.**  
(Drainage area, 3,000 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum	Minimum.	Mean	Per square mile	Depth in inches on Drainage area.	Total in acre-feet.
March	175	100	141	0 07	0 08	8,670
April	225	120	174	0 09	0 10	10,400
May	815	140	382	0 19	0 22	23,500
June	745	335	418	0 21	0 23	24,900
July	910	365	598	0 30	0 35	38,800
August	615	225	339	0 17	0 20	20,800
September	210	125	166	0 08	0 09	9,880
October	140	115	127	0 06	0 07	7,800
November	185	90	118	0 06	0 07	7,020
The period	910	90	274	0 14	1 41	149,770

**CACHE CREEK.—(2071).**

*Location.*—Section 34, township 21, range 24, west of 6th meridian; Water District No. 2. This station is above all diversions except the one to Eightmile creek, on which a regular gauging station has been established (No. 2072).

*Records Available.*—June 9 to September 24, 1911; April 1 to September 3, 1912; May 9 to September 30, 1915.

*Drainage Area.*—Thirty-five square miles, but part of the run-off is diverted to Eightmile creek.

*Gauge.*—Standard vertical staff gauge, read twice a week by A. C. Trimble.

*Channel.*—Rocks and gravel; current swift.

*Discharge Measurements.*—Fourteen measurements made during 1912-13 and -15 agree fairly well and cover the whole range of stage except below discharge of 2 cubic feet per second.

*Winter Flow.*—Ice conditions obtain during the three winter months, but as the stream is only used for irrigation it is not necessary to keep up the records during the winter.

*Accuracy.*—"B" and "C." Gauge readings are only taken twice a week; the rating curve is subject to a certain indefiniteness at very low stages (below 2 cubic feet per second).

*Discharge Measurements of Cache Creek below McAbee's Diversion.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
1912			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.
May 8	C. G. Cline	1,046	15	15 4	4 2	1 65	64 6
May 13	C. G. Cline	1,046	12	15 4	3 2	1 52	49 5
June 13	Cline & Corbould	1,046	10	4 3	1 5	0 86	6 6
July 13	C. B. Corbould	1,044	8	3 4	1 5	0 85	5 2
Aug. 3	C. B. Corbould	1,044	7	2 3	1 1	0 78	2 6
Aug. 29	C. B. Corbould	1,044	7	2 1	1 1	0 77	2 3
1913							
April 26	Cline & Chisholm	1,055	12	14 0	1 2	1 10	16 7
May 15	K. G. Chisholm	1,055	11	11 7	3 7	1 40	41 5
June 9	K. G. Chisholm	1,055	12	7 5	1 6	0 99	12 2
July 30	K. G. Chisholm	1,055	11	5 7	1 1	0 85	6 4
1915							
May 5	E. R. Archibald	1,675	16	8 0	1 8	1 07	14 4
June 1	E. H. Tredcroft	1,923	14	12 2	1 3	1 10	16 3
Aug 20	A. L. McNaughton	1,915	11	7 5	1 1	0 96	8 5
Aug 26	A. L. McNaughton	1,915	11	5 9	0 8	0 89	4 7

*Daily Gauge Height and Discharge of Cache Creek below Diversion to Eightmile Creek for 1914.*

(Drainage area, 35 square miles.)

Day.	May.		June.		July.		August.		September.		Gauge Height.	Discharge.
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.		
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.		
1				27		16	1.05	13	0.70	1		
2				22	1.10	16		13	0.70	1		
3			1.10	16		16	1.05	13		1		
4				16	1.10	16		12		1		
5			1.10	16		16	1.00	10	0.70	1		
6				16	1.10	16		10		1		
7				16		16		10	0.70	1		
8			1.10	16	1.10	16	1.00	10		1		
9	1.10	16		14		17		10		1		
10		15	1.05	13		19		10	0.70	1		
11		14		13	1.15	20	1.00	10		1		
12	1.05	13	1.05	13		21		10	0.70	1		
13		13	1.00	10	1.20	23	1.00	10		1		
14	1.05	13		12		23		10	0.65	0		
15		14	1.05	13		23		10		0		
16	1.10	16		14	1.20	23		10	0.65	0		
17		23	1.10	16		21	1.00	10		0		
18	1.30	30		16	1.15	20		9		0		
19		40		16		20	0.95	8	0.65	0		
20		60	1.10	16	1.15	20		8		0		
21	1.70	70		16		19		8		0		
22		70	1.10	14		17	0.95	8	0.65	0		
23	1.70	70		17	1.10	16		6		0		
24		65		19		16	0.85	4	0.65	0		
25	1.60	59	1.15	20	1.10	16		3		0		
26		52		19		16		3	0.60	0		
27		46		18	1.10	16	0.75	2		1		
28	1.40	39		17		16		2	0.70	1		
29	1.40	39	1.10	16	1.10	16	0.70	1		1		
30	1.40	39		16		15		1	0.75	2		
31		33				14	0.70	1				

*Monthly Discharge of Cache Creek below Diversion to Eightmile Creek for 1915*

(Drainage area, 35 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet
June	27	10	16.1			960
July	23	14	17.9			1,100
August	13	1	7.9			490
September	2	0	0.6			40
The period	27	0	10.6			2,600

NOTE.—The discharge through the diversion from the North fork of Cache creek to Eightmile creek must be added to the discharge at the station on Cache creek to give the total run off from the Cache creek watershed.





## COLDWATER RIVER.—(2006).

*Location.*—At Merritt; Water District No. 3.

*Records Available.*—April 17 to August 31, 1913; April 1 to December 6, 1914; March 17 to December 31, 1915.

*Drainage Area.*—Three hundred and sixty square miles.

*Gauge.*—Vertical staff gauge read daily by J. Skimming.

*Channel.*—The stream is from 50 to 75 feet wide; velocities are medium. Bed of stream is rocky and permanent.

*Discharge Measurements.*—Made by wading during low water, and from traffic bridge at high water. Seven measurements made during 1914 and 1915 show a good agreement and cover all stages except between 700 and 1,400 cubic feet per second.

*Winter Flow.*—Ice conditions exist on this river during January and February.

*Accuracy.*—"B" and "C." Results should be quite accurate except for certain indefiniteness in the location of the rating curve mentioned above.

*Discharge Measurements of Coldwater River at Merritt.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet	Sq. ft	Ft per sec.	Feet.	Sec-ft.
<b>1914</b>							
Mar. 2	K. G. Chisholm	1,505	68	244	5.86	3.27	1,459
July 8	K. G. Chisholm	1,913	66	151	2.78	1.69	420
July 20	C. B. Corbould	1,915	40	91	0.96	0.85	87
<b>1915</b>							
Feb. 9	E. H. Tredcroft	1,923	49	46	1.07	0.92	50
May 4	E. M. Dann	1,055	65	148	3.60	1.85	532
June 2	E. H. Tredcroft	1,923	66	121	3.00	1.59	353
June 8	A. L. McNaughton	1,915	64	122	2.50	1.53	312
July 24	A. L. McNaughton	1,915	27	28	1.67	0.67	47

<sup>1</sup> Ice measurement.

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Daily Gauge Height and Discharge of Coldwater River at Merritt for 1915.

(Drainage area, 360 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1							1.20	195	1.75	440	1.60	360
2							1.35	260	1.70	410	1.60	310
3							1.80	470	1.65	386	1.46	290
4							2.12	380	1.85	500	1.50	310
5							1.96	370	1.95	570	1.67	400
6							1.95	670	2.12	680	1.70	410
7							1.97	680	2.12	878	2.67	400
8							1.92	660	2.66	1,020	1.47	300
9				5.0			1.82	480	2.30	800	1.37	260
10							1.70	410	2.22	740	1.36	250
11							1.70	410	2.02	610	1.42	280
12							1.87	520	1.87	620	1.47	300
13							2.10	670	1.82	480	1.40	270
14							1.97	580	1.90	640	1.40	270
15							1.92	550	1.87	520	1.37	260
16							2.10	670	1.72	420	1.40	270
17					0.85	103	2.45	900	1.67	400	1.30	230
18					0.85	103	2.62	1,000	1.85	600	1.25	210
19					0.85	103	2.72	1,070	2.10	670	1.15	180
20					0.86	103	2.85	1,160	2.17	710	1.10	166
21					0.85	103	2.50	930	2.10	670	1.06	150
22					0.95	125	2.20	730	1.85	500	1.06	160
23					1.10	165	2.02	610	1.85	500	0.96	125
24					1.25	210	2.00	600	1.75	440	1.02	145
25					1.25	210	1.95	670	1.90	540	1.02	146
26					1.15	180	2.10	670	1.75	440	1.00	140
27					1.15	180	2.00	600	1.70	410	0.90	115
28					1.10	165	1.90	540	1.95	570	0.90	116
29					1.15	180	1.97	580	1.80	470	0.92	120
30					1.15	180	1.87	620	1.60	360	0.90	115
31					1.20	195			1.56	335		

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	0.90	116	0.75	81	0.20	8	0.26	12	1.80	470	0.55	47
2	0.90	115	0.65	63	0.20	8	0.25	12	1.65	335	0.65	47
3	0.86	105	0.60	56	0.20	8	0.40	27	1.45	290	0.85	106
4	0.96	126	0.65	47	0.17	6	0.46	47	1.30	230	0.95	125
5	0.73	116	0.60	40	0.16	5	0.60	55	1.35	250	0.85	105
6	0.80	91	0.60	40	0.15	5	0.60	40	1.25	219	0.85	105
7	0.20	91	0.45	53	0.15	5	0.60	55	1.26	210	0.75	81
8	0.76	81	0.46	33	0.15	5	0.45	33	1.20	195	0.80	91
9	0.65	63	0.40	27	0.16	5	0.40	27	1.15	180	0.70	71
10	0.65	63	0.35	22	0.20	8	0.40	27	0.70	71	0.75	81
11	0.55	47	0.35	22	0.25	12	0.40	27	0.95	125		72
12	0.60	65	0.35	22	0.30	16	0.40	27	0.85	106	0.65	63
13	0.60	56	0.36	22	0.25	12	0.40	27		126	0.70	71
14	0.70	71	0.36	22	0.25	12	0.60	40	1.05	150	0.70	71
15	0.80	91		19	0.25	12	0.65	63	1.05	150	0.85	105
16	0.85	105	0.30	16	0.20	8	0.65	63	0.90	115	0.85	105
17	0.75	81	0.25	12	0.20	8	0.60	55	0.95	126	0.85	106
18	0.76	81	0.25	12	0.20	8	0.55	47	0.90	115	0.90	115
19	0.65	63	0.30	16	0.20	8	0.55	47	0.90	115	0.90	115
20	0.65	63	0.30	16	0.20	8	0.65	63	0.70	71	0.80	91
21	0.65	63	0.30	16	0.20	8	0.65	63	0.65	63	0.85	105
22	0.60	65	0.30	16	0.17	6	1.00	140	0.65	63	0.85	105
23	0.60	55	0.30	16	0.20	8	1.05	150	0.90	115	0.75	81
24	0.56	47	0.26	12	0.25	12	0.95	125	0.75	81	0.75	81
25	0.50	40	0.25	12	0.30	16	0.85	105	0.85	105	0.75	81
26	0.55	47	0.25	12	0.30	16	1.25	210	0.75	81	Ice	80
27	0.60	56	0.26	12	0.25	12	1.70	410	0.65	63		75
28	0.55	47	0.22	10	0.25	12	2.40	560	0.55	47		75
29	0.65	63	0.20	8	0.25	12	2.00	600	0.65	63		70
30	0.65	63	0.20	8	0.25	12	1.60	360	0.55	47		65
31	0.66	63	0.20	8			1.50	310			0.66	63

## Monthly Discharge of Coldwater River at Merrill for 1915.

(Drainage area, 360 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
April.....	1,150	195	621	1.46	1.62	31,000
May.....	1,020	335	549	1.63	1.76	33,800
June.....	410	115	236	0.65	0.72	14,000
July.....	126	40	73	0.20	0.23	4,400
August.....	81	8	24	0.07	0.08	1,480
September.....	16	6	9	0.02	0.03	640
October.....	860	12	133	0.37	0.43	8,180
November.....	470	47	145	0.40	0.45	8,630
December.....	125	47	86	0.24	0.28	6,290
The period.....	1,160	5	197	0.55	6.60	107,410

## CRISS CREEK.—(2007).

*Location.*—Section 32, township 22, range 22, west 6th meridian.

*Records Available.*—June 14 to September 14, 1912; April 22 to November 21, 1913; April 1 to December 9, 1914; March 22 to September 30, 1915.

*Drainage Area.*—One hundred and fifty square miles.

*Gauge.*—Standard vertical staff gauge read daily by W. H. Hoey.

*Channel.*—The channel at measuring section is straight. Velocity is high. Bed of stream composed of gravel and boulders.

*Discharge Measurements.*—Thirteen measurements made during 1912-13-14-15 agree very well and cover all stages up to a discharge of 450 cubic feet per second.

*Winter Flow.*—Ice conditions exist on this stream during January, February and part of March.

*Accuracy.*—"B", "C" and "D." Results very reliable except for flood stages.

## Discharge Measurements of Criss Creek near Mouth.

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec-ft
1912							
July 16	B. Corbould.....	1,046	24	31.4	1.20	0.70	38
Aug. 5	B. Corbould.....	1,046	24	28.6	1.15	0.52	33
Aug. 30	B. Corbould.....	1,046	22	29.2	1.04	0.60	30
1913							
April 22	Cline & Chisholm.....		30	114.0	1.90	1.62	217
May 17	K. G. Chisholm.....		30	123.6	2.03	1.72	251
June 10	K. G. Chisholm.....		30	100.0	1.72	1.49	176
Aug. 15	K. G. Chisholm.....		18	26.9	1.15	0.63	31
Oct. 4	K. G. Chisholm.....		13	13.4	0.91	0.18	12
1914							
May 24	C. B. Corbould.....	1,673	32	77.0	5.34	2.05	412
July 10	C. B. Corbould.....	1,915	23	29.5	0.83	0.36	24
1915							
April 1	F. R. Archibald.....	1,673	21	19.2	0.61	0.30	12
April 28	F. R. Archibald.....	1,673	29	47.9	1.73	1.26	100
Aug. 26	A. L. McNaughton.....	1,915	18	12.6	0.95	0.22	12



## Monthly Discharge of Criss Creek near Mouth for 1915.

(Drainage area, 150 square miles.)

MONTH	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
April	150	30	89	0.59	0.66	5,300
May	1,050	105	274	1.82	2.10	16,850
June	1,470	24	299	2.00	2.23	17,800
July	850	38	242	1.61	1.86	14,880
August	500	7	100	0.67	0.77	6,150
September	25	7	12	0.06	0.09	600
The period	1,470	7	166	1.13	7.71	61,670

## DEADMAN RIVER. —(2008).

*Location.*—Section 15, township 22, range 22, west 6th meridian.

*Records Available.*—April 22 to November 21, 1913; April 1 to December 9, 1914; March 22 to December 30, 1915.

*Drainage Area.*—Three hundred square miles.

*Gauge.*—Standard vertical staff gauge read daily by J. Hoey.

*Channel.*—Channel is straight and control is good. Velocity is high only at high water.

*Discharge Measurements.*—Eleven measurements made during 1913-14-15 agree fairly well and cover the whole range of stage up to 450 cubic feet per second.

*Winter Flow.*—Ice conditions exist on this river during January, February and March.

*Accuracy.*—"B" and "C." Results very reliable except for the flood discharges on July 1-3, 1915.

## Discharge Measurements of Deadman River above Criss Creek.

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec. ft.
1913							
April 22	Cline & Chisholm	1,055	40	73	3.5	3.52	250
April 23	Cline & Chisholm	1,055	30	92	3.1	3.60	280
May 17	K. G. Chisholm	1,085	34	115	4.1	3.95	410
June 11	K. G. Chisholm	1,055	24	33	3.0	2.38	140
Aug. 15	K. G. Chisholm	1,155	15	19	2.5	1.80	60
Oct. 6	K. G. Chisholm	1,155	12	9	1.1	0.93	10
1914							
May 24	C. B. Corbould	1,673	32	83	3.4	3.40	270
July 10	C. B. Corbould	1,915	24	30	1.4	1.60	40
1915							
April 1	F. R. Richardson	1,673	21	7	1.0	0.76	10
April 28	F. R. Richardson	1,673	11	10	1.4	1.10	10
Aug. 26	A. L. McNaughton	1,915	21	21	1.7	1.46	10

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Daily Gauge Height and Discharge of Deadman River above Criss Creek for 1915.

(Drainage area, 300 square miles.)

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	
	Feet	Sec.-ft.	Feet	Sec.-ft.	Feet	Sec.-ft.	Feet	Sec.-ft.	Feet	Sec.-ft.	Feet	Sec.-ft.	
1							0 75	3 0	1 10	18 0	2 45	105	
2							0 80	5 0	1 05	15 5	2 35	94	
3							0 85	7 0	1 05	15 5	2 35	94	
4							0 95	11 0	1 00	13 0	2 35	94	
5							0 95	11 0	1 00	13 0	2 25	85	
6													
7							1 00	13 0	1 00	13 0	2 15	77	
8							1 00	13 0	1 00	13 0	2 15	77	
9							1 00	13 0	1 00	13 0	2 05	69	
10							0 95	11 0	0 95	11 0	2 05	69	
							0 90	9 0	0 95	11 0	2 05	69	
11							0 90	9 0	1 00	13 0	1 95	62	
12							0 95	11 0	1 00	13 0	1 85	56	
13							0 95	11 0	1 00	13 0	1 85	56	
14							0 95	11 0	1 05	15 5	1 85	56	
15							1 05	15 5	1 05	15 5	1 85	56	
16													
17							1 05	15 5	1 05	15 5	1 85	56	
18							1 05	15 5	1 05	15 5	1 85	56	
19							1 15	20 0	1 05	15 5	1 85	56	
20							1 10	18 0	1 25	25 0	1 95	62	
							1 15	20 0	1 45	35 0	1 95	62	
21													
22							1 25	25 0	1 65	45 0	1 95	62	
23						0 70	1 0	1 25	25 0	1 75	50 0	2 15	77
24						0 70	1 0	1 15	20 0	1 70	48 0	2 35	94
25						0 70	1 0	1 15	20 0	1 95	62 0	2 45	105
						0 70	1 0	1 10	18 0	2 45	105 0	2 45	105
26													
27						0 70	1 0	1 05	15 5	2 70	135 0	2 65	130
28						0 75	3 0	1 05	15 5	2 75	140 0	2 65	130
29						0 75	3 0	1 05	15 5	2 75	140 0	2 95	170
30						0 75	3 0	1 05	15 5	2 75	140 0	3 20	205
31						0 75	3 0	1 05	15 5	2 65	130 0	3 75	335
										2 55	115 0		

Day.	July.		August.		September.		October.	November.	December.
	Gauge Height	Discharge	Gauge Height	Discharge	Gauge Height	Discharge			
1	4 15	500	2 85	155	1 25	25			
2	4 05	730	2 75	140	1 25	25			
3	4 35	580	2 75	130	1 25	20			
4	3 05	410	2 65	130	1 15	20			
5	3 25	215	2 55	115	1 15	20			
6	2 95	170	2 45	105	1 30	27			
7	2 85	170	2 35	95	1 35	30			
8	2 75	140	2 35	95	1 30	27			
9	2 65	115	2 25	85	1 30	27			
10	2 55	115	2 05	70	1 30	27			
11	2 45	105	1 95	63	1 25	25			
12	2 25	85	1 85	56	1 25	25			
13	2 25	85	1 85	56	1 25	25			
14	2 30	100	1 85	56	1 25	25			
15	2	105	1 75	50	1 25	25			
16	2 55	115	1 65	45	1 25	25			
17	2 75	140	1 65	45	1 25	25			
18	3 10	180	1 55	40	1 25	25			
19	3 30	225	1 55	40	1 25	25			
20	3 25	215	1 45	35	1 25	25			
21	3 25	215	1 45	35	1 25	25			
22	3 05	185	1 45	35	1 25	25			
23	2 95	170	1 45	35	1 25	25			
24	2 75	140	1 45	35	1 20	23			
25	2 65	130	1 45	35	1 25	25			
26	2 65	115	1 45	35	1 25	25			
27	2 55	115	1 35	30	1 25	25			
28	2 55	115	1 35	30	1 25	25			
29	2 70	135	1 35	30	1 20	23			
30	2 75	140	1 25	25	1 25	25			
31	2 75	140	1 25	25					

**Monthly Discharge of Deadman River above Criss Creek for 1915.**  
(Drainage area, 300 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUM-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile	Depth in inches on Drainage area.	Total in acre-feet
April .....	28	3	14.2	0.04	0.05	848
May .....	140	11	46.0	0.13	0.17	2,530
June .....	328	36	94.1	0.31	0.25	3,600
July .....	730	58	197.0	0.66	0.76	12,110
August .....	183	28	63.4	0.21	0.34	3,900
September .....	30	20	24.8	0.08	0.09	1,476
The period .....	780	3	73.2	0.24	1.66	26,761

NOTE.—Regulated by storage dam on Deadman lake.

**HAT CREEK, ABOVE HAMMOND'S DIVERSION.—(2016).**

*Location.*—Section 18, township 19, range 26, west 6th meridian. At Colley's ranch, just above the Hammond diversion.

*Records Available.*—April 22, 1911, to December 31, 1911; January 1, 1912; to November 18, 1912; April 30 to December 31, 1913; April 1 to November 30, 1914; March 13 to September 30, 1915.

*Drainage Area.*—Forty-seven square miles.

*Gauge.*—Standard vertical gauge read daily by Thos. King.

*Channel.*—The channel is 12 to 14 feet in width and is straight above and below the gauge; the control is good.

*Discharge Measurements.*—Well-distributed meterings have been obtained covering the stream's range. Meterings were mostly made in the box flume above the Hammond diversion weir.

*Winter Flow.*—Stream is sometimes open during winter months.

*Accuracy.*—"A" and "B." Results should be very reliable at all stages.

*Discharge Measurements of Hat Creek above Hammond's Diversion.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
<b>1911</b>							
April 28	E. M. Dann .....	268	10	5.2	0.9	0.16	4.7
May 2	E. M. Dann .....	268	11	8.3	1.5	0.39	13.0
May 29	E. M. Dann .....	268	.....	.....	.....	0.97	43.5
May 30	E. M. Dann .....	268	.....	.....	.....	1.57	75.1
May 31	E. M. Dann .....	268	.....	.....	.....	1.41	92.6
July 18	C. G. Cline .....	1,046	11	8.0	1.0	0.16	4.8
Sept. 30	C. G. Cline .....	1,046	11	4.8	0.7	0.15	3.6
<b>1912</b>							
May 14	C. G. Cline .....	1,046	17	21.7	4.0	1.40	87.0
June 17	B. Corbould .....	1,046	12	7.5	1.6	0.39	12.0
July 11	B. Corbould .....	1,044	12	8.4	1.9	0.42	15.9
July 31	B. Corbould .....	1,044	12	8.4	1.0	0.23	5.3
Aug. 19	B. Corbould .....	1,044	12	6.4	1.4	0.30	9.4
<b>1913</b>							
April 26	Cline & Chisholm .....	1,055	11	5.4	1.2	0.25	6.7
Aug. 3	K. G. Chisholm .....	1,055	9	5.2	1.0	0.24	5.4
<b>1915</b>							
Mar. 12	F. R. Archibald .....	1,673	12	2.8	0.4	0.07	1.1
April 22	F. R. Archibald .....	1,673	16	11.3	1.8	0.58	19.0
Aug. 23	A. L. McNaughton .....	1,915	10	4.0	1.0	0.15	4.8



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Daily Gauge Height and Discharge of Hat Creek above Hammond's Diversion for 1915.

(Drainage area, 47 square miles)

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.
	Feet	Sec.-ft.	Feet	Sec.-ft.	Feet	Sec.-ft.	Feet	Sec.-ft.	Feet	Sec.-ft.	Feet	Sec.-ft.
1							0 15	4 0	0 52	18 0	0 80	32 0
2							0 14	3 7	0 52	18 0	0 72	28 0
3							0 30	8 5	0 55	19 5	0 70	27 0
4							0 32	9 3	0 67	25 0	0 67	25 0
5							0 30	8 5	0 80	32 0	0 70	27 0
6							0 30	8 5	0 85	35 0	0 62	23 0
7							0 30	8 5	0 95	42 0	0 60	22 0
8							0 35	10 5	1 00	45 0	0 60	22 0
9							0 30	8 5	0 90	38 0	0 67	25 0
10							0 38	11 7	0 90	38 0	0 72	28 0
11							0 38	11 7	0 85	35 9	0 75	28 0
12							0 35	10 5	0 70	27 0	0 70	27 0
13					0 02	0 5	0 38	11 7	0 65	24 0	0 70	27 0
14					0 05	1 2	0 45	14 7	0 90	38 0	0 67	25 0
15					0 10	2 5	0 57	20 0	0 90	38 0	0 65	24 0
16					0 08	2 0	0 80	32 0	0 77	30 0	0 70	27 0
17					0 10	2 5	0 95	42 0	0 82	41 0	0 70	27 0
18					0 08	2 0	0 85	35 0	0 90	38 0	0 65	21 0
19					0 10	2 5	0 80	32 0	1 25	67 0	0 62	23 0
20					0 08	2 0	0 70	27 0	1 20	61 0	0 55	19 0
21					0 10	2 5	0 70	27 0	1 15	57 0	0 52	18 0
22					0 08	2 0	0 89	32 0	1 10	52 0	0 50	17 0
23					0 10	2 5	0 70	27 0	1 00	45 0	0 50	17 0
24					0 06	1 5	0 65	24 0	0 92	40 0	0 50	17 0
25					0 08	2 0	0 62	23 0	0 90	38 0	0 48	16 1
26					0 10	2 5	0 60	22 0	0 80	32 0	0 48	16 1
27					0 10	2 5	0 60	22 0	0 80	32 0	0 49	16 6
28					0 09	2 2	0 54	19 0	0 80	32 0	0 48	16 1
29					0 10	2 5	0 69	22 0	0 80	32 0	0 42	13 4
30					0 08	2 0	0 59	21 0	0 80	32 0	0 40	12 5
31					0 12	3 1			0 80	32 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 40	12 5	0 40	12 5	0 12	3 1						
2	0 40	12 5	0 30	8 5	0 12	3 1						
3	0 40	12 5	0 25	7 0	0 10	2 5						
4	0 47	15 6	0 22	6 1	0 10	2 5						
5	0 59	12 1	0 22	6 1	0 10	2 5						
6	0 38	11 7	0 25	7 0	0 10	2 5						
7	0 37	11 3	0 25	7 0	0 10	2 5						
8	0 35	10 5	0 25	7 0	0 10	2 5						
9	0 31	8 9	0 22	6 1	0 12	3 0						
10	0 30	8 5	0 20	5 5	0 10	2 5						
11	0 30	8 5	0 20	5 5	0 08	2 0						
12	0 30	8 5	0 20	5 5	0 05	1 4						
13	0 30	8 5	0 20	5 5	0 05	1 4						
14	0 32	9 3	0 20	5 5	0 05	1 4						
15	0 37	11 3	0 18	4 9	0 05	1 4						
16	0 35	10 5	0 18	4 9	0 05	1 4						
17	0 37	11 3	0 20	5 5	0 03	0 9						
18	0 35	10 5	0 25	7 0	0 03	0 9						
19	0 30	8 5	0 30	8 5	0 05	1 4						
20	0 30	8 5	0 30	8 5	0 10	2 5						
21	0 30	8 5	0 30	8 5	0 10	2 5						
22	0 28	7 9	0 25	7 0	0 10	2 5						
23	0 25	7 0	0 20	5 5	0 10	2 5						
24	0 22	6 1	0 18	4 9	0 10	2 5						
25	0 22	6 1	0 15	4 0	0 10	2 5						
26	0 28	7 9	0 15	4 0	0 15	2 5						
27	0 27	7 6	0 12	3 1	0 10	2 5						
28	0 35	10 5	0 12	3 1	0 10	2 5						
29	0 40	12 5	0 12	3 1	0 10	2 5						
30	0 37	11 3	0 12	3 1	0 10	2 5						
31	0 35	10 5	0 12	3 1								

*Monthly Discharge of Hat Creek above Hammond's Diversion for 1915.*

(Drainage area, 47 square miles.)

MONTH	DISCHARGE IN SECOND FEET				RUN-OFF	
	Maximum	Minimum	Mean	Per square mile.	Depth in inches on Drainage area	Total in acre-feet
April	42.0	3.7	18.2	0.39	0.43	1,083
May	67.0	18.0	36.3	0.77	0.89	2,232
June	32.0	12.5	22.3	0.47	0.52	1,327
July	15.6	6.1	9.9	0.21	0.24	609
August	12.5	3.1	5.9	0.13	0.15	363
September	3.1	0.9	2.2	0.05	0.05	131
The period	67.0	0.9	17.4	0.33	2.28	5,745

*NAHATLATCH RIVER, SEVEN MILES FROM MOUTH. —(2027).*

*Location.*—Section 7, township 12, range 26, west 6th meridian.

*Records Available.*—March 1 to December 7, 1912; January 1 to December 31, 1913; January 1 to December 31, 1914; January 1 to December 31, 1915.

*Drainage Area.*—Four hundred square miles.

*Gauge.*—Standard vertical staff gauge read weekly by Chas. Nicholson.

*Channel.*—Channel at section is straight, with an average depth at low water of 8 feet. Bed of river rocky and permanent.

*Discharge Measurements.*—Discharge measurements are made from cable car. Six measurements made during 1912-13-14 agree very well and cover the whole range of stage.

*Winter Flow.*—Open conditions prevailed throughout the winter.

*Accuracy.*—Results are quite reliable except for the fact that the gauge readings are only taken once a week.

*Discharge Measurements of Nahatlatch River 7 Miles from Mouth.*

Date	Engineer	Meter No.	Width	Area of Section.	Mean Velocity	Gauge Height.	Discharge
			Feet	Sq. ft.	Ft. per sec.	Feet.	Sec. ft.
1912							
July 23	C. G. Cline	1,046	80	432	4.44	3.75	1,900
Nov. 28	C. G. Cline	1,048	70	352	2.53	2.20	890
1913							
June 26	Cline & Chisholm	1,044	95	747	6.47	6.40	4,640
July 4	K. G. Chisholm	1,055	93	627	5.09	4.95	3,200
Sept. 21	K. G. Chisholm	1,055	80	431	2.96	2.63	1,100
1915							
Feb. 15	E. H. Tredcroft	1,023	70	262	1.10	3.40	290

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Daily Gauge Height and Discharge of Nahatlatch River 7 Miles from Mouth for 1915.

(Drainage area, 400 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1												
2	1 30	570										
3									3 50	1,500		
4							6 15	4,360				
5												
6												
7			0 70	390	0 95	465					6 50	4,780
8												
9									7 20	5,480		
10	1 10	510										
11												
12							3 75	2,000				
13												
14					1 05	495					5 00	3,160
15			0 75	405								
16												
17	0 90	450					5 50	3,660	4 25	2,450		
18												
19												
20											4 20	3,410
21			0 70	390	1 45	630						
22												
23	0 70	390										
24							4 50	2,680	4 80	2,960		
25												
26												
27												
28			0 80	420	2 55	1,150					3 95	2,180
29												
30	0 65	380							4 45	2,630		
31												

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			4 20	2,410								
2												
3							1 95	850				
4	3 80	3,980										
5					2 75	1,270					1 50	680
6												
7												
8			3 20	1,560					3 35	1,680		
9												
10							0 90	450				
11	3 70	1,960										
12					1 50	650					1 30	570
13												
14												
15			3 35	1,680					1 55	670		
16												
17												
18	3 30	1,640					1 00	480				
19					1 60	690					1 00	480
20												
21												
22			3 90	2,140					1 70	730		
23												
24												
25	4 00	2,230					3 45	1,760				
26												
27					1 50	650					1 00	480
28												
29			3 05	1,450					1 40	610		
30												
31							4 00	3,250				

## NICOLA RIVER, AT MOUTH. (2030).

*Location.*—Section 12, township 17, range 25, west 6th meridian.

*Records Available.*—August 1 to November 31, 1911; April 5 to December 2, 1912; May 9 to December 11, 1913; April 1 to September 30, 1914; April 1 to September 30, 1915.

*Drainage Area.*—Two thousand six hundred and fifty square miles

*Gauge.*—Incline staff gauge read three times a week by Miss Violet Turnow.

*Channel.*—Straight at measuring section. Velocity high. Bed of stream is composed of rocks and gravel. During high water on the Thompson river the control is affected at the measuring section but not at the gauge.



Nicola river, at mouth. Inclined staff gauge bolted to solid rock.

*Discharge Measurements.*—Are made from bridge at all stages. Eleven measurements made during 1912-13-14 agree fairly well and cover practically the whole range of stage.

*Winter Flow.*—Ice conditions exist usually during January, February and March.

*Accuracy.*—"C." Results should be fairly reliable at all stages, though no measurements have been made during 1915.

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*Discharge Measurements of Nicola River at Mouth.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1912							
Mar. 29	C. G. Cline	1,046	105	127	1.9	2.00	242
May 3	E. Richardson	1,048	128	348	4.6	4.40	1,600
May 27	Cline & Corbould	1,046	140	658	6.1	6.60	3,990
July 3	C. B. Corbould	1,046	130	399	3.2	4.20	1,298
July 20	C. B. Corbould	1,046	120	260	2.6	3.10	667
Aug. 10	C. B. Corbould	1,046	115	167	1.9	2.25	321
1913							
May 9	K. G. Chisholm	1,044	130	490	5.4	5.49	2,586
June 7	K. G. Chisholm	1,055	150	778	5.3	6.65	4,159
Aug. 12	K. G. Chisholm	1,055	113	194	2.1	2.50	410
1914							
May 23	K. G. Chisholm	1,055	144	873	8.1	7.60	6,456
July 31	C. B. Corbould	1,915	115	197	2.4	2.42	468



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Monthly Discharge of Nicola River at Merritt for 1915.

(Drainage area, 2,650 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
April.....	3,300	1,400	1,980	0.75	0.84	118,000
May.....	3,010	1,600	2,200	0.83	0.96	135,000
June.....	2,010	1,060	1,505	0.57	0.64	89,500
July.....	1,160	660	841	0.32	0.37	51,700
August.....	720	215	374	0.14	0.16	23,000
September.....	230	195	213	0.08	0.09	12,700
The period.....	3,300	195	1,185	0.45	3.06	429,900

NICOLA RIVER, AT MERRITT. (1929).

Location.—At Merritt; Water District No. 3.

Records Available.—June 16 to December 31, 1911; January 31 to December 31, 1912; January 1 to December 31, 1913; January 1 to December 31, 1914; April 1 to December 31, 1915.

Drainage Area.—One thousand five hundred square miles.

Gauge.—Standard vertical staff gauge read tri-weekly by Miss C. A. Seaton.

Channel.—The bed of the stream is gravelly and the flow is in two channels during high water. The channel seems to be shifting considerably.

Discharge Measurements.—Between discharges of 200 and 1,200 cubic feet per second, the rating curve has been located by four measurements made during 1915. For lower discharges a comparison was made with the station on the Nicola river, near Nicola lake, and on the Coldwater river. For higher discharges, the 1914 measurements were used.

Winter Flow.—Open conditions usually prevail most of the winter.

Accuracy.—"C." The accuracy is somewhat impaired by the shifting of the channel and also by the fact that the gauge readings are not taken every day.

Discharge Measurements of Nicola River at Merritt.

Date.	Engineer.	Meter No.	Width.	Area of	Mean	Gauge	Discharge.
				Section.	Velocity.	Height.	
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1914							
May 3	K. G. Chisholm	1,505	160	537	4.65	7.53	2,500
May 26	K. G. Chisholm	1,055	150	649	4.51	7.80	2,926
1915							
Feb.	E. H. Tredcroft	1,923	51	194	0.40	4.40	74 <sup>1</sup>
May	E. M. Dann	1,055	58	233	3.27	5.86	760
June	E. H. Tredcroft	1,923	86	299	3.40	6.30	1,020
June	A. L. McNaughton	1,915	59	265	3.32	6.19	943
July	A. L. McNaughton	1,915	56	190	1.50	5.00	284

<sup>1</sup> Partial ice conditions.

## Daily Gauge Height and Discharge of Nicola River near Merritt for 1915.

(Drainage area, 1,500 square miles.)

Day.	April.		May.		June.		July.		August.		September.	
	Gauge Height	Discharge.	Gauge Height	Discharge.	Gauge Height	Discharge.	Gauge Height	Discharge.	Gauge Height	Discharge.	Gauge Height	Discharge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1		380		660	6 35	1,110	5 65	620		275	4 20	70
2	5 30	425	5 70	650		1,080		630	4 95	265		70
3		535		680	6 30	1,060	5 70	650		255	4 20	70
4	5 70	650	5 80	710		1,060		600	4 90	245		67
5		710		740	6 30	1,060	5 55	560		240	4 15	65
6	5 90	770	5 90	770		1,040		515	4 85	230		65
7		710		850	6 25	1,020	5 40	475		220	4 15	65
8	5 70	650	6 15	940		1,000		450	4 80	210	4 20	70
9		590	6 10	910	6 20	980	5 30	425		200	4 15	65
10	5 50	530	6 05	870		960		400	4 75	195		62
11		620		820	6 15	940	5 20	375		180	4 10	60
12	5 80	710	5 90	770		930		375	4 65	170		57
13	5 90	770		800	6 10	910	5 20	375		155	4 05	55
14	5 80	710	6 00	840		870		375	4 55	140		55
15		740		770	6 00	840	5 20	375		140	4 05	55
16	5 90	770	5 80	710		820		375	4 55	140		52
17		910		770	5 95	800	5 20	375		140	4 00	50
18	6 30	1,060	6 00	840		790		360	4 55	140		50
19		980		1,000	5 90	770	5 15	350		135	4 00	50
20	6 10	910	6 40	1,150		740		340	4 50	130		50
21		870		1,140	5 80	710	5 10	330		125	4 00	50
22	6 00	840	6 35	1,110		690		320	4 45	120		48
23	5 90	770		1,080	5 75	680	5 05	305		110	1 95	46
24	5 80	710	6 30	1,060		670		295	4 40	105		46
25		710		1,110	5 70	650	5 00	285		95	3 95	46
26	5 80	710	6 40	1,160		650		275	4 30	85		44
27		710		1,210	5 70	650	4 95	265		85	3 90	42
28	5 80	710	6 50	1,260		650		275	4 30	85		42
29		700		1,210	5 70	650	5 00	285		80	3 90	42
30	5 75	680	6 40	1,150		630		285	4 25	75		42
31				1,130			5 00	285		70		

## Monthly Discharge of Nicola River near Merritt for 1915.

(Drainage area, 1,500 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet
April	1,050	380	585	0.46	0.51	40,800
May	1,260	650	932	0.52	0.71	57,300
June	1,110	630	847	0.55	0.53	50,400
July	650	265	394	0.26	0.30	24,200
August	275	70	155	0.10	0.12	9,500
September	70	42	55	0.04	0.04	3,270
The period	1,260	42	511	0.34	2.31	185,560



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## NICOLA RIVER, AT NICOLA.—(2075).

*Location.*—At Nicola; Water District No. 2.*Records Available.*—April 14 to August 31, 1913; February 22 to December 31, 1915.*Drainage Area.*—One thousand three hundred square miles.*Gauge.*—Vertical staff read daily by V. H. Harbord.*Channel.*—Rocky; permanent control; high banks.*Discharge Measurements.*—Ten measurements made by the Provincial Water Rights Branch in 1913, and five measurements made by the B.C. Hydrometric Survey in 1915 agree very well and cover practically the whole range of stage for 1915, and all but the peak of the freshet for 1913.*Winter Flow.*—Partial ice conditions in January.*Accuracy.*—"B" and "C." Results should be very reliable except for discharges above 700 cubic feet per second.*Co-operation.*—This station was established April 11, 1913, by A. G. Woolsey, of the Provincial Water Rights Branch, and the gauge readings and meter measurements for 1913 were taken under his direction. The station was taken over by the B.C. Hydrometric Survey, February 10, 1915.*Discharge Measurements of Nicola River at Nicola.*

Date.	Engineer	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1913							
April 14	A. G. Woolsey		41	49	0.94	0.42	25
April 14	A. G. Woolsey		41	49	0.86	0.43	42
April 16	A. G. Woolsey		41	44	0.95	0.40	42
April 19	A. G. Woolsey		45	48	0.96	0.50	46
April 24	A. G. Woolsey		43	56	1.14	0.60	64
April 28	A. G. Woolsey		45	82	1.61	0.80	100
May 1	A. G. Woolsey		45	58	1.20	0.72	75
May 3	A. G. Woolsey		47	69	1.67	0.90	115
May 13	A. G. Woolsey		46	79	2.10	1.10	166
May 20	A. G. Woolsey		50	103	3.13	1.70	322
1915							
Feb. 10	E. H. Tredcroft	1,923	29	28	0.45	0.46	13
May 5	E. M. Dann	1,955	42	35	3.60	0.97	123
June 9	A. L. McNaughton	1,915	59	108	6.00	2.24	649
July 26	A. L. McNaughton	1,915	62	116	1.88	1.30	219
Dec 18	McNaughton & Cline	1,915	32	29	0.80	0.20	22

NOTE.—The 1913 measurements were made for the Provincial Water Rights Branch.

*Daily Gauge Height and Discharge of Nicola River at Nicola for 1915.*  
(Drainage area, 1,300 square miles.)

Day.	April.		May.		June.		July.		August.		September.	
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1			0.72	90	2.50	830	2.30	690	1.18	180		
2				115	2.50	830	2.25	650	1.18	180		
3			0.90	120	2.60	900	2.25	650	1.18	180		
4				120	2.70	1,000	2.20	620	1.05			
5			0.90	120	2.75	1,100	2.20	620	0.90	130		
6			0.85	119	2.80	1,200	2.25	650	0.85	110		
7			0.90	120	2.80	1,200	2.00	500	0.85	110		
8				120	2.85	1,300	2.00	500	0.90	130		
9			0.92	125	2.80	1,200	2.00	500	0.85	110		
10			0.95	130	2.75	1,100	1.90	445	0.85	110		
11				140	2.75	1,100	1.85	420	0.85	110		
12				150	2.70	1,000	1.82	410	0.80	100		
13			1.10	160	2.70	1,000	1.75	370	0.80	100		
14	0.43	49		180	2.75	1,100	1.80	395	0.70	85		
15			1.25	200		1,000	1.72	360	0.80	100		
16	0.40	46		220	2.55	860	1.72	360	0.80	100		
17				250	2.55	860		355	0.80	100		
18				280	2.50	830	1.70	350	0.80	100		
19	0.50	57		210		850	1.67	340	0.72	90		
20			1.66	335	2.55	860		330	0.70	85		
21				350	2.55	860	1.60	310	0.67	80		
22				370	2.50	830	1.55	290	0.65	75		
23				390	2.45	800	1.50	275	0.67	80		
24	0.60	70		410	2.45	800	1.45	260	0.62	75		
25				430	2.40	760	1.42	250	0.50	57		
26			1.90	445	2.40	760	1.38	230	0.50	57		
27			2.50	830	2.35	720	1.28	205	0.55	63		
28	0.80	100	2.50	830	2.30	690	1.20	185	0.55	63		
29			2.50	830	2.30	690	1.20	185	0.50	57		
30			2.35	720	2.30	690	1.20	185	0.50	57		
31			2.30	690			1.20	185		55		

*Monthly Discharge of Nicola River at Nicola for 1913.*

(Drainage area, 1,300 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
May	830	90	321	0.24	0.28	19,700
June	1,300	690	924	0.71	0.79	55,000
July	690	185	390	0.30	0.35	24,000
August	180	55	100	0.08	0.09	6,100
The period	1,300	55	434	0.33	1.51	104,800

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Daily Gauge Height and Discharge of Nicola River at Nicola for 1915.

(Drainage area, 1,300 square miles.)

Day.	January.		February.		March.		April.		May.		June.	
	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1						30	0.30	37	0.87	115	2.37	740
2						30	0.30	37	0.82	125	2.42	770
3						30	0.30	37	0.93	125	2.38	740
4					0.20	30	0.35	41	0.95	130	2.43	780
5						30	0.40	46	0.96	130	2.42	770
6												
7					0.22	31	0.39	45	0.98	135	2.42	770
8						31	0.35	41	0.97	135	2.38	740
9						31	0.30	37	0.99	140	2.35	720
10					0.22	31	0.30	37	1.02	145	2.24	550
11						32	0.39	45	1.04	150	2.21	630
12												
13					0.24	32	0.36	42	1.17	175	2.19	510
14						32	0.42	48	1.17	175	2.15	590
15						33	0.38	44	1.19	180	2.11	560
16						34	0.49	56	1.21	185	2.05	520
17						35	0.48	55	1.33	220	2.01	500
18												
19					0.30	36	0.45	51	1.35	225	1.98	490
20						37	0.48	55	1.42	240	1.95	470
21						37	0.52	59	1.45	255	1.94	450
22					0.30	37	0.48	55	1.51	280	1.91	450
23						38	0.62	73	1.60	310	1.86	420
24												
25			0.12	25	0.32	39	0.65	77	1.62	320	1.78	385
26						38	0.55	63	1.74	370	1.78	385
27					0.30	37	0.48	55	1.88	435	1.75	370
28						36	0.72	88	1.95	470	1.72	350
29			0.12	25		36	0.63	74	1.98	490	1.70	350
30												
31						36	0.65	77	2.15	590	1.69	345
32						36	0.70	85	2.25	650	1.68	340
33					0.28	36	0.72	88	2.43	780	1.68	340
34						36	0.82	105	2.47	810	1.58	340
35						36	0.80	100	2.45	800	1.68	340
36						36			2.43	780		

	July.		August.		September.		October.		November.		December.	
	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.	Gauge Height.	Dis-charge.
1	1.58	340	1.25	195	0.50	70	0.18	29	0.08	23	0.11	24
2	1.68	340	1.25	195	0.58	67	0.20	30	0.06	22	0.12	25
3	1.68	340	1.21	185	0.55	63	0.20	30	0.08	23	0.11	24
4	1.68	340	1.18	180	0.54	62	0.20	30	0.07	22	0.12	25
5	1.55	335	1.15	170	0.54	62	0.25	33	0.10	24	0.12	25
6												
7	1.52	320	1.14	170	0.52	59	0.25	33	0.07	22	0.12	25
8	1.55	290	1.12	165	0.50	57	0.25	33	0.13	26	0.13	26
9	1.50	275	1.08	155	0.49	56	0.25	33	0.07	22	0.13	25
10	1.42	245	1.08	155	0.48	54	0.18	29	0.10	24	0.14	26
11	1.42	245	1.05	150	0.48	54	0.15	27	0.13	26	0.15	27
12												
13	1.43	250	1.05	150	0.49	56	0.10	24	0.14	26	0.15	27
14	1.46	250	1.02	145	0.46	52	0.10	24	0.10	24	0.16	28
15	1.46	250	1.00	140	0.42	48	0.09	24	0.10	24	0.16	28
16	1.45	250	0.98	135	0.38	44	0.09	24	0.10	24	0.16	28
17	1.27	200	0.97	135	0.33	40	0.15	27	0.10	24	0.16	28
18												
19	1.43	250	0.96	130	0.30	37	0.18	29	0.10	24	0.15	28
20	1.44	255	0.95	130	0.26	34	0.00	20	0.00	24	0.16	28
21	1.40	240	0.93	125	0.25	33	0.11	24	0.10	24	0.15	28
22	1.39	235	0.91	120	0.25	33	0.15	27	0.09	24		28
23	1.33	220	0.86	110	0.25	33	0.10	24	0.00	24	0.15	28
24												
25	1.30	210	0.81	100	0.25	33	0.10	24	0.08	23	0.16	28
26	1.27	200	0.78	97	0.25	33	0.19	29	0.09	24	0.16	28
27	1.25	195	0.76	94	0.23	32	0.00	20	0.09	24	0.16	28
28	1.28	205	0.75	92	0.22	31	0.16	28	0.08	23	0.17	28
29	1.30	210	0.73	90	0.21	30	0.13	26	0.09	24	0.17	28
30												
31	1.31	210	0.73	90	0.20	30	0.15	27	0.08	23	0.18	29
32	1.30	210	0.70	85	0.20	30	0.17	28	0.08	23	0.18	29
33	1.27	200	0.67	80	0.19	29	0.01	20	0.09	24	0.19	29
34	1.25	195	0.65	77	0.18	28	0.13	26	0.10	24	0.19	29
35	1.26	200	0.63	74	0.18	28	0.12	25	0.12	25	0.19	29
36	1.27	200	0.50	70			0.12	25			0.20	30

## Monthly Discharge of Nicola River at Nicola for 1915.

(Drainage area, 1,300 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
March	39	30	34	0.03	0.03	2,090
April	105	37	58	0.04	0.06	3,450
May	510	115	325	0.25	0.29	20,000
June	780	340	531	0.41	0.46	31,600
July	340	195	250	0.19	0.22	15,400
August	195	70	129	0.10	0.11	7,930
September	70	28	44	0.03	0.04	2,620
October	33	20	27	0.02	0.02	1,660
November	26	22	24	0.02	0.02	1,430
December	30	24	27	0.02	0.02	1,660
The period	810	20	145	0.11	1.26	87,340

## NICOLA RIVER, ABOVE NICOLA LAKE.—(2086).

*Location.*—At highway bridge, six miles from Nicola Lake; Provincial Water District No. 3.

*Records Available.*—Records have been kept from May 12 to September 16, 1915, which will be available when the station is more completely rated.

*Gauge.*—Vertical staff read by W. M. Lauder.

*Channel.*—Rocks and gravel; stream confined between abutments of highway bridge.

*Discharge Measurements.*—Three measurements in 1915 under open water conditions and one under ice cover. More measurements are needed at high and low stages.

*Accuracy.*—The discharges computed should be quite reliable.

## Discharge Measurements of Nicola River above Nicola Lake.

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1915							
May 6	E. M. Dann	1,055	37	86	2.7	1.70	227
June 10	A. L. McNaughton	1,915	36	101	3.1	1.95	313
July 27	A. L. McNaughton	1,915	40	45	2.6	1.20	117
Dec. 19	Cline & McNaughton	1,915	36	63	0.6	Ice	36

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## Daily Gauge Height and Discharge of Nicola River above Nicola Lake for 1915.

Day.	May.		June.		July.		August.		September.		Gauge Height.	Discharge.
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.		
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.		
1			2.6		1.8	250	1.2	120		0.4		
2					1.8	250	1.2	120		0.4		
3			2.5		1.8	250	1.2	120		0.4		
4					1.8	250	1.2	120		0.4		
5							1.2	120		0.3		
6			2.2		1.7	220	1.1	100		0.3		
7			2.1	360	1.7	220	1.1	100		0.3		
8			2.0	320			1.1	100		0.3		
9			2.0	320			1.1	100		0.3		
10							1.1	100		0.3		
11							1.0			0.3		
12	2.1						1.0			0.2		
13	2.1						1.0			0.2		
14	2.2		1.8	250			1.0			0.2		
15	2.2						1.0			0.2		
16	2.2		1.8	250			0.9			0.2		
17	2.2		1.8	250			0.9					
18	2.4		1.7	220			0.8					
19	2.9						0.7					
20	2.9		1.5	170			0.7					
21	3.1		1.5	170			0.7					
22	2.9		1.4	150	1.4	150	0.7					
23	3.0		1.4	150	1.4	150	0.7					
24	3.1				1.4	150	0.7					
25	3.0				1.4	150	0.6					
26	2.9		1.5	170	1.4	150	0.6					
27			1.7	220	1.3	130	0.5					
28	2.8		1.8	250	1.3	130	0.5					
29	2.8		1.8	250	1.3	130	0.5					
30	2.8		1.8	250	1.2	120	0.5					
31	2.7				1.2	120	0.5					

NOTE.—Station only partly rated during 1915.

## SPIUS CREEK.—(2037).

*Location.*—Section 23, township 13, range 23, west of 6th meridian.

*Records Available.*—August 18 to November 22, 1911; May 8 to September 12, 1912; May 25 to November 30, 1913; March 22 to December 24, 1914; March 7 to October 15, 1915.

*Drainage Area.*—Three hundred and forty-four (344) square miles.

*Gauge.*—Standard chain gauge read daily by G. A. Longbotham.

*Channel.*—The channel is composed of rocks and boulders; velocity of water is high at all stages.

*Discharge Measurements.*—Six discharge measurements were obtained during 1914 at varying stages, and curve is fairly well defined. One ice measurement in 1915.

*Winter Flow.*—Ice conditions exist from November to February.

*Accuracy.*—"C." A high accuracy value cannot be assigned, since no measurements under open water conditions have been made during 1915.

*Discharge Measurements of Spius Creek at Longbotham's Ranch.*

Date	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1914							
Mar. 18	K. G. Chisholm	1,505	70	111	1.73	1.48	191
May 5	K. G. Chisholm	1,505	91	234	6.51	3.04	1,309
May 6	K. G. Chisholm	1,505	90	224	5.16	2.92	1,171
May 27	K. G. Chisholm	1,055	108	240	5.11	3.00	1,236
July 10	K. G. Chisholm	1,913	76	138	3.60	2.08	499
July 30	C. B. Corbould	1,915	68	67	1.85	1.25	120
1915							
Feb. 12	E. H. Tredcroft	1,923	46	27	1.00	1.70	28 <sup>1</sup>

<sup>1</sup> Ice conditions.



*Monthly Discharge of Spius Creek at Longbotham's Ranch for 1915.*

(Drainage area, 344 square miles.)

MONTH	DISCHARGE IN SECOND FEET				RUN-OFF	
	Maximum	Minimum	Mean	Per square mile	Depth in inches on Drainage area	Total in acre-feet
April	1 850	250	860	2.50	2.79	51,200
May	2 130	580	948	2.75	3.17	58,300
June	690	200	418	1.22	1.16	24,000
July	225	86	146	0.42	0.49	9,000
August	160	61	87	0.25	0.29	5,400
September	105	52	75	0.22	0.25	4,500
The period	2,130	52	422	1.22	8.35	151,200

THOMPSON RIVER, AT SPENCES BRIDGE. (2039).

*Location.*—Section 10, township 17, range 25, west of 10th meridian.

*Records Available.*—October 25 to December 31, 1911; January 1 to December 31, 1912; January 1 to December 31, 1913; January 1 to December 31, 1914; January 1 to December 31, 1915.

*Drainage Area.*—Twenty-one thousand square miles.

*Gauge.*—Gauge is standard chain gauge, situated on traffic bridge, read daily by Miss Violet Curnow.

*Channel.*—The channel varies in width from 400 feet to 500 feet. Depth of section at high water greater by 16 feet than at low. Velocities range from 2 to 11 feet per second.

*Discharge Measurements.*—Measurements are made from traffic bridge. Owing to great velocity at high water, meterings are difficult to obtain. However curve is well defined.

*Winter Flow.*—River usually remains open throughout the year.

*Accuracy.*—"B." Results are considered to be quite accurate at all stages.

*Discharge Measurements at Thompson River at Spences Bridge.*

Date	Engineer	Meter No.	Width	Area of section	Velocity	Gauge height	Discharge
			Feet	Sq. Ft.	Per second	Feet	Second
1911							
Oct. 25	C. F. Richardson	104	47	780	—	4.0	3,120
Nov. 25	C. F. Richardson	104	44	660	—	2.8	1,848
1912							
Feb. 17	C. G. Cline	1 040	44	7200	—	4	28,800
Mar. 30	C. G. Cline	1 040	43	6900	4	2	13,800
May	H. E. Richardson	1 040	48.5	8400	—	5.5	46,200
May	C. G. Cline	1 040	40.4	8080	4.5	15.9	80,880
July	C. B. Corbould	1 040	44.1	7135	4.1	11.7	83,480
1913							
May	K. Chisholm & Cline	1 040	400	4350	1	7.1	30,885
June	K. G. Chisholm	1 040	37.1	5968	—	14.4	85,950
June	K. Chisholm & Cline	1 040	30.1	3220	4.8	18.1	100,000
Aug. 12	K. G. Chisholm	1 040	44.0	5730	4	1.4	80,220
1915							
Feb. 13	E. H. Tredcroft	—	37	5658	2.5	1.7	9,618



BRITISH COLUMBIA HYDROMETRIC SURVEY

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225. JAL PAPER No. 266

Daily Gauge Height and Discharge of Thompson River at Spences Bridge for 1915.

(Drainage area, 31,000 square miles.)

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
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	2 20	6,550	1 70	5,640	1 50	5,420	2 50	6,800	9 20	33,800	14 25	67,200
2	2 30	8,850	1 70	5,640	1 45	5,370	2 70	7,240	9 50	25,400	14 00	58,300
3	3 10	9,370	1 60	5,630	1 60	5,420	3 00	8,000	9 70	36,400	13 70	62,800
4	2 10	8,270	1 60	5,630	1 50	5,420	3 35	8,690	9 70	36,400	13 50	61,300
5	3 10	8,270	1 60	5,530	1 50	5,420	3 40	9,110	10 00	38,000	13 50	61,200
6	3 00	8,000	1 60	5,530	1 50	5,420	4 20	11,500	10 30	39,700	13 30	58,400
7	3 00	8,000	1 60	5,530	1 50	5,420	4 75	13,600	10 60	41,300	13 30	58,800
8	2 90	7,740	1 70	5,640	1 45	5,370	6 30	16,700	11 30	45,800	13 20	58,800
9	2 80	7,490	1 80	5,750	1 40	5,330	6 50	16,500	11 60	46,700	13 30	58,600
10	2 70	7,240	1 80	5,750	1 40	5,320	6 70	17,200	12 40	52,500	12 25	58,300
11	2 70	7,240	1 70	5,640	1 40	5,230	6 80	17,800	12 80	55,700	13 15	58,400
12	2 60	7,000	1 70	5,640	1 40	5,330	6 90	18,200	13 00	56,500	13 00	58,300
13	2 55	6,900	1 70	5,640	1 40	5,330	6 10	19,100	13 60	62,000	12 80	58,300
14	2 50	6,800	1 70	5,640	1 40	5,330	6 30	20,000	13 50	61,300	13 45	52,300
15	3 40	6,620	1 70	5,640	1 40	5,230	6 45	20,700	13 45	60,600	12 30	53,100
16	2 40	6,620	1 70	5,640	1 40	5,330	6 55	22,600	13 40	60,400	12 30	52,100
17	2 40	6,620	1 60	5,530	1 50	5,420	7 30	24,600	13 40	60,800	12 20	52,100
18	2 35	6,630	1 60	5,530	1 55	5,470	7 70	26,400	13 35	60,000	12 50	52,000
19	2 20	6,450	1 60	5,530	1 60	5,530	7 90	27,300	13 20	59,600	13 50	56,700
20	2 30	6,450	1 60	5,530	1 65	5,580	8 30	29,300	12 35	60,000	13 50	56,800
21	2 20	6,290	1 60	5,530	1 70	5,640	8 70	31,300	14 20	62,800	12 55	56,100
22	2 10	6,140	1 60	5,530	1 80	5,750	8 90	32,300	14 20	67,700	12 80	55,700
23	2 00	6,000	1 60	5,530	1 90	5,870	9 00	32,200	14 80	69,400	12 50	54,900
24	1 90	5,870	1 55	5,470	2 00	6,000	9 00	32,300	14 90	72,700	12 60	54,300
25	1 80	5,750	1 50	5,420	2 10	6,140	8 90	32,200	15 10	74,500	12 30	52,100
26	1 80	5,750	1 50	5,420	2 20	6,290	9 00	32,800	15 00	72,600	12 70	55,000
27	1 80	5,750	1 50	5,420	2 30	6,450	9 00	32,800	14 90	72,700	12 40	60,400
28	1 75	5,690	1 50	5,420	2 40	6,620	9 10	32,300	14 80	71,900	13 40	60,400
29	1 70	5,640	1 50	5,420	2 50	6,800	9 10	33,300	14 70	71,100	13 40	60,400
30	1 70	5,640	1 50	5,420	2 50	6,800	9 10	33,300	14 55	70,700	13 30	58,800
31	1 70	6,640	1 50	5,420	2 50	6,800	9 10	33,300	14 55	69,800	13 30	58,800

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
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1		58,600	12 50	53,500	9 20	33,800	4 90	14,000	5 70	17,300	2 20	8,520
2	13 15	58,400	12 60	53,500	8 70	31,300	4 80	13,600	5 60	16,900	2 20	8,820
3	12 10	58,000	12 50	53,500	8 60	30,800	4 80	13,600	5 50	16,800	2 35	8,690
4	13 00	57,200	12 45	53,200	8 60	30,800	4 90	13,600	5 40	16,100	2 30	8,560
5	13 00	57,200	12 40	52,800	8 55	30,500	4 70	13,300	5 30	15,700	3 20	8,550
6	12 90	56,500	12 30	52,100	8 50	30,300	4 50	12,500	5 20	15,200	3 10	8,270
7	12 80	55,700	12 10	50,700	8 40	29,800	4 40	12,200	5 20	15,200	3 15	8,410
8	12 60	55,700	11 90	49,300	8 30	30,300	4 50	12,500	5 10	14,800	3 20	8,550
9	13 00	57,300	11 70	48,000	8 10	28,300	4 50	12,500	5 00	14,400	2 20	8,560
10	12 80	55,700	11 60	47,400	7 60	26,000	4 10	11,200	4 90	14,000	2 20	8,550
11	12 70	55,000	11 50	46,700	7 20	24,100	4 05	11,000	4 60	13,600	2 15	6,410
12	12 80	55,700	11 40	46,100	6 90	22,700	4 00	10,800	4 70	12,200	2 10	8,270
13	12 80	55,700	11 25	45,100	6 40	20,400	4 00	10,800	4 60	13,900	2 10	8,370
14	12 75	55,400	11 10	44,200	6 30	20,000	3 95	10,700	4 50	13,500	3 05	8,130
15	12 60	54,300	11 00	42,600	6 15	19,300	3 95	10,700	4 40	12,300	2 05	8,120
16	12 50	53,500	10 80	43,000	5 50	18,300	3 90	10,500	4 20	11,800	3 00	8,000
17	12 50	53,500	10 70	41,900	5 40	17,300	3 85	10,400	4 15	11,200	3 00	8,000
18	13 50	61,200	10 60	41,300	5 70	17,200	3 75	10,100	4 10	11,200	2 90	7,740
19	12 60	62,000	10 45	40,500	5 70	17,300	3 70	9,950	4 05	11,000	3 80	7,490
20	12 60	62,000	10 30	39,700	5 75	17,500	2 70	9,950	4 00	10,800	2 80	7,490
21	12 50	61,300	10 25	39,400	5 80	17,800	3 80	10,200	4 00	10,800	3 70	7,240
22	13 40	60,400	10 20	39,100	5 80	17,800	4 00	10,800	3 90	10,500	3 70	7,240
23	13 30	59,600	10 10	38,500	5 60	16,900	4 20	11,500	3 80	10,200	2 80	7,490
24	12 20	58,800	10 00	38,000	5 50	16,500	4 60	12,900	3 70	9,950	2 70	7,340
25	13 90	56,500	9 90	37,500	5 40	16,000	4 90	14,000	2 60	9,670	2 70	7,340
26	12 90	56,500	9 80	37,000	5 30	15,500	5 10	14,500	3 55	9,390	2 70	7,240
27	12 50	56,500	9 70	36,400	5 20	15,000	5 30	15,700	3 40	9,110	3 70	7,340
28	12 80	56,700	9 60	35,900	5 10	14,500	5 30	15,700	3 40	9,110	2 50	6,800
29	13 70	55,000	9 40	34,900	5 00	14,000	5 35	15,900	3 35	8,970	2 40	6,630
30	13 60	54,200	9 30	34,400	4 50	13,500	5 40	16,100	3 35	8,970	3 20	6,450
31	12 55	52,900	9 20	32,800	4 40	13,000	5 50	16,500	3 35	8,970	3 20	6,290

**Monthly Discharge of Thompson River at Spences Bridge for 1915.**  
(Drainage area, 21,000 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January	8,550	5,640	6,820	0.32	0.37	420,000
February	5,750	5,420	5,660	0.26	0.28	309,000
March	8,800	5,330	5,710	0.27	0.31	351,000
April	33,300	8,800	22,210	1.06	1.18	1,321,000
May	74,500	33,800	57,580	2.74	3.16	3,540,000
June	87,300	52,100	57,500	2.73	3.05	3,420,000
July	62,000	53,600	57,110	2.72	3.14	3,510,000
August	53,500	33,800	43,580	2.08	2.40	2,680,000
September	33,800	14,500	21,900	1.04	1.16	1,303,000
October	16,500	9,950	12,520	0.60	0.69	770,000
November	17,300	8,970	12,430	0.57	0.84	716,000
December	8,830	8,290	7,830	0.37	0.43	482,000
The year	74,500	5,330	25,980	1.23	18.81	18,822,000

**THOMPSON RIVER, AT KAMLOOPS.—(2040).**

*Location.*—Lower highway bridge, below mouth of North Thompson river, at Kamloops; section 7, township 20, range 17, west of 6th meridian.

*Gauge Readings.*—These readings show the elevation of the water level in the Thompson and are interesting for navigation and pumping; the station has shown itself unsuitable for determining discharge. Gauge read daily by Geo. Clapperton.

*Discharge Measurements.*—Six meter measurements made during 1915 are listed under Miscellaneous Measurements, Kamloops district.

*Mean Daily Gauge Height, in Feet, of Thompson River at Kamloops.*

DAY.	JAN.	FEB.	MARCH	APRIL.	MAY.	JUNE	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
1	-0.2	-0.2	0.2	0.3	5.4	9.1	8.3	7.8	5.5	1.8		
2	-0.2	-0.1	0.2	0.3	5.4	8.8	8.2	7.8	5.5	1.7		
3	-0.2	-0.1	0.3	0.2	5.3	8.7	8.2	7.7	4.8	1.8		
4	0.0	-0.1	0.3	0.9	5.4	8.5	8.1	7.9	4.5	1.8		
5	0.1	-0.1	Ice	2.0	5.7	8.4	8.0	8.0	4.5	1.8		
6	0.2	0.0	Jam	2.4	6.0	8.2	8.1	7.5	4.4	1.7		
7	0.5	0.0	Clear	2.5	6.4	8.5	8.2	7.2	4.5	1.6		
8	0.7	0.0	-0.2	2.6	6.8	8.8	8.3	7.1	4.0	1.5		
9	0.5	0.1	-0.3	2.7	7.5	8.8	8.2	7.2	3.9	1.4		
10	0.6	0.2	-0.3	2.6	8.0	8.6	8.0	7.0	7.0	1.4		
11	0.5	0.3	-0.3	2.7	8.6	8.2	8.1	6.7	3.3	1.3		
12	0.6	0.1	-0.3	2.8	9.0	7.7	8.0	8.6	3.1	1.2		
13	0.4	0.1	-0.5	2.6	8.8	7.6	7.7	8.5	2.8	1.1		
14	0.4	0.1	-0.6	2.9	8.5	7.5	7.8	6.4	2.5	0.8		
15	0.3	0.2	-0.7	3.4	8.3	7.5	8.0	8.3	2.2	0.7		
16	0.2	0.3	-0.6	3.4	8.6	7.6	8.2	8.2	2.5	1.0		
17	0.2	0.3	-0.6	3.4	8.6	7.7	9.0	6.1	2.4	0.8		
18	0.2	0.2	-0.3	3.8	8.6	8.1	9.1	8.2	2.5	1.0		
19	0.1	0.1	0.0	4.1	8.3	8.2	8.8	6.3	2.5	1.0		
20	0.1	0.2	0.0	4.5	8.6	8.1	8.5	8.2	2.6	1.0		
21	0.1	0.2	0.2	4.5	9.2	8.0	8.4	6.1	2.7	1.1		
22	Frozen	0.2	0.5	4.8	9.6	8.1	8.3	6.0	2.6	1.0		
23	0.0	0.3	0.3	4.6	9.9	7.7	8.4	6.2	2.6	1.2		
24	0.0	0.3	0.2	4.5	10.2	7.5	8.3	6.2	2.6	1.1		
25	-0.2	0.3	0.2	4.5	10.0	7.8	8.2	6.1	2.6	1.6		
26	-0.2	0.3	0.1	4.5	10.0	8.1	8.0	6.0	2.2	1.7		
27	-0.2	0.2	0.1	4.8	9.9	8.4	7.9	8.0	2.1	1.8		
28	-0.2	0.1	0.2	4.8	9.7	8.7	7.6	5.5	2.0	1.7		
29	-0.2	.....	0.1	4.8	9.5	8.6	7.8	5.5	2.0	1.8		
30	-0.2	.....	0.2	4.9	9.7	8.4	7.8	5.4	1.8	1.9		
31	.....	.....	0.3	.....	9.5	.....	7.8	5.3	.....	1.8		

MISCELLANEOUS METER MEASUREMENTS, 1915.

KAMLOOPS DISTRICT, KAMLOOPS DIVISION.

Date.	Stream.	Tributary To—	Locality.	Gauge Height.	Dis-charge.	Drainage Area.	Dis-charge per square mile.
April 3	Alkali creek	Cherry creek	Above Cornwall's div.	Feet.	Sec.-ft.		
April 29	Alkali creek	Cherry creek	Above Cornwall's div.		Dry		
May 3	Anstey creek	Shuswap lake	Near mouth		23.5		
July 19	Anstey creek	Shuswap lake	Near mouth		12.1		
May 20	Battle creek	Clearwater river	Near mouth		80.1		
Feb. 26	Bear creek	Adams river	Adams lake road	3.00	7.7		
June 3	Bear creek	Adams river	Adams lake road	2.58	4.0		
July 3	Bear creek	Adams river	Adams lake road		3.3		
Aug. 31	Bear creek	Adams river	Adams lake road		Dry		
July 3	Bear creek	Diversion from	Adams lake road		63.0		
Aug. 31	Bear creek	Diversion from	Adams lake road		5.3		
May 21	Bear creek	Clearwater	Murtle trail		251.0		
Aug. 11	Bear creek	Clearwater	Murtle trail		16.9		
April 14	Cahilty creek	Louis creek	At road		17.5		
May 13	Cahilty creek	Louis creek	Above diversion		113.0		
July 21	Canoe creek	Shuswap lake	C. P. R. track	2.00	10.1		
April 2	Chartrand creek	Guichon creek	Chartrand's ranch		Dry		
June 4	Chartrand creek	Guichon creek	Above Savona road		3.5		
July 22	Chartrand creek	Guichon creek	Near mouth		3.3		
April 2	Chartrand spring	Guichon creek	Chartrand's ranch		0.2		
April 14	Christina creek	Louis creek	McMartina ranch		4.7		
May 12	Christina creek	Louis creek	McKnight's ranch		3.4		
May 28	Cold creek	Paul creek	Near mouth		2.7		
Aug. 3	Cold creek	Paul creek	Near mouth		0.5		
April 3	Dairy creek	Cherry creek	Near mouth		Dry		
April 3	Duffy creek	Kamloops lake	Road bridge		Dry		
April 29	Duffy creek	Kamloops lake	Road bridge		Dry		
April 13	Edwards creek	Hefley creek	Near mouth		Dry		
April 15	Fadear creek	Louis creek	Above Fadear's division	0.30	2.8		
May 13	Fadear creek	Louis creek	Above Fadear's division	0.90	15.8		
Mar. 9	Fishtrap creek	N. Thompson river	Three miles from mouth	Ice	35.4		
May 4	Fishtrap creek	N. Thompson river	Three miles from mouth	Ice	3.4		
Feb. 18	Frazer river	Straits of Georgia	Above mouth of Thompson	1.20	51.5		
Feb. 25	Gold creek	Adams river	Near mouth		14,900.0		
June 3	Gold creek	Adams river	Near mouth		11.9		
April 1	Greenstone creek	Meadow creek	Near mouth		270.0		
June 5	Greenstone creek	Meadow creek	Near mouth	Ice	1.0		
July 22	Greenstone creek	Meadow creek	Near mouth	0.95	10.2		
May 20	Grouse creek	Clearwater river	Near mouth	0.90	6.8		
April 2	Guichon creek	Nicola river	Above Witch creek		308.0		
June 4	Guichon creek	Nicola river	Above Witch creek		6.8		
June 7	Guichon creek	Nicola river	Above lower Nicola		30.0		
July 21	Guichon creek	Nicola river	Below Allen's house		106.0		
July 23	Guichon creek	Nicola river	Above Lower Nicola div.		13.8		
April 13	Hefley creek	Anderson's div.	Near intake		70.1		
May 12	Hefley creek	Anderson's div.	Near intake		1.8		
April 12	Hefley creek	Austin's div.	Near road		3.8		
May 11	Hefley creek	Austin's div.	Near road		0.5		
April 12	Hefley creek	Crawshaw div.	Near intake		Dry		
May 12	Hefley creek	Crawshaw div.	Near intake		0.5		
May 20	Hemp creek	Clearwater river	Near intake		1.4		
Aug. 10	Hermon spring	Clearwater river	Near mouth		360.0		
Aug. 18	Louis creek	N. Thompson river	Hermon's ranch		0.6		
May 12	McGillivary creek	Louis creek	Near mouth		78.1		
April 2	Meadow creek	Guichon creek	Cochran's ranch		109.0		
June 7	Meadow creek	Guichon creek	Near mouth	Ice	10.1		
July 22	Meadow creek	Guichon creek	Below McClure's ranch	1.37	21.5		
April 28	Meadow creek	Shuswap lake	Near Celestia		20.7		
Mar. 24	Monte creek	Diversion from	To Summit lake		4.1		
June 16	Monte creek	Diversion from	To Summit lake		1.4		
July 3	Monte creek	Diversion from	To Summit lake		1.8		
Oct. 9	Monte creek	Diversion from	To Summit lake	0.71	13.3		
April 3	Pendleton creek	Cherry creek	Near mouth	0.15	0.1		
April 29	Pendleton creek	Cherry creek	Near mouth		Dry		
May 31	Peterson creek	Thompson river	Fish lake road		0.5		
May 31	Peterson creek	Cooper's div. from	Fish lake road		0.5		
May 31	Peterson creek	Mitchell's lower div.	Fish lake road		0.5		
July 19	Queest creek	Shuswap lake	Near mouth		1.4		
April 2	Quenville creek	Guichon creek	Quenville's ranch		37.2		
June 7	Quenville creek	Guichon creek	Above Quenville's div.		Dry		
July 23	Quenville creek	Guichon creek	Quenville's ranch		4.6		
June 10	Quilchena creek	Nicola lake	Above Gulchan's div.		1.2		
Feb. 22	Quilchena creek	Nicola lake	Near mouth		35.9		
June 7	Ray creek	Guichon creek	Ray's ranch		6.8		
July 23	Ray creek	Guichon creek	Ray's ranch		18.0		
Mar. 23	Robbins creek	Monte creek	Duck's ranch		7.8		
June 16	Robbin's creek	Monte creek	Duck's ranch	1.05	0.3		
			Duck's ranch	1.25	1.9		

## MISCELLANEOUS METER MEASUREMENTS, 1915.—Continued.

## KAMLOOPS DISTRICT, KAMLOOPS DIVISION.

Date.	Stream.	Tributary to—	Locality.	Gauge Height.	Dis-charge.	Drainage Area.	Dis-charge per square mile.
				Feet.	Sec.-ft.	Sq. miles	Sec.-ft.
July 22	Salmon river	Shuswap lake	Near Salmon arm	0.40	101.0		
April 17	Sullivan creek	N. Thompson river	Above diversions	0.33	0.5		
May 14	Sullivan creek	N. Thompson river	Above diversions	0.25	0.4		
Mar. 17	Thompson river	Fraser river	Below North Thompson	-0.25	4,400.0		
April 8	Thompson river	Fraser river	Below North Thompson	2.40	14,600.0		
May 3	Thompson river	Fraser river	Below North Thompson	5.30	28,600.0		
May 28	Thompson river	Fraser river	Below North Thompson	10.05	56,900.0		
July 9	Thompson river	Fraser river	Below North Thompson	8.10	46,200.0		
Aug. 9	Thompson river	Fraser river	Below North Thompson	7.35	45,500.0		
Mar. 13	N. Thompson river	Thompson river	Above Clearwater river		1,080.0		
July 12	N. Thompson river	Thompson river	C.N.R. Bridge, Kamloops		29,400.0		
Sept. 1	N. Thompson river	Thompson river	C.N.R. Bridge, Kamloops		20,200.0		
April 3	Threemile creek	Kamloops lake	Leighton's ranch		0.4		
April 29	Threemile creek	Kamloops lake	Road bridge		1.8		
June 3	Threemile creek	Kamloops lake	Kamloops-Savona road		4.6		
July 20	Threemile creek	Kamloops lake	Kamloops-Savona road		4.3		
Aug. 18	Threemile creek	Kamloops lake	Kamloops-Savona road		2.0		
June 3	Threemile creek	South-east fork	100 feet above forks		0.8		
June 3	Threemile creek	South-west fork	100 foot above forks		2.5		
July 21	Threemile creek	South-west fork	At road crossing		2.0		
April 2	Witch creek	Gulchon creek	Chartrand's ranch		6.5		
June 4	Witch creek	Gulchon creek	Chartrand's ranch		24.5		
July 21	Witch creek	Gulchon creek	Ashcroft road		10.8		

## OKANAGAN DISTRICT, KAMLOOPS DIVISION.

April 6	Ashnola creek	Similkameen river	Above diversions	0.51	96.0
April 8	Otter river	Tulameen river	Tulameen	3.14	181.0
June 3	Otter river	Tulameen river	Tulameen	2.75	71.6
June 9	Nicholson's creek	Kettle river	Nicholson's bridge		13.6
June 9	Rock creek	Kettle river	Rock creek		138.0

## ASHCROFT DISTRICT, KAMLOOPS DIVISION.

April 22	Anderson creek	Hat creek	At mouth		10.5
April 22	Blue Earth creek	Hat creek	At mouth		0.7
April 24	Blue Earth creek	Hat creek	At mouth		1.4
April 27	Cache creek	Bonaparte river	Above diversions		18.2
April 27	Clemes creek	Deadman river	Near mouth		4.6
April 1	Colley creek	Hat creek	At wagon road		1.0
Aug. 24	Colley creek	Hat creek	At wagon road		1.0
May 6	Collins div.	From Bonaparte river	Collins ranch		2.4
Aug. 23	Hammonds div.	From Hat creek	Near intake		3.6
April 21	Hammonds div.	From Oregon Jack creek	Near intake		0.8
April 23	Hat creek	Bonaparte river	Above diversions at mouth	3.25	57.9
Aug. 24	Hat creek	Bonaparte river	Above diversions at mouth	2.72	21.9
April 21	King creek	Hat creek	At wagon road		1.0
Aug. 24	King creek	Hat creek	At wagon road		0.1
Aug. 24	Lloyd creek	Hat creek	At mouth		0.9
April 27	Long Lake creek	Deadman river	Above Cultus lake		0.6
April 22	Medicine creek	Hat creek	At mouth		4.6
Feb. 15	Nahatlatch river	Thompson river	At Nahatlatch lake		287.0
Aug. 21	Nelson creek	Thompson river	Near mouth		0.5
April 21	Oregon Jack creek	Thompson river	Hat creek road		3.9
Aug. 23	Oregon Jack creek	Thompson river	Hat creek road		6.7
April 22	Robertson creek	Hat creek	At wagon road		3.6
April 23	Scottie creek	Bonaparte river	Above diversions	1.27	14.9
Aug. 25	Scottie creek	Bonaparte river	Above diversions	0.79	7.7
Aug. 26	Walhachin div.	From Deadman river	At intake		36.5

## CHRISTINA LAKE.—(2086).

*Location.*—Near Grand Forks; Provincial Water District No. 5.

*Gauge Readings.*—These readings show the level of the water in Christina lake, January 1 to December 31, 1914, and March 21 to September 30, 1915. Gauge read by W. H. Beach.

*Co-operation.*—This gauge was installed under the supervision of Mr. A. V. White, Consulting Engineer of the Conservation Commission and Mr. Wm. Young, Comptroller of the Provincial Water Rights Branch.

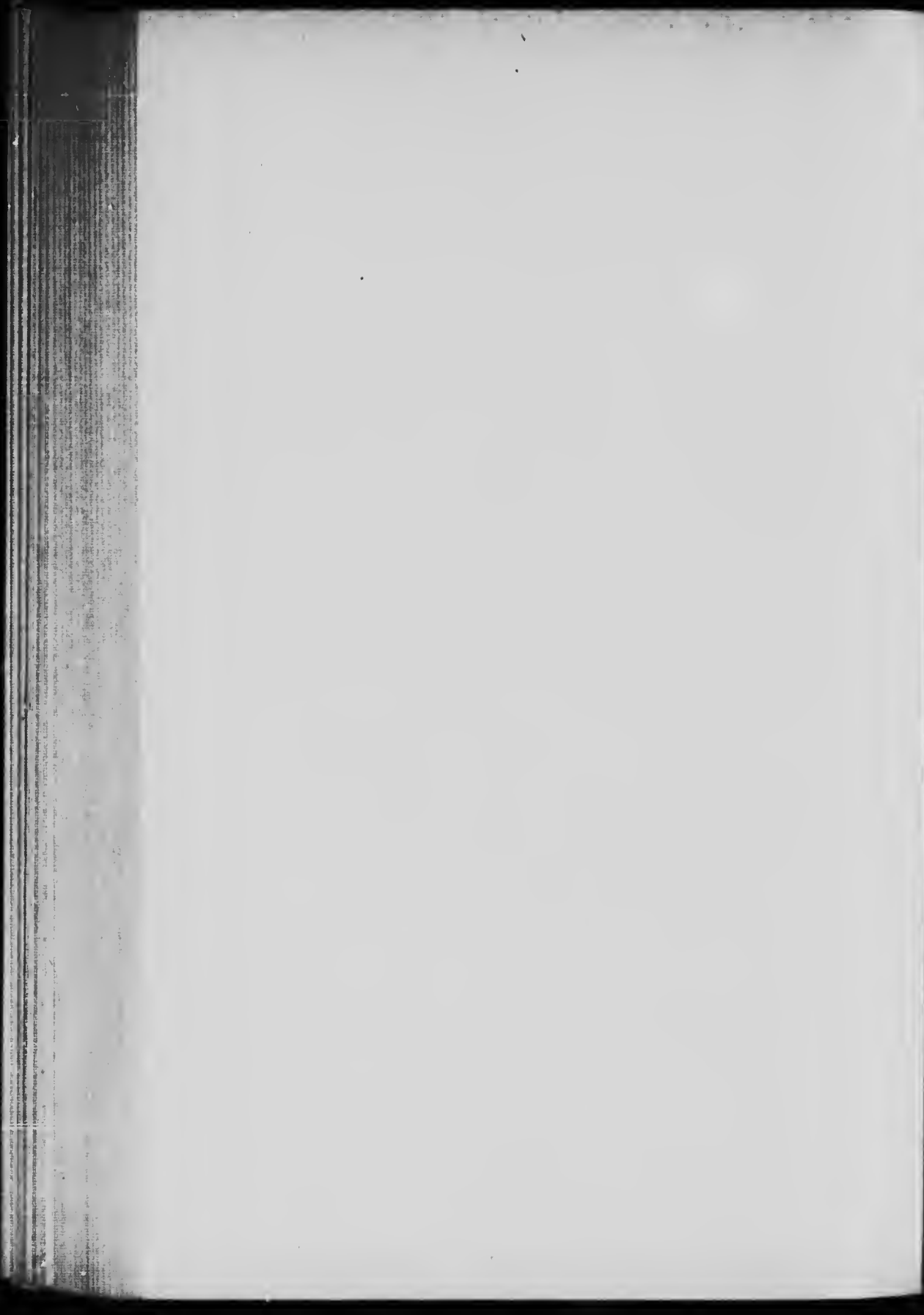
*Mean Daily Gauge Height, in Feet, of Christina Lake for 1914.*

DAY	JAN.	FEB.	MARCH	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
1	1.40			2.15	5.00	4.38	2.87	1.75				
2	1.40			2.20	5.05	4.25	2.85	1.75	1.10	1.05	1.35	1.80
3	1.40			2.20	5.05	4.30	2.55	1.70	1.15	1.03	1.35	1.75
4	1.40			2.25	5.22	4.30	2.85	1.70	1.00	1.00	1.40	1.75
5	1.45			2.25	5.22	4.30	2.55	1.52	0.95	1.00	1.45	1.75
6												
7	1.45			2.32	5.20	4.30	2.80	1.53	0.90	1.00	1.50	1.75
8	1.45			2.45	5.20	4.28	2.75	1.50	0.90	1.00	1.05	1.75
9	1.45			2.50	5.20	4.22	2.77	1.51	0.90	1.00	1.50	1.75
10	1.50			2.55	5.20	4.18	2.52	1.55	0.90	1.00	1.52	1.70
11				2.85	5.17	4.02	2.55	1.50	0.90	1.00	1.55	1.70
12	1.55			3.05	5.15	3.98	2.50	1.50	0.90	1.00	1.70	1.70
13	1.55			3.20	5.10	2.82	2.42	1.45	0.90	1.00	1.75	1.70
14	1.55			3.45	5.10	3.75	2.37	1.45	0.90	1.00	1.50	1.70
15	1.55			3.55	5.08	3.75	2.30	1.45	0.90	1.00	1.50	1.70
16				4.00	5.12	3.70	2.22	1.45	0.90	1.05	1.50	1.68
17	1.57			4.40	5.15	3.70	2.20	1.45	0.90	1.05	1.55	1.55
18	1.70			4.70	5.20	2.55	2.15	1.45	0.95	1.05	1.55	1.55
19	1.75			4.80	5.17	3.52	2.15	1.40	0.95	1.05	1.55	1.55
20	1.75			4.90	5.12	3.57	2.10	1.40	0.95	1.10	1.55	1.55
21	1.80		1.50	5.10	5.05	3.50	2.05	1.32	1.00	1.10	1.55	1.55
22												
23	1.80		1.55	5.12	5.00	3.45	1.97	1.30	1.00	1.10	1.55	1.55
24	1.85		1.55	5.20	4.92	3.45	1.95	1.27	1.00	1.10	1.55	1.55
25	1.85		1.50	5.20	4.85	3.37	1.90	1.25	1.00	1.10	1.55	1.55
26	1.85		1.55	5.30	4.85	2.20	1.90	1.20	1.00	1.10	1.55	1.55
27	1.85		1.75	5.30	4.80	3.22	1.90	1.20	1.00	1.17	1.52	1.50
28												
29	1.85		1.80	5.25	4.75	2.17	1.90	1.15	1.00	1.10	1.80	1.60
30	1.85		1.85	5.17	4.70	2.10	1.87	1.15		1.10	1.50	1.50
31	1.85		1.90	5.10	4.52	3.00	1.85	1.15		1.10	1.50	1.57
1	1.85		1.95	5.05	4.53	3.07	1.85	1.12		1.15	1.80	1.55
2	1.85		3.00	5.00	4.43	2.00	1.80	1.10		1.15	1.50	1.55
3			3.10		4.40		1.80	1.10		1.30		1.55

## Mean Daily Gauge Height, in Feet, of Christina Lake for 1915.

DAY.	JAN.	FEB.	MARCH	APRIL.	MAY.	JUNE.	JULY.	AUG.	SEPT.	OCT.	NOV.	DEC.
1				1.98	3.90	4.67			1.50			
2				3.00	2.90	4.52			1.45			
3				3.08	2.95	4.55			1.42			
4				2.10	2.95	4.47			1.40			
5				2.15	2.95	4.40			1.25			
6				2.20	2.90	4.35			1.25			
7				2.32	2.90	4.30			1.20			
8				2.42	3.00	4.27			1.20			
9				2.52	2.90	4.22			1.25			
10				2.72	2.90	4.20			1.25			
11				2.72	3.00	4.10			1.20			
12				2.85	2.85	3.97			1.20			
13				2.97	3.85	3.87			1.20			
14				3.12	3.85	3.77			1.15			
15				2.57	3.95	3.67			1.15			
16				3.55	3.90	2.60			1.15			
17				3.55	4.00	3.55			1.15			
18				3.72	4.05	3.52			1.10			
19				3.77	4.12	3.47			1.10			
20				3.52	4.20	3.42			1.10			
21			1.50	3.55	4.25	2.40			1.10			
22			1.52	3.90	4.30	3.35			1.10			
23			1.57	3.90	4.32	3.30			1.07			
24			1.62	3.92	4.37	3.22			1.07			
25			1.65	2.95	4.42	3.18			1.10			
26			1.70	2.92	4.52	3.10			1.05			
27			1.72	3.87	4.60	2.00			1.05			
28			1.80	3.82	4.62	2.95			1.05			
29			1.82	3.87	4.70	2.90			1.00			
30			1.90	3.90	4.70	2.85			1.00			
31			1.95		4.70							







REPORT  
OF THE  
BRITISH COLUMBIA HYDROMETRIC  
SURVEY FOR 1915.

CHAPTER VIII.  
Nelson Division—Hydrometric Data.

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## CHAPTER VIII.

## NELSON DIVISION—HYDROMETRIC DATA.

## NELSON DISTRICT.

## CARPENTER CREEK.—(3025).

*Location.*—The station is in the flume back of the C.P.R. depot, at Sandon.

*Records Available.*—1914 and 1915.

*Drainage Area.*—Twelve square miles.

*Climatic Conditions.*—Summers hot. May and June generally wet. Little rain during July and August. Winters mild. Snowfall is not heavy in the lower altitudes. Frazil ice is a possibility.

*Gauge.*—Enamel gauge, 0 feet to 3 feet, nailed to side of flume; daily readings are made by Mrs. E. A. Cameron.

*Flume.*—The creek is carried through Sandon in a box flume, 11.67 feet wide and 6 feet deep. Kutter's formula was applied to determine the discharges.

*Accuracy.*—During high water results are probably within 10 per cent, but at low stages, as the gauge reads only to tenths, no accuracy can be given.

## Daily Gauge Height and Discharge of Carpenter Creek at Sandon for 1915.

(Drainage area, 12 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	0.10	13	0.05	12	0.05	12	0.03	12	0.33	144	0.70	200
2	0.10	18	0.05	12	0.05	12	0.06	13	0.63	170	0.33	170
3	0.05	12	0.03	12	0.05	12	0.10	13	0.86	192	0.60	162
4	0.05	12	0.05	12	0.06	12	0.10	13	0.70	200	0.65	131
5	0.05	12	0.05	12	0.05	12	0.10	18	0.73	222	0.72	206
6	0.05	12	0.05	12	0.06	12	0.10	16	0.72	222	0.72	206
7	0.05	12	0.05	12	0.06	12	0.10	16	0.30	243	0.82	232
8	0.05	12	0.05	12	0.03	12	0.10	13	0.33	273	0.72	208
9	0.05	12	0.05	12	0.03	12	0.12	20	0.88	279	0.33	170
10	0.03	12	0.05	12	0.05	12	0.15	23	0.82	322	0.30	132
11	0.05	12	0.05	12	0.05	12	0.15	29	0.72	206	0.80	132
12	0.05	12	0.05	12	0.05	12	0.13	29	0.65	131	0.65	132
13	0.05	12	0.05	12	0.05	12	0.15	23	0.83	161	0.70	200
14	0.05	12	0.05	12	0.05	12	0.15	23	0.85	131	0.70	200
15	0.05	12	0.05	12	0.05	12	0.16	36	0.65	131	0.30	242
16	0.05	12	0.05	12	0.05	12	0.22	45	0.65	181	0.70	200
17	0.05	12	0.05	12	0.05	12	0.25	82	0.82	170	0.72	206
18	0.05	12	0.05	12	0.05	12	0.35	80	0.62	170	0.68	132
19	0.05	12	0.05	12	0.05	12	0.40	64	0.60	132	0.60	182
20	0.05	12	0.05	12	0.05	12	0.40	94	0.85	131	0.62	182
21	0.05	12	0.05	12	0.05	12	0.25	80	0.78	234	0.82	132
22	0.05	12	0.05	12	0.05	12	0.30	66	0.82	232	0.85	181
23	0.05	12	0.05	12	0.05	12	0.30	68	0.80	243	0.70	200
24	0.05	12	0.05	12	0.05	12	0.30	68	0.80	243	0.70	200
25	0.05	12	0.05	12	0.05	12	0.30	38	0.78	224	0.32	181
26	0.05	12	0.05	12	0.05	12	0.30	88	0.70	300	0.38	132
27	0.05	12	0.05	12	0.03	12	0.30	66	0.70	200	0.52	145
28	0.05	12	0.05	12	0.05	12	0.58	148	0.90	288	0.30	182
29	0.05	12	.....	.....	0.05	12	0.55	144	0.80	243	0.65	181
30	0.05	12	.....	.....	0.05	12	0.70	200	0.80	243	0.72	213
31	0.05	12	.....	.....	0.05	12	.....	.....	0.70	300	.....	.....
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	0.78	222	0.30	68	0.10	18	0.10	18	0.15	26	0.10	18
2	0.85	222	0.30	68	0.10	18	0.15	26	0.15	29	0.10	18
3	0.70	200	0.30	66	0.10	18	0.10	18	0.12	22	0.10	18
4	0.88	132	0.25	52	0.10	18	0.10	16	0.16	23	0.10	18
5	0.85	181	0.25	53	0.10	18	0.10	18	0.15	23	0.10	18
6	0.85	181	0.25	53	0.10	18	0.10	18	0.15	23	0.10	18
7	0.85	181	0.25	53	0.10	18	0.10	18	0.12	22	0.10	18
8	0.62	170	0.20	40	0.10	18	0.10	18	0.10	18	0.10	18
9	0.60	132	0.20	40	0.10	18	0.10	18	0.10	16	0.10	18
10	0.68	132	0.20	40	0.10	18	0.10	18	0.10	16	0.10	18
11	0.50	136	0.20	40	0.18	38	0.10	18	0.10	18	0.10	18
12	0.42	100	0.20	40	0.10	18	0.10	18	0.10	18	0.10	18
13	0.25	80	0.16	29	0.10	18	0.10	16	0.10	18	0.10	18
14	0.45	110	0.15	29	0.10	18	0.10	16	0.10	16	0.10	18
15	0.52	132	0.15	29	0.10	18	0.13	29	0.10	18	0.10	18
16	0.58	155	0.15	29	0.10	18	0.10	18	0.10	18	0.10	18
17	0.65	181	0.15	29	0.12	22	0.10	18	0.10	18	0.10	18
18	0.70	200	0.15	29	0.18	26	0.10	18	0.10	18	0.10	18
19	0.88	132	0.15	26	0.15	26	0.15	29	0.10	18	0.10	18
20	0.85	181	0.15	29	0.15	29	0.15	29	0.10	18	0.10	18
21	0.80	182	0.30	88	0.18	22	0.15	26	0.10	18	0.10	18
22	0.85	144	0.25	53	0.15	29	0.15	26	0.10	18	0.10	18
23	0.45	110	0.20	53	0.15	29	0.15	26	0.10	18	0.10	18
24	0.37	88	0.15	29	0.15	29	0.18	38	0.10	18	0.10	18
25	0.35	80	0.15	29	0.20	40	0.20	40	0.10	18	0.10	18
26	0.35	80	0.15	29	0.15	29	0.30	40	0.10	18	0.10	18
27	0.35	80	0.15	26	0.15	29	0.20	40	0.10	18	0.10	18
28	0.32	80	0.10	18	0.15	29	0.22	45	0.10	18	0.10	18
29	0.30	88	0.20	13	0.13	23	0.22	45	0.10	18	0.10	18
30	0.30	88	0.10	18	0.10	18	0.30	40	0.10	18	0.10	18
31	0.30	38	0.10	18	.....	.....	0.30	40	.....	.....	0.10	18

Monthly Discharge of Carpenter Creek at Sandon for 1915.  
(Drainage area, 12 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January	18.0	12.0	12.4	1.03	1.19	752
February	12.0	12.0	12.0	1.00	1.04	565
March	12.0	12.0	12.0	1.00	1.15	739
April	200.0	12.0	56.2	4.68	5.22	5,540
May	288.0	144.0	212.0	17.70	20.40	15,000
June	282.0	144.0	187.0	15.60	17.40	11,100
July	322.0	66.0	137.0	11.40	13.10	8,420
August	66.0	18.0	27.6	3.13	3.61	2,810
September	40.0	18.0	22.9	1.99	2.22	1,420
October	48.0	18.0	27.1	2.25	2.61	1,870
November	29.0	18.0	20.2	1.68	1.87	1,200
December	18.0	18.0	18.0	1.50	1.73	1,110
The Year	285.0	12.0	82.9	5.25	71.64	48,737

NOTE.—As the gauge is read only to the nearest tenth, no accuracy can be given for the lower flow. At higher stages results are probably within 10 per cent.

COLUMBIA RIVER, CASTLEGAR.—(3004).

Location.—At C.P.R. bridge, near Castlegar.

Records Available.—1913-14-15.

Drainage Area.—Fifteen thousand square miles.

Climatic Conditions.—Summers hot, with plenty of rain in May and June, but very little during July and August. In winter the snowfall is not heavy, and the temperature seldom goes below zero. The river rarely freezes over.

Gauge.—A chain gauge read daily by Mr. W. J. Farmer.

Channel.—Straight for 200 yards above and below section. A pronounced riffle in low water is lost during high water. The rise and fall of the river is about 25 feet.

Discharge Measurements.—The 1915 curve is based on fifteen measurements made during 1913-14-15.

Accuracy.—"A" and "B." During 1915 as no very high water was encountered results are probably within 5 and 10 per cent.

Discharge Measurements of Columbia River at Castlegar (For Curve).

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1913							
June 14	(Prov.) Lawley			20,100	7.88	28.2	158,000
July 8	(Prov.) Lawley			18,500	6.94	21.5	118,000
Sept. 8	(Prov.) Lawley			12,200	5.55	13.0	67,800
Nov. 28	Richardson	1,827	440	7,730	2.04	3.2	18,800
1914							
Jan. 14	Webb	1,048	380	6,800	1.66	1.7	11,300
Mar. 8	Richardson	1,672	398	6,170	1.24	0.72	7,680
May 21	Elliott	1,909	515	14,199	5.82	16.12	62,109
July 28	Beeston	1,672	530	13,500	7.67	17.62	104,000
1915							
Feb. 28	Richardson & Beeston	1,929	400	6,510	1.21	0.70	7,920
April 28	Corbould & Beeston	1,927	480	9,250	3.73	7.23	34,500
May 8	Richardson & Dempster	1,929	493	10,200	4.28	9.30	43,700
June 2	Dempster	1,909	513	12,400	5.76	14.40	71,600

## Daily Gauge Height and Discharge of Columbia River at Castlegar for 1915.

(Drainage area, 18,000 square miles.)

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.
	Feet.	Sec. ft.	Feet.	Sec. ft.	Feet.	Sec. ft.	Feet.	Sec. ft.	Feet.	Sec. ft.	Feet.	Sec. ft.
1	1 3	9,530	0 9	8,450	0 8	7,700	1 3	9,530	6 3	39,400	14 8	73,300
2	1 2	9,250	0 9	8,450	0 6	7,700	1 3	9,530	6 4	39,900	14 3	71,600
3	1 3	9,530	0 9	8,450	0 6	7,700	1 5	10,100	8 6	40,900	14 1	70,500
4	1 4	9,820	0 9	8,450	0 6	7,700	1 8	11,000	8 9	42,500	14 0	69,900
5	1 5	10,100	0 9	8,450	0 6	7,700	2 0	11,600	9 0	43,000	14 0	69,900
6	1 4	9,820	0 9	8,450	0 6	7,700	2 4	12,600	9 3	44,600	13 6	68,800
7	1 3	9,530	0 8	8,200	0 6	7,700	2 7	13,900	9 8	48,800	13 3	66,100
8	1 2	9,250	0 8	8,200	0 5	7,450	2 9	14,600	9 8	47,300	13 5	67,200
9	1 1	8,980	0 6	8,200	0 5	7,450	3 0	14,900	10 3	49,400	13 5	67,700
10	1 1	8,980	0 6	8,200	0 5	7,450	3 1	15,300	10 5	51,900	13 4	66,700
11	1 0	8,710	0 6	8,200	0 5	7,450	3 3	16,000	10 9	53,200	13 4	66,700
12	1 1	8,980	0 6	8,200	0 5	7,450	3 4	16,400	11 8	58,900	13 5	67,700
13	1 1	8,980	0 6	8,200	0 5	7,450	3 6	17,200	12 6	63,300	13 4	66,700
14	1 1	8,980	0 7	7,950	0 5	7,450	3 9	16,400	13 5	67,300	13 3	66,100
15	1 1	8,980	0 7	7,950	0 5	7,450	4 0	18,800	13 8	68,800	13 3	65,600
16	1 1	8,980	0 7	7,950	0 5	7,450	4 4	20,300	13 9	69,400	13 0	64,500
17	1 1	8,980	0 7	7,950	0 5	7,450	4 7	21,500	13 6	67,700	13 9	64,000
18	1 1	8,980	0 7	7,950	0 6	7,700	4 9	22,300	13 0	64,500	12 8	63,400
19	1 1	8,980	0 7	7,950	0 6	7,700	5 0	22,800	13 0	64,800	12 4	61,300
20	1 1	8,980	0 7	7,950	0 6	7,700	5 4	24,600	13 3	65,600	12 6	62,300
21	1 1	8,980	0 7	7,950	0 7	7,950	5 8	26,500	13 2	65,600	13 0	64,500
22	1 1	8,980	0 7	7,950	0 7	7,950	6 2	26,500	13 5	67,200	13 5	67,200
23	1 1	8,980	0 7	7,950	0 7	7,950	6 5	30,000	13 3	65,600	14 0	69,900
24	1 0	8,710	0 7	7,950	0 6	8,200	8 8	31,600	13 9	64,000	14 0	69,900
25	1 0	8,710	0 7	7,950	0 9	8,450	7 0	32,600	13 0	64,500	14 3	71,600
26	1 0	8,710	0 7	7,950	1 0	8,710	7 2	33,600	13 1	68,000	14 4	72,100
27	1 0	8,710	0 7	7,950	1 0	8,710	7 5	35,200	13 5	67,200	14 6	73,300
28	1 0	8,710	0 7	7,950	1 0	8,710	7 8	35,200	13 6	67,700	15 0	75,500
29	1 0	8,710	.....	.....	1 1	8,980	7 7	36,200	13 7	66,300	15 4	77,700
30	0 9	8,450	.....	.....	1 1	8,980	7 9	37,300	14 0	69,900	15 6	78,900
31	0 9	8,450	.....	.....	1 1	8,980	.....	.....	14 3	71,500	.....	.....
Day.	July.		August.		September.		October.		November.		December.	
	Feet.	Sec. ft.	Feet.	Sec. ft.	Feet.	Sec. ft.	Feet.	Sec. ft.	Feet.	Sec. ft.	Feet.	Sec. ft.
1	15 8	80,000	16 1	81,700	14 8	74,400	6 1	28,000	4 0	18,600	3 0	14,900
2	15 9	80,500	15 5	78,300	14 9	74,900	5 9	27,000	4 5	20,700	3 0	14,900
3	16 0	81,100	15 9	80,500	14 8	74,400	5 7	26,100	4 7	21,500	3 0	14,900
4	16 0	81,100	15 1	81,700	14 7	73,800	5 6	25,800	4 8	21,900	3 0	14,900
5	15 9	80,500	16 1	81,700	14 6	73,300	5 4	24,500	4 8	21,900	2 9	14,600
6	15 4	78,900	16 1	81,700	14 6	73,300	5 3	24,100	4 8	21,900	2 9	14,600
7	16 5	83,900	15 9	80,500	14 0	69,900	5 2	23,700	4 7	21,500	2 8	14,200
8	16 2	82,200	15 8	80,000	13 3	66,100	5 0	22,600	4 8	21,900	2 8	14,200
9	16 4	83,300	16 6	84,500	12 6	62,300	4 9	22,300	4 8	21,900	2 8	14,200
10	16 8	85,600	16 8	85,600	12 0	59,100	4 9	22,300	4 8	21,900	2 9	14,600
11	16 6	84,500	16 9	86,100	11 4	55,900	4 9	22,300	4 7	21,500	2 8	14,200
12	16 5	83,900	16 7	85,000	11 0	53,700	4 5	20,700	4 7	21,500	2 8	14,200
13	16 8	85,600	16 6	84,500	10 8	52,600	4 4	20,300	4 6	21,100	2 6	13,500
14	16 5	83,900	16 5	83,900	10 6	51,500	4 2	19,600	4 8	20,700	2 6	13,500
15	16 4	84,500	16 5	83,900	10 0	48,300	4 1	19,200	4 3	19,900	2 6	13,500
16	.....	83,100	16 4	83,300	9 5	45,600	4 1	19,200	4 0	18,800	2 7	13,900
17	18 1	81,700	16 4	83,300	9 0	43,000	4 0	18,800	3 9	18,400	2 4	12,800
18	18 0	81,100	16 0	81,100	5 5	40,400	3 6	18,000	3 8	18,000	2 3	12,500
19	15 9	80,500	15 8	80,000	8 2	38,800	3 8	18,000	3 6	18,000	2 3	12,500
20	15 1	76,100	15 8	80,000	8 0	37,800	3 8	18,000	3 7	17,600	2 2	12,200
21	15 5	78,300	15 6	78,900	7 8	36,800	3 7	17,600	3 7	17,600	3 0	11,600
22	15 5	78,300	15 5	78,300	7 5	35,200	3 5	16,800	3 6	17,200	1 9	11,300
23	15 6	78,900	15 0	75,500	7 2	33,600	3 5	16,800	3 5	16,800	1 8	11,000
24	15 6	78,900	15 6	78,900	7 0	32,600	3 5	16,800	3 4	16,400	1 7	10,700
25	16 1	81,700	16 0	81,100	6 8	31,600	3 5	16,800	3 4	16,400	1 7	10,700
26	15 8	80,000	16 0	81,100	6 6	30,800	3 5	16,600	3 2	15,700	1 7	10,500
27	15 9	80,500	16 0	81,100	6 2	28,500	3 7	17,600	3 2	15,700	1 8	11,000
28	15 7	79,400	15 5	78,300	6 0	27,500	3 7	17,600	3 1	15,300	1 8	11,000
29	15 9	80,500	15 5	78,300	5 7	26,100	3 6	17,200	3 0	14,900	1 7	10,700
30	15 8	80,000	15 6	78,900	5 5	25,100	3 8	18,000	3 0	14,900	1 7	10,700
31	15 7	79,400	15 6	78,900	.....	.....	3 8	18,000	.....	.....	1 7	10,500

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## Monthly Discharge of Columbia River at Castlegar for 1915.

(Drainage area, 18,000 square miles)

MONTH.	DISCHARGE IN SECOND-FEET				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile	Depth in inches on Drainage area.	Total in acre-feet.
January	10,100	8,450	9,050	0.60	0.69	550,000
February	8,450	7,950	8,120	0.54	0.56	481,000
March	8,980	7,450	7,910	0.53	0.61	486,000
April	37,300	9,530	21,600	1.44	1.81	1,290,000
May	71,600	39,400	58,700	3.91	4.51	3,610,000
June	78,900	61,300	68,700	4.54	5.11	4,090,000
July	83,600	76,100	81,200	5.41	6.24	5,000,000
August	86,100	75,500	81,200	5.41	6.24	5,000,000
September	74,900	25,100	49,200	3.28	3.66	2,950,000
October	28,000	16,800	20,300	1.35	1.56	1,260,000
November	21,900	14,900	19,000	1.27	1.42	1,130,000
December	14,900	10,700	12,900	0.88	0.95	793,000
The year	86,100	7,450	36,490	2.43	33.20	26,586,000

## COLUMBIA RIVER, TRAIL. —(3008).

*Location.*—The station is at the highway bridge, near Trail, 15 miles above International boundary and above mouth of Pend d'Oreille river.

*Records Available.*—1913-14-15.

*Drainage Area.*—Thirty-four thousand square miles.

*Climatic Conditions.*—Considerable rain usually falls in the spring. June, July, August and September are usually dry. October and November are generally unsettled, but not cold. Winters are mild, and the summers hot.

*Gauge.*—Chain gauge used and read by Mr. C. A. Broderick.

*Channel.*—The river has a bend about 100 yards above the bridge. Below the river is straight for 400 yards. Control appears to be permanent, and is a pronounced riffle 100 yards below section.

*Discharge Measurements.*—The 1915 curve is based on twenty measurements, during 1913-14-15. These measurements were well distributed.

*Accuracy.*—"B" and "C." Reliable daily gauge readings have been obtained. The rating curve appears reliable. Results should be within 10 or 15 per cent.

## Discharge Measurements of Columbia River at Trail (For Curve).

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1913							
Dec. 18	(Prov.) Wilson		450	6,840	3.79	10.5	15,600
1913							
Mar. 3	(Prov.) Wilson		450	5,540	3.53	8.5	14,200
May 1	Richardson	1,048	515	9,380	5.30	15.4	35,700
May 31	(Prov.) Biker	1,527	532	11,200	7.30	19.0	63,200
July 4	(Prov.) Lawley	1,527	553	30,100	10.9	34.5	219,000
June 11	Richardson	1,048	557	23,900	12.4	40.2	297,000
July 21	(Prov.) Lawley	1,527	580	15,500	9.53	27.5	152,000
Aug. 5	(Prov.) Lawley	1,527	553	18,100	9.42	35.1	142,000
Aug. 7	Richardson & Elliott	1,045	553	18,200	9.55	35.1	145,000
Sept. 4	(Prov.) Lawley	1,527	547	12,300	7.93	21.0	97,000
Nov. 5	Richardson	1,048	709	7,630	4.85	12.1	37,100
1914							
Jan. 15	Webb	1,048	485	5,250	3.57	9.5	32,200
April 17	Webb	1,048	493	7,120	3.51	10.5	35,000
June 2	Elliott	1,909	510	15,500	9.70	28.3	151,000
July 17	Elliott	1,909	640	19,200	11.09	33.7	213,000
Nov. 11	Elliott	1,909	515	9,110	5.43	14.5	49,000
1913							
Jan. 4	Elliott	1,929	490	5,940	3.42	10.0	33,500
Feb. 11	Corbould	1,909	470	5,290	2.74	5.5	17,100
June 4	Dempster & Beeston	1,909	555	14,400	8.59	24.7	125,000
Aug. 9	Dempster & Beeston	1,927	570	15,000	9.50	25.9	144,000
Dec. 23	Richardson & Dempster	1,927	490	5,150	3.10	10.2	19,100



BRITISH COLUMBIA HYDROMETRIC SURVEY

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Daily Gauge Height and Discharge of Columbia River at Trail for 1915.

(Drainage area, 84,000 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	9.9	21,500	9.0	17,000	8.7	15,500	10.2	23,100	18.3	74,400	24.9	129,000
2	10.0	22,000	9.0	17,000	8.7	15,500	10.4	24,100	18.5	75,000	24.8	128,000
3	10.0	22,000	8.9	16,800	8.7	15,500	10.8	25,300	18.7	77,500	24.7	127,000
4	10.0	22,000	8.9	16,800	8.7	15,500	11.2	28,500	19.1	80,800	24.7	127,000
5	10.1	22,500	9.0	17,000	8.7	15,500	11.4	29,500	19.4	83,200	24.5	126,000
6	10.0	22,000	8.9	16,500	8.7	15,500	11.6	30,500	19.6	84,800	24.3	125,000
7	9.9	21,500	8.9	16,500	8.7	15,500	11.8	31,700	20.1	88,800	24.5	125,000
8	9.8	21,000	8.9	16,500	8.7	15,500	12.0	32,800	20.5	92,000	24.4	125,000
9	9.8	21,000	9.0	17,000	8.8	16,000	12.1	33,400	20.9	95,200	24.3	124,000
10	9.7	20,500	9.0	17,000	8.8	16,000	12.2	34,000	21.2	97,600	24.2	123,000
11	9.7	20,500	9.0	17,000	8.8	16,000	12.3	34,500	21.5	100,000	24.1	122,000
13	9.7	20,500	8.9	16,500	8.8	16,000	12.4	35,100	21.8	103,000	24.0	121,000
13	9.7	20,500	8.9	16,500	8.8	16,000	12.5	35,700	22.2	105,000	23.9	120,000
14	9.7	20,500	8.9	16,500	8.9	16,500	12.7	35,900	22.6	109,000	23.8	119,000
15	9.7	20,500	8.8	16,000	8.9	16,500	12.9	38,000	23.2	114,000	23.7	118,000
16	9.5	20,000	8.8	16,000	8.9	16,500	13.2	39,800	23.8	119,000	23.6	117,000
17	9.6	20,000	8.8	16,000	8.9	16,500	13.6	42,200	24.3	124,000	23.6	117,000
18	9.5	19,500	8.8	16,000	9.0	17,000	14.3	46,500	24.7	127,000	23.6	117,000
19	9.6	20,000	8.8	16,000	9.0	17,000	14.9	50,400	24.8	128,000	23.6	117,000
20	9.5	20,000	8.8	16,000	9.0	17,000	15.5	54,400	24.7	127,000	23.7	118,000
21	9.6	20,000	8.8	16,000	9.0	17,000	16.0	57,700	24.7	127,000	23.8	119,000
22	9.5	19,500	8.9	16,500	9.1	17,500	16.3	59,800	24.8	128,000	23.9	120,000
23	9.4	19,000	8.9	16,500	9.2	18,000	16.6	62,000	24.8	128,000	24.0	121,000
24	9.3	18,500	8.9	16,500	9.3	18,500	16.9	64,100	24.8	128,000	24.2	123,000
35	9.3	18,500	8.9	16,500	9.4	19,000	17.1	65,500	24.7	127,000	24.3	124,000
25	9.2	18,000	8.9	16,500	9.5	19,500	17.3	66,900	24.7	127,000	24.3	124,000
27	9.1	17,500	8.8	16,000	9.6	20,000	17.5	68,400	24.7	127,000	24.5	125,000
28	9.0	17,000	8.8	16,000	9.7	20,500	17.6	69,100	24.8	128,000	24.8	128,000
29	9.0	17,000	8.8	16,000	9.8	21,000	17.8	70,500	24.9	129,000	25.2	132,000
30	9.1	17,500	8.8	16,000	9.9	21,500	18.0	72,000	24.9	129,000	25.7	137,000
31	9.1	17,500	8.8	16,000	10.0	22,000	18.0	72,000	24.9	129,000	25.7	137,000

	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	25.0	140,000	25.5	135,000	23.6	117,000	14.2	45,900	12.6	36,300	11.4	29,500
2	25.1	141,000	25.6	136,000	23.4	116,000	14.0	44,800	12.7	36,900	11.3	29,000
3	25.2	142,000	25.7	137,000	23.1	113,000	14.0	44,600	12.7	36,900	11.3	29,000
4	25.3	143,000	25.7	137,000	22.8	110,000	13.9	44,000	12.8	37,400	11.2	28,500
5	25.4	144,000	25.8	138,000	22.4	107,000	13.8	43,400	12.8	37,400	11.2	28,500
6	25.5	145,000	25.8	138,000	22.0	104,000	13.7	42,800	12.9	38,000	11.1	27,900
7	26.7	147,000	25.9	139,000	21.8	103,000	13.6	42,200	12.9	38,000	11.1	27,900
8	26.8	148,000	25.9	139,000	21.4	99,200	13.5	41,600	12.9	38,000	11.1	27,900
9	25.8	148,000	25.9	139,000	21.0	96,000	13.4	41,000	12.9	38,000	11.1	27,900
10	25.8	148,000	25.8	138,000	20.6	92,800	13.3	40,400	12.8	37,400	11.0	27,400
11	25.9	149,000	25.7	137,000	20.0	88,000	13.2	39,800	12.8	37,400	10.9	26,900
12	25.9	149,000	25.6	136,000	19.6	84,800	13.1	39,200	12.7	36,900	10.8	26,300
13	26.8	148,000	25.5	135,000	19.0	80,000	13.0	38,600	12.7	36,900	10.8	26,300
14	25.5	146,000	25.4	134,000	18.6	78,800	12.9	38,000	12.6	36,300	10.7	25,800
15	25.5	145,000	25.3	133,000	18.2	75,500	12.8	37,400	12.6	35,800	10.7	25,800
16	36.4	144,000	25.2	132,000	17.5	69,100	12.7	36,900	12.5	35,700	10.7	25,800
17	26.2	142,000	25.2	132,000	17.2	66,200	12.6	36,300	12.5	35,700	10.5	25,200
18	25.1	141,000	25.1	131,000	16.8	63,400	12.5	35,700	12.4	35,100	10.5	24,700
19	26.0	140,000	25.1	131,000	16.4	60,500	12.4	35,100	12.3	34,500	10.5	24,700
20	25.9	139,000	25.0	130,000	16.3	59,800	12.3	34,500	12.2	34,000	10.4	24,100
21	25.8	138,000	25.0	130,000	16.0	57,700	12.3	34,500	12.1	33,400	10.4	24,100
22	25.6	136,000	24.9	129,000	15.8	56,400	12.2	34,000	12.1	33,400	10.3	23,600
23	25.5	135,000	24.8	128,000	15.6	55,000	12.2	34,000	12.0	32,800	10.2	23,100
24	25.3	133,000	24.7	127,000	15.3	53,000	12.2	34,000	12.0	32,800	10.2	23,100
25	25.1	131,000	24.6	126,000	15.0	51,000	12.3	34,500	11.8	31,700	10.2	23,100
26	25.0	130,000	24.5	125,000	14.8	49,700	12.3	34,500	11.7	31,200	10.1	22,500
27	25.0	130,000	24.4	125,000	14.8	49,700	12.4	35,100	11.6	30,600	10.1	22,500
28	25.1	131,000	24.2	123,000	14.7	49,100	12.4	35,100	11.6	30,600	10.1	22,500
29	35.2	132,000	24.1	122,000	14.6	48,400	12.5	35,700	11.5	30,100	10.0	22,000
30	25.3	133,000	24.0	121,000	14.4	47,200	12.5	35,700	11.4	29,500	9.9	21,500
31	25.4	134,000	23.8	119,000	14.4	47,200	12.6	36,300	11.4	29,500	9.9	21,500

## Monthly Discharge of Columbia River at Trail for 1915.

(Drainage area, 34,000 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January.....	22,500	17,000	19,900	0.58	0.87	1,230,000
February.....	17,000	16,000	16,400	0.48	0.50	911,000
March.....	22,000	15,500	17,300	0.51	0.59	1,060,000
April.....	72,000	23,100	45,500	1.34	1.50	2,710,000
May.....	129,000	74,000	110,000	3.24	3.74	6,790,000
June.....	127,000	127,000	123,000	3.63	4.04	7,320,000
July.....	149,000	130,000	140,000	4.12	4.78	8,110,000
August.....	139,000	119,000	132,000	3.88	4.47	8,130,000
September.....	117,000	47,200	76,600	2.25	2.51	4,560,000
October.....	45,900	34,900	39,200	1.13	1.30	2,350,000
November.....	38,000	29,500	35,000	1.03	1.15	2,080,000
December.....	29,500	21,500	25,400	0.75	0.88	1,580,000
The year.....	149,000	15,500	64,900	1.91	26.08	47,261,000

## DUNCAN RIVER.—(3066).

*Location.*—About 10 miles above the mouth, at the highway bridge, 1 mile south of Howser.

*Records Available.*—December 1914, and all of 1915.

*Drainage Area.*—Not determined.

*Climatic Conditions.*—Considerable rainfall in spring and fall. Winters and summers temperate.

*Gauge.*—A vertical staff, nailed to the wharf at Howser, about 1 mile above measuring section. Daily readings made by Mr. Wm. Simpson.

*Channel.*—The section is situated about midway in a straight stretch of over 1,500 feet.

*Discharge Measurements.*—The rating curve was compiled from one measurement made in November, 1914, and four well-distributed measurements in 1915.

*Accuracy.*—"B" and "C." The readings are reliable. The section is good. Results should be within 10 and 15 per cent.

*General.*—The Duncan river rises in the Selkirk and Purcell mountains, and flows south through the Purcell trench into Kootenay lake. There is considerable timber along this river, and a number of promising but undeveloped mining properties. The stream is swift, but in portions is suitable for small boats.

## Discharge Measurements of Duncan River at Howser.

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec. ft.
1914							
Nov. 27	Richardson & Beeston	1,941	380	1,700	0.74	1.80	1,250
1915							
Mar. 5	Beeston	1,929	271	1,440	0.75	0.78	457
May 5	Corbould	1,927	309	2,430	1.83	4.20	4,457
July 21	Dempster	1,927	320	2,930	2.49	6.20	7,240
Oct. 27	Dempster	1,927	283	1,740	0.81	2.05	1,410

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Daily Gauge Height and Discharge of Duncan River at Howser for 1915.

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	1.25	759	0.87	500	0.8	455	1.55	1,010	3.9	3,730	4.7	4,920
2	1.28	759	0.87	500	0.77	452	1.5	1,060	4.15	4,140	4.7	4,920
3	1.25	735	0.9	515	0.77	453	1.55	1,140	4.3	4,210	4.7	4,920
4	1.22	711	0.9	515	0.77	452	2.0	1,450	4.3	4,350	4.7	4,920
5	1.22	711	0.92	526	0.75	442	2.18	1,650	4.2	4,250	4.3	5,070
6	1.2	695	0.92	525	0.75	442	2.25	1,750	4.33	4,380	5.0	5,350
7	1.2	695	0.92	525	0.72	429	2.32	1,800	4.5	4,520	5.1	5,510
8	1.17	675	0.92	525	0.72	429	2.4	1,890	4.9	5,210	5.1	5,960
9	1.17	675	0.92	525	0.72	429	2.4	1,890	5.45	5,040	5.25	5,740
10	1.15	553	0.9	515	0.75	442	2.4	1,890	5.75	5,520	5.05	5,440
11	1.15	662	0.9	515	0.75	442	2.4	1,890	5.0	5,920	4.8	5,070
12	1.15	562	0.87	500	0.77	452	2.4	1,890	5.7	5,440	4.58	4,750
13	1.15	552	0.87	500	0.77	452	2.43	1,910	5.4	5,960	4.5	4,630
14	1.12	542	0.87	500	0.77	452	2.5	2,000	5.0	5,350	4.5	4,520
15	1.1	630	0.87	500	0.8	465	2.5	2,110	4.3	5,070	4.7	4,920
16	1.1	630	0.87	500	0.8	465	2.5	2,110	4.3	5,070	4.7	4,920
17	1.1	620	0.85	490	0.8	465	2.7	2,320	4.45	4,560	4.9	5,210
18	1.1	550	0.85	490	0.82	475	2.9	2,470	4.2	4,250	5.35	5,880
19	1.1	630	0.82	475	0.85	490	3.22	2,890	4.13	4,090	5.7	6,440
20	1.07	512	0.82	475	0.87	500	3.5	3,330	4.2	4,210	5.5	5,280
21	1.05	500	0.82	475	0.90	515	3.9	3,780	4.22	4,240	5.4	5,960
22	1.0	570	0.82	475	0.95	543	3.9	3,730	4.3	4,350	5.2	5,660
23	1.0	570	0.85	490	1.0	570	3.93	3,390	4.5	4,780	5.2	5,550
24	1.0	570	0.8	455	1.02	582	3.75	3,580	4.75	5,000	5.2	5,810
25	0.95	542	0.5	465	1.25	735	3.6	3,380	4.8	5,070	5.4	5,960
26	0.9	515	0.8	455	1.4	855	3.4	3,120	4.9	5,210	5.8	5,600
27	0.9	515	0.8	455	1.42	884	3.4	3,120	4.85	5,140	6.4	7,500
28	0.37	500	0.5	455	1.45	912	3.4	3,120	4.8	5,070	5.45	7,050
29	0.85	490	0.8	455	1.47	932	3.38	3,090	4.8	5,070	6.15	7,180
30	0.85	490	.....	.....	1.47	932	3.35	3,050	5.00	5,500	5.3	5,800
31	0.85	490	.....	.....	1.5	950	3.55	3,330	5.0	5,260	5.7	6,440
					1.5	950	.....	.....	4.9	5,210	.....	.....

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	5.72	5,470	5.52	7,950	5.2	7,250	2.18	1,550	2.4	1,890	1.2	775
2	6.0	5,920	6.82	8,500	5.55	5,390	2.3	1,780	2.35	1,840	1.2	595
3	5.05	7,000	5.9	8,440	5.4	5,950	2.28	1,760	2.2	1,760	1.2	595
4	5.2	7,250	7.2	8,960	5.3	5,310	2.2	1,670	2.2	1,570	1.2	595
5	5.35	7,520	7.2	5,950	5.2	5,560	2.1	1,560	2.2	1,670	1.2	695
6	5.55	7,340	6.95	8,520	5.0	5,360	2.08	1,540	3.13	1,550	1.2	695
7	5.7	5,100	6.9	8,440	4.8	5,070	2.0	1,460	2.1	1,560	1.2	595
8	5.35	8,250	6.92	8,470	4.4	4,490	1.9	1,360	2.0	1,450	1.2	695
9	5.8	5,270	5.95	3,520	4.0	3,920	1.85	1,310	1.9	1,560	1.2	775
10	6.7	3,100	6.8	5,270	3.7	3,510	1.3	1,250	1.9	1,560	1.2	775
11	5.95	7,340	5.3	6,270	3.4	3,120	1.7	1,160	1.9	1,250	1.2	695
12	5.9	6,750	5.78	8,240	3.0	2,600	1.68	1,140	1.8	1,250	1.2	695
13	5.7	5,440	6.8	8,270	2.85	2,400	1.65	1,110	1.7	1,150	1.2	695
14	5.7	5,440	5.8	3,270	2.55	2,170	1.62	1,080	1.5	1,060	1.15	560
15	5.0	5,920	6.8	3,270	2.5	2,000	1.5	1,060	1.6	1,060	1.12	642
16	5.15	7,130	5.5	5,270	2.4	1,890	1.5	1,050	1.6	1,060	1.1	620
17	6.22	7,290	5.8	8,270	2.4	1,390	1.55	1,010	1.6	1,050	1.1	630
18	5.2	7,250	5.9	8,440	2.4	1,890	1.5	950	1.6	1,060	1.1	530
19	6.12	7,120	5.5	8,270	2.4	1,890	1.5	1,060	1.6	1,050	1.1	530
20	6.1	7,090	5.6	7,980	2.58	2,090	1.7	1,160	1.5	960	1.1	530
21	6.2	7,260	6.5	7,760	2.5	2,000	1.8	1,260	1.5	960	1.1	630
22	5.32	7,460	6.55	7,340	2.45	1,940	1.8	1,260	1.5	950	1.1	650
23	6.5	7,760	6.6	7,930	2.4	1,890	1.8	1,260	1.45	912	1.1	530
24	5.48	7,780	6.55	7,840	2.4	1,890	1.85	1,310	1.4	365	1.1	520
25	6.48	7,720	6.5	7,760	2.4	1,590	1.9	1,260	1.4	865	1.1	530
26	5.23	7,400	5.45	7,530	2.35	1,540	1.9	1,360	1.4	355	1.05	600
27	5.28	7,570	5.55	7,520	2.2	1,780	2.0	1,460	1.4	355	1.02	532
28	6.4	7,600	5.2	7,250	2.25	1,720	2.15	1,520	1.35	320	1.06	500
29	5.4	7,600	5.2	7,430	2.2	1,570	2.25	1,720	1.3	775	0.96	843
30	5.45	7,530	6.35	7,520	2.18	1,550	2.45	1,940	1.3	775	0.55	420
31	6.5	7,760	6.45	7,980	.....	.....	2.4	1,890	.....	.....	0.85	490

## Monthly Discharge of Duncan River at Howser for 1915.

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January.	789	490	619			32,100
February.	528	482	495			27,800
March.	960	429	561			32,700
April.	3,800	1,010	2,450			146,000
May.	6,920	2,720	4,980			202,000
June.	7,880	4,680	5,720			240,000
July.	2,260	9,440	7,290			484,000
August.	2,260	7,260	2,110			499,000
September.	7,260	1,850	3,120			186,000
October.	1,940	960	1,370			84,200
November.	1,890	775	1,200			71,400
December.	775	490	661			40,000
The year.	6,960	429	3,060			2,227,900

## FRY CREEK.—(3070).

*Location.*—The section is located about  $\frac{3}{4}$  mile above mouth of creek, and about  $\frac{1}{2}$  mile above canyon, about 2 miles from Johnston's Landing.

*Records Available.*—December 1914, and all of 1915.

*Drainage Area.*—Not determined.

*Climatic Conditions.*—Summers are hot and generally dry in July and August; the winters are mild. The temperature seldom goes below zero. The snowfall is not heavy, but there is considerable rainfall in spring and fall. The creek freezes over during cold spells, but seldom for more than two weeks at a time. Frazil ice is a possibility.

*Gauge.*—The gauge is just below canyon, and is painted on a sloping rock. Mr. W. Holmgren reads the gauge weekly.

*Channel.*—Straight for about 200 feet above the cable station, and for 100 feet below. The bed is of broken rock formation. Current swift.

*Discharge Measurements.*—The 1915 data has been prepared from a rating curve based on five measurements during the year. These were, with one exception, made from cable car.

*Accuracy.*—This stream has its source near or in the summit of the Purcell mountains, and is subject to considerable variation. As gauge readings were only made once a week no accuracy can be given at present.

*General.*—Fry creek is the third largest tributary to Kootenay lake. It has its source about 20 miles from the mouth, in the summit of the Purcells. It is a mountain torrent, with extreme high flow in the summer months, and a very low flow in winter. There are good power possibilities at the canyon, particularly for 9 months of the year. Placer mining has been carried on for several years, and it is contended that there is still gold in the bed.

## Discharge Measurements of Fry Creek at Johnston's Landing for 1915.

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec. ft.
1915							
Mar. 22	Richardson & Elliott.	1,900	72.0	123.0	1.47	0.20	170
April 1	Elliott.	1,909	74.0	185.0	1.03	0.60	193 <sup>1</sup>
May 10	Corbould.	1,909	90.0	425.0	5.03	5.47	2,240
July 24	Dempster.	1,927	94.0	425.0	4.27	2.05	1,900
Oct. 29	Dempster.	1,927	74.5	250.0	1.89	2.22	494

<sup>1</sup> At wading section. <sup>2</sup> At cable section.

Daily Gauge Height and Discharge of Fry Creek at Johnston's Landing for 1915.

Day.	April.		May.		June.		July.		August.		September.		
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	
1	0.60	186	4.70	1,640		1,820		2,580		1,760		1,280	
2		240		1,820	4.40	1,820		2,530		1,720		1,270	
3	1.40	295		2,000		1,840	5.70	2,480		1,680		1,280	
4		291		2,180		1,870		2,680	4.70	1,640	4.10	1,230	
5		266		2,360	4.90	1,800		2,820		1,610		1,100	
6		262		2,540		1,750	6.30	3,000		1,590		970	
7		277		2,720		1,690		2,720	4.60	1,560		829	
8		273	6.20	2,910		1,640		2,440		1,570		708	
9		266		2,610		1,580		2,160		1,580		576	
10	1.20	262	5.50	2,310		1,520	5.00	1,880		1,590		444	
11		401		2,150		1,470		1,860		1,600	1.50	312	
12		329		1,960	4.40	1,420		1,660		1,610		285	
13		677		1,820		1,530		1,880		1,620	1.20	283	
14		815		1,650		1,640		1,880	4.70	1,640		280	
15		95	4.50	1,490		1,760		1,880		1,660		297	
16		1,090		1,800	5.00	1,880		1,880		1,690		315	
17	4.10	1,280		1,510		1,820	5.00	1,880	4.80	1,720		332	
18		1,180		1,820		1,770		2,020		1,760	1.70	249	
19		1,140		1,530	4.80	1,720		2,160		1,800		337	
20		1,090		1,540		1,880		2,290		1,840		325	
21		1,050		1,550		2,030		2,420	5.00	1,680		312	
22		1,000	4.60	1,560		2,190	5.80	2,560		1,600		200	
23		960		1,610		2,250		2,800		1,720		287	
24	3.60	910		1,650		2,510	5.20	2,050		1,640		275	
25		1,010		1,700		2,670		2,010	4.60	1,560	1.20	262	
26		1,110		1,740	6.10	2,820		1,980		1,490		272	
27		1,220		1,790		2,780		1,940		1,420		282	
28		1,220		1,840		2,780		1,910	4.20	1,250		291	
29		1,420	5.00	1,880		2,680		1,880		1,230		201	
30		1,520		1,760		2,620		1,840		1,210		210	
31				1,640			4.90	1,800		1,200			
October.		November.		December.									
1		320		427		156							
2	1.60	830		897		160							
3		818		368		164							
4		806		338	0.40	168							
5		295		308		167							
6		283	1.20	278		166							
7		272		262		165							
8		260		248		164							
9	1.10	248		224		163							
10		243		219		162							
11		238		205	0.30	161							
12	1.00	234		190		160							
13		228	0.50	175		159							
14		222		176		158							
15		216		178		157							
16	0.80	210		179		156							
17		216		180		155							
18		227		162	0.20	154							
19		225		184		153							
20		244	0.60	186		152							
21		252		179		151							
22		261		172		150							
23		269		166		149							
24	1.30	278		160		148							
25		313		154	0.10	147							
26		348		147		146							
27		282	0.00	140		145							
28		417		144		144							
29		481		146		143							
30	2.30	456		152		142							
31		456				141							

## Monthly Discharge of Fry Creek at Johnston's Landing for 1915.

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
April.....	1,380	133	777			43,300
May.....	3,310	1,490	1,890			118,000
June.....	3,830	1,420	1,950			113,000
July.....	3,000	1,300	2,180			134,000
August.....	1,380	1,300	1,610			99,000
September.....	1,380	263	322			31,100
October.....	486	210	292			18,000
November.....	427	140	313			13,300
December.....	163	141	135			9,580
The period.....	3,000	140	1,065			383,730

## GLACIER CREEK.—(3071).

*Location.*—At footbridge, about 1 mile above the mouth, and about 2 miles south-east of Howser.

*Records Available.*—June to November, 1915.

*Drainage Area.*—Not determined.

*Climatic Conditions.*—Considerable rainfall in spring and fall. Winters and summers temperate. It is probable that at the source in the higher altitudes the precipitation is heavy.

*Gauge.*—A vertical staff read three times a week by Mr. C. Malloch.

*Channel.*—Very swift water, running over a bed of boulders.

*Discharge Measurements.*—A measurement was made in November 1914, and three in 1915, and on these the present data has been based.

*Accuracy.*—"D." This stream is a mountain torrent. At low water it is difficult to get measurements with precision. At high water it is practically impossible. Hence the accuracy will not be guaranteed but is thought to be within 20 per cent.

*General.*—Glacier creek rises in the Purcell mountains, flows westerly, and empties into the Duncan river about 2 miles below Howser. It is only about 12 miles in length but it carries considerable water, especially during June, July, August and September. There are timber resources, and a number of promising mineral claims in this vicinity.

## Discharge Measurements of Glacier Creek at Howser for 1915.

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec. ft.
1914							
Nov. 27	Richardson & Beeston.....	1,929	38.0	85.6	1.68	4.30	142 <sup>1</sup>
1915							
May 8	Corbould.....	1,927	36.0	119.0	3.60	1.80	399 <sup>2</sup>
July 21	Dempster.....	1,927	27.0	135.0	3.25	3.80	128 <sup>2</sup>
Oct. 27	Dempster.....	1,927	27.5	76.2	2.56	1.65	195 <sup>2</sup>

<sup>1</sup> Old gauge.

<sup>2</sup> New gauge.

Relationship.—New gauge = 0.0, old gauge = 3.25.

Daily Gauge Height and Discharge of Glacier Creek at Howser for 1915.

Day.	June.		July.		August.		September.		October.		November.	
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.
	Feet.	Sec.-ft.	Feet.	Sec. ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	2.3	452	3.65	1,320	.....	2,320	2.4	1,110	1.9	205	.....	185
2	.....	435	.....	1,490	4.7	2,480	2.6	1,460	.....	270	1.45	190
3	2.22	419	4.0	1,660	.....	2,360	4.0	1,660	.....	235	.....	184
4	2.3	702	4.1	1,770	4.5	2,240	.....	1,410	1.65	229	1.4	178
5	2.7	646	4.1	1,770	.....	2,320	.....	1,160	1.6	223	.....	174
6	.....	735	.....	1,770	.....	2,400	.....	910	1.3	200	1.25	170
7	2.0	824	4.1	1,770	4.7	2,480	.....	660	.....	194	1.2	160
8	2.75	694	3.8	1,460	.....	2,420	2.2	411	.....	169	.....	160
9	.....	862	.....	1,280	4.6	2,360	.....	366	.....	134	.....	160
10	2.26	422	2.4	1,110	.....	2,360	1.95	321	1.4	179	1.2	160
11	.....	437	.....	962	4.6	2,360	.....	296	.....	179	.....	150
12	2.5	843	3.0	824	.....	2,480	.....	272	1.4	179	.....	140
13	.....	652	.....	927	.....	2,600	1.7	248	1.35	170	1.1	130
14	2.9	761	3.3	1,030	4.9	2,720	.....	261	.....	165	.....	140
15	3.2	960	.....	1,070	.....	2,600	1.8	275	1.2	160	.....	160
16	3.3	1,030	3.4	1,110	4.7	2,480	1.8	275	.....	165	1.2	160
17	2.4	1,110	.....	1,220	.....	2,240	1.8	275	1.35	170	.....	156
18	3.2	960	.....	1,340	4.3	2,000	.....	306	.....	180	1.25	152
19	.....	631	3.8	1,460	.....	1,940	2.0	338	1.45	190	.....	143
20	2.8	702	.....	1,370	4.2	1,880	.....	327	.....	193	1.2	144
21	.....	796	3.6	1,280	.....	2,180	.....	316	1.5	200	.....	144
22	2.1	690	.....	1,520	4.7	2,480	1.9	305	.....	195	1.2	144
23	.....	1,270	4.1	1,770	3.6	1,280	.....	295	1.45	190	1.2	144
24	4.0	1,660	.....	1,770	4.6	2,360	.....	285	.....	190	.....	144
25	.....	1,470	.....	1,770	.....	2,480	1.3	275	1.45	190	1.2	144
26	2.6	1,280	4.1	1,770	4.8	2,600	.....	275	.....	206	.....	140
27	3.3	1,030	.....	1,770	.....	2,540	1.8	275	1.6	223	1.15	127
28	3.0	824	4.1	1,770	4.7	2,480	1.7	248	.....	223	.....	139
29	3.4	1,110	.....	1,880	4.6	2,360	.....	267	1.6	222	.....	141
30	.....	1,210	4.3	2,000	.....	1,820	.....	286	.....	211	1.2	144
31	.....	.....	.....	2,160	3.6	1,280	.....	.....	1.5	200	.....	.....

Monthly Discharge of Glacier Creek at Howser for 1915.

MONTH.	DISCHARGE IN SECOND-FEET.				Run-Off.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
June.....	1,660	419	849	.....	.....	.....
July.....	2,160	824	1,490	.....	.....	.....
August.....	2,720	1,280	2,290	.....	.....	.....
September.....	1,660	248	506	.....	.....	.....
October.....	305	160	200	.....	.....	.....
November.....	195	130	154	.....	.....	.....
The period.....	2,720	130	914	.....	.....	.....



## GOAT RIVER.—(3031).

*Location.*—Immediately above bridge, near Erickson, 5 miles from Creston.

*Records Available.*—1914 and 1915.

*Drainage Area.*—Not determined.

*Climatic Conditions.*—Similar to Nelson. (See Kootenay river, Nelson.)

The river generally freezes over, but only for two or three weeks at a time, frazil ice is to be expected.

*Gauge.*—A vertical staff, located immediately above head of canyon, 20 yards from Canyon siding. The control is permanent.

*Channel.*—At the gauge it is permanent, but is liable to shift below the measuring section.

*Discharge Measurements.*—The 1915 data is based on seven well-distributed measurements in 1914, and four in 1915. An ice measurement on February 19, 1915, gave a discharge of 167 c.f.s.

*Accuracy.*—"A" and "B." Daily readings have been obtained, and good measurements were made. Results should be within 5 and 10 per cent.

*Discharge Measurements of Goat River at Erickson.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft
1914							
May 8	Richardson & Beeston	1,673	99.0	549	4.55	3.00	2,500
May 28	Elliott	1,909	99.0	589	5.00	3.50	2,940
June 18	Richardson	1,673	102.0	711	6.02	4.95	4,380
July 21	Gill	1,929	67.0	399	1.84	0.00	735
Aug. 4	Gill	1,929	79.0	360	0.99	-1.10	348
Oct. 16	Gill	1,929	96.0	421	1.25	1.71	527
Dec. 21	Elliott & Corbould	1,909	22.0	229	1.14	-1.20	281
1915							
Feb. 19	Elliott & Corbould	1,927	75.0	344	0.49	-1.65	167
April 18	Corbould & Beeston	1,927	101.0	524	2.84	3.20	1,950 <sup>1</sup>
April 30	Beeston	1,929	104.0	565	4.20	4.82	2,430
Nov. 26	Dempster	1,927	90.0	267	0.75	0.60	277

<sup>1</sup> 1915 gauge established with relation to the old gauge.



BRITISH COLUMBIA HYDROMETRIC SURVEY

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Daily Gauge Height and Discharge of Goat River at Erickson for 1915.

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1			0.7	256	0.7	256						
2			0.7	256	0.7	256	2.5	655	4.85	2,420	4.7	2,290
3			0.7	256	0.9	292	2.9	1,050	4.55	2,160	4.45	2,080
4			0.7	256	0.9	292	3.05	1,120	4.45	2,080	4.3	1,950
5			0.7	256	0.9	292		1,150	4.3	1,950	3.85	1,820
6			0.7	256	0.9	292	3.15	1,180	4.4	2,040	3.8	1,850
7			0.7	256	0.9	292	3.15	1,180	4.5	2,120	3.8	1,850
8			0.7	256	1.0	316	3.05	1,120	4.7	2,290	3.7	1,810
9			0.7	256	1.0	316	2.97	1,080	4.7	2,290	3.6	1,450
10			0.7	256	1.0	316	2.85	1,040	4.75	2,240	3.5	1,390
11			0.7	256	1.0	316	2.97	1,080	5.0	2,370	4.1	1,800
12			0.7	256	1.0	316	3.5	1,390	4.9	2,470	3.75	1,540
13			0.7	256	1.2	368	3.8	1,550	4.85	2,420		1,340
14			0.7	256	1.2	368	4.0	1,720	4.4	2,040	3.1	1,150
15			0.7	256	1.3	399	4.15	1,840	4.6	2,210	2.9	1,060
16			0.7	256	1.3	399	4.3	1,950	4.85	2,420	3.0	1,100
17	0.9		0.7	256	1.3	399	4.35	2,000	4.65	2,350	2.85	1,020
18	0.9		0.7	256	1.35	416	4.85	2,420	4.5	2,120	2.7	946
19	0.8		0.7	256	1.5	467	5.5	3,070	4.4	2,040	2.75	972
20	0.9		0.7	256	1.55	484	5.65	3,230		2,040	2.85	1,020
21	0.9		0.7	256	1.7	539	5.6	3,180	4.4	2,040	2.7	948
22	0.9		0.7	256	1.85	595	5.1	2,670	4.7	2,290	2.75	972
23	0.9		0.7	256	2.3	772	4.65	2,250	4.65	2,250	2.75	972
24	0.9		0.8	272	2.55	878	4.45	2,060	4.6	2,210	2.85	1,020
25	0.9		0.8	272	2.7	948	4.36	2,000	4.7	2,290	2.95	1,080
26	0.9		0.8	272	2.6	900	4.35	2,000	4.15	1,840	3.0	1,160
27	0.6		0.7	256	2.5	855	3.9	1,650	4.5	2,120	3.6	1,450
28	0.8		0.7	256		734	4.0	1,720	4.5	2,120	3.55	1,420
29	0.6		0.7	256	1.9	614	3.95	1,680	5.2	2,760	3.5	1,290
30	0.8				1.9	614	3.95	1,680	5.1	2,670	3.25	1,300
31	0.7				2.0	652	4.25	1,910	4.9	2,470	3.25	1,240
									4.75	2,340		
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	2.18	1,180	2.0	652	0.7	256	0.5	225	1.3	399	0.7	256
2	2.9	1,080	2.1	692	0.7	256		325	1.2	368	0.7	256
3	2.8	996	2.1	692	0.7	256	0.5	225		368	Ice	
4	2.4	812	1.9	614	0.7	256	0.6	240	1.2	368	Ice	
5	2.3	772	1.8	467	0.7	256	0.6	240	1.1	341	0.9	292
6												
7	2.3	772	1.5	467	0.7	256	0.5	225	1.0	316	0.9	292
8	2.2	772	1.5	467	0.7	256	0.5	225		328	0.8	272
9	2.2	772	1.5	467	0.7	256	0.5	225	1.1	341	0.8	272
10	2.1	692	1.4	422	0.7	256	0.5	225	1.2	368	Ice	
11		692		416	0.8	272	0.5	225	1.1	341	Ice	
12	2.1	692	1.3	399	0.9	292	0.4	210	0.8	272	0.9	292
13	2.1	692	1.2	368	0.8	272	0.5	225	0.8	272	0.8	272
14	2.1	692	1.2	368	0.8	272	0.5	225	0.6	240	0.7	256
15	2.2	732	1.3	399	0.7	256	0.6	240	1.0	316	Ice	
16	2.3	772	1.4	422	0.7	256	0.6	240	1.0	316	Ice	
17	2.2	772	1.2	368	0.7	256	0.6	240	0.9	292	0.7	256
18	2.4	812	1.1	341	0.6	240		222		282	0.6	240
19	2.4	812	1.0	316	0.6	240	0.5	225	0.8	272	0.7	256
20	2.4	812	1.1	341	0.7	256	1.2	368	0.8	272	Ice	
21	2.3	772	1.1	341	0.7	256	1.1	341	0.8	272	Ice	
22	2.2	772	1.0	316	0.8	272	1.1	341	0.8	272	Ice	
23	2.0	652	0.9	292	0.7	256	0.9	292	0.8	272	Ice	
24	1.8	574	0.9	292	0.7	256	0.8	272	0.8	272	Ice	
25	1.6	578	0.9	292	0.6	240	0.8	272	0.8	272	Ice	
26							0.7	256	0.6	240	Ice	
27	1.7	529	0.8	272	0.6	240	1.0	316	0.5	225	0.6	240
28	2.1	1,150	0.8	272	0.7	256	1.1	341	0.5	225	0.5	225
29	2.7	948	0.7	256	0.7	256	1.1	341	0.5	225	0.4	210
30	2.4	812	0.7	256	0.5	225		354	0.5	225	0.4	210
31	2.1	692	0.6	240	0.5	225	1.2	368	0.6	240	0.4	210
		892	0.7	256			1.4	432			Ice	

## Monthly Discharge of Goat River at Erickson for 1915.

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
February	272	258	257			14,200
March	948	288	491			30,200
April	3,230	888	1,720			108,000
May	2,780	1,840	2,280			126,000
June	2,290	946	1,240			79,700
July	1,120	829	782			48,100
August	892	240	298			24,200
September	292	228	284			18,100
October	422	210	271			16,700
November	399	222	298			17,800
The period	3,230	210	809.8			429,900

## INONOAKLIN CREEK.—(3084).

*Location.*—At second highway bridge, about 2 miles from mouth, in the vicinity of Edgewood.

*Records Available.*—June to December, 1915.

*Drainage Area.*—Not determined.

*Climatic Conditions.*—Considerable rainfall during spring and fall. Winters and summers temperate.

*Gauge.*—A vertical staff, attached to buttress just above the measuring section, was read daily by Mr. W. R. Colegrave.

*Channel.*—At the section the water has an even flow with a control about 100 yards below, which appears more or less permanent.

*Discharge Measurements.*—Four well distributed measurements were obtained, and on these the rating curve has been based.

*Accuracy.*—"A" and "B." Gauge readings and measurements are reliable, the results should be within 5 and 10 per cent.

*General.*—Inonoaklin creek is about 20 miles long, and drains the Fire valley which is fairly well settled and has great agricultural possibilities. The creek empties into the Lower Arrow lake, near Edgewood, and is important as a possible source of water supply and power. About half a mile from the mouth a drop of 30 feet or more occurs.

## Discharge Measurements of Inonoaklin Creek at Edgewood for 1915.

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge
			Feet.	Sq. ft.	Ft. per sec.	Feet	Sec.-ft.
1915							
May 29	Richardson	1,909	52.0	224	3.61	3.30	808.0
June 24	Dempster	1,927	52.0	132	2.91	1.30	265.0
Sept. 16	Dempster	1,927	48.0	69.1	0.78	0.29	53.0
Oct. 21	Dempster	1,927	44.0	60.7	0.67	0.09	40.8

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Daily Gauge Height and Discharge of Innonaklin Creek at Edgewood for 1915.

Day.	April.		May.		June.		July.		August.		September.	
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1					2.80	333	1.70	323	1.10	513	0.33	50.0
2					2.33	540	1.33	327	1.10	313	0.30	50.0
3					2.20	499	1.43	301	1.00	193	0.33	50.0
4					2.10	473	1.40	323	1.10	213	0.30	30.0
5					3.15	430	1.43	301	0.90	173	0.30	50.0
6												
7					3.13	435	1.38	323	0.33	131	0.30	50.0
8					3.55	523	1.90	340	0.60	151	0.30	50.0
9					1.90	418	1.40	338	0.70	130	0.13	44.3
10					1.70	365	1.33	433	0.70	130	0.13	44.3
					1.50	340	1.30	413	0.70	130	0.13	44.6
11												
12					1.30	314	1.70	355	0.50	110	0.13	44.3
13					1.40	358	1.50	340	0.55	101	0.13	44.6
14					1.50	314	2.10	473	0.50	92	0.10	39.3
15					1.45	301	1.90	416	0.50	33	0.10	33.9
16					1.55	333	2.03	450	0.45	34	0.30	50.0
17												
18					1.50	514	2.50	551	0.40	79	0.50	33.0
19					1.45	301	3.35	540	0.40	75	0.25	56.0
20					1.40	265	2.20	499	0.50	93	0.30	50.0
					1.45	301	3.10	472	0.50	93	0.13	44.3
					1.60	393	1.90	418	0.45	54	0.13	44.3
21												
22					1.65	555	1.70	366	0.40	75	0.10	39.6
23					1.50	314	1.65	353	0.35	39	0.10	39.6
24					1.40	268	1.50	314	0.53	63	0.10	39.5
25					1.35	275	1.40	258	0.30	62	0.10	39.3
					1.35	275	1.30	254	0.30	52	0.10	39.6
26												
27					1.78	257	1.40	259	0.30	63	0.10	39.3
28					2.45	507	1.50	314	0.30	53	0.05	35.4
29					2.25	312	1.55	327	0.35	56	0.03	35.4
30					2.10	473	1.40	258	0.35	55	0.05	33.4
31			2.6	505	2.00	445	1.20	240	0.25	55	0.05	35.4
			3.6	509			1.25	252	0.30	30		
Day.	October.		November.		December.							
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.						
Day.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.						
1	0.13	44.6	0.15	44.5	0.10	29.5						
2	0.10	39.5	0.15	44.6	0.10	39.5						
3	0.10	39.5	0.20	50.0	0.05	25.4						
4	0.05	35.4	0.20	50.0	0.00	31.2						
5	0.03	33.4	0.20	50.0	0.00	21.2						
6												
7	0.05	35.4	0.20	50.0	0.00	31.2						
8	0.00	31.2	0.15	44.6	0.10	39.6						
9	0.00	31.2	0.15	44.6	0.05	35.4						
10	0.05	35.4	0.10	39.6	Ice							
			0.10	39.6	Ice							
11	0.05	35.4	0.10	39.6	Ice							
12	0.05	35.4	0.15	44.6	Ice							
13	0.05	35.4	0.15	44.6	Ice							
14	0.10	39.6		42.1	Ice							
15	0.10	39.6	0.10	39.6	Ice							
16	0.10	39.6	0.10	39.6	Frozen							
17	0.05	35.4	0.15	44.6	Frozen							
18	0.00	31.2	0.15	44.6	Frozen							
19	0.05	35.4	0.10	39.6	Frozen							
20	0.10	39.6	0.10	39.6	Frozen							
21	0.10	39.6	0.10	39.6	Frozen							
22	0.10	39.6	0.10	39.6	Frozen							
23	0.10	39.6	0.15	44.5	Frozen							
24	0.20	50.0	0.30	50.0	Frozen							
25	0.20	50.0	0.15	44.5	Frozen							
26												
27	0.20	50.0	0.0	39.6	Frozen							
28	0.20	50.0	0.05	35.4	Frozen							
29	0.25	55.0		55.4	Frozen							
30	0.20	50.0		41.5	Frozen							
31	0.20	50.0	0.15	44.5	Frozen							
	0.15	44.5			Frozen							

## Monthly Discharge of Inonoaklin Creek near Edgewood for 1915.

MONTH	DISCHARGE IN SECOND-FeET				RUN-Off	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
June	465	276	298.0	.....	.....	22,700
July	581	240	263.0	.....	.....	32,300
August	218	60	107.0	.....	.....	4,580
September	62.0	28.4	45.0	.....	.....	3,680
October	86.0	31.2	40.2	.....	.....	2,470
November	80.0	35.4	42.1	.....	.....	3,260
The period	465	21.3	166.0	.....	.....	60,290

## KASLO CREEK. —(3029).

*Location.*—The section is at the second highway bridge above the mouth of Kaslo.

*Records Available.*—1914 and 1915.

*Drainage Area.*—One hundred and seventy square miles.

*Climatic Conditions.*—The summers are hot and generally dry in July and August; the winters are mild. The temperature seldom goes below zero. The snowfall is not heavy, but there is considerable rainfall in spring and fall. The creek freezes over during cold spells, but seldom for more than two weeks at a time. Frazil ice is a possibility.

*Gauge.*—Chain gauge is read daily by Mr. W. F. Hurst, of Kaslo.

*Channel.*—The bed of the stream is broken, with boulders, but is apparently permanent. The water flows swiftly, and at an angle to the section.

*Discharge Measurements.*—The 1915 data is prepared from a rating curve based on five measurements taken in 1914 and four in 1915.

*Accuracy.*—"C" and "D." Daily readings were obtained and the curve is fair. Results should be within 15 per cent.

## Discharge Measurements of Kaslo Creek at Kaslo (For Curve).

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1914							
May 22	Elliott	1,672	64.0	282	7.11	3.90	2,000
June 17	Richardson	1,672	72.0	349	9.25	3.75	3,270
July 22	Richardson	1,672	65.9	191	3.66	1.95	737
Sept. 23	Elliott	1,929	62.9	131	2.70	1.35	254
Nov. 20	Richardson & Beaton	1,929	63.0	96	2.04	0.65	195
1915							
Mar. 3	Beaton	1,929	56.0	62.4	1.22	0.40	101
May 10	Corbould	1,909	73.0	266	6.57	2.60	1,750
July 25	Dempster	1,927	66.0	192	4.94	2.09	776
Nov. 10	Beaton	1,927	64.0	120	2.17	0.95	282

BRITISH COLUMBIA HYDROMETRIC SURVEY

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Daily Gauge Height and Discharge of Kaslo Creek at Kaslo for 1915.

(Drainage area, 170 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	0.85	184	Ice	.....	0.40	100	0.98	247	2.30	1,060	2.48	1,200
2	0.80	183	Ice	.....	0.40	100	1.15	310	2.22	1,100	2.48	1,200
3	0.87	182	Ice	.....	0.38	96	1.58	507	2.22	980	2.40	1,200
4	0.80	118	Ice	.....	0.45	109	1.55	491	2.20	966	2.45	1,260
5	0.80	118	Ice	.....	0.42	104	1.80	465	2.18	946	2.60	1,470
6	0.87	182	Ice	.....	0.42	104	1.43	456	2.25	1,020	2.58	1,410
7	0.47	113	0.40	100	0.48	109	1.48	442	2.52	1,360	2.82	1,790
8	0.80	138	0.35	91	0.40	100	1.40	418	2.75	1,880	2.58	1,440
9	.....	128	0.40	100	0.30	82	1.30	374	2.82	1,790	2.45	1,260
10	.....	128	0.35	81	0.27	94	1.30	374	2.80	1,760	2.28	1,060
11	.....	122	0.35	91	0.42	104	1.38	410	2.52	1,660	2.25	1,020
12	.....	124	0.45	109	0.42	104	1.40	416	2.32	1,100	2.25	1,020
13	.....	118	0.40	100	0.42	104	1.60	517	2.25	1,020	2.30	1,080
14	.....	132	0.87	94	0.52	122	1.60	517	2.36	1,160	2.48	1,200
15	.....	118	0.80	118	0.56	134	1.55	491	2.45	1,230	2.65	1,500
16	.....	118	0.40	100	0.60	136	1.30	628	2.28	1,020	2.65	1,540
17	.....	118	0.40	100	0.65	150	2.00	772	2.22	969	2.62	1,500
18	.....	100	0.80	118	0.77	162	2.30	1,080	2.30	1,060	2.55	1,400
19	.....	113	0.42	104	0.65	150	2.40	1,200	2.35	1,140	2.40	1,200
20	.....	105	0.27	77	0.65	150	2.45	1,260	2.35	1,140	2.30	1,060
21	0.87	94	0.32	86	0.82	196	2.25	1,020	2.46	1,300	2.35	1,140
22	0.40	100	0.38	67	0.97	244	2.00	772	2.55	1,400	2.38	1,160
23	.....	Ice	0.38	91	1.08	262	1.92	708	2.82	1,360	3.45	1,260
24	.....	Ice	0.82	66	1.12	298	1.85	660	.....	1,340	2.52	1,260
25	.....	Ice	0.80	82	1.08	262	1.60	628	2.80	1,330	2.62	1,500
26	.....	Ice	0.40	100	0.93	220	1.65	650	.....	1,320	2.66	1,580
27	.....	Ice	0.40	100	0.68	214	2.00	772	2.42	1,230	2.40	1,200
28	.....	Ice	0.40	100	0.90	220	1.65	660	2.65	1,840	2.88	1,140
29	.....	Ice	.....	.....	0.88	214	2.05	818	2.90	1,810	2.40	1,200
30	.....	Ice	.....	.....	0.88	214	2.45	1,280	2.82	1,360	2.80	1,330
31	.....	Ice	.....	.....	0.90	220	.....	.....	2.40	1,200	.....	.....
Day.	July.		August.		September.		October.		November.		December.	
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	2.63	1,510	2.05	816	1.32	363	0.90	220	1.20	330	0.75	176
2	2.56	1,440	2.02	790	1.20	290	1.20	330	1.20	330	0.75	176
3	2.62	1,500	2.05	818	1.18	322	1.10	290	1.10	290	0.70	162
4	2.50	1,330	1.98	756	1.18	322	1.00	254	1.10	290	0.72	186
5	2.53	1,440	1.82	641	1.25	352	1.08	283	1.05	272	0.72	168
6	2.55	1,490	1.82	641	1.25	252	1.00	254	0.98	247	0.70	162
7	2.55	1,440	1.62	641	1.22	339	0.92	227	0.95	237	0.70	162
8	2.45	1,260	1.78	615	1.18	322	0.92	227	0.98	247	0.72	168
9	2.26	1,180	1.75	600	1.02	261	0.92	227	0.95	237	0.85	205
10	2.28	1,020	1.66	551	1.16	322	0.98	247	0.98	237	0.72	168
11	2.15	915	1.70	572	1.05	272	0.90	220	0.95	237	0.68	157
12	2.00	772	1.72	582	1.02	261	0.92	227	0.92	227	0.70	162
13	2.15	915	1.65	544	0.95	287	0.88	214	0.90	220	0.70	162
14	2.15	91	1.60	517	0.90	220	0.90	220	0.95	237	0.68	157
15	2.25	1,02	1.65	544	0.98	247	0.88	214	0.98	247	0.68	157
16	2.40	1,200	1.62	528	1.05	272	0.66	214	0.98	247	0.70	162
17	2.45	1,260	1.65	544	1.05	272	0.60	190	0.92	227	0.68	157
18	2.45	1,260	1.65	544	1.10	290	0.68	214	0.90	220	0.70	162
19	2.35	1,140	1.60	517	1.12	298	1.02	261	0.88	214	0.68	156
20	2.32	1,100	1.95	732	1.02	261	1.00	254	0.85	214	0.65	150
21	2.25	1,140	1.80	626	1.00	254	0.95	237	0.88	214	0.68	157
22	2.22	1,100	1.65	544	1.05	272	0.95	237	0.85	214	0.68	157
23	2.30	1,080	1.62	528	1.02	261	0.98	247	0.85	205	0.82	148
24	2.32	969	1.56	507	1.15	310	1.05	272	0.85	205	0.82	148
25	2.08	646	1.55	491	1.05	272	1.12	298	0.88	214	0.60	138
26	2.10	864	1.48	456	1.00	254	1.12	298	0.82	196	0.60	138
27	2.35	1,140	1.42	427	1.05	272	1.30	330	0.78	184	0.60	138
28	2.18	946	1.45	442	1.02	261	1.25	352	0.68	157	0.62	143
29	2.05	818	1.48	456	0.95	237	1.38	410	0.75	176	0.66	157
30	1.88	786	1.55	491	0.92	227	1.28	366	0.70	162	Ice	138
31	2.10	864	1.50	465	.....	.....	1.22	330	.....	.....	Ice	138

## Monthly Discharge of Kaslo Creek at Kaslo for 1915.

(Drainage area, 170 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
March.....	398	82	160	0.94	1.08	9,840
April.....	1,260	347	643	3.79	4.33	38,400
May.....	1,910	946	1,270	7.47	8.61	76,100
June.....	1,790	1,080	1,300	7.64	8.82	77,400
July.....	1,810	766	1,110	6.53	7.83	68,300
August.....	816	427	679	3.41	3.93	38,600
September.....	383	230	285	1.68	1.87	17,000
October.....	410	190	264	1.66	1.79	16,300
November.....	330	167	231	1.36	1.62	13,700
December.....	308	138	187	0.97	1.08	9,680
The period.....	1,910	83	600	3.53	40.14	364,090

## KOOSKANAX CREEK.—(3022).

*Location.*—At bridge, above canyon, 1 mile from Nakusp, and about 1 mile from the mouth.

*Records Available.*—May to December, 1914, and practically all of 1915.

*Drainage Area.*—One hundred and twenty-five square miles.

*Climatic Conditions.*—Summers hot and fairly dry. Winters are mild. Thermometer occasionally goes below zero, but the mean temperature of the winter months is probably 25 degrees to 35 degrees Fahr. Frazil ice may be expected for a few days at a time only.

*Gauge.*—A chain gauge was installed and is read by Mr. J. H. Stevenson.

*Channel.*—The stream is confined between perpendicular walls, 38 feet apart, at the section. The control is a sand and gravel bar, which shifts considerably.

*Discharge Measurements.*—The 1915 rating curve is based on seven well-distributed measurements made during the year.

*Accuracy.*—"D." No gauge readings were made from May 6 to 25 inclusive, and other readings were only taken twice a week. The results are considered to be within 20 per cent.

## Discharge Measurements of Kooskanax Creek at Nakusp for 1915.

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft
1918							
Mar. 20	Beeston	1,929	27.4	209	0.86	0.60	115
May 17	Dempster	1,929	28.0	221	3.36	2.60	747
May 27	Richardson	1,909	27.0	250	4.60	3.00	1,120
June 22	Dempster	1,927	26.0	266	2.92	2.25	774
Sept. 11	Dempster	1,937	36.5	160	0.74	0.75	150
Nov. 29	Beeston	1,937	29.0	222	0.60	0.76	177

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Daily Gauge Height and Discharge of Kooskanax Creek at Nakusp for 1915.

(Drainage area, 125 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1		151		153		115		162		1,150		1,010
2		151	0.72	155		115		173	3.1	1,190		1,010
3	0.7	151		150	0.5	115		184	3.1	1,190	2.5	1,010
4		153		145		119	0.9	195		1,230		1,010
5		155		140		123	1.1	246	3.2	1,250		1,010
5	0.73	155		136		127		293			2.8	1,010
7		161	0.6	132	0.6	132	1.4	340				1,020
8		165		132		132		355			2.85	1,040
9		169		132		132		376				900
10	0.8	173	0.5	132	0.6	132		394			2.95	750
11		173		127		127	1.6	413				734
12		173		123		123		441			2.25	706
13	0.5	173		119		119		459				696
14		178	0.5	115	0.5	115	1.8	497			2.2	653
15		183		115		115		590				703
16		189		115		115	2.2	693				731
17	0.9	195	0.5	115	0.5	115		789				740
18		187		115		115	2.6	895			2.35	760
19		180		115		115		955				734
20	0.8	173		115	0.5	115		1,010			2.25	708
21		167		115	0.5	115	2.9	1,070				696
22		161		115		120		1,100			2.2	663
23		156		115		126		1,130				696
24	0.7	151		115	0.6	132		1,160			2.35	706
25		151		115		136	3.1	1,190				1,020
26		151		115		141		1,170			3.35	1,340
27	0.7	151		115		146		1,150	3.0	1,130		1,140
28		151	0.5	115	0.7	151	3.0	1,130		1,100	2.7	950
29		151		115		151		1,140		1,070		940
30	0.7	151		115	0.7	151		1,160		1,040		931
31		152		115		151			2.8	1,010		

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	2.65	922		329		151		168		397		152
2		854		318	0.7	151	0.9	195		368	0.55	142
3	2.4	787	1.3	307		151		187	1.4	340		146
4		752		291	0.7	151		180		357	0.70	151
5		717	1.2	276		151	0.8	173	1.5	375		148
5	2.2	683		268	0.7	151		167	1.3	307		145
7		635	1.15	261		151	0.75	162		291	0.55	143
8	2.0	587		251		151		162	1.2	276		152
9		563		241	0.7	151	0.75	162		266	0.75	153
10	1.9	540	1.05	232		151		162		256		152
11		587		219	0.7	151		162	1.1	246	0.65	142
12		635	0.95	207		154	0.75	162		215		142
13	2.2	683		201		158		184	0.55	184		142
14		761	0.9	195	0.75	162	0.95	207		195	0.65	142
15	2.5	840		191		174		184		207		137
16		955		187	0.85	184	0.75	162	1.0	219	0.50	132
17	2.9	1,070	0.85	184		184		190		213		132
18		928		178	0.85	184		216	0.95	207		132
19	2.4	787	0.8	173		176	1.1	246		199	0.60	132
20		735		190		169		253		191		137
21		685	0.95	207	0.75	162	1.15	261	0.85	184	0.65	142
22	2.1	634		195		156		261		184		142
23		567		184	0.7	151	1.15	251	0.85	184	0.65	142
24	1.9	540	0.6	173		151		271		178		137
25		518		173	0.7	151		281	0.5	173	0.50	132
25		497	0.8	173		148	1.25	291		173	1cc	130
27	1.75	476		167		145		332	0.5	173	1cc	130
26		435	0.75	162	0.65	142	1.5	413		169	1cc	130
29	1.55	394		156		142		434		165	1cc	130
30		367	0.7	151	0.65	142	1.7	455	0.75	162	1cc	130
31	1.4	340		151		142		426			1cc	130



*Monthly Discharge of Kooskanax Creek at Nakusp for 1915.*

(Drainage area, 125 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January	195	151	164	1 31	1 51	10,100
February	155	115	125	1 00	1 04	6,940
March	151	115	127	1 01	1 16	7,810
April	1,190	162	695	5 56	6 20	41,400
June	1,340	683	869	6 95	7 75	51,700
July	1,070	340	661	5 29	6 10	40,600
August	329	151	213	1 70	1 96	13,100
September	184	142	156	1 25	1 39	9,280
October	455	162	238	1 90	2 19	14,600
November	397	162	235	1 88	2 10	140,000
December	162	130	140	1 12	1 29	8,610
The period	1,340	115	329	2 63	32 69	218,140

NOTE.—No gauge readings were taken from May 6 to May 25. As gauge readings were only made twice a week the accuracies cannot be guaranteed closer than 20%.

KOOTENAY RIVER. —(3075).

*Location.*—The gauge is located below the tail-race of the West Kootenay Power and Light Company's plant No. 2, at Upper Bonnington, 10 miles west of Nelson, and about 15 miles above the mouth of the Kootenay.

*Records Available.*—October, 1907, to October 1915, through the courtesy of the above-mentioned company.

*Drainage Area.*—Seventeen thousand eight hundred square miles.

*Climatic Conditions.*—These are similar to Nelson (see Kootenay river, Nelson). The river never freezes over, and very little, if any, frazil ice is formed.

*Gauge.*—A vertical staff, below the tail-race, read daily by Mr. G. L. Thompson, of the West Kootenay Power and Light Company.

*Method of Compilation.*—The discharge curve is obtained by subtracting the discharge of Slocan river from the discharge of Kootenay river, near Glade.

*Accuracy.*—"B." Not guaranteed, owing to the difficulties with Slocan River curve, to be closer than 10 per cent.



BRITISH COLUMBIA HYDROMETRIC SURVEY

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Daily Gauge Height and Discharge of Kootenay River at Bonnington Falls for 1915.

(Drainage area, 17,500 square miles)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	121.1	8,560	120.4	7,520	120.2	7,260	121.6	9,390	131.4	35,800	134.7	49,900
2	121.7	9,560	120.3	7,300	120.1	7,130	121.9	9,920	131.5	36,200	134.6	49,500
3	121.8	9,740	120.3	7,300	120.2	7,260	122.2	10,500	131.8	37,300	134.6	49,500
4	121.7	9,500	120.3	7,300	120.2	7,260	122.3	10,600	132.0	38,100	134.6	49,500
5	121.7	9,560	120.3	7,300	120.2	7,260	122.7	11,400	132.2	38,900	134.6	49,500
6	121.8	9,740	120.3	7,300	120.1	7,130	123.2	12,400	132.3	39,300	134.7	49,900
7	121.7	9,560	120.3	7,300	120.1	7,130	123.2	12,400	132.6	40,500	134.6	49,600
8	121.7	9,560	120.4	7,520	120.2	7,260	123.4	12,900	132.8	41,400	134.6	49,500
9	121.4	9,050	120.5	7,660	120.1	7,130	123.6	13,300	133.0	42,200	134.6	49,500
10	121.6	9,390	120.3	7,300	120.1	7,130	123.8	13,700	133.3	43,500	134.6	49,500
11	121.5	9,220	120.4	7,520	120.1	7,130	123.9	13,900	133.6	44,800	134.6	49,500
12	121.5	9,220	120.3	7,300	120.3	7,390	124.2	14,600	133.8	45,700	134.5	49,000
13	121.5	9,220	120.2	7,260	120.3	7,390	124.4	15,000	134.0	46,600	134.4	48,500
14	121.3	8,880	120.0	7,000	120.3	7,390	124.6	15,500	134.0	46,600	134.3	48,100
15	121.3	8,880	120.3	7,390	120.1	7,130	126.0	18,800	134.2	47,600	134.2	47,600
16	121.2	8,720	120.3	7,300	120.2	7,260	125.3	17,100	134.2	47,600	134.1	47,100
17	121.3	8,880	120.3	7,300	120.1	7,130	126.0	18,800	134.4	48,500	134.0	46,800
18	121.2	8,720	120.2	7,260	120.1	7,130	126.5	20,100	134.3	48,100	133.9	46,600
19	121.2	8,720	120.2	7,260	120.2	7,260	127.2	22,000	134.5	49,000	133.8	45,700
20	120.8	8,090	120.2	7,260	120.2	7,260	128.0	24,200	134.4	48,500	133.8	45,700
21	120.9	8,240	120.3	7,300	120.3	7,390	128.5	25,700	134.3	48,100	133.9	46,200
22	120.8	8,090	120.3	7,300	120.5	7,660	129.0	27,300	134.4	48,500	133.8	45,700
23	120.8	8,090	120.2	7,260	120.5	7,660	129.8	30,000	134.2	47,600	133.8	45,700
24	120.8	8,090	120.3	7,300	120.8	8,090	130.0	30,700	134.2	47,600	133.9	46,200
25	120.7	7,940	120.3	7,300	121.0	8,400	130.3	31,800	134.2	47,600	133.8	45,700
26	120.5	7,660	120.2	7,260	121.2	8,720	130.2	31,800	134.3	48,100	133.8	45,700
27	120.5	7,660	120.2	7,260	121.0	8,400	130.5	32,500	134.3	48,100	133.9	46,200
28	120.4	7,520	120.3	7,300	121.3	8,880	130.8	33,600	134.4	48,500	134.0	46,600
29	120.5	7,660	120.3	7,300	121.3	8,880	131.0	34,300	134.4	48,500	134.2	47,600
30	120.5	7,660	120.3	7,300	121.3	8,880	131.1	34,700	134.5	49,000	134.5	49,000
31	120.6	7,800	120.3	7,300	121.5	9,220	131.7	34,700	134.7	49,900	134.5	49,000
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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	134.5	49,000	133.5	41,400	129.5	29,000	124.4	15,300	123.8	13,700	122.6	11,200
2	134.5	49,000	133.4	44,000	129.2	28,000	124.4	15,000	123.7	13,500	122.6	11,200
3	134.6	49,500	133.4	44,000	129.2	28,000	124.4	15,000	123.7	13,500	122.4	10,800
4	134.7	49,900	133.3	43,500	129.0	27,300	124.2	14,600	123.7	13,500	122.3	10,600
5	134.7	49,900	133.2	43,100	128.8	26,700	124.2	14,600	123.5	13,100	122.3	10,600
6	134.8	50,400	133.1	42,600	128.7	26,400	124.1	14,300	123.8	13,700	122.1	10,300
7	134.7	49,900	133.1	42,600	128.4	25,400	124.0	14,100	123.6	13,300	122.1	10,300
8	134.8	50,400	132.8	41,400	128.4	25,400	124.0	14,100	123.6	13,300	122.1	10,300
9	134.7	49,900	132.7	40,900	128.1	24,500	124.0	14,100	123.6	13,300	122.1	10,300
10	134.8	50,400	132.5	40,100	128.1	24,500	124.0	14,100	123.6	13,300	122.1	10,300
11	134.8	50,400	132.3	39,300	127.3	22,300	123.8	13,700	123.7	13,500	122.1	10,300
12	135.0	51,400	132.1	38,500	127.3	22,300	123.8	13,700	123.6	13,300	122.1	10,300
13	134.8	50,400	131.9	37,700	127.2	22,000	123.7	13,500	123.6	13,300	122.3	10,600
14	134.7	49,900	131.8	37,300	126.8	20,900	123.6	13,300	123.6	13,300	122.1	10,300
15	134.6	49,500	131.7	37,000	126.7	20,600	123.6	13,300	123.4	12,900	121.9	9,920
16	134.5	49,000	131.5	36,200	126.5	20,100	123.5	13,100	123.4	12,900	121.9	9,920
17	134.4	48,500	131.3	35,500	126.2	19,300	123.4	12,900	123.2	12,400	121.9	9,920
18	134.5	49,000	131.2	35,100	126.0	18,800	123.4	12,600	123.2	12,400	121.9	9,920
19	134.5	49,000	131.1	34,700	125.8	18,300	123.3	12,600	123.2	12,400	121.7	9,560
20	134.5	49,000	131.0	34,300	125.7	18,100	123.3	12,600	123.2	12,400	121.7	9,560
21	134.2	47,600	131.0	31,300	125.7	18,100	123.3	12,600	123.2	12,400	121.7	9,560
22	134.2	47,600	131.0	31,300	125.3	17,100	123.3	12,600	123.2	12,400	121.6	9,390
23	134.2	47,600	131.0	31,300	125.3	17,100	123.3	12,600	123.1	12,200	121.8	9,740
24	131.1	47,100	130.8	33,600	125.2	16,900	123.3	12,600	123.0	12,000	121.8	9,740
25	134.2	47,600	130.8	33,600	125.1	16,600	123.2	12,400	123.0	12,000	121.7	9,560
26	134.0	44,600	130.7	33,200	124.8	15,900	123.2	12,100	122.9	11,800	121.6	9,390
27	134.0	44,600	130.3	31,800	124.9	16,100	123.3	12,600	122.8	11,600	121.5	9,220
28	133.8	45,700	130.1	31,100	124.7	15,700	123.4	12,900	122.8	11,600	121.5	9,220
29	133.8	45,700	130.0	30,700	124.6	15,500	123.4	12,900	122.8	11,600	121.5	9,220
30	133.5	44,400	129.8	30,000	124.6	15,500	123.4	12,900	122.6	11,200	121.4	9,050
31	133.6	44,800	129.8	30,000	124.6	15,500	123.4	12,900	122.6	11,200	121.3	8,880

## Monthly Discharge of Kootenay River at Bonnington Falls for 1915.

(Drainage area, 17,800 square miles.)

MONTH.	DISCHARGE IN SECONO-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January	7.740	7.520	8.690	0.49	0.87	534,000
February	7.960	7.000	7.370	0.41	0.43	409,000
March	9.220	7.130	7.639	0.43	0.50	469,000
April	34.700	9.390	20.300	1.14	1.27	1,210,000
May	49.900	35.800	45.100	2.53	2.92	2,770,000
June	49.900	46.700	47.600	2.68	2.99	2,840,000
July	51.400	44.400	48.600	2.73	3.15	2,990,000
August	44.400	30.000	37.100	2.08	2.40	2,280,000
September	29.000	15.500	21.100	1.19	1.33	1,250,000
October	15.300	12.400	18.400	0.75	0.87	824,000
November	13.700	11.200	12.700	0.71	0.79	756,000
December	11.200	8.880	9.970	0.56	0.65	613,000
The year..	51.400	7.000	23.300	1.31	17.87	16,945,000

## KOOTENAY RIVER.—(3014).

*Location.*—The station is located 10 miles above the mouth of the river, at ferry cable put in by the Doukhobour colony, near Glade.

*Records Available.*—1913-14-15.

*Drainage Area.*—Nineteen thousand one hundred square miles.

*Climatic Conditions.*—Similar to those at Nelson (see Kootenay river, Nelson). The river is open all the year round.

*Gauge.*—Staff gauges are used and read daily by Mr. F. Striloff.

*Channel.*—Straight and uniform. There are riffles 1,000 yards above and below section.

*Discharge Measurements.*—The 1915 rating curve is based on six meterings made in 1913, six in 1914, and two in 1915.

*Accuracy.*—"A." The section is ideal for metering purposes. The curve is satisfactory. Results are considered within 5 per cent.

## Discharge Measurements of Kootenay River at Glade (For Curve).

Date.	Engineer	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec. ft.
1913							
June 13	Richardson	1,048	720	16,000	9.63	24.5	154,000
July 3	(Prov.) Lawley	1,527	706	12,400	8.88	19.8	104,000
July 31	(Prov.) Lawley	1,527	655	8,930	6.21	14.6	55,000
Aug. 6	Richardson	1,672	660	8,450	6.08	13.8	51,400
Sept. 6	(Prov.) Lawley	1,527	600	6,980	4.81	11.5	33,600
Nov. 27	Richardson	1,527	550	4,940	3.05	7.82	15,100
1914							
Jan. 3	Webb	1,048	549	4,580	2.82	2.52	12,000
Mar. 9	Richardson	1,672	530	4,000	2.22	1.57	8,000
June 1	Elliott	1,909	690	11,400	7.79	13.4	88,600
July 20	Elliott	1,909	685	10,800	7.54	12.6	81,400
Aug. 13	Richardson	1,929	630	7,700	5.25	7.80	40,400
Dec. 11	Elliott	1,929	556	5,020	3.42	3.45	17,200
1915							
Mar. 9	Elliott & Beeston	1,929	516	3,600	2.24	1.07	8,000
April 19	Corbould & Beeston	1,929	597	6,720	4.48	5.87	30,100

BRITISH COLUMBIA HYDROMETRIC SURVEY

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SESSIONAL PAPER No. 256

Daily Gauge Height and Discharge of Kootenay River at Glade for 1915.

(Drainage area, 10,100 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	3.0	10,900	1.3	8,690	1.1	8,110	2.2	11,700	7.8	41,300	10.0	58,300
2	3.0	10,900	1.3	8,690	1.1	8,110	2.55	13,000	7.8	41,300	10.0	58,300
3	2.0	10,900	1.3	8,690	1.1	8,110	2.55	14,100	7.6	41,300	10.0	58,300
4	3.0	10,900	1.3	8,690	1.1	6,110	3.0	14,700	6.0	43,700	10.0	58,300
5	3.0	10,900	1.3	8,690	1.1	8,110	3.05	14,900	6.2	44,100	10.0	58,300
6	2.0	10,900	1.3	8,690	1.1	8,110	3.2	15,600	8.35	44,500	10.0	58,300
7	2.0	10,900	1.2	8,400	1.1	8,110	3.25	15,800	8.45	46,000	10.0	58,300
8	2.0	10,900	1.2	8,400	1.1	6,110	3.45	16,600	8.75	46,300	10.0	56,300
9	1.9	10,600	1.1	8,110	1.1	8,110	3.6	17,300	8.95	49,600	10.0	58,300
10	1.9	10,600	1.1	8,110	1.1	6,110	3.65	17,500	9.15	51,400	9.9	57,400
11	1.9	10,800	1.1	6,110	1.1	6,110	3.75	16,000	9.35	53,200	9.9	57,400
12	1.8	10,300	1.1	8,110	1.1	8,110	3.95	16,600	9.3	52,600	9.9	57,400
13	1.8	10,300	1.1	8,110	1.1	8,110	4.1	19,500	9.4	53,400	9.6	55,000
14	1.6	10,300	1.1	8,110	1.1	8,110	4.25	20,200	9.55	54,600	9.5	54,200
15	1.8	10,300	1.1	8,110	1.1	8,110	4.45	21,200	9.65	55,400	9.5	54,200
16	1.7	9,940	1.1	8,110	1.2	8,400	4.65	22,200	9.7	55,600	9.4	53,400
17	1.7	9,940	1.1	8,110	1.2	8,400	5.0	24,000	9.7	55,800	9.4	53,400
18	1.7	9,940	1.1	8,110	1.2	8,400	5.5	26,700	9.7	55,800	9.4	53,400
19	1.6	9,610	1.1	8,110	1.25	8,540	5.85	28,600	9.8	56,800	9.35	53,000
20	1.6	9,610	1.1	8,110	1.3	8,690	6.25	31,000	9.7	55,800	9.25	53,000
21	1.6	9,610	1.1	8,110	1.5	9,290	6.35	31,600	9.7	55,800	9.2	51,800
22	1.6	9,610	1.1	8,110	1.5	9,290	6.65	33,500	9.7	55,800	9.2	51,800
23	1.6	9,610	1.1	8,110	1.5	9,290	6.8	34,500	9.8	56,600	9.2	51,800
24	1.5	9,290	1.1	8,110	1.65	9,780	7.0	35,600	9.7	55,800	9.2	51,800
25	1.4	8,990	1.1	8,110	1.8	10,300	7.1	36,400	9.7	55,800	9.2	51,800
26	1.3	8,690	1.1	8,110	1.9	10,600	7.1	36,400	9.7	55,800	9.2	51,800
27	1.3	8,690	1.1	8,110	1.9	10,600	7.2	37,100	9.75	56,200	9.3	52,600
28	1.3	8,690	1.1	8,110	2.0	10,900	7.3	37,800	9.8	56,600	9.4	53,400
29	1.3	8,690	1.1	8,110	2.0	10,900	7.3	37,800	9.8	56,600	9.45	53,800
30	1.2	8,400	1.1	8,110	2.0	10,900	7.7	40,500	10.1	59,000	9.55	54,600
31	1.3	8,690	1.1	8,110	2.1	11,300	.....	.....	10.1	59,000	.....	.....
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	9.65	55,400	8.80	48,700	6.45	32,200	2.60	17,300	3.00	14,700	2.50	12,800
2	9.80	56,600	8.75	48,300	6.35	31,600	3.55	17,100	3.00	14,700	2.50	12,800
3	9.80	56,600	8.75	48,300	6.20	30,700	3.50	16,900	3.10	15,100	2.40	12,400
4	9.80	56,600	8.60	47,100	6.10	30,100	3.40	16,400	3.10	15,100	2.40	12,400
5	9.80	56,600	8.50	46,400	5.95	29,200	3.30	16,000	3.10	15,100	2.40	12,400
6	9.80	56,600	8.45	46,000	5.85	28,600	3.30	16,000	3.15	15,400	2.30	12,000
7	9.95	57,800	8.35	45,200	5.75	28,100	3.30	16,000	3.20	15,600	2.35	12,200
8	9.90	57,400	8.30	44,900	5.65	27,500	3.30	16,000	3.20	15,600	2.20	11,700
9	9.90	57,400	8.20	44,100	5.45	27,000	3.20	15,600	3.20	15,600	2.20	11,700
10	9.90	57,400	8.10	43,400	5.35	25,800	3.10	15,100	3.20	15,600	2.20	11,700
11	9.90	57,400	8.00	42,700	5.20	25,300	3.00	14,700	3.10	15,100	2.30	13,000
12	9.65	57,000	7.85	41,600	5.15	24,800	3.00	14,700	3.10	15,100	2.30	12,000
13	9.80	56,600	7.80	41,200	5.05	24,200	3.00	14,700	3.00	14,700	2.30	12,000
14	9.70	55,800	7.70	40,500	4.95	23,800	2.90	14,300	3.00	14,700	2.20	11,700
15	9.65	55,400	7.60	39,800	4.85	23,200	2.90	14,300	3.00	14,700	2.15	11,500
16	9.60	55,000	7.50	39,100	4.70	22,500	2.90	14,300	2.90	14,300	2.20	11,700
17	9.50	54,200	7.40	38,400	4.65	22,200	2.90	14,300	2.90	14,300	2.20	11,700
18	9.50	54,200	7.30	37,800	4.55	21,800	2.90	14,300	2.80	13,900	2.20	11,700
19	9.25	52,200	7.20	37,100	4.40	21,000	2.80	13,900	2.80	13,900	2.10	11,300
20	9.20	51,800	7.20	37,100	4.30	20,500	2.85	14,100	2.80	13,900	2.10	11,300
21	9.30	52,600	7.20	37,100	4.15	19,800	2.90	14,300	2.80	13,900	2.00	10,900
22	9.30	52,600	7.10	36,400	4.20	20,000	2.90	14,300	2.80	13,900	2.00	10,900
23	9.30	52,600	7.10	36,400	4.10	19,500	3.00	14,700	2.80	13,900	2.00	10,900
24	9.20	51,800	7.00	35,800	4.05	19,300	2.80	13,900	2.70	13,500	2.00	10,900
25	9.05	50,600	6.85	34,800	4.00	19,100	2.80	13,900	2.70	13,500	2.00	10,900
26	9.00	50,200	6.75	34,200	3.95	18,800	2.90	14,300	2.60	13,100	2.00	10,900
27	9.15	51,400	6.65	33,500	3.90	18,600	2.90	14,300	2.60	13,100	2.00	10,900
28	9.05	50,600	6.60	33,200	3.80	18,200	2.90	14,300	2.60	13,100	2.00	10,900
29	8.95	49,800	6.60	33,200	3.75	18,000	2.90	14,300	2.60	13,100	2.00	10,900
30	8.85	49,000	6.55	32,900	3.70	17,700	3.00	14,700	2.50	12,800	1.95	10,800
31	8.80	48,700	6.50	32,600	.....	.....	2.85	14,100	.....	.....	1.70	9,940

## Monthly Discharge of Kootenay River at Glade for 1915.

(Drainage area, 19,100 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January..	10,900	8,400	9,940	0.52	0.60	611,000
February	8,690	8,110	8,260	0.43	0.48	469,000
March...	11,300	8,110	8,940	0.47	0.54	550,000
April...	40,600	11,700	24,650	1.29	1.44	1,480,000
May.....	59,000	41,200	52,300	3.74	3.16	3,220,000
June.....	58,200	51,600	55,000	2.66	3.21	3,270,000
July.....	57,800	48,700	54,100	3.63	3.26	3,330,000
August...	48,700	32,600	39,900	2.09	3.41	2,450,000
September	32,200	17,700	23,600	1.24	1.36	1,400,000
October...	17,300	13,900	15,000	0.79	0.91	922,000
November...	15,600	12,800	14,400	0.75	0.34	657,000
December..	12,800	9,940	11,500	0.60	0.69	707,000
The year.	59,000	8,110	28,800	1.39	18.89	19,256,000

## KOOTENAY RIVER. —(3077).

*Location.*—The gauge is located at Astley's wharf, Nelson, 25 miles above the mouth of river.

*Records Available.*—1913-14-15.

*Drainage Area.*—Seventeen thousand seven hundred square miles.

*Climatic Conditions.*—Winters are mild, with light snowfall. Occasionally the west arm of the lake freezes over. The summers are temperate, with occasional hot days, but the evenings are always cool. Precipitation is heaviest during the spring and fall. July, August and September are considered the dry months.

*Gauge.*—A vertical staff, 20 feet long, and read daily by Mr. W. F. Mawdsley.

*Method of Compilation.*—The discharge curve is obtained by subtracting the discharge of Slocan river from the discharge of the Kootenay, near Glade, allowing for the inflow between Nelson and Glade, which is less than 1 per cent.

*Accuracy.*—"B." Cannot be guaranteed, owing to the difficulties with the Slocan river rating curve, to be closer than 10 per cent.

BRITISH COLUMBIA HYDROMETRIC SURVEY

SESSIONAL PAPER No. 25a

Daily Gauge Height and Discharge of Kootenay River at Nelson for 1915.

(Drainage area, 17,700 square miles)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	1.8	10,100										
2	1.45	9,940	0.8	7,810	0.65	7,380	1.45	9,940	6.45	25,300	8.7	49,500
3	1.45	9,940	0.8	7,810	0.65	7,380	1.55	10,300	8.55	25,900	8.7	48,500
4	1.45	9,940	0.75	7,660	0.65	7,380	1.7	10,900	8.65	26,600	8.7	49,500
5	1.45	9,940	0.8	7,810	0.6	7,230	1.85	11,400	6.8	27,500	8.7	49,500
6	1.45	9,940	0.8	7,810	0.65	7,380	2.0	12,000	6.9	28,200	8.7	49,500
7	1.4	9,770	0.75	7,660	0.65	7,380	2.1	12,400	7.05	29,100	8.7	49,500
8	1.4	9,770	0.75	7,660	0.6	7,230	2.2	13,800	7.15	29,800	8.7	49,500
9	1.25	9,600	0.75	7,660	0.6	7,230	2.3	13,300	7.3	30,700	8.7	49,500
10	1.35	9,600	0.75	7,660	0.6	7,230	2.45	13,900	7.45	31,700	8.7	49,500
11	1.8	9,430	0.7	7,520	0.6	7,230	2.6	14,500	7.65	32,900	8.65	49,200
12	1.2	8,080	0.7	7,520	0.6	7,230	2.7	15,000	7.85	34,200	8.65	48,200
13	1.25	9,600	0.7	7,520	0.65	7,380	2.85	15,600	8.0	35,100	8.6	48,900
14	1.25	9,600	0.7	7,520	0.65	7,380	2.95	16,100	8.2	36,400	8.6	48,900
15	1.8	9,430	0.7	7,520	0.65	7,380	3.1	16,800	8.35	37,400	8.4	47,700
16	1.25	9,250	0.65	7,380	0.65	7,380	3.35	18,000	8.5	38,500	8.8	47,000
17	1.25	9,250	0.65	7,380	0.7	7,520	3.6	19,200	8.55	39,500	8.25	48,700
18	1.2	9,080	0.65	7,380	0.75	7,660	3.85	20,400	8.55	40,500	8.35	48,700
19	1.2	9,080	0.65	7,380	0.75	7,660	4.05	21,400	8.55	41,500	8.25	48,700
20	1.15	8,920	0.7	7,520	0.75	7,660	4.35	23,000	8.65	42,500	8.2	48,400
21	1.15	8,920	0.7	7,520	0.8	7,810	4.8	25,500	8.5	43,300	8.15	48,000
22	1.1	8,750	0.85	7,380	0.8	7,810	5.15	27,500	8.5	44,300	8.15	46,000
23	1.1	8,750	0.85	7,380	0.85	7,960	5.4	28,900	8.5	45,300	8.1	45,700
24	1.05	8,580	0.85	7,380	0.9	8,110	5.6	30,100	8.5	46,300	8.1	45,700
25	1.0	8,420	0.85	7,380	1.0	8,420	5.8	31,300	8.45	47,300	8.05	45,400
26	0.95	8,260	0.85	7,380	1.1	8,750	5.9	31,900	8.45	48,300	8.1	45,700
27	0.95	8,260	0.85	7,380	1.2	9,080	5.95	32,200	8.5	49,300	8.2	48,400
28	0.9	8,110	0.85	7,380	1.25	9,250	6.05	32,800	8.55	49,800	8.2	47,000
29	0.9	8,110	0.85	7,380	1.3	9,420	6.1	33,100	8.6	49,800	8.25	47,400
30	0.85	7,960	0.85	7,380	1.35	9,420	6.15	33,400	8.65	49,200	8.8	48,300
31	0.8	7,810	0.85	7,380	1.4	9,770	6.3	34,400	8.7	49,600	8.65	49,200
									8.65	49,200		

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	8.75	49,800	7.75	43,600	5.4	28,900	2.85	15,600	2.15	12,600	1.8	11,200
2	8.75	49,800	7.7	43,200	5.35	28,600	2.8	15,400	2.25	13,000	1.7	10,900
3	8.9	50,800	7.7	43,200	5.25	28,000	2.75	15,200	2.35	13,500	1.6	10,500
4	8.95	61,100	7.65	42,900	5.2	27,800	2.7	15,000	2.35	13,500	1.55	10,300
5	9.0	51,400	7.55	42,300	5.1	27,200	2.65	14,800	2.35	13,500	1.5	10,100
6	9.0	51,400	7.45	41,700	5.0	26,600	2.65	14,800	2.35	13,600	1.55	10,800
7	9.06	51,700	7.0	38,800	4.9	26,000	2.65	14,800	2.4	13,700	1.45	9,940
8	9.08	51,700	7.3	40,700	4.7	24,900	2.6	14,500	2.4	13,700	1.45	9,940
9	9.0	51,400	7.2	40,100	4.6	24,400	2.55	14,300	2.4	13,700	1.45	9,940
10	9.0	51,400	7.1	39,400	4.5	23,800	2.5	14,100	2.4	13,700	1.5	10,100
11	8.9	50,800	7.0	38,800	4.4	23,300	2.5	14,100	2.4	13,700	1.55	10,500
12	8.8	50,200	6.9	38,200	4.3	22,800	2.5	14,100	2.4	13,700	1.6	10,800
13	8.65	49,200	6.85	37,800	4.2	22,200	2.4	13,700	2.4	13,700	1.6	10,500
14	8.65	49,200	6.75	37,200	4.1	21,700	2.3	13,300	2.3	13,300	1.55	10,300
15	8.65	48,600	6.7	36,900	4.0	21,200	2.3	13,300	2.25	13,000	1.5	10,100
16	8.45	48,000	6.6	36,200	3.9	20,700	2.3	13,300	2.2	12,800	1.45	9,940
17	8.45	48,000	6.5	35,600	3.75	20,000	2.3	13,300	2.2	12,800	1.45	9,940
18	8.4	47,700	6.4	35,000	3.7	19,200	2.25	13,000	2.2	12,800	1.4	9,770
19	8.35	47,400	6.35	34,700	3.5	18,700	2.2	12,800	2.1	12,400	1.4	9,770
20	8.36	47,400	6.3	34,400	3.45	18,400	2.2	12,800	2.05	12,200	1.4	9,770
21	8.3	47,000	6.25	34,000	3.35	18,000	2.15	12,600	2.1	12,400	1.4	9,770
22	8.3	47,000	6.2	33,700	3.25	17,500	2.1	12,400	2.1	12,400	1.4	9,770
23	8.2	46,400	6.1	33,100	3.2	17,300	2.1	12,400	2.1	12,400	1.36	9,600
24	8.2	46,400	6.0	32,500	3.15	17,000	2.1	12,400	2.1	12,400	1.3	9,420
25	8.15	46,000	5.95	32,200	3.1	16,800	2.05	12,200	2.1	12,400	1.3	9,420
26	8.1	45,700	5.9	31,900	3.05	16,600	2.05	12,200	2.0	12,000	1.25	9,250
27	8.0	45,100	5.8	31,300	3.0	16,300	2.0	12,000	2.0	12,000	1.25	9,250
28	8.0	45,100	5.7	30,700	2.95	16,100	2.05	12,200	2.0	12,000	1.24	9,220
29	7.9	44,500	5.65	30,400	2.9	15,900	2.0	12,000	1.95	11,800	1.23	9,180
30	7.85	44,200	5.6	30,100	2.9	15,900	2.05	12,200	1.9	11,600	1.21	9,110
31	7.8	43,900	5.55	29,800	2.85	15,700	2.1	12,400	1.9	11,600	1.19	9,050

## Monthly Discharge of Kootenay River at Nelson for 1915.

(Drainage area, 17,700 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January . . . . .	10,100	7,810	9,180	0.52	0.50	561,000
February . . . . .	7,810	7,880	7,840	0.48	0.48	419,000
March . . . . .	9,770	7,230	7,920	0.48	0.52	487,000
April . . . . .	34,400	9,940	20,900	1.18	1.38	1,240,000
May . . . . .	49,800	35,800	45,000	2.55	2.94	5,770,000
June . . . . .	49,800	48,400	47,800	2.76	3.08	5,840,000
July . . . . .	51,700	48,900	48,800	2.78	3.15	5,970,000
August . . . . .	48,600	39,800	36,500	2.06	2.38	4,840,000
September . . . . .	38,900	18,900	21,400	1.21	1.38	4,270,000
October . . . . .	18,600	18,000	13,500	0.78	0.88	880,000
November . . . . .	18,700	11,800	12,900	0.73	0.81	788,000
December . . . . .	11,800	9,080	9,910	0.58	0.65	609,000
The year . . . . .	51,700	7,830	28,400	1.58	18.18	17,004,000

## PEND D'OREILLE RIVER.—(3017).

*Location.*—The gauging section is located 9 miles above the mouth, near Mr. A. G. Lang's ranch, in the vicinity of Waneta.

*Records Available.*—May, 1913, to September, 1915.

*Drainage Area.*—Twenty-six thousand six hundred square miles.

*Climatic Conditions.*—Precipitation is light over practically all of the Pend d'Oreille drainage area. The summers are hot and fairly dry, the winters mild, temperature seldom going below zero. The river, in Canada, seldom freezes over, and frazil ice will not be a serious factor.

*Gauge.*—Vertical staff gauges were used and read two or three times weekly, except during high water (when daily readings were taken), by Mr. A. G. Lang.

*Channel.*—The Pend d'Oreille, through Canada, is very swift, and there are few, if any, favorable metering sections. The section chosen is very fast in high water, but satisfactory at low water, and appears to have a permanent control.

*Discharge Measurements.*—The 1915 rating curve is based on six measurements in 1913, three in 1914, and six in 1915.

*Accuracy.*—"A," "B" and "C." Readings, as a rule, were only taken two or three times weekly, and high water measurements were not altogether satisfactory, therefore, the results cannot be guaranteed closer than 15 per cent, though at the lower stages of the water it is thought to be within 5 and 10 per cent.

*Discharge Measurements of Pend d'Oreille River at Waneta (For Curve).*

Date.	Engineer.	Meter No.	Width	Area of Section	Mean Velocity	Gauge Height	Discharge.
			Feet	Sq. ft.	Ft. per sec.	Feet	Sec.-ft.
1913							
June 11	Richardson						
June 25	(Prov.) Lawley	1,048	410	12,400	10.40	26.80	128,000 <sup>1</sup>
July 15	(Prov.) Lawley			9,940	10.70	24.20	106,000
Aug. 4	(Prov.) Lawley			7,090	8.40	17.10	59,600
Sept. 2	(Prov.) Lawley			4,780	6.04	10.24	29,800
Nov. 6	Richardson & Webb			3,380	4.19	5.41	14,200
1914							
June 3	Elliott & Beeston	1,048	260	3,350	3.32	3.20	11,200
July 18	Elliott & Gill	1,909	380	9,260	8.52	18.95	78,900
Nov. 12	Elliott & Beeston	1,909	310	6,350	6.08	10.60	38,600
1915							
Jan. 5	Elliott & Beeston	1,927	260	4,240	5.30	3.60	14,000
Feb. 12	Corbould	1,909	260	3,770	2.76	1.95	10,400
Mar. 20	Elliott	1,909	255	3,710	3.18	2.70	11,700
June 5	Dempster & Beeston	1,909	112	6,530	6.67	12.00	43,500
Aug. 10	Dempster & Beeston	1,927	294	5,000	4.84	7.54	24,200
Sept. 3	Richardson	1,927	284	4,730	3.38	4.24	16,000

<sup>1</sup> Old measurement recomputed under new soundings, February, 1915.







Monthly Discharge of Pend d'Oreille River at Waneta for 1915.

(Drainage area, 36,600 square miles.)

MONTH	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January	13,700	8,600	11,300	0.42	0.48	680,000
February	9,700	9,100	9,300	0.36	0.38	618,000
March	14,800	9,380	11,200	0.42	0.48	669,000
April	30,800	18,600	22,300	0.84	0.94	1,330,000
May	43,800	31,800	37,600	1.41	1.63	2,210,000
June	43,400	39,600	40,100	1.51	1.68	3,200,000
July	39,400	30,000	38,000	1.32	1.52	3,180,000
August	39,700	18,100	23,400	0.89	1.03	1,480,000
September	17,800	14,000	15,400	0.58	0.83	916,000
The period	43,800	8,600	32,800	0.88	8.77	13,440,000

SILVERTON CREEK.—(3027).

*Location.*—At bridge, about 3 miles from the mouth, and about ¼ mile below the Hewitt mill.

*Records Available.*—1914 and 1915.

*Drainage Area.*—Not determined.

*Climatic Conditions.*—Summers hot, with light rainfall after June. Winters mild, moderate snowfall. The creek does not stay frozen more than a few days at a time. Frazil ice may be expected occasionally.

*Channel.*—Swift water, with rocky bed.

*Discharge Measurements.*—The 1915 data is based on six measurements in 1914, and five in 1915.

*Accuracy.*—"D." The section is not suitable for good measurements, and accuracy cannot be guaranteed, but should be within 20 per cent.

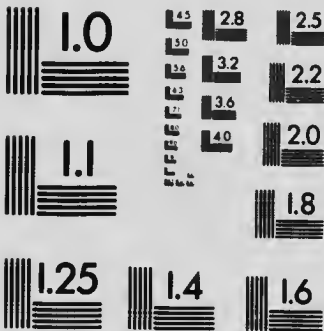
Discharge Measurements of Silverton Creek at Silverton (Below Mill) (For Curve).

Date.	Engineer.	Meter No.	Width	Area of Section.	Mean Velocity.	Gauge Height	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1914							
April 19	Webb & Gill	1,048	26.5	43.0	3.97	0.85	171
May 12	Elliott & Beeston	1,672	33.5	63.5	4.89	1.20	298
June 11	Richardson & Beeston	1,927	30.0	57.2	4.81	1.15	375
July 9	Gill	1,929	28.0	66.0	4.30	1.25	383
Aug. 18	Gill	1,929	24.0	33.1	3.64	0.50	387.6
Nov. 3	Elliott	1,909	22.0	32.5	3.12	0.50	101
1915							
Mar. 18	Beeston	1,929	18.0	18.6	2.10	0.35	39.0
April 28	Corbould	1,927	26.0	46.0	3.02	1.30	139
June 10	Richardson	1,927	28.0	56.1	4.18	1.50	235
Sept. 9	Dempster	1,927	20.0	24.6	2.16	0.80	34.0
Dec. 1	Beeston	1,927	19.0	16.9	2.81	0.53	44.1



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Daily Gauge Height and Discharge of Silverton Creek at Silverton (Below Mill) for 1915.

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	0.0	.....	0.4	38.0	0.35	37.0	0.55	42.8	1.48	208	2.0	431
2	0.0	.....	0.4	38.0	0.35	37.0	0.88	68.7	1.48	208	1.9	384
3	0.0	.....	0.4	38.0	0.35	37.0	1.08	99.5	1.48	208	1.8	339
4	0.0	.....	0.4	38.0	0.35	37.0	0.95	78.2	1.4	180	1.7	296
5	0.0	.....	0.4	38.0	0.35	37.0	0.90	71.0	1.4	180	1.68	288
6	0.0	.....	0.4	38.0	0.35	37.0	0.88	68.7	1.4	180	1.68	288
7	0.0	.....	0.4	38.0	0.35	37.0	0.90	71.0	1.52	223	1.85	362
8	0.0	.....	0.4	38.0	0.35	37.0	0.90	71.0	1.58	246	1.75	318
9	0.0	.....	0.4	38.0	0.35	37.0	0.90	71.0	1.62	262	1.58	246
10	0.0	.....	0.4	38.0	0.35	37.0	0.90	71.0	1.72	305	1.52	223
11	0.45	39.5	0.4	38.0	0.35	37.0	0.90	71.0	1.62	262	1.5	215
12	0.45	39.5	0.4	38.0	0.35	37.0	0.90	71.0	1.6	254	1.55	234
13	0.45	39.5	0.4	38.0	0.35	37.0	0.98	82.6	1.6	254	1.68	288
14	0.45	39.5	0.36	37.2	0.35	37.0	1.05	94.2	1.58	246	1.72	305
15	0.45	39.5	0.3	36.0	0.35	37.0	1.1	103.0	1.68	288	1.65	275
16	0.45	39.5	0.25	35.0	0.40	38.0	1.16	116.0	1.45	198	1.62	262
17	0.45	39.5	0.25	35.0	0.45	39.5	1.3	150.0	1.52	223	1.65	275
18	0.45	39.5	0.31	36.2	0.45	39.5	1.45	198.0	1.48	208	1.68	288
19	0.45	39.5	0.39	37.8	0.45	39.5	1.55	234.0	1.52	223	1.62	262
20	0.45	39.5	0.4	38.0	0.5	41.0	1.6	254.0	1.6	254	1.5	215
21	0.45	39.5	0.35	37.0	0.5	41.0	1.42	187.0	1.65	275	1.5	215
22	0.45	39.5	0.35	37.0	0.51	41.4	1.38	174.0	1.6	254	1.5	215
23	0.4	38.0	0.35	37.0	0.56	43.1	1.32	156.0	1.58	246	1.45	198
24	0.4	38.0	0.35	37.0	0.59	44.2	1.35	165.0	1.68	288	1.5	215
25	0.4	38.0	0.35	37.0	0.53	42.0	1.3	150.0	1.7	296	1.55	234
26	0.4	38.0	0.35	37.0	0.52	41.7	1.3	150.0	1.65	275	1.72	305
27	0.4	38.0	0.35	37.0	0.56	43.1	1.3	150.0	1.72	305	1.58	246
28	0.4	38.0	0.35	37.0	0.44	39.2	1.3	150.0	2.05	435	1.48	208
29	0.4	38.0	.....	.....	0.47	40.1	1.52	223.0	1.95	408	1.5	215
30	0.4	38.0	.....	.....	0.51	41.4	1.5	215.0	2.1	480	1.6	254
31	0.4	38.0	.....	.....	0.5	41.0	.....	.....	2.1	480	.....	.....

	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	1.60	254	1.40	180	0.90	71.0	0.70	51.0	.....	71.0	0.60	44.5
2	1.60	254	1.35	165	0.90	71.0	0.70	51.0	.....	71.0	0.60	44.5
3	1.60	254	1.30	150	0.90	71.0	0.88	68.7	.....	59.5	0.60	44.5
4	1.60	254	1.20	124	0.90	71.0	0.90	71.0	.....	59.5	0.60	44.5
5	1.60	254	1.20	124	0.85	65.2	0.85	65.2	.....	59.5	0.55	42.8
6	1.58	246	1.15	114	0.85	65.2	0.85	65.2	.....	59.5	0.60	44.5
7	1.58	246	1.15	114	0.85	65.2	0.80	59.5	.....	59.5	0.55	42.8
8	1.50	215	1.15	114	0.90	71.0	0.80	59.5	.....	59.5	0.50	41.0
9	1.50	215	1.10	103	0.90	71.0	0.80	59.5	.....	59.5	0.50	41.0
10	1.45	198	1.10	103	0.85	65.2	0.80	59.5	.....	51.0	0.50	41.0
11	1.40	180	1.10	103	0.85	65.2	0.80	59.5	.....	51.0	0.50	41.0
12	1.40	180	1.05	942	0.85	65.2	0.80	59.5	.....	51.0	0.45	39.5
13	1.40	180	1.00	855	0.85	65.2	0.80	59.5	.....	51.0	0.45	39.5
14	1.48	208	1.00	855	0.90	71.0	0.80	59.5	.....	51.0	0.40	38.0
15	1.52	223	1.00	855	0.90	71.0	0.80	59.5	.....	51.0	0.50	41.0
16	1.55	234	1.00	855	0.85	65.2	0.80	59.5	.....	51.0	0.50	41.0
17	1.50	215	1.00	855	0.85	65.2	0.80	59.5	0.70	51.0	0.50	41.0
18	1.50	215	1.03	855	0.85	65.2	0.80	59.5	0.70	51.0	0.50	41.0
19	1.40	180	1.00	855	0.80	59.5	0.80	59.5	0.70	51.0	0.45	39.5
20	1.40	180	1.12	107	0.80	59.5	0.80	59.5	0.70	51.0	0.45	39.5
21	1.40	180	1.20	124	0.60	59.5	0.80	59.5	0.70	51.0	0.45	39.5
22	1.42	187	1.15	114	0.80	59.5	0.85	65.2	0.70	51.0	0.45	39.5
23	1.50	215	1.08	995	0.80	59.5	0.90	71.0	0.65	47.8	0.50	41.0
24	1.45	198	1.02	890	0.80	59.5	0.90	71.0	0.65	47.8	0.50	41.0
25	1.40	180	1.00	855	0.80	59.5	0.90	71.0	0.65	47.8	0.50	41.0
26	1.40	180	1.00	855	0.80	50.5	0.90	71.0	0.65	47.8	0.45	39.5
27	1.45	198	0.95	782	0.75	55.2	0.90	71.0	0.65	47.8	0.45	39.5
28	1.40	180	0.90	710	0.75	55.2	.....	.....	0.65	47.8	0.45	39.5
29	1.40	180	0.85	652	0.70	51.0	.....	.....	0.65	47.8	0.40	38.0
30	1.40	180	0.85	652	0.70	51.0	.....	.....	0.70	51.0	0.40	38.0
31	1.40	180	0.90	710	.....	.....	.....	.....	0.60	44.5	0.40	38.0

SESSIONAL PAPER No. 25e

## Monthly Discharge of Silverton Creek at Silverton (Below Mill) for 1915.

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
February.....	38.0	35.0	37.3			2,070
March.....	44.2	37.0	39.1			2,400
April.....	254.0	42.8	127.0			7,580
May.....	480.0	180.0	270.0			16,600
June.....	431.0	208.0	270.0			16,100
July.....	254.0	180.0	208.0			12,800
August.....	180.0	65.2	101.0			6,210
September.....	71.0	51.0	63.6			3,780
October.....	71.0	51.0	63.5			3,900
November.....	71.0	44.5	54.8			3,260
December.....	44.5	38.0	40.8			2,510
The period.....	480.0	35.0	115.9			77,190

## SILVERTON CREEK.—(3028).

*Location.*—Immediately above intake of flume of Hewitt mill, about 5 miles from Silverton.

*Records Available.*—1914 and 1915.

*Drainage Area.*—Thirty square miles.

*Climatic Conditions.*—Summers hot, light rainfall, after June. Winters not very severe, moderate snowfall. The creek does not remain frozen for more than a few days at a time. Frazil ice and anchor ice to be expected at times.

*Gauge.*—A vertical staff read daily by Mr. P. Harding.

*Channel.*—Water smooth and swift, controlled by Hewitt diversion dam.

*Discharge Measurements.*—The 1915 rating curve is based on five measurements in 1914 and five in 1915.

*Accuracy.*—"C." Results should be within 15 per cent.

## Discharge Measurements of Silverton Creek at Silverton (Above Intake) (For Curve).

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1914							
April 19	Webb & Gill.....	1,048	38.5	62.7	1.27	1.05	80.1
June 11	Richardson & Beeston.....	1,927	28.2	55.0	3.55	1.52	195.0
July 9	Elliott & Gill.....	1,929	30.5	57.8	3.56	1.58	206.0
Aug. 18	Gill.....	1,929	26.0	26.9	1.86	0.80	50.1
Nov. 3	Elliott & Beeston.....	1,909	25.0	22.6	2.09	0.80	47.4
1915							
Mar. 18	Beeston.....	1,929	18.0	16.3	0.93	0.75	15.1
April 28	Corbould.....	1,927	28.0	41.0	1.96	1.05	80.4
June 9	Richardson.....	1,927	28.9	49.5	2.70	1.38	133.0
Sept. 9	Dempster.....	1,927	30.5	26.4	1.32	0.64	34.8
Dec. 1	Beeston.....	1,927	30.0	46.4	0.67	Ice	31.4 <sup>1</sup>

<sup>1</sup> Ice conditions.

Daily Gauge Height and Discharge of Silverton Creek at Silverton (Above Intake)  
for 1915.

(Drainage area, 30 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	0.2	15.5	0.1	15.0	0.1	15.0	0.21	15.5	1.22	113	1.38	147
2	0.2	15.5	0.1	15.0	0.1	15.0	0.44	22.5	1.22	113	1.35	142
3	0.2	15.5	0.1	15.0	0.1	15.0	0.68	37.8	1.2	109	1.36	142
4	0.2	15.5	0.1	15.0	0.07	14.9	0.63	33.7	1.2	109	1.35	140
5	0.2	15.5	0.1	15.0	0.07	14.9	0.56	28.9	1.18	105	1.41	154
7	0.2	15.5	0.12	15.1	0.07	14.9	0.55	28.9	1.25	119	1.41	154
8	0.2	15.5	0.12	15.1	0.07	14.9	0.58	30.1	1.32	133	1.51	180
9	0.2	15.5	0.12	15.1	0.05	14.8	0.53	27.1	1.38	147	1.42	157
10	0.2	15.5	0.12	15.1	0.05	14.8	0.53	27.1	1.45	157	1.36	142
									1.51	180	1.31	131
11	0.2	15.5	0.12	15.1	0.07	14.9	0.58	30.1	1.42	157	1.28	125
12	0.2	15.5	0.12	15.1	0.07	14.9	0.72	41.4	1.33	133	1.26	121
13	0.2	15.5	0.12	15.1	0.07	14.9	0.82	51.6	1.32	133	1.28	125
14	0.2	15.5	0.1	15.0	0.07	14.9	0.79	48.4	1.38	147	1.31	131
15	0.2	15.5	0.1	15.0	0.12	15.1	0.82	51.6	1.36	142	1.41	154
18	0.15	15.2	0.1	15.0	0.11	15.0	0.95	87.5	1.35	140	1.42	157
17	0.15	15.2	0.1	15.0	0.1	15.0	1.15	99.5	1.31	131	1.4	152
18	0.15	15.2	0.1	15.0	0.07	14.9	1.24	117.0	1.33	135	1.41	154
19	0.15	15.2	0.1	15.0	0.07	14.9	1.3	129.0	1.33	135	1.35	142
20	0.15	15.2	0.1	15.0	0.07	14.9	1.31	131.0	1.35	142	1.31	131
21	0.12	15.1	0.12	15.1	0.07	14.9	1.22	113.0	1.4	152	1.3	129
22	0.12	15.1	0.12	15.1	0.13	15.1	1.18	105.0	1.41	154	1.28	125
23	0.15	15.2	0.12	15.1	0.21	15.6	1.19	107.0	1.41	154	1.28	125
24	0.12	15.1	0.12	15.1	0.24	16.0	1.14	97.7	1.43	159	1.31	131
25	0.12	15.1	0.12	15.1	0.23	15.8	1.1	90.3	1.1	154	1.35	140
25	0.12	15.1	0.12	15.1	0.21	15.8	1.1	90.3	1.38	147	1.48	172
27	0.12	15.1	0.12	15.1	0.21	15.5	1.12	94.0	1.35	142	1.34	137
28	0.12	15.1	0.1	15.0	0.21	15.6	1.08	87.0	1.61	205	1.32	133
29	0.12	15.1	.....	.....	0.19	15.4	1.2	109.0	1.58	198	1.3	129
30	0.12	15.1	.....	.....	0.19	15.4	1.22	113.0	1.48	172	1.35	135
31	0.1	15.0	.....	.....	0.21	15.5	.....	.....	1.38	147	.....	.....

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	1.36	142.0	1.09	88.5	0.62	32.9	0.48	24.5	0.50	31.5	.....	15.2
2	1.35	142.0	1.05	82.2	0.80	31.5	0.70	39.6	0.50	31.5	0.25	15.2
3	1.34	137.0	1.05	82.2	0.59	30.8	0.60	31.5	0.58	30.1	0.22	15.7
4	1.32	133.0	1.01	76.1	0.58	30.1	0.69	30.8	0.65	28.3	0.22	15.7
5	1.34	137.0	1.00	74.5	0.55	28.3	0.59	30.8	0.50	31.5	0.22	15.7
8	1.38	147.0	0.92	63.6	0.55	28.3	0.53	27.1	0.42	21.5	0.22	15.7
7	1.42	157.0	0.90	81.0	0.55	28.9	0.50	25.5	0.48	24.5	0.22	15.7
8	1.34	137.0	0.88	58.5	0.55	28.3	0.48	24.5	0.45	23.0	0.22	15.7
9	1.31	131.0	0.86	58.2	0.55	28.3	0.48	24.5	0.50	25.5	.....	15.8
10	1.29	127.0	0.83	52.7	0.70	39.6	0.48	23.5	0.45	23.5	0.24	18.0
11	1.23	115.0	0.81	50.5	0.59	30.8	0.45	23.0	0.40	20.8	0.22	15.7
12	1.18	105.0	0.80	49.4	0.58	30.1	0.48	24.5	0.50	25.5	0.20	15.5
13	1.26	121.0	0.80	49.4	0.55	28.3	0.48	24.5	.....	23.9	.....	15.5
14	1.24	117.0	0.79	48.4	0.55	28.3	0.48	24.5	.....	22.3	0.20	15.5
15	1.32	133.0	0.76	45.4	0.58	28.9	0.45	23.0	0.40	20.8	0.18	15.4
15	1.34	137.0	0.79	48.4	0.58	30.1	0.42	21.6	0.40	20.8	0.18	15.4
17	1.31	131.0	0.78	47.4	0.58	28.9	0.40	20.8	0.38	20.0	0.18	15.4
18	1.34	137.0	0.75	44.4	0.55	28.3	0.45	23.0	0.38	20.0	0.15	15.2
19	1.32	133.0	0.75	44.4	0.55	28.3	0.54	27.7	0.34	18.7	0.15	15.2
20	1.29	127.0	1.08	83.8	0.52	26.5	0.48	24.5	0.31	17.8	0.15	15.2
21	1.25	121.0	0.90	61.0	0.50	25.5	0.51	28.0	.....	17.7	0.15	15.2
22	1.24	117.0	0.81	50.5	0.47	24.0	0.52	28.5	.....	17.6	0.15	15.2
23	1.21	111.0	0.79	48.4	0.47	24.0	0.52	28.5	0.30	17.5	0.15	15.2
24	1.20	109.0	0.76	45.4	0.62	32.9	0.52	25.5	0.30	17.5	0.12	15.1
25	1.18	105.0	0.73	42.4	0.55	28.9	0.51	25.0	0.30	17.5	0.12	15.1
25	1.15	99.5	0.71	40.5	0.52	26.5	0.60	31.5	0.28	18.9	0.12	15.1
27	1.20	109.0	0.70	39.6	0.52	26.5	0.61	32.2	0.25	15.9	0.12	15.1
28	1.16	101.0	0.68	37.8	0.48	24.5	0.85	35.3	.....	15.9	0.12	15.1
29	1.14	97.7	0.55	35.1	0.45	23.0	0.65	35.3	0.28	15.9	0.12	15.1
30	1.11	92.1	0.55	35.3	0.45	23.0	0.55	35.3	0.25	15.2	0.10	15.0
31	1.11	92.1	0.54	34.5	.....	.....	0.65	35.3	.....	.....	0.10	15.0

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## Monthly Discharge of Silverton Creek at Silverton (Above Intake) for 1915.

(Drainage area, 30 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January	15.5	15.0	15.3	0.51	0.59	941
February	15.1	15.0	15.1	0.50	0.52	839
March	16.0	14.8	15.1	0.50	0.58	928
April	131.0	15.6	68.4	2.28	2.54	4,070
May	206.0	105.0	144.0	4.80	5.53	8,850
June	172.0	121.0	141.0	4.70	5.24	8,390
July	157.0	92.1	123.0	4.10	4.73	7,560
August	88.5	34.5	54.2	1.81	2.09	3,330
September	39.6	23.0	28.5	0.95	1.06	1,700
October	39.6	20.8	27.6	0.92	1.06	1,700
November	31.5	16.2	21.7	0.72	0.80	1,290
December	16.2	15.0	15.4	0.51	0.59	947
The year	206.0	14.8	55.8	1.86	25.33	40,545

## SLOCAN RIVER.—(3018).

*Location.*—The section is located at a highway bridge about a mile from the mouth of the river and near Crescent valley.

*Records Available.*—1913-14-15.

*Drainage Area.*—One thousand three hundred square miles.

*Climatic Conditions.*—Similar to Nelson (see Kootenay river, Nelson).

*Gauge.*—A vertical staff, nailed to bridge pier. Read by Mr. R. T. Symms.

*Channel.*—Straight above and below section. Inclined to shift. One side of the channel often filled with logs. Control not satisfactory.

*Discharge Measurements.*—Seven measurements were made in 1913, five in 1914, and four in 1915.

*Accuracy.*—"B." Results are not published during April, May, June, July, August and September, as the gauge readings are not relative to the discharge, due to the lumber company sluicing logs at their plant below the gauging station. Results published are considered within 10 per cent.

## Discharge Measurements of Slocan River at Crescent Valley (For Curve) for 1915.

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1913							
Nov. 8	Webb & Richardson	1,048	237	652	2.47	4.40	1,600
1914							
Mar. 6	Richardson	1,672	210	470	1.91	3.45	897
May 30	Elliott	1,909	219	1,470	5.43	8.10	7,980
Aug. 13	Richardson & Beeston	1,927	224	845	3.01	5.10	2,840
Nov. 10	Elliott	1,909	132	579	4.11	4.82	2,380
Dec. 9	Elliott & Beeston	1,929	128	468	2.62	3.95	1,230
1915							
Feb. 24	Beeston	1,929	212	339	2.07	3.10	703 <sup>1</sup>
May 5	Richardson	1,929	229	1,170	4.56	6.75	5,340 <sup>1</sup>
June 3	Dempster	1,909	230	1,450	3.75	7.80	5,420 <sup>1</sup>
July 30	Dempster	1,927	229	1,300	3.49	6.50	4,540 <sup>1</sup>

<sup>1</sup> Logs in Channel.

## Daily Gauge Height and Discharge of Slocan River at Crescent Valley for 1915.

(Drainage area, 1,800 square miles.)

Day.	January.		February.		March.		October.		November.		December.	
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	3.3	800	3.1	700	3.1	700	3.3	800	.....	850	3.3	800
2	3.3	800	3.1	700	3.1	700	3.3	800	.....	850	3.2	750
3	3.3	800	3.1	700	3.1	700	3.4	850	3.4	850	3.3	800
4	3.3	800	3.1	700	3.1	700	3.4	850	3.4	850	3.2	750
5	3.3	800	3.1	700	3.1	700	3.3	800	.....	850	3.3	800
6	3.3	800	3.1	700	3.1	700	3.3	800	.....	850	3.2	750
7	3.3	800	3.1	700	3.1	700	3.3	800	2.4	850	3.2	750
8	3.3	800	3.1	700	3.1	700	3.3	800	3.4	850	3.3	800
9	3.3	800	3.1	700	3.1	700	3.3	800	3.4	850	3.3	800
10	3.3	800	3.1	700	3.1	700	3.3	800	3.4	850	3.3	800
11	3.3	800	3.1	700	3.1	700	3.3	800	3.4	850	3.3	800
12	3.2	750	3.1	700	3.1	700	3.3	800	3.4	850	3.3	800
13	3.2	750	3.1	700	3.1	700	3.3	800	3.3	800	3.3	800
14	3.2	750	3.1	700	3.1	700	3.3	800	3.3	800	3.2	750
15	3.2	750	3.1	700	3.1	700	3.3	800	3.3	800	3.2	750
16	3.2	750	3.1	700	3.1	700	3.3	800	3.3	800	3.2	750
17	3.2	750	3.1	700	3.2	750	3.3	800	3.3	800	3.2	750
18	3.2	750	3.1	700	3.2	750	3.3	800	3.3	800	3.2	750
19	3.2	750	3.1	700	3.2	750	3.3	800	3.3	800	3.2	750
20	3.2	750	3.1	700	3.2	750	3.3	800	3.3	800	3.2	750
21	3.2	750	3.1	700	3.3	800	3.3	800	3.3	800	3.2	750
22	3.2	750	3.1	700	3.3	800	3.3	800	3.3	800	3.2	750
23	3.2	750	3.1	700	.....	810	3.5	800	3.3	800	3.2	750
24	3.1	700	3.1	700	.....	825	3.3	800	3.3	800	3.2	750
25	3.1	700	3.1	700	.....	835	3.3	800	3.3	800	3.2	750
26	3.1	700	3.1	700	3.4	850	3.3	800	3.3	800	3.2	750
27	3.1	700	3.1	700	3.4	850	3.4	850	3.3	800	3.3	800
28	3.1	700	3.1	700	3.4	850	3.4	850	3.3	800	3.3	800
29	3.1	700	.....	.....	3.4	850	3.4	850	3.3	800	3.3	800
30	3.1	700	.....	.....	3.4	850	.....	850	3.3	800	3.3	800
31	3.1	700	.....	.....	.....	850	.....	850	.....	800	3.3	800

## Monthly Discharge of Slocan River at Crescent Valley for 1915.

(Drainage area, 1,800 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January.....	800	700	755	0.58	0.57	46,400
February.....	700	700	700	0.54	0.55	38,900
March.....	850	700	754	0.58	0.67	46,400
October.....	850	800	811	0.52	0.72	49,900
November.....	850	800	820	0.63	0.70	48,800
December.....	800	750	773	0.59	0.68	47,500
The period.....	850	700	769	0.59	4.00	277,900

NOTE.—Owing to peculiar conditions below the gauging section the gauge readings for April to September are in doubt. The results for the months given are thought to be fairly accurate.



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## REVELSTOKE DISTRICT.

## AKOLKOLEX RIVER.—(3000).

*Location.*—The station is in section 35, township 22, range 1, west of the 6th meridian, about one mile from Wigwam, at the bridge where wagon road crosses the river above the falls.

*Records Available.*—1913-14-15.

*Drainage Area.*—One hundred and five square miles.

*Climatic Conditions.*—Summers hot and moderately dry. Heavy snowfall during winters. Thermometer rarely goes below zero. Stream at section seldom freezes, except for a day or two. Anchor ice seldom forms for more than one or two days at a time.

*Gauge.*—Chain gauge used. Gauge readings taken three times a week, from May to October, inclusive, for the balance of the year one reading a week. J. A. Lewis, gauge reader, Wigwam.

*Channel.*—Straight for 100 yards above and below section. Current swift through box canyon. Control is rock and appears permanent.

*Accuracy.*—"B," "C" and "D." Accurate measurements were made, but as gauge readings are not daily the mean monthly discharge cannot be guaranteed closer than 15 per cent.

*Discharge Measurements of Akolkolex River at Wigwam (For Curve).*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1913							
May 7	Richardson & Elliott.	1,048	37	157	2.66	2.36	402
May 30	Elliott.	1,672	37	363	7.43	7.60	2,700
June 27	Elliott.	1,672	37	314	6.40	6.46	2,110
July 17	Elliott.	1,672	37	268	4.98	4.90	1,340
Aug. 13	Elliott.	1,672	37	235	4.37	4.28	1,070
Sept. 16	Swan & Richardson.	1,048	39	186	2.92	3.10	630
Nov. 20	Webb.	1,048	29	106	1.71	1.60	180
1914							
Mar. 18	Webb.	1,048	30	95	1.48	1.40	141
May 19	Elliott.	1,909	37	312	5.34	6.10	1,670
June 26	Elliott.	1,672	36	275	4.95	5.30	1,360
July 24	Elliott.	1,909	35	239	3.88	4.30	929
Aug. 10	Elliott.	1,909	37	190	2.82	3.10	537
Sept. 6	Richardson & Elliott.	1,927	40	171	2.18	2.40	373
Oct. 10	Elliott.	1,909	37	151	2.18	2.18	329
1915							
Mar. 18	Corbould.	1,927	36	116	1.19	1.20	138
May 14	Dempster.	1,929	39.5	250	4.60	4.80	1,150
Oct. 28	Richardson.	1,929	43	210	3.28	3.66	689
Nov. 30	Richardson.	1,929	39	140	1.45	1.60	202

Daily Gauge Height and Discharge of Akolkolex River at Wigwam for 1915.

(Drainage area, 105 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1		159		166	0.9	103		261		1,040		1,180
2		168		149		104		328		1,060	6.0	1,180
3		177		142		106	2.6	376		1,060		1,180
4	1.5	187	1.16	136		107		400	4.75	1,080	6.0	1,180
6		177		134	0.95	109		425		1,280		1,270
6		167		133		107		480		1,490	6.4	1,360
7	1.3	157		132		106		476	6.1	1,690		1,290
8		186		131		104	3.0	500		1,790		1,210
9		166		130	0.9	103		482		1,890	4.9	1,140
10		154	1.1	129		103		464	6.7	1,990		1,090
11		153		127		103	2.8	447		1,770		1,060
12		152		125	0.9	103		664		1,640	4.55	1,000
13		161		123		111	3.65	661		1,320	4.6	1,020
14	1.25	160		121		119		682	4.8	1,100		1,160
16		140		119		127		704		1,110		1,290
16		130		117	1.15	135	3.75	726		1,120	6.56	1,420
17		120		116		138		829		1,130		1,370
18		111	1.0	115	1.2	142		932	4.9	1,140	5.3	1,310
19		102		113		162		1,040		1,270		1,290
20		93		111		182	4.9	1,140		1,410	5.2	1,270
21		84		109		202		1,010	5.8	1,540		1,280
22	0.6	75		107		223		874		1,520	6.26	1,290
23		90		106	1.85	244	3.8	742		1,490		1,480
24		105		104		228		734		1,470		1,670
25		120	0.9	103		212		725	6.6	1,450	6.45	1,860
26		135		103	1.55	194		717		1,560		1,660
27		150		103		204	3.7	709		1,680		1,470
28		165		103		211		813	6.3	1,790	5.2	1,270
29	1.45	180				219		916		1,480		1,280
30		172				227	4.6	1,020	5.0	1,180		1,290
31		164			1.8	235			1,180			
	July.		August.		September.		October.		November.		December.	
1		1,300		1,310	3.25	570	2.1	289		422	1.6	202
2	6.3	1,310		1,270		631		266	2.7	422		202
3		1,310	5.1	1,220	3.65	693	1.85	244		395		202
4	5.3	1,310		1,170		596		248		368	1.5	202
5		1,360		1,110	3.0	500	1.0	252	2.35	341		200
6	5.5	1,400	4.7	1,060		426		241		322		198
7	6.9	1,690		1,150	2.4	352		230		303		196
8		1,680	5.15	1,240		320		220		284	1.55	194
9	6.25	1,760		1,090	2.1	289	1.65	210	2.0	270		194
10		1,670	4.4	949		270		215		262		194
11		1,570		905	1.9	252		220		254	1.55	194
12	5.65	1,480	4.15	862		252	1.75	226		246		192
13		1,610		1,020		252		218		238		190
14		1,530	6.0	1,180	1.9	252		210		231		189
15	5.85	1,560		1,180		270	1.6	202		224		188
16		1,510		1,180	2.1	289		231	1.65	210	1.5	187
17		1,450	5.0	1,180		310		260		218		185
18	5.5	1,400		929		331		290		226		183
19		1,310	3.6	677	2.4	362	2.25	320	1.8	235		181
20	5.1	1,220		688		318		327		230	1.45	180
21		1,270		699		286		334		226		182
22		1,330	3.7	709	1.9	282	2.35	341		222		184
23	6.45	1,380		885		252		361	1.7	218	1.5	187
24		1,380	4.7	1,060	1.9	252		381		212		177
25		1,180		948		243		401		206		167
26	4.75	1,080		837	1.8	235	2.7	422		210		157
27		1,050	3.75	726		218		550	1.55	194		147
28		1,026		702	1.6	202	3.6	677		196		136
29	4.5	985	3.6	677		227		592		198	1.1	129
30		1,170		641	1.9	252		507		200		129
31	5.4	1,360		605			2.7	422				129

Monthly Discharge of Akolkolex River at Wigwam for 1915.  
(Drainage area, 106 square miles.)

MONTH	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January	187	75	142	1.35	1.66	8,730
February	156	103	121	1.15	1.20	6,720
March	244	103	154	1.47	1.70	9,220
April	1,140	281	672	6.40	7.14	40,000
May	1,990	1,040	1,410	13.40	15.40	86,700
June	1,840	1,000	1,290	12.30	13.70	79,300
July	1,760	985	1,370	13.00	14.50	84,000
August	1,310	605	963	9.17	10.60	59,200
September	693	202	331	3.15	3.51	19,700
October	677	202	320	3.05	3.52	19,700
November	422	194	260	2.47	2.76	15,500
December	202	129	180	1.71	1.97	11,100
The year	1,990	75	601	5.72	77.56	439,870

BLAEBERRY RIVER.—(3002).

*Location.*—Section 29, township 28, range 22, west of 5th meridian, 11 miles north of Golden, about 1 mile from the mouth, on downstream side of C.P.R. bridge.

*Records Available.*—1912-13-14-15.

*Drainage Area.*—Three hundred and twenty-five square miles.

*Climatic Conditions.*—Summers hot and dry, with occasional heavy rains. Winters severe, with light snowfall. Ice conditions exist generally from November 15 to April 1.

*Gauge.*—Vertical staff, read three times a week by H. M. Cooper, until July, when chain gauge was established.

*Channel.*—Straight for 50 yards above and below station. Water runs swiftly and is controlled by a sand-bar, about 100 yards downstream. This bar probably shifts. Exceedingly high water on the Columbia may affect gauge readings.

*Discharge Measurements.*—Measurements are made from downstream side of railway bridge. 1915 data is compiled from one measurement in 1913, five in 1914, and five in 1915.

*Accuracy.*—"C." As gauge readings are not taken daily results are considered only within 15 per cent.

Discharge Measurements of Blaeberry River at Moberly (For Curve).

Date.	Engineer	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height	Discharge.
1913							
Nov. 30	Webb	1,048	Feet. 52	Sq. ft. 154	Ft. per sec. 1.38	Feet. 0.50	Sec.-ft. 212
1914							
June 12	Elliott	1,909	82	357	5.15	3.10	1,840
July 27	Elliott	1,909	78	323	3.96	2.60	1,280
Aug. 5	Elliott	1,909	78	322	4.53	2.80	1,460
Sept. 10	Elliott	1,927	78	230	2.50	1.75	573
Oct. 13	Elliott	1,909	66	188	2.19	1.39	412
1915							
Mar. 3	Corbould	1,927	69	104	0.55	Ice	57
May 6	Elliott	1,672	76	238	3.38	2.15	802
July 4	Elliott	1,909	82	332	6.34	3.28	2,110
July 13	Elliott	1,909	82	340	4.89	2.82	1,660
Oct. 21	Richardson	1,929	63	165	1.80	1.10	298



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Monthly Discharge of Blaeberry River at Moberly for 1915.  
(Drainage area, 325 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area	Total in acre-feet.
April.	660	207	354	1.09	1.22	21,100
May.	1,720	600	1,060	3.26	3.76	65,200
June.	4,160	860	1,800	5.54	6.18	107,000
July.	2,600	1,460	2,160	6.71	7.74	134,000
August.	2,440	1,480	1,890	5.61	6.70	116,000
September.	1,260	355	628	1.93	2.16	37,400
October.	460	300	371	1.14	1.31	22,600
November.	425	200	277	0.85	0.95	16,600
The period	4,160	200	1,060	3.29	30.01	620,000

## BUGABOO CREEK.—(3003).

*Location.*—About 3 miles south-west of Spillimacheen Landing, on downstream side of highway bridge, 1 mile from mouth.

*Records Available.*—1912-13-14-15.

*Drainage Area.*—One hundred and ninety square miles.

*Climatic Conditions.*—Summers hot and dry. Winters severe, light snowfall. The creek usually freezes over in November and does not open again till April.

*Gauge.*—A vertical staff, nailed to pier of bridge, and read in the open season by Mr. Jas. Montgomery, daily.

*Channel.*—Straight, 100 feet above and below gauge. Current swift during freshet. One channel during low water and two at high water.

*Discharge Measurements.*—The 1915 rating curve is based on three measurements in 1912, six in 1913, three in 1914, and four in 1915.

*Accuracy.*—"B" and "C." The control is apparently permanent, daily readings are made, and the 1915 curve appears reliable. Above gauge height of 1.4 the results should be within 10 per cent, and below 1.4 15 per cent.

Discharge Measurements of Bugaboo Creek at Spillimacheen Landing (For Curve).

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
1912							
June 1	Hughes	1,055	Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
July 16	Hughes	1,055	33.0	96.3	2.89	1.45	276
Sept. 29	Richardson	1,065	59.0	128.0	5.34	2.15	684
1913			33.0	86.0	1.87	1.02	161
May 20	Elliott	1,672	34.5	103.0	2.94	1.35	363
June 23	Elliott	1,672	60.0	152.0	6.68	2.40	1,040
July 11	Richardson	1,048	60.0	150.0	6.87	2.40	1,030
July 27	Elliott	1,672	60.0	159.0	6.66	2.38	1,050
July 30	Elliott	1,672	60.0	130.0	5.72	2.05	744
Sept. 3	Swan & Richardson	1,048	34.0	111.0	3.66	1.69	408
1914							
June 17	Elliott	1,909	60.0	187.0	10.20	3.09	1,316
July 31	Elliott	1,909	60.0	151.0	6.40	2.35	970
Oct. 23	Elliott	1,909	34.0	96.0	1.71	1.10	164
1916							
Feb. 28	Elliott & Corbould	1,927	34.0	73.6	0.69	0.50	50
May 3	Elliott	1,672	34.0	114.0	3.63	1.75	402
May 21	Elliott	1,672	34.0	116.0	4.09	1.87	477
Oct. 22	Richardson	1,929	34.0	89.4	1.86	1.12	140

Daily Gauge Height and Discharge of Bugaboo Creek at Galena for 1915.

(Drainage area, 100 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1							0.58	32	1.8	438	1.8	423
2							0.82	33	1.3	433	1.8	489
3							0.8	99	1.78	411	2.0	563
4							0.9	83	1.7	335	1.3	489
5							0.32	37	1.7	385	2.08	631
6							0.8	44	1.72	877	2.0	583
7							0.88	32	1.8	438	2.25	602
8							0.92	103	1.12	888	2.15	897
9							0.82	92	2.13	697	1.93	548
10							0.82	67	2.23	603	1.35	456
11							0.9	88	2.05	506	1.3	423
12							1.0	117	1.88	456	1.85	456
13							1.1	139	1.82	485	1.9	489
14							1.12	144	1.8	423	1.95	526
15							1.12	144	1.7	355	2.18	697
16							1.22	173	1.33	329	2.3	350
17					0.6	53	1.26	224	1.6	814	2.4	942
18					0.6	56	1.48	253	1.35	340	2.15	697
19					0.5	56	1.58	805	1.68	855	2.1	648
20					0.5	55	1.5	314	1.5	214	2.0	563
21					0.55	60	1.58	805	1.85	455	2.0	563
22					0.5	62	1.82	204	2.0	553	2.1	648
23					0.55	57	1.3	197	1.95	526	2.2	746
24					0.5	58	1.33	224	1.86	475	2.8	860
25					0.5	83	1.3	197	1.87	469	2.6	1,250
26					0.58	67	1.32	204	1.38	475	2.7	1,290
27					0.5	63	1.85	214	1.9	489	2.35	921
28					0.52	55	1.25	182	2.0	553	2.25	603
29					0.55	80	1.4	281	2.0	563	2.2	746
30					0.58	52	1.72	277	1.95	526	2.3	860
31					0.5	68			1.85	486		
	July.		August.		September.		October.		November.		December.	
1	2.4	982	2.75	1,450	2.05	608	1.85	214	1.10	129	Ice	
2	2.48	1,080	2.7	1,390	1.95	625	1.35	214	1.08	184	Ice	
3	2.4	962	2.5	1,250	2.0	563	1.20	185	1.10	139	Ice	
4	2.4	1,110	2.5	1,250	2.1	548	1.12	144	1.00	117	Ice	
5	2..	1,250	2.8	1,110	1.92	504	1.15	152	1.02	121	Ice	
6	2.7	1,390	2.48	1,090	1.9	489	1.20	155	0.85	92	Ice	
7	2.7	1,390	2.55	1,180	1.75	394	1.05	128	0.90	99	1.45	230
8	2.55	1,320	2.55	1,180	1.5	814	1.02	121	0.90	99	1.20	197
9	2.4	982	2.5	1,110	1.55	292	1.08	184	1.00	117	0.95	108
10	2.7	850	2.4	982	1.45	250	1.02	121	0.92	103	0.95	108
11	2.2	745	2.35	921	1.88	224	1.05	128	0.80	84	Ice	
12	2.0	553	2.45	1,050	1.22	204	1.00	117	0.70	72	Ice	
13	2.2	745	2.45	1,050	1.28	191	1.05	128	0.80	82	Ice	
14	2.3	921	2.4	982	1.25	182	1.02	121	0.90	99	1.10	139
15	2.3	850	2.4	982	1.22	172	0.98	118	0.90	99	0.85	63
16	2.2	745	.4	982	1.8	197	0.92	102	1.00	117	0.80	84
17	2.28	827	2.4	982	1.85	214	0.95	108	0.95	108	0.90	99
18	2.85	921	2.5	1,110	1.82	204	1.05	128	0.90	99	0.85	92
19	2.4	982	2.22	759	1.58	340	1.25	182	0.92	102	0.95	108
20	2.42	1,010	2.3	850	1.28	224	1.10	139	0.90	99	1.00	117
21	2.5	1,110	2.38	827	1.28	191	1.12	144	0.90	99	1.00	117
22	2.5	1,250	2.3	745	1.3	197	1.10	139	0.85	92	0.90	99
23	2.55	1,180	2.3	860	1.28	191	1.10	139	1.05	125	0.80	84
24	2.4	982	2.35	921	1.25	182	1.12	144	1.10	129	0.85	92
25	2.45	1,050	2.3	850	1.3	197	1.10	139	1.20	165	0.90	99
26	2.38	952	2.25	602	1.2	166	1.06	124	1.05	128	0.75	72
27	2.88	964	2.32	884	1.32	204	1.20	197	1.05	128	0.75	72
28	2.85	921	2.25	802	1.28	191	1.15	214	1.15	152	0.80	84
29	2.65	1,220	2.32	884	1.18	151	1.28	191	1.10	370	0.90	99
30	2.8	1,110	2.32	884	1.28	191	1.20	166	1.85		Ice	
31	2.5	1,250	2.3	660			1.15	162	Ice		Ice	

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Monthly Discharge of Bugaboo Creek at Galena for 1915.

(Drainage area, 190 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET				RUN-OFF.	
	Maximum.	Minimum	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
April.....	377	62	171	0.90	1.00	10,200
May.....	803	314	471	2.48	2.86	28,000
June.....	1,390	423	893	3.65	4.07	41,200
July.....	1,390	363	1,020	5.37	6.19	62,700
August.....	1,400	746	1,000	5.26	6.06	61,800
September.....	948	181	287	1.51	1.68	17,100
October.....	214	103	148	0.78	0.80	9,100
The period.....	1,460	62	541	2.88	22.74	222,800

## COLUMBIA RIVER, GOLDEN.—(3005).

*Location.*—Station is in section 12, township 27, range 22, west of 5th meridian, 1 mile from Golden.

*Records Available.*—During the open season from 1903 to 1915. Gauge heights from 1903 to 1911 were obtained through the courtesy of the Columbia River Lumber Company. One ice measurement made in February, 1912, gave a discharge of 795 c.f.s., and one made in February, 1914, gave a discharge of 894 c.f.s.

*Drainage Area.*—Two thousand five hundred square miles.

*Climatic Conditions.*—Summers are warm and dry. Winters severe. Ice conditions generally exist from the middle of November till the end of March. Frazil ice is to be expected.

*Gauge.*—A vertical staff read daily during open season by Mr. J. T. Wood.

*Channel.*—The section is located in the middle of a straight stretch of river of 1,500 feet. At low water there is a pronounced riffle 300 yards below gauge, but this disappears at high water.

*Discharge Measurements.*—Measurements made from cable car. The 1915 rating curve is based on eighteen measurements made during 1911-12-13-14-15.

*Accuracy.*—"C." Gauge readings are good. 1915 results should be within 15 per cent.

*Discharge Measurements of Columbia River at Golden (For Curve).*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1911							
Oct. 17	Richardson	1,048	176	792	2.36	10.8	1,879
1912							
June 4	Hughes	1,055	200	1,030	3.02	9.2	3,100
June 8	Hughes	1,055	220	1,270	3.52	8.1	4,490
June 24	Hughes	1,055	440	2,485	4.35	5.0	10,800
July 4	Hughes	1,055	385	1,910	4.60	5.3	8,820
July 28	Hughes	1,055	373	2,010	4.14	5.6	8,300
Oct. 1	Richardson	1,055	180	798	2.53	10.5	2,020
1913							
May 23	Elliott	1,672	200	1,060	3.42	3.7	3,620
June 16	Richardson	1,672	400	3,710	5.40	2.1	20,000
July 4	Richardson	1,672	400	2,690	4.20	4.0	11,300
Sept. 16	Elliott	1,672	270	1,280	4.17	8.1	5,340
Nov. 29	Webb	1,048	185	764	2.20	1.8	1,670
1914							
July 30	Elliott	1,909	390	2,540	4.09	7.95	10,400
Oct. 14	Elliott	1,909	200	855	2.65	2.48	2,260
1915							
Mar. 13	Corbous	1,927	164	1,420	0.67	0.50	957
May 7	Elliott	1,672	190	1,940	2.08	3.75	4,050
July 5	Elliott	1,909	200	2,460	3.73	7.20	9,200
Oct. 25	Richardson	1,929	168	1,540	1.14	1.58	1,750

<sup>1</sup> Ice conditions.





## Monthly Discharge of Columbia River at Golden for 1915.

(Drainage area, 2,500 square miles.)

MONTH.	DISCHARGE IN SECON-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
April .....	3,220	1,260	2,070	0.83	0.93	123,000
May .....	8,290	2,400	4,810	1.93	2.22	296,000
June .....	8,600	5,280	6,520	2.61	2.91	388,000
July .....	9,960	8,630	9,490	3.80	4.38	584,000
August .....	10,600	8,630	9,600	3.92	4.52	603,000
September .....	8,470	2,350	4,690	1.88	2.10	288,000
October .....	2,300	1,680	1,910	0.76	0.88	117,000
The period .....	10,600	1,260	5,610	2.24	17.94	2,459,000

## COLUMBIA RIVER, REVELSTOKE.—(3007).

*Location.*—Section 33, township 23, range 2, west of 6th meridian, above the mouth of Illecillewaet river, on downstream side of highway bridge, at Revelstoke.

*Records Available.*—1912-13-14-15.

*Drainage Area.*—Nine thousand square miles.

*Climatic Conditions.*—Summers are hot, with considerable rainfall. Winters are fairly cold, with heavy snowfall. Frazil ice forms in large quantities.

*Gauge.*—Chain gauge read daily during open season. Mr. J. H. Jones read the gauge till September, Mr. S. Anderson thereafter.

*Channel.*—About 1,000 feet wide, controlled by a fairly permanent sand-bar.

*Discharge Measurements.*—1915 data is based on nine measurements during 1913 and 1914, and four during 1915.

*Accuracy.*—"A" and "B." Accurate gauge readings and fair conditions for metering. Results are considered to be within 5 and 10 per cent.

*Discharge Measurements of Columbia River at Revelstoke (For Curve).*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1913							
May 5	Elliott	1,048	705	5,040	2.40	5.60	12,300
May 26	Elliott	1,048	840	10,000	6.02	12.82	61,800
June 7	Elliott	1,048	1,050	13,400	7.60	16.30	102,000
Sept. 17	Elliott	1,048	825	7,340	4.33	9.20	31,800
1914							
May 20	Elliott	1,672	835	8,190	5.93	11.60	48,500
June 25	Elliott	1,909	846	11,500	6.38	13.20	73,600
Sept. 7	Elliott	1,927	825	7,940	4.75	9.50	37,700
Oct. 8	Richardson	1,909	710	5,750	3.18	7.00	18,300
Nov. 18	Elliott	1,909	705	4,210	2.66	5.10	11,200
1915							
Jan. 6	Corbould	1,999	735	4,130	1.82	4.65	7,510 <sup>1</sup>
Mar. 17	Corbould	1,927	705	3,770	1.60	3.70	5,950
May 11	Dempster	1,929	847	11,000	5.78	13.55	74,700
Nov. 30	Richardson	1,929	702	4,500	1.84	4.20	8,280

<sup>1</sup> Ice conditions.

SESSIONAL PAPER No. 25e

Daily Gauge Height and Discharge of Columbia River at Revelstoke for 1915.

(Drainage area, 9,000 square miles.)

Day.	April.		May.		June.		July.		August.		September.	
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	4.7	9,600	8.6	29,200	10.7	45,200	14.5	80,500	14.9	84,900	.....	62,900
2	5.9	14,000	8.6	29,200	11.0	47,800	14.7	82,700	15.2	88,200	.....	60,000
3	6.2	15,200	9.1	32,700	11.0	47,800	14.5	80,500	16.1	98,000	.....	57,000
4	6.3	15,700	9.5	35,600	11.1	48,600	14.3	78,500	16.2	99,000	.....	54,100
5	6.1	14,800	9.9	38,800	11.4	51,000	14.5	80,500	15.9	95,900	.....	51,200
6	6.0	14,400	10.6	44,400	11.6	52,700	14.9	84,900	15.0	86,000	.....	48,300
7	6.0	14,400	11.4	51,000	12.5	60,800	15.2	88,200	15.4	90,400	.....	45,400
8	6.0	14,400	12.5	60,800	12.3	59,000	15.5	91,500	15.5	91,500	.....	42,500
9	5.9	14,000	13.1	66,600	11.8	54,500	15.0	86,000	15.3	89,300	.....	39,600
10	5.8	13,600	13.9	74,500	11.0	47,800	14.7	82,700	15.0	86,000	.....	36,700
11	5.8	13,600	13.6	71,500	10.4	42,800	14.0	75,500	15.1	87,100	.....	33,800
12	6.0	14,400	13.0	65,700	10.7	45,200	13.1	66,600	15.0	86,000	.....	30,900
13	6.5	16,700	12.0	56,300	10.8	46,000	12.6	61,700	15.0	86,000	.....	27,900
14	6.6	17,200	11.4	51,000	11.3	50,200	12.9	64,700	15.1	87,100	.....	25,000
15	6.8	18,200	11.1	48,600	12.0	56,300	14.1	76,500	15.2	88,200	.....	22,100
16	6.9	18,700	10.7	45,200	12.6	61,700	14.3	78,500	15.3	89,300	7.0	19,200
17	7.3	20,800	10.2	41,200	13.9	74,500	14.0	75,500	15.1	87,100	7.2	20,200
18	7.9	24,400	10.5	43,600	13.6	71,500	13.9	74,500	15.0	86,000	7.1	19,700
19	8.3	27,100	10.6	44,400	13.0	65,700	13.6	71,500	14.9	84,900	7.8	23,800
20	8.5	28,500	11.4	51,000	12.8	63,700	13.9	74,500	14.9	84,900	7.4	21,400
21	8.4	27,800	12.1	57,200	12.9	64,700	14.2	77,500	15.2	88,200	6.9	18,700
22	8.2	26,400	12.8	63,700	13.0	65,700	14.6	81,600	15.3	89,300	6.8	18,200
23	8.0	25,000	12.8	63,700	13.3	68,500	14.3	78,500	15.1	87,100	6.8	18,200
24	7.9	24,400	12.5	60,800	13.6	71,500	14.3	78,500	15.1	87,100	6.6	17,200
25	7.7	23,200	12.3	59,000	13.8	73,500	14.2	77,500	15.0	86,000	6.4	16,200
26	7.8	23,800	12.0	56,300	14.9	84,900	14.0	75,500	14.9	84,900	6.3	15,700
27	7.6	22,600	11.8	54,500	14.6	81,600	13.9	74,500	13.9	74,500	6.4	16,200
28	7.9	24,400	12.0	56,300	14.4	79,500	14.1	76,500	13.9	74,500	6.3	15,700
29	8.9	31,300	12.2	58,100	14.3	78,500	14.2	77,500	.....	71,600	6.2	15,200
30	8.6	29,200	11.5	51,800	14.3	78,500	14.2	77,500	.....	68,700	6.2	15,200
31	.....	.....	10.9	46,900	.....	.....	14.4	79,500	.....	65,800	.....	.....
Day.	October.		November.		December.							
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.						
1	6.0	14,400	6.7	17,700	4.2	8,100						
2	5.9	14,000	6.6	17,200	4.2	8,100						
3	5.8	13,600	6.4	16,200	4.1	7,900						
4	5.7	13,200	6.2	15,200	4.2	8,100						
5	5.7	13,200	6.2	15,200	4.3	8,400						
6	5.6	12,800	6.0	14,400	4.3	8,400						
7	5.6	12,800	5.8	13,600	4.4	8,700						
8	5.5	12,400	5.7	13,200	4.5	9,000						
9	5.4	12,000	5.6	12,800	4.5	9,000						
10	5.3	11,600	5.4	12,000	4.4	8,700						
11	5.3	11,600	5.3	11,600	4.3	8,400						
12	5.2	11,200	5.2	11,200	4.2	8,100						
13	5.2	11,200	4.8	9,900	4.2	8,100						
14	5.4	12,000	4.8	9,900	4.1	7,900						
15	5.2	11,200	4.8	9,900	4.1	7,900						
16	5.1	10,800	4.9	10,200	4.1	7,900						
17	5.1	10,800	4.9	10,200	4.0	7,700						
18	5.5	12,400	4.8	9,900	4.0	7,700						
19	6.3	15,700	4.8	9,900	4.0	7,700						
20	6.0	14,400	4.8	9,900	4.0	7,700						
21	6.2	15,200	4.8	9,900	4.1	7,900						
22	6.2	15,200	4.8	9,900	4.1	7,900						
23	6.2	15,200	4.7	9,600	4.1	7,900						
24	6.4	16,200	4.6	9,300	4.0	7,700						
25	6.2	15,200	4.6	9,300	4.1	7,900						
26	6.4	16,200	4.7	9,600	4.2	8,100						
27	7.1	19,700	4.6	9,300	4.1	7,900						
28	7.2	20,200	4.5	9,000	4.0	7,700						
29	7.2	20,200	4.4	8,700	4.0	7,700						
30	7.0	19,200	4.3	8,400	4.0	7,700						
31	6.8	18,200	.....	.....	4.0	7,700						

*Monthly Discharge of Columbia River at Revelstoke for 1915.*

(Drainage area, 9,000 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches of drainage area.	Total in acre-feet.
April .....	31,300	9,600	19,900	2.21	2.47	1,180,000
May .....	74,500	29,200	51,900	5.77	6.65	3,190,000
June .....	84,900	42,800	61,300	6.81	7.60	3,650,000
July .....	91,500	61,700	77,700	8.63	9.95	4,780,000
August .....	99,000	65,800	85,600	9.51	11.00	5,260,000
September .....	62,900	18,200	30,300	3.37	3.76	1,800,000
October .....	20,200	10,800	14,300	1.59	1.83	879,000
November .....	17,700	8,400	11,400	1.27	1.42	678,000
December .....	9,000	7,700	8,050	0.89	1.03	495,000
The period .....	99,000	7,700	40,050	4.45	45.71	21,912,000

NOTE.—No gauge readings were made from August 29 to September 16. The discharges were interpolated by referring to gauge at Arrowhead. No accuracy is given for September.

FIELD SPRINGS 1, 2, 3.—(3062, 3063, 3064).

*Location.*—In township 28, range 18, west of 5th meridian, about  $\frac{1}{4}$  mile east of C.P.R. hotel, at Field.

*Records Available.*—October 16 to December 31, 1914, and all of 1915.

*Drainage Area.*—Not determined.

*Climatic Conditions.*—In summer the days are usually hot and the nights cool, June is generally a wet month, July and August dry ones. In winter the snow generally falls in October or November and remains till April.

*Discharge Measurements.*—Discharges are obtained from these springs by means of weirs. There are three weirs and readings were taken daily at the different gauges on Nos. 1 and 2 throughout the year, and at No. 3. from the first of April till the end of the year, by Messrs. Jackson and Bell. These weirs were established to determine the water supply for Field and the C.P.R. shops.

SESSIONAL PAPER No. 25a

Daily Gauge Height and Discharge of Field Springs at Field (Weir No. 1) for 1915.

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	0.07	0.046	0.00	0.067	0.08	0.056	0.10	0.079	0.43	0.704	0.36	0.539
2	0.07	0.046	0.09	0.067	0.08	0.056	0.11	0.091	0.44	0.729	0.40	0.531
3	0.07	0.046	0.09	0.067	0.08	0.056	0.11	0.091	0.45	0.754	0.38	0.585
4	0.07	0.046	0.09	0.067	0.08	0.056	0.14	0.131	0.45	0.754	0.34	0.496
5	0.07	0.046	0.09	0.067	0.08	0.056	0.20	0.223	0.45	0.754	0.30	0.410
6	0.07	0.046	0.10	0.079	0.08	0.056	0.18	0.191	0.45	0.754	0.28	0.370
7	0.07	0.046	0.10	0.079	0.07	0.046	0.19	0.207	0.45	0.754	0.30	0.410
8	0.07	0.046	0.09	0.067	0.07	0.046	0.20	0.223	0.45	0.754	0.33	0.473
9	0.07	0.046	0.09	0.067	0.07	0.046	0.20	0.223	0.45	0.754	0.32	0.462
10	0.07	0.046	0.09	0.067	0.07	0.046	0.19	0.207	0.50	0.883	0.30	0.410
11	0.07	0.046	0.09	0.067	0.07	0.046	0.19	0.207	0.49	0.856	0.29	0.390
12	0.09	0.067	0.09	0.067	0.07	0.046	0.19	0.207	0.44	0.729	0.28	0.370
13	0.10	0.079	0.10	0.079	0.07	0.046	0.20	0.223	0.46	0.779	0.28	0.370
14	0.11	0.091	0.10	0.079	0.07	0.046	0.22	0.258	0.45	0.754	0.28	0.370
15	0.11	0.091	0.10	0.079	0.07	0.046	0.22	0.294	0.49	0.856	0.28	0.370
16	0.11	0.091	0.10	0.079	0.07	0.046	0.28	0.370	0.40	0.631	0.30	0.410
17	0.11	0.091	0.09	0.067	0.07	0.046	0.34	0.495	0.40	0.631	0.38	0.585
18	0.12	0.104	0.09	0.067	0.07	0.046	0.42	0.679	0.40	0.631	0.34	0.495
19	0.12	0.104	0.10	0.079	0.07	0.046	0.41	0.655	0.40	0.631	0.45	0.754
20	0.11	0.091	0.09	0.067	0.07	0.046	0.42	0.679	0.26	0.331	0.58	1.103
21	0.10	0.079	0.08	0.056	0.08	0.056	0.40	0.631	0.26	0.331	0.56	1.047
22	0.10	0.070	0.08	0.056	0.09	0.067	0.38	0.585	0.28	0.370	0.52	0.936
23	0.10	0.079	0.09	0.067	0.10	0.079	0.36	0.539	0.28	0.370	0.48	0.830
24	0.10	0.079	0.08	0.056	0.10	0.079	0.39	0.608	0.28	0.370	0.44	0.729
25	0.10	0.079	0.09	0.067	0.10	0.079	0.36	0.539	0.28	0.370	0.50	0.883
26	0.10	0.079	0.08	0.056	0.10	0.079	0.34	0.495	0.29	0.390	.....	0.848
27	0.10	0.079	0.08	0.056	0.10	0.079	0.34	0.495	0.28	0.370	.....	0.823
28	0.10	0.079	0.08	0.066	0.10	0.079	0.35	0.517	0.28	0.370	.....	0.787
29	0.10	0.079	.....	.....	0.10	0.079	0.36	0.539	0.29	0.390	.....	0.762
30	0.10	0.079	.....	.....	0.11	0.091	.....	0.622	0.29	0.390	.....	0.716
31	0.09	0.067	.....	.....	0.11	0.091	.....	.....	0.31	0.431	.....	.....

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	.....	0.681	0.23	0.276	0.10	0.079	0.07	0.046	0.10	0.079	0.07	0.046
2	.....	0.646	0.22	0.258	0.10	0.079	0.07	0.046	0.10	0.079	0.07	0.046
3	.....	0.610	0.23	0.276	0.11	0.091	0.06	0.037	0.10	0.079	0.07	0.046
4	.....	0.575	0.20	0.223	0.10	0.079	0.07	0.046	0.09	0.067	0.07	0.046
6	0.36	0.639	0.18	0.191	0.09	0.067	0.07	0.046	0.09	0.067	0.07	0.046
6	0.44	0.729	0.18	0.191	0.09	0.067	0.06	0.037	0.09	0.067	0.07	0.046
7	0.42	0.679	0.18	0.191	0.10	0.079	0.06	0.037	0.08	0.056	0.07	0.046
8	0.50	0.883	0.17	0.175	0.10	0.079	0.06	0.037	0.09	0.067	0.07	0.046
9	0.56	1.047	0.17	0.175	0.12	0.104	0.06	0.037	0.08	0.056	0.07	0.046
10	0.57	1.075	0.16	0.160	0.10	0.079	0.06	0.037	0.07	0.046	0.07	0.046
11	0.69	1.132	0.16	0.160	0.09	0.067	0.06	0.037	0.06	0.037	0.07	0.046
12	0.59	1.132	0.15	0.145	0.09	0.067	0.06	0.037	0.06	0.037	0.07	0.046
13	0.62	1.219	0.15	0.145	0.08	0.056	0.06	0.028	0.06	0.037	0.07	0.046
14	0.64	1.280	0.14	0.131	0.08	0.056	0.06	0.028	0.06	0.037	.....	0.640
16	0.66	1.340	0.14	0.131	0.07	0.046	0.06	0.028	0.06	0.037	.....	0.034
16	0.64	1.280	0.14	0.131	0.09	0.067	0.05	0.028	0.06	0.037	0.05	0.028
17	0.64	1.280	0.14	0.131	0.09	0.067	0.05	0.028	0.07	0.046	0.05	0.028
18	0.66	1.340	0.14	0.131	0.11	0.091	0.07	0.026	0.06	0.037	0.06	0.028
19	0.62	1.219	0.14	0.131	0.13	0.117	0.06	0.037	0.06	0.037	0.05	0.028
20	0.60	1.160	0.14	0.131	0.12	0.104	0.06	0.037	0.06	0.037	0.05	0.028
21	0.66	1.047	0.14	0.131	0.10	0.079	0.06	0.037	0.07	0.046	0.06	0.037
22	0.50	0.883	0.13	0.117	0.09	0.067	0.06	0.037	.....	0.046	0.06	0.037
23	0.46	0.779	0.15	0.145	0.10	0.079	0.07	0.047	.....	0.046	0.06	0.037
24	0.40	0.631	0.13	0.117	0.09	0.067	0.08	0.056	.....	0.046	0.06	0.028
25	0.37	0.662	0.12	0.104	0.08	0.056	0.07	0.046	.....	0.046	.....	0.025
26	0.34	0.496	0.12	0.104	0.07	0.046	0.07	0.046	.....	0.046	.....	0.022
27	0.36	0.617	0.11	0.091	0.07	0.046	0.08	0.056	.....	0.046	0.04	0.020
28	0.30	0.410	0.10	0.079	0.07	0.046	0.09	0.067	.....	0.046	0.04	0.020
29	0.28	0.370	0.10	0.079	0.07	0.046	0.09	0.067	0.07	0.046	0.04	0.020
30	0.26	0.331	0.10	0.079	0.08	0.056	0.10	0.079	0.07	0.046	0.04	0.020
31	0.24	0.294	0.10	0.079	.....	.....	0.10	0.079	.....	0.046	0.04	0.020

## Monthly Discharge of Field Springs at Field (Weir No. 1) for 1915.

MONTH.	DISCHARGE				RUN-OFF.	
	1 Maximum.	2 Minimum.	3 Mean.	4 Per square mie.	Depth in inches on Drainage area.	Total in acre-feet.
January.....	56,200	24,800	0.070	37,800		
February.....	42,700	80,200	0.068	36,700		
March.....	49,100	24,800	0.059	31,900		
April.....	367,000	42,700	0.377	204,000		
May.....	477,000	179,000	0.599	323,000		
June.....	596,000	200,000	0.611	330,000		
July.....	724,000	159,000	0.844	458,000		
August.....	149,000	42,700	0.149	80,500		
September.....	68,200	24,800	0.071	38,300		
October.....	42,700	15,100	0.044	23,800		
November.....	42,700	20,000	0.050	27,000		
December.....	24,800	10,800	0.035	18,900		
The year.....	724,000	10,800	0.248	184,000		

- No. 1.—This column gives maximum daily flow, in gallons, for month.  
 No. 2.—This column gives minimum daily flow, in gallons, for month.  
 No. 3.—This column gives mean daily flow, in second-feet, for month.  
 No. 4.—This column gives mean daily flow, in gallons, for month.

SESSIONAL PAPER No. 26a

Daily Gauge Height and Discharge of Field Springs at Field (Weir No. 2) for 1915.

Day.	January.		February.		March.		April.		May.		June.	
	Gauge Height.	Discharge.	Gauge H. 'sht.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	0.15	0.304	0.14	0.274	0.14	0.274	0.13	0.246	0.13	0.245	0.20	0.803
2	0.16	0.304	0.14	0.274	0.14	0.274	0.13	0.246	0.14	0.274	0.29	0.803
3	0.16	0.304	0.14	0.274	0.14	0.274	0.13	0.246	0.14	0.274	0.29	0.803
4	0.15	0.304	0.14	0.274	0.14	0.274	0.13	0.245	0.14	0.274	0.28	0.753
5	0.15	0.304	0.14	0.274	0.13	0.246	0.13	0.246	0.14	0.274	0.28	0.763
6	0.15	0.304	0.14	0.274	0.13	0.245	0.13	0.245	0.15	0.334	0.29	0.803
7	0.15	0.304	0.14	0.274	0.13	0.246	0.14	0.274	0.17	0.366	0.29	0.803
8	0.16	0.304	0.14	0.274	0.14	0.274	0.14	0.274	0.18	0.398	0.3	0.844
9	0.15	0.304	0.14	0.274	0.14	0.274	0.13	0.245	0.2	0.464	0.3	0.844
10	0.15	0.304	0.14	0.274	0.13	0.245	0.13	0.245	0.2	0.454	0.29	0.803
11	0.15	0.304	0.14	0.274	0.13	0.245	0.13	0.245	0.22	0.634	0.28	0.763
12	0.14	0.274	0.14	0.274	0.13	0.246	0.13	0.246	0.23	0.671	0.29	0.803
13	0.14	0.274	0.14	0.274	0.13	0.246	0.14	0.274	0.24	0.608	0.3	0.644
14	0.14	0.274	0.14	0.274	0.13	0.245	0.13	0.245	0.23	0.671	0.3	0.644
16	0.14	0.274	0.14	0.274	0.13	0.245	0.13	0.245	0.23	0.571	0.3	0.644
16	0.13	0.245	0.14	0.274	0.13	0.245	0.12	0.218	0.24	0.608	0.31	0.665
17	0.14	0.274	0.13	0.246	0.13	0.245	0.12	0.218	0.24	0.684	0.31	0.866
18	0.14	0.274	0.13	0.246	0.13	0.246	0.12	0.218	0.26	0.684	0.3	0.844
19	0.14	0.274	0.14	0.274	0.13	0.246	0.12	0.218	0.26	0.646	0.32	0.926
20	0.14	0.274	0.14	0.274	0.13	0.246	0.13	0.245	0.26	0.546	0.32	0.926
21	0.13	0.246	0.14	0.274	0.13	0.245	0.13	0.246	0.26	0.584	0.31	0.886
22	0.13	0.246	0.14	0.274	0.13	0.245	0.12	0.218	0.27	0.723	0.3	0.844
23	0.13	0.246	0.14	0.274	0.13	0.246	0.12	0.218	0.28	0.763	0.3	0.844
24	0.14	0.274	0.14	0.274	0.13	0.245	0.13	0.246	0.29	0.803	0.29	0.803
26	0.14	0.274	0.14	0.274	0.13	0.245	0.13	0.245	0.29	0.803	0.32	0.926
26	0.14	0.274	0.14	0.274	0.13	0.246	0.13	0.246	0.29	0.803	0.39	1.240
27	0.14	0.274	0.14	0.274	0.13	0.246	0.13	0.246	0.28	0.763	0.37	1.140
28	0.14	0.274	0.14	0.274	0.13	0.245	0.13	0.246	0.28	0.762	0.36	1.100
29	0.14	0.274	.....	.....	0.13	0.245	0.13	0.245	0.28	0.763	0.35	1.060
30	0.14	0.274	.....	.....	0.13	0.245	0.14	0.274	0.28	0.763	0.34	1.010
31	0.14	0.274	.....	.....	0.13	0.246	.....	.....	0.29	0.803	.....	.....

Day.	July.		August.		September.		October.		November.		December.	
	Gauge Height.	Discharge.	Gauge H. 'sht.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	0.39	1.240	0.37	1.140	0.29	0.803	0.25	0.646	0.23	0.571	0.21	0.498
2	0.37	1.140	0.37	1.140	0.29	0.803	0.25	0.646	0.23	0.571	0.20	0.464
3	0.37	1.140	0.37	1.140	0.3	0.844	0.26	0.648	0.22	0.534	0.20	0.464
4	0.41	1.320	0.36	1.100	0.29	0.803	0.25	0.646	0.22	0.534	0.20	0.464
6	0.45	1.520	0.35	1.060	0.28	0.763	0.25	0.646	0.22	0.534	0.20	0.464
6	0.45	1.520	0.34	1.010	0.28	0.763	0.24	0.608	0.22	0.534	0.20	0.464
7	0.44	1.470	0.34	1.010	0.29	0.803	0.25	0.646	0.22	0.534	0.20	0.464
8	0.43	1.420	0.33	0.967	0.29	0.803	0.24	0.608	0.22	0.534	0.20	0.464
9	0.43	1.420	0.33	0.967	0.29	0.803	0.24	0.608	0.22	0.534	0.20	0.464
10	0.42	1.370	0.33	0.967	0.28	0.763	0.24	0.608	0.22	0.534	0.20	0.464
11	0.43	1.420	0.34	1.010	0.27	0.723	0.23	0.571	0.22	0.534	0.20	0.464
12	0.41	1.320	0.33	0.967	0.27	0.723	0.23	0.571	0.21	0.498	0.20	0.464
13	0.42	1.370	0.32	0.926	0.26	0.684	0.28	0.571	0.21	0.498	0.20	0.464
14	0.43	1.420	0.32	0.926	0.25	0.646	0.22	0.534	0.21	0.498	.....	0.464
15	0.44	1.470	0.32	0.928	0.25	0.648	0.22	0.534	0.22	0.534	.....	0.464
16	0.41	1.320	0.32	0.926	0.25	0.645	0.22	0.634	0.21	0.498	0.20	0.464
17	0.40	1.280	0.32	0.926	0.25	0.646	0.22	0.534	0.22	0.634	0.20	0.464
18	0.39	1.240	0.32	0.926	0.26	0.684	0.23	0.571	0.21	0.498	0.20	0.464
19	0.39	1.240	0.32	0.926	0.28	0.684	0.22	0.534	0.21	0.498	0.20	0.464
20	0.39	1.240	0.32	0.926	0.26	0.684	0.22	0.634	0.21	0.498	0.20	0.464
21	0.39	1.240	0.32	0.928	0.26	0.684	0.22	0.534	0.21	0.498	0.20	0.464
22	0.38	1.190	0.31	0.885	0.25	0.648	0.22	0.534	.....	0.498	0.20	0.464
23	0.39	1.240	0.32	0.926	0.28	0.684	0.23	0.571	.....	0.498	0.20	0.464
24	0.39	1.240	0.31	0.885	0.26	0.684	0.23	0.571	.....	0.498	0.20	0.464
25	0.39	1.240	0.31	0.885	0.25	0.648	0.23	0.571	.....	0.498	.....	0.464
26	0.38	1.190	0.31	0.886	0.25	0.648	0.23	0.571	.....	0.498	.....	0.498
27	0.39	1.240	0.3	0.844	0.26	0.684	0.23	0.571	.....	0.498	0.21	0.498
28	0.37	1.140	0.3	0.844	0.25	0.646	0.23	0.571	0.21	0.498	0.21	0.498
29	0.37	1.140	0.3	0.844	0.25	0.646	0.23	0.571	0.21	0.498	0.20	0.464
30	0.37	1.140	0.3	0.844	0.25	0.646	0.22	0.634	0.21	0.498	0.20	0.464
31	0.36	1.190	0.29	0.803	.....	.....	0.22	0.534	.....	.....	0.19	0.431

## Monthly Discharge of Field Springs at Field (Weir No. 2) for 1915.

MONTH.	DISCHARGE.				RUN-OFF.	
	1 Maximum.	2 Minimum.	3 Mean.	4 Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
January.....	164,000	132,000	0.261	152,000		
February.....	148,000	132,000	0.272	147,000		
March.....	148,000	132,000	0.251	136,000		
April.....	148,000	118,000	0.243	131,000		
May.....	484,000	132,000	0.578	312,000		
June.....	870,000	412,000	0.882	476,000		
July.....	821,000	616,000	1.290	697,000		
August.....	618,000	434,000	0.950	513,000		
September.....	455,000	349,000	0.712	384,000		
October.....	349,000	266,000	0.578	312,000		
November.....	308,000	289,000	0.516	279,000		
December.....	289,000	233,000	0.487	252,000		
The year.....	821,000	118,000	0.585	316,000		

No. 1.—This column gives maximum daily flow, in gallons, for month.  
 No. 2.—This column gives minimum daily flow, in gallons, for month.  
 No. 3.—This column gives mean discharge, in second-feet, for month.  
 No. 4.—This column gives mean daily flow, in gallons, for month.



SESSIONAL PAPER No. 25a

Daily Gauge Height and Discharge of Field Springs at Field (Weir No. 3) for 1915

Day.	April.		May.		June.		July.		August.		September.	
	Gauge Height	Dis-charge.	Gauge Height	Dis-charge.	Gauge Height	Dis-charge.	Gauge Height	Dis-charge.	Gauge Height	Dis-charge.	Gauge Height	Dis-charge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	0.12	0.0126	0.09	0.0061	0.10	0.0080	0.19	0.0398	0.18	0.0348	0.13	0.0154
2	0.12	0.0126	0.08	0.0046	0.12	0.0126	0.18	0.0348	0.17	0.0301	0.13	0.0164
3	0.12	0.0126	0.08	0.0046	0.10	0.0080	0.18	0.0348	0.18	0.0348	0.14	0.0186
4	0.12	0.0126	0.07	0.0033	0.09	0.0061	0.20	0.0463	0.17	0.0301	0.13	0.0154
5	0.11	0.0101	0.08	0.0046	0.08	0.0046	0.20	0.0453	0.17	0.0301	0.13	0.0164
6	0.10	0.0080	0.06	0.0046	0.05	0.0046	0.20	0.0453	0.15	0.0259	0.14	0.0186
7	0.11	0.0101	0.08	0.0046	0.09	0.0061	0.20	0.0453	0.16	0.0259	0.16	0.0221
8	0.11	0.0101	0.07	0.0033	0.10	0.0080	0.23	0.0642	0.16	0.0269	0.16	0.0221
9	0.10	0.0080	0.07	0.0033	0.10	0.0080	0.26	0.0672	0.16	0.0269	0.16	0.0259
10	0.09	0.0061	0.10	0.0060	0.09	0.0061	0.23	0.0642	0.16	0.0259	0.15	0.0221
11	0.09	0.0061	0.09	0.0061	.....	0.0061	0.24	0.0714	0.16	0.0269	0.14	0.0154
12	0.09	0.0061	0.08	0.0046	0.11	0.0101	0.22	0.0676	0.16	0.0269	0.16	0.0221
13	0.10	0.0080	0.10	0.0080	0.13	0.0154	0.23	0.0642	0.16	0.0269	0.16	0.0221
14	0.10	0.0080	0.09	0.0061	0.12	0.0126	0.23	0.0642	0.16	0.0269	0.16	0.0269
15	0.09	0.0061	0.08	0.0046	0.12	0.0126	0.24	0.0714	0.16	0.0269	0.16	0.0259
16	0.09	0.0061	0.08	0.0046	0.13	0.0164	0.22	0.0576	0.15	0.0269	0.16	0.0259
17	0.08	0.0046	0.09	0.0061	0.14	0.0186	0.20	0.0463	0.17	0.0301	0.15	0.0221
18	0.08	0.0046	0.09	0.0061	0.12	0.0126	0.19	0.0398	0.17	0.0301	0.15	0.0269
19	0.08	0.0046	0.09	0.0061	0.16	0.0221	0.19	0.0398	0.17	0.0301	0.15	0.0259
20	0.09	0.0061	0.08	0.0046	0.16	0.0269	0.19	0.0398	0.17	0.0301	0.16	0.0259
21	0.08	0.0046	0.08	0.0046	0.16	0.0221	0.19	0.0398	0.17	0.0301	0.16	0.0221
22	0.08	0.0046	0.09	0.0061	0.14	0.0186	0.18	0.0348	0.16	0.0269	0.15	0.0221
23	0.08	0.0046	0.09	0.0061	0.12	0.0154	0.17	0.0301	0.16	0.0259	0.15	0.0269
24	0.09	0.0061	0.09	0.0061	0.11	0.0101	0.17	0.0301	0.15	0.0221	0.16	0.0269
25	0.09	0.0061	0.09	0.0061	0.16	0.0259	0.17	0.0301	0.16	0.0221	0.15	0.0221
26	0.09	0.0061	0.09	0.0061	0.24	0.0714	0.18	0.0348	0.16	0.0221	0.15	0.0221
27	0.09	0.0061	0.08	0.0046	0.22	0.0676	0.18	0.0348	0.14	0.0186	0.15	0.0269
28	0.09	0.0061	0.08	0.0046	0.20	0.0463	0.17	0.0301	0.14	0.0186	0.16	0.0259
29	0.10	0.0080	0.09	0.0061	0.18	0.0348	0.16	0.0348	0.15	0.0221	0.16	0.0221
30	0.11	0.0101	0.09	0.0061	0.17	0.0301	0.18	0.0348	0.15	0.0221	0.17	0.0301
31	.....	.....	0.09	0.0061	.....	.....	0.19	0.0398	0.14	0.0154	.....	.....

Day.	October.		November.		December.							
	Gauge Height	Dis-charge.	Gauge Height	Dis-charge.	Gauge Height	Dis-charge.	Gauge Height	Dis-charge.	Gauge Height	Dis-charge.	Gauge Height	Dis-charge.
1	0.17	0.0301	0.17	0.0301	0.15	0.0221	.....	.....	.....	.....	.....	.....
2	0.17	0.0301	0.17	0.0301	0.15	0.0221	.....	.....	.....	.....	.....	.....
3	0.17	0.0301	0.16	0.0259	0.16	0.0269	.....	.....	.....	.....	.....	.....
4	0.17	0.0301	0.15	0.0259	0.17	0.0301	.....	.....	.....	.....	.....	.....
6	0.17	0.0301	0.16	0.0269	0.17	0.0301	.....	.....	.....	.....	.....	.....
6	0.16	0.0259	0.15	0.0221	0.17	0.0301	.....	.....	.....	.....	.....	.....
7	0.17	0.0301	0.14	0.0186	0.17	0.0301	.....	.....	.....	.....	.....	.....
8	0.17	0.0301	0.15	0.0221	0.17	0.0301	.....	.....	.....	.....	.....	.....
9	0.17	0.0301	0.14	0.0186	0.17	0.0301	.....	.....	.....	.....	.....	.....
10	0.17	0.0301	0.14	0.0186	0.17	0.0301	.....	.....	.....	.....	.....	.....
11	0.17	0.0301	0.13	0.0154	0.17	0.0301	.....	.....	.....	.....	.....	.....
12	0.17	0.0301	0.12	0.0126	0.17	0.0301	.....	.....	.....	.....	.....	.....
13	0.17	0.0301	0.12	0.0126	0.17	0.0301	.....	.....	.....	.....	.....	.....
14	0.17	0.0301	0.10	0.0101	.....	0.0301	.....	.....	.....	.....	.....	.....
15	0.17	0.0301	0.10	0.0080	.....	0.0301	.....	.....	.....	.....	.....	.....
16	0.17	0.0301	0.10	0.0080	0.17	0.0301	.....	.....	.....	.....	.....	.....
17	0.17	0.0301	0.10	0.0080	0.17	0.0301	.....	.....	.....	.....	.....	.....
18	0.17	0.0301	0.09	0.0061	0.17	0.0301	.....	.....	.....	.....	.....	.....
19	0.17	0.0301	0.09	0.0061	0.17	0.0301	.....	.....	.....	.....	.....	.....
20	0.17	0.0301	0.08	0.0046	0.17	0.0301	.....	.....	.....	.....	.....	.....
21	0.17	0.0301	0.09	0.0061	0.17	0.0301	.....	.....	.....	.....	.....	.....
22	0.17	0.0301	.....	0.0074	0.16	0.0259	.....	.....	.....	.....	.....	.....
23	0.18	0.0348	.....	0.0087	0.15	0.0221	.....	.....	.....	.....	.....	.....
24	0.17	0.0301	.....	0.0100	0.15	0.0221	.....	.....	.....	.....	.....	.....
25	0.17	0.0301	.....	0.0113	.....	0.0221	.....	.....	.....	.....	.....	.....
26	0.17	0.0301	.....	0.0127	.....	0.0259	.....	.....	.....	.....	.....	.....
27	0.17	0.0301	.....	0.0140	0.16	0.0259	.....	.....	.....	.....	.....	.....
28	0.18	0.0348	0.13	0.0154	0.16	0.0259	.....	.....	.....	.....	.....	.....
29	0.18	0.0348	0.13	0.0154	0.16	0.0259	.....	.....	.....	.....	.....	.....
30	0.17	0.0301	0.14	0.0186	0.16	0.0259	.....	.....	.....	.....	.....	.....
31	0.17	0.0301	.....	.....	0.17	0.0301	.....	.....	.....	.....	.....	.....

## Monthly Discharge of Field Springs at Field (Weir No. 3) for 1915.

MONTH.	DISCHARGE				Run-Off	
	1 Maximum.	2 Minimum.	3 Mean	4 Per square mile.	Depth in inches on Drainage area.	Total in acre-feet
April	6,800	2,480	0 0075	4,050		
May	4,320	1,780	0 0054	2,920		
June	38,600	2,480	0 0185	9,920		
July	47,100	16,300	0 0462	24,920		
August	19,800	10,000	0 0262	14,100		
September	16,200	8,320	0 0025	12,200		
October	16,800	14,000	0 0304	16,400		
November	16,300	2,480	0 0150	8,100		
December	16,300	11,900	0 0279	15,100		
The period	47,100	1,780	0 0199	11,970		

No. 1.—This column gives maximum daily flow, in gallons, for month.  
 No. 2.—This column gives minimum daily flow, in gallons, for month.  
 No. 3.—This column gives mean discharge, in second-feet, for month.  
 No. 4.—This column gives mean daily flow, in gallons, for month.

## FINDLAY CREEK.—(3036).

*Location.*—At highway bridge, on Findlay creek road, about 15 miles from the mouth, and 7 miles from Thunder hill.

*Records Available.*—1914 and 1915.

*Drainage Area.*—Not determined.

*Climatic Conditions.*—Summers hot and dry, winters severe with light snowfall. Frazil ice is to be expected.

*Gauge.*—A vertical staff, near Mason's cabin, about 1½ mile below measuring section. Daily readings were taken by Mr. O. Mason.

*Channel.*—Rocky above and below section, not likely to shift.

*Discharge Measurements.*—The 1915 data is based on one measurement made in 1913, five in 1914, and one in 1915.

*Co-operation.*—This station has been maintained by co-operation with the Provincial Water Rights Branch.

*Accuracy.*—"D." Accuracy should be within 20 per cent.

## Discharge Measurements of Findlay Creek at Canal Flats (For Curve).

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1913							
Oct. 24	(Prov.) Bergoust.			104	2 81	0 80	294
1914							
April 13	(Prov.) Bergoust.			84 9	92 56	0 72	211
June 18	Elliott.	1,909	59	375	10 50	8 20	3,940
Aug. 1	Elliott.	1,909	49	184	5 77	2 70	1,060
Sept. 23	Gill			107	2 90	1 00	314
Oct. 20	Elliott.	1,900	44	105	3 11	0 90	327
1915							
Sept. 25	(Prov.) Bergoust.	1,927	54	89 3	3 17	0 90	282

BRITISH COLUMBIA HYDROMETRIC SURVEY

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Daily Gauge Height and Discharge of Findlay Creek at Canal Flats for 1915.

Day.	April.		May.		June.		July.		August.		September.	
	Gauge Height	Discharge.	Gauge Height	Discharge.	Gauge Height	Discharge.	Gauge Height	Discharge.	Gauge Height	Discharge.	Gauge Height	Discharge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	0.2	.....	2.2	810	2.2	810	3.2	1,370	2.9	1,180	1.6	540
2	0.2	.....	1.9	660	2.8	1,120	3.2	1,370	2.9	1,180	1.5	300
3	0.5	270	1.8	620	2.4	910	3.2	1,370	2.8	1,120	1.6	300
4	0.5	252	1.6	640	2.6	1,010	3.5	1,570	2.8	1,120	1.6	500
5	0.4	238	1.6	640	3.0	1,240	3.6	1,640	2.6	1,010	1.6	340
6	0.4	238	1.6	640	2.7	1,060	3.6	1,570	2.0	710	1.5	300
7	0.4	238	2.0	710	3.4	1,510	3.4	1,510	2.0	710	1.3	430
8	0.4	238	2.6	1,010	3.1	1,300	3.3	1,440	2.3	1,120	1.0	343
9	0.4	238	2.8	1,120	2.7	1,060	2.8	1,120	2.6	1,010	1.0	343
10	0.3	.....	2.9	1,180	2.5	960	2.8	1,120	2.6	1,010	1.0	343
11	0.3	.....	2.5	960	2.2	810	2.3	860	2.6	1,010	0.9	326
12	0.4	238	2.0	710	2.0	710	2.0	710	2.0	710	0.1	306
13	0.9	325	2.0	710	2.4	910	2.1	760	2.0	710	0.1	306
14	0.9	326	2.2	810	2.4	910	2.6	960	2.0	710	0.1	230
15	0.9	325	2.1	760	2.9	1,180	2.4	910	2.0	710	0.1	283
16	1.1	372	1.9	660	3.2	1,370	2.3	860	2.0	710	0.8	308
17	1.6	640	1.7	660	3.2	1,370	2.3	860	2.0	710	0.8	308
18	1.8	620	1.7	580	2.9	1,180	2.4	910	2.0	710	0.8	306
19	1.9	660	1.7	680	2.6	1,010	2.7	1,060	2.0	710	1.0	348
20	1.9	660	1.6	540	2.4	910	2.8	1,120	2.1	760	0.8	308
21	1.7	680	1.9	660	2.4	910	2.8	1,120	2.0	710	0.8	306
22	1.4	460	2.2	810	2.8	1,010	2.7	1,060	1.8	620	0.7	288
23	1.2	400	2.2	810	3.0	1,240	2.5	960	2.0	710	0.7	288
24	1.2	400	2.2	810	3.2	1,370	2.4	910	2.1	760	1.0	348
25	1.1	372	2.2	810	3.6	1,640	2.8	1,010	2.1	760	0.9	323
26	1.1	372	2.1	760	3.3	1,440	2.8	1,010	1.7	60	0.9	326
27	1.2	400	2.0	710	2.8	1,120	2.8	1,120	1.9	30	1.2	400
28	1.1	372	2.4	910	2.6	1,010	2.8	1,120	1.9	680	1.0	348
29	1.4	460	2.8	1,120	2.6	1,010	2.8	1,120	2.0	710	0.9	323
30	1.7	580	2.4	910	2.8	1,120	3.0	1,240	1.8	620	0.8	306
31	.....	.....	2.2	820	.....	.....	2.6	1,010	1.9	660	.....	.....

Day.	October.		November.		December.	
	Gauge Height	Discharge.	Gauge Height	Discharge.	Gauge Height	Discharge.
1	0.90	325	0.70	288	0.50	252
2	0.80	306	0.70	288	0.50	252
3	0.80	306	0.70	288	0.40	238
4	0.70	288	0.60	270	0.40	238
5	0.70	288	0.60	270	0.50	252
6	0.80	306	0.70	288	0.50	252
7	0.80	306	0.60	252	0.40	238
8	0.70	288	0.40	238	0.40	238
9	0.70	288	0.40	238	0.40	238
10	0.70	288	0.50	252	0.50	252
11	0.60	270	0.60	252	0.60	252
12	0.60	270	0.60	270	0.40	238
13	0.70	288	0.50	252	0.50	252
14	0.70	288	0.60	252	0.40	238
15	0.60	270	0.60	252	0.50	252
16	0.60	270	0.40	238	0.50	252
17	0.60	270	0.40	238	0.40	238
18	0.60	270	0.40	238	0.50	252
19	0.60	270	0.60	252	0.40	238
20	0.60	270	0.60	262	0.40	238
21	0.70	288	0.40	238	0.60	252
22	0.70	288	0.49	238	0.40	238
23	0.60	270	0.40	238	0.40	238
24	0.60	270	0.40	238	0.60	252
25	0.70	288	0.50	252	0.40	238
26	0.80	306	0.50	252	0.50	252
27	0.80	306	0.40	238	0.40	238
28	0.90	325	0.49	238	0.50	252
29	0.90	326	0.50	252	0.60	252
30	0.80	306	0.50	252	0.40	238
31	0.70	288	.....	.....	0.60	252

## Monthly Discharge of Findlay Creek at Canal Flats for 1915.

MONTH.	DISCHARGE IN SECOND-FEET				RUN-OFF	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet
May	1,180	840	766			47,100
June	1,640	710	1,110			66,000
July	1,640	710	1,120			68,900
August	1,180	620	811			49,900
September	840	288	363			31,600
October	328	270	290			17,800
November	288	238	263			18,100
December	252	238	245			18,100
The period	1,640	238	798			301,500

## HOSPITAL CREEK.—(3053).

*Location.*—At dam above intake of old smelter flume, 1½ mile from Golden.

*Records Available.*—October and November, 1914, and all of 1915.

*Drainage Area.*—Eighteen square miles.

*Climatic Conditions.*—Similar to Golden. Summers are warm and dry, winters severe. Ice conditions generally exist from the middle of November till the end of March. Frazil ice is to be expected.

*Weir.*—A 10-foot Cippoletti weir.

*Accuracy.*—Readings at the gauge were only made once a week, so the accuracy cannot be expected to be closer than 20 per cent.

*Co-operation.*—The weir was established by Mr. O. J. Bergoust, of the Provincial Water Rights Branch. Mr. Bergoust kindly sent copies of readings, in 1914, and this year they have been sent direct by the reader, Mr. D. C. Robertson, of Golden.

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Daily Gauge Height and Discharge of Hospital Creek at Golden for 1915.

(Drainage area, 18 square miles)

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
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	0 16	1 88		1 31		1 19	0 19	2 74	0 92	39 80		33 00
2		1 88		1 31		1 22	0 19	2 74	0 81	34 70		31 70
3		1 88		1 31		1 25	0 19	2 74	0 81	34 70	0 98	31 80
4		1 88		1 31		1 28	0 19	2 74	0 78	31 90		31 30
5		1 88	0 11	1 21	0 11	1 31	0 19	2 74	0 76	22 30		31 10
6		1 88		1 27		1 31	0 19	3 74	1 01	34 90		30 90
7		1 88		1 21		1 31	0 19	2 74	1 23	48 60		30 80
8	0 15	1 88		1 19		1 31	0 19	2 74	1 12	41 80		30 70
9		1 82		1 16		1 31	0 19	2 74	1 02	25 60		30 80
10		1 76	0 10	1 13		1 31	0 19	2 74	1 04	36 80		30 80
11		1 70		1 13		1 31	0 21	3 20	0 96	33 20	0 93	30 40
12		1 64		1 13	0 11	1 31	0 23	3 69	0 88	27 60		20 60
13		1 59		1 13		1 31	0 25	4 20	0 83	36 60	0 94	30 90
14		1 54		1 13		1 31	0 28	4 20	0 80	24 20	1 00	34 40
15	0 12	1 49		1 13		1 31	0 29	5 20	0 79	22 70	1 10	40 80
16		1 46		1 12		1 31	0 33	6 47		28 00	1 06	39 20
17		1 43		1 13		1 31	0 42	9 06		36 40	1 58	60 00
18		1 40	0 10	1 13		1 31	0 67	18 30		37 80	1 17	44 50
19		1 37		1 13	0 11	1 31	0 69	19 20		29 20	1 16	43 80
20		1 35		1 13		1 36	0 88	15 00		30 60	1 14	42 80
21		1 33		1 13		1 41	0 68	15 00	0 96	33 00	1 06	36 10
22	0 11	1 31		1 13		1 45	0 86	14 30		32 10	1 06	38 10
23		1 31		1 13		1 51	0 85	12 80		32 30	1 07	38 40
24		1 31		1 13		1 56	0 68	15 00		32 30	1 08	39 20
25		1 31		1 13		1 62	0 69	18 20		32 40	1 14	43 80
26		1 31	0 10	1 13	0 13	1 68	0 71	30 10		32 60	1 36	81 90
27		1 31		1 15		1 85	0 72	31 00		33 60	1 80	68 10
28		1 31		1 17		2 02	0 73	21 00	0 96	33 30	1 89	74 60
29	0 11	1 31				2 19	0 83	25 60		32 90	1 84	71 30
30		1 31				2 37	0 94	30 90		32 60	1 46	64 90
31		1 31				2 66				32 30		

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
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	1 23	48 60	0 78	32 20	0 31	5 87		5 23		5 30		3 86
2	1 12	41 80	0 76	32 30	0 30	5 88		6 26		4 74		3 63
3	1 08	39 30	0 73	31 00	0 29	5 30	0 29	5 30	0 37	4 74		3 78
4	1 03	35 60	0 73	20 60	0 29	5 30		5 22		4 74		3 76
5	0 98	23 20	0 71	20 10	0 39	5 30		6 14	0 37	4 74		3 73
6	0 96	33 00	0 69	19 20	0 39	5 30		5 06	0 36	4 47	0 23	3 69
7	0 93	30 40	0 62	16 60	0 29	6 30		4 98		4 30		3 68
8	0 88	27 10	0 58	15 00	0 29	5 30		4 90		4 13		3 61
9	0 84	26 10	0 56	14 20	0 29	6 30		4 82		4 16		3 57
10	0 80	34 20	0 51	12 20	0 29	5 30	0 37	4 74		3 99		3 83
11	0 79	22 70	0 49	11 30	0 29	5 30		4 68		3 93		3 80
12	0 62	35 60	0 47	10 80	0 31	6 87		4 62		3 87		3 47
13	1 16	44 90	0 46	10 40	0 30	5 68		1 57		3 81	0 23	3 44
14		51 90	0 45	10 10	0 30	5 88		4 52		3 78		3 37
15		58 90	0 42	9 39	0 30	5 88		4 47	0 22	3 69		3 30
16		66 90	0 43	9 06	0 30	5 88		4 47		3 76		3 33
17		74 90	0 40	8 39	0 29	6 30	0 26	4 47		3 83		3 16
18	1 69	82 90	0 44	9 74	0 29	5 30		4 50		3 90		3 09
19	1 59	75 40	0 43	9 39	0 29	5 20		4 54		3 97		3 08
20	1 44	63 40	0 40	8 39	0 39	5 30		4 58		4 04	0 20	2 97
21	1 39	82 90	0 36	7 40	0 39	6 30		4 63		4 12		3 90
22	1 03	35 80	0 34	6 79	0 29	5 20		4 66	0 35	4 20		2 83
23	0 95	31 50	0 33	6 47	0 38	5 02		4 70		4 16		3 76
24	0 94	30 90	0 23	6 47	0 28	5 02	0 37	4 74		4 13		3 69
25	0 93	29 80	0 33	6 47		5 38		4 93		4 08		2 63
26	0 86	28 20	0 33	6 47		5 08		5 11		4 04		2 56
27	0 85	38 60	0 34	6 79		6 11	0 29	5 30		4 00	0 18	2 50
28	0 86	27 10	0 23	6 47		5 14	0 39	6 30		2 97		2 50
29	0 84	36 10	0 33	6 47		6 17		5 30	0 34	3 94		3 50
30	0 81	24 70	0 33	6 47		5 20		5 20		3 90		3 80
31	0 80	24 20	0 33	6 17			0 39	8 30				2 80

*Monthly Discharge of Hospital Creek near Golden for 1915.*

(Drainage area, 18 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in Inches on Drainage area.	Total in acre-feet.
January .....	1.88	1.31	1.55	0.09	0.10	95.3
February .....	1.31	1.13	1.17	0.06	0.06	65.0
March .....	2.56	1.19	1.49	0.08	0.09	91.6
April .....	30.90	2.74	10.40	0.58	0.65	819.0
May .....	48.60	21.90	30.70	1.71	1.97	1,890.0
June .....	74.50	30.40	40.80	2.27	2.53	2,430.0
July .....	82.90	23.70	40.10	2.23	2.57	2,470.0
August .....	23.20	6.17	11.40	0.63	0.73	701.0
September .....	5.87	5.02	5.33	0.29	0.32	317.0
October .....	5.30	4.47	4.88	0.27	0.31	300.0
November .....	5.30	3.69	4.14	0.23	0.26	246.0
December .....	3.86	2.50	3.17	0.18	0.21	195.0
The year .....	82.90	1.13	12.90	0.72	9.80	9,419.9

NOTE.—Readings at the gauge, generally speaking, were only made once a week,—therefore an accuracy closer than 20 per cent cannot be expected.

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## ILLECILLEWAET RIVER.—(3009).

*Location.*—This station is located about 1 mile from the mouth of the river and 1 mile from Revelstoke, at highway bridge.

*Records Available.*—1911-12-13-14-15.

*Drainage Area.*—Four hundred and eighty square miles.

*Climatic Conditions.*—At Revelstoke the precipitation from December 1, 1913, to November 30, 1914, was approximately 40.5 inches. The snowfall is approximately 10 feet, and the precipitation during the months December to March was 18 inches, practically all of which would be snow at higher altitudes. The winters are not severe, being seldom below 10 degrees Fahr. Frazil ice may be expected. The summer days are very hot, sometimes going as high as 100 degrees Fahr.

*Gauge.*—A chain gauge, referenced to two bench marks is used and read by Miss S. Moran, about 1 mile above the measuring section.

*Channel.*—The section at the gauge is very fast in high water, and at the measuring section there is a possibility of backwater from the Columbia during high flow. The control at the gauge appears permanent.

*Discharge Measurements.*—The 1915 data is based on a rating curve prepared from one measurement in 1913, ten in 1914, and four in 1915.

*Accuracy.*—"B" and "D." Daily readings were obtained, results should be within 10 per cent.

*Discharge Measurements of Illecillewaet River at Revelstoke (For Curve).*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1913							
Nov. 22	Webb.....	1,048	130	431	1.41	2.35	607
1914							
Mar. 17	Webb.....	1,048	120	290	1.64	1.57	478
May 18	Elliott.....	1,672	122	704	5.21	4.80	3,670
June 9	Elliott.....	1,909	123	661	5.25	4.70	3,450
June 26	Elliott.....	1,909	137	820	6.33	5.70	6,190
July 25	Elliott.....	1,909	136	763	4.63	4.60	3,640
Aug. 11	Elliott.....	1,909	125	656	3.71	3.76	2,060
Sept. 5	Richardson.....	1,927	130	606	3.67	3.24	1,800
Oct. 9	Elliott.....	1,909	118	364	2.60	2.38	910
Oct. 26	Swan & Webb.....	1,909	147	326	2.49	1.95	809 <sup>1</sup>
Nov. 17	Elliott.....	1,909	115	316	2.27	1.73	718
1915							
Mar. 17	Corbould.....	1,927	90	278	1.28	1.30	358
May 12	Dempster.....	1,929	130	630	5.00	4.30	3,160
Oct. 27	Richardson.....	1,929	123	407	3.66	2.96	1,440
Dec. 1	Richardson.....	1,929	115	198	2.9	1.40	438

<sup>1</sup> At gauging station.

Daily Gauge Height and Discharge of Illecillewaet River at Revelstoke for 1915.

(Drainage area, 480 square miles.)

Day.	March.		April.		May.		June.		July.		August.	
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	.....	375	1.7	548	3.4	1,990	4.2	2,950	5.05	4,120	5.3	4,500
2	.....	276	1.85	537	3.45	2,040	3.9	2,580	4.9	3,900	5.15	4,280
3	1.1	275	2.5	1,120	3.7	2,340	3.95	2,540	4.9	3,900	5.5	4,950
4	1.1	275	2.5	1,200	3.7	2,340	4.15	2,880	5.0	4,050	5.15	4,280
5	1.1	275	2.5	1,120	3.55	2,280	4.0	2,700	5.05	4,120	5.2	4,350
6	1.0	244	2.6	1,200	4.0	2,700	5.05	4,120	5.1	4,200	5.1	4,200
7	1.0	244	2.6	1,200	4.45	3,280	5.0	4,050	5.2	4,350	5.1	4,200
8	0.9	215	2.5	1,200	4.7	3,520	4.35	3,140	4.5	3,480	5.05	4,120
9	0.9	215	2.45	1,080	4.95	3,980	3.9	2,580	4.5	3,480	4.95	3,980
10	0.9	215	2.5	1,120	5.0	4,050	3.8	2,450	4.55	3,410	4.95	3,980
11	0.9	215	2.4	1,040	4.2	2,950	3.9	2,580	4.4	3,210	5.0	4,050
12	0.9	215	2.5	1,120	4.2	2,950	3.85	2,580	4.15	2,880	4.95	3,980
13	0.9	215	2.9	1,480	3.7	2,340	4.05	2,750	4.35	3,140	5.0	4,050
14	0.9	215	2.85	1,430	3.7	2,340	4.2	2,950	4.6	3,480	5.05	4,120
15	1.1	276	2.85	1,430	3.6	2,220	4.55	3,410	4.55	3,550	5.0	4,050
16	1.1	275	3.2	1,780	3.6	2,220	4.85	3,830	4.5	3,480	4.8	3,750
17	1.2	312	3.55	2,160	3.5	2,220	5.2	4,350	4.7	3,520	5.1	4,200
18	1.2	312	3.8	2,460	3.6	2,220	4.4	3,210	4.5	3,480	5.15	4,280
19	1.3	352	3.5	2,100	3.6	2,220	4.4	3,210	4.55	3,410	4.8	3,750
20	1.4	395	3.5	2,220	4.2	2,950	4.4	3,210	4.65	3,550	4.9	3,900
21	1.4	395	3.45	2,040	4.45	3,280	4.35	3,140	4.7	3,520	4.9	3,900
22	1.7	548	3.3	1,880	4.9	3,900	4.5	3,340	4.7	3,520	5.15	4,280
23	1.7	548	3.2	1,780	4.5	3,340	4.7	3,520	4.7	3,520	5.05	4,120
24	1.7	548	3.2	1,880	4.2	2,950	4.9	3,900	4.5	3,480	4.95	3,980
25	1.7	548	3.1	1,680	4.3	3,080	5.3	4,500	4.5	3,340	4.9	3,900
26	1.5	444	3.05	1,630	4.2	2,950	5.4	4,550	4.6	3,480	4.7	3,520
27	1.55	469	3.1	1,680	4.45	3,280	4.5	3,340	4.7	3,520	4.75	3,590
28	1.4	395	3.05	1,630	4.1	2,820	4.5	3,480	4.7	3,520	4.9	3,900
29	1.6	494	3.4	1,990	4.1	2,820	4.5	3,480	4.75	3,690	5.0	4,050
30	1.5	444	3.6	2,220	3.9	2,580	5.0	4,050	5.0	4,050	4.95	3,980
31	1.45	420	.....	.....	3.95	2,640	.....	.....	5.25	4,420	4.6	3,480
	September.		October.		November.		December.					
1	3.90	2,580	2.50	1,120	2.4	1,040	1.35	374				
2	3.85	2,520	2.50	1,120	2.4	1,040	1.4	396				
3	4.15	2,880	2.30	955	2.2	878	1.4	396				
4	3.90	2,580	2.10	804	2.15	841	1.4	396				
5	3.85	2,520	2.10	804	2.2	878	1.4	396				
5	3.80	2,460	2.25	917	2.1	804	1.45	420				
7	3.40	1,990	1.80	606	1.95	701	1.45	420				
8	2.85	1,430	1.80	606	1.9	658	1.4	396				
9	2.70	1,290	1.80	606	1.9	658	1.3	352				
10	2.50	1,120	1.70	548	1.9	668	1.3	352				
11	2.20	878	1.70	548	1.8	606	1.4	396				
12	2.20	878	1.70	548	1.65	521	1.30	352				
13	2.20	878	1.70	548	1.6	494	1.3	352				
14	2.00	734	2.00	734	1.6	494	1.3	352				
15	2.30	956	1.80	606	1.7	548	1.35	374				
16	2.65	1,240	1.70	548	1.6	494	1.4	395				
17	2.80	1,380	1.70	548	1.6	494	1.3	352				
18	2.60	1,200	2.35	998	1.65	521	1.1	276				
19	2.50	1,120	2.50	1,200	1.6	494	1.1	276				
20	2.50	1,120	2.40	1,040	1.5	444	1.1	276				
21	2.50	1,120	2.40	1,040	1.5	444	0.9	215				
22	2.40	1,040	2.45	1,080	1.5	444	0.0	215				
23	2.35	998	2.40	1,040	1.5	444	0.9	215				
24	2.30	956	2.40	1,040	1.5	444	Frozen	.....				
25	2.30	956	2.40	1,040	1.4	396	.....	.....				
26	2.30	956	2.70	1,290	1.3	352	.....	.....				
27	2.30	956	2.55	1,120	1.3	352	.....	.....				
28	2.20	878	2.90	1,480	1.3	352	.....	.....				
29	2.15	841	1.80	1,380	1.3	352	.....	.....				
30	2.30	956	2.50	1,120	1.3	352	.....	.....				
31	.....	.....	2.40	1,040	.....	.....	.....	.....				



SESSIONAL PAPER No. 25a

Monthly Discharge of Illecillewaet River at Revelstoke for 1915.

(Drainage area, 480 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
March.....	548	215	340	0.71	0.82	20,900
April.....	2,460	548	1,540	3.20	3.57	91,600
May.....	3,980	1,990	2,800	5.83	6.72	172,000
June.....	4,630	2,460	3,320	6.92	7.72	198,000
July.....	4,420	2,880	3,660	7.62	8.78	225,000
August.....	4,960	3,480	4,060	8.46	9.75	250,000
September.....	2,880	734	1,380	2.87	3.20	82,100
October.....	1,530	548	919	1.91	2.20	56,500
November.....	1,040	352	574	1.19	1.33	34,200
The period.....	4,960	215	2,032	4.30	44.09	1,130,300

INCOMAPLEUX RIVER.—(36.0).

Location.—At the highway bridge, about 2 miles from Beaton.

Records Available.—1914 and 1915.

Drainage Area.—Four hundred and sixty square mi

Climatic Conditions.—Similar to Revelstoke. The snowfall is heavy in the hills. Winters not severe. Summers hot. Frazil ice is to be expected.

Gauge.—A chain gauge about 1/2 mile above section is read daily by Mr. Jas. Burbridge.

Channel.—At the gauge the water is swift. The measuring section is satisfactory.

Discharge Measurements.—The 1915 data is compiled from a rating curve based on two measurements in 1913, six in 1914 and four in 1915.

Accuracy.—"B." The curve appears reliable. Results are considered within 10 per cent.

Discharge Measurements of Incomappleux River at Beaton (For Curve).

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1913							
Sept. 18	Swan & Richardson	1,048	98	830	4.91	4.87	4,080
Nov. 21	Webb	1,048	93	526	1.13	2.40	597
1914							
May 21	Elliott	1,909	98	763	4.46	4.50	3,410
June 14	Beeston	1,927	97	973	5.41	6.10	5,360
June 27	Elliott	1,909	98	902	6.11	5.60	5,520
Sept. 4	Elliott	1,927	98	752	4.01	4.15	3,020
Oct. 27	Elliott	1,909	91	564	1.65	2.80	935
Nov. 20	Elliott	1,909	92	490	1.57	2.60	768
1915							
Mar. 19	Corbould	1,927	87	445	0.93	Ice	415
May 16	Dempster	1,929	96	620	3.49	3.90	2,160
Sept. 13	Dempster	1,927	97	554	1.66	2.85	920
Oct. 26	Dempster	1,927	98	555	2.24	3.30	1,240

## Daily Gauge Height and Discharge of Incomappleux River at Beaton for 1915.

(Drainage area, 450 square miles.)

Day.	April.		May.		June.		July.		August.		September.	
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	2.5	749	3.95	2,390	4.4	3,120	5.35	4,820	5.9	5,860	4.35	3,030
2	2.95	1,070	4.1	2,630	4.45	3,200	5.35	4,820	5.0	6,050	4.15	2,710
3	3.65	1,940	4.1	2,530	4.35	3,040	5.3	4,720	5.45	6,950	4.45	3,210
4	3.5	1,730	4.1	2,630	4.5	3,290	5.5	5,100	5.65	5,380	4.55	3,380
5	3.4	1,590	4.15	2,710	4.5	3,290	5.65	5,380	5.55	5,200	4.35	3,040
6	3.4	1,590	4.4	3,120	4.5	3,290	5.05	5,150	5.6	5,290	4.2	2,790
7	3.45	1,660	4.8	3,820	5.3	4,720	5.0	6,050	5.75	5,580	3.7	2,010
8	3.45	1,660	5.15	4,450	4.7	3,640	5.85	5,760	5.9	5,850	3.55	1,800
9	3.25	1,400	5.2	4,540	4.3	2,950	5.65	5,380	5.7	5,480	3.35	1,520
10	3.2	1,340	5.5	5,290	4.0	2,470	5.2	4,540	5.55	5,200	3.2	1,340
11	3.2	1,340	4.95	4,090	4.05	2,550	5.3	4,720	5.65	5,380	3.05	1,180
12	3.35	1,520	4.4	3,120	4.15	2,710	4.75	3,730	5.55	5,380	3.0	1,120
13	3.65	1,940	4.25	3,870	4.15	2,710	5.2	4,540	5.7	5,480	2.95	1,070
14	3.65	1,940	4.15	2,710	4.45	3,200	5.3	4,720	5.7	5,480	2.85	972
15	3.6	1,870	4.0	2,470	4.75	3,730	5.6	5,290	5.8	5,670	3.05	1,180
16	3.7	2,010	3.95	2,390	5.05	4,270	5.5	5,100	5.7	5,480	3.15	1,280
17	4.05	2,550	3.95	2,390	5.35	4,820	5.2	4,540	5.95	5,960	3.25	100
18	4.15	2,710	4.15	2,710	4.85	3,910	5.2	4,540	5.7	5,480	3.2	140
19	4.3	2,950	4.4	3,120	4.6	3,450	5.05	4,270	5.15	4,450	3.65	1,940
20	4.5	3,290	4.35	3,040	4.75	3,780	5.25	4,630	5.55	5,200	3.15	1,280
21	4.0	2,470	4.6	3,450	4.55	3,380	5.55	5,380	5.45	5,000	3.1	1,230
22	3.75	2,080	5.1	4,360	4.75	3,730	5.7	5,480	5.7	5,480	3.1	1,230
23	3.7	2,010	4.6	3,450	5.05	4,270	5.45	5,000	5.65	5,380	3.1	1,230
24	3.75	2,080	4.45	3,200	5.25	4,530	5.5	5,100	5.65	5,380	3.05	1,180
25	3.5	1,870	4.55	3,380	5.6	5,290	5.3	4,720	5.55	5,200	3.05	1,180
26	3.7	2,010	4.45	3,200	5.95	5,960	5.3	4,720	5.15	4,450	3.0	1,120
27	3.65	1,960	4.35	3,040	5.1	4,360	5.5	5,100	5.1	4,360	2.95	1,070
28	3.5	1,870	4.85	3,910	4.85	3,910	5.55	5,200	5.4	4,910	2.9	1,020
29	4.05	2,550	4.7	3,540	4.8	3,820	5.5	5,100	5.45	5,000	2.9	1,020
30	4.25	2,870	4.3	2,950	5.1	4,360	5.55	5,200	5.7	5,480	3.05	1,180
31	.....	.....	4.1	2,530	.....	.....	5.7	5,480	4.0	4,000	.....	.....
	October.		November.		December.							
1	3.20	1,460	3.30	1,460	2.30	527						
2	3.15	1,280	3.20	1,340	2.30	527						
3	2.95	1,070	3.15	1,280	2.30	527						
4	2.90	1,020	3.10	1,230	2.30	527						
5	2.95	1,070	3.15	1,280	2.30	527						
5	2.80	925	3.00	1,120	2.30	527						
7	2.70	834	3.00	1,120	2.30	527						
8	2.65	792	2.90	1,020	2.30	527						
9	2.60	749	2.80	925	2.40	595						
10	2.50	670	2.75	880	2.30	527						
11	2.50	670	2.70	834	2.30	527						
12	2.60	749	2.60	749	2.30	527						
13	2.60	749	2.45	633	2.20	453						
14	2.80	925	2.50	870	2.20	453						
15	2.50	749	2.60	749	2.20	463						
16	2.55	710	2.60	749	2.20	463						
17	2.65	792	2.60	749	2.20	463						
18	3.05	1,180	2.50	570	2.20	463						
19	3.20	1,340	2.50	670	2.20	453						
20	3.00	1,120	2.50	670	2.20	463						
21	3.10	1,230	2.50	670	2.15	434						
22	3.15	1,280	2.50	670	2.10	404						
23	3.05	1,180	2.40	596	2.15	434						
24	3.15	1,280	2.40	596	2.10	404						
25	3.10	1,230	2.40	596	2.00	350						
26	3.35	1,520	2.40	508	2.00	350						
27	3.60	1,870	2.40	508	2.00	350						
28	3.85	2,240	2.40	508	1ce	340						
29	3.55	1,800	2.40	508	.....	330						
30	3.45	1,560	2.40	508	.....	320						
31	3.40	1,590	.....	.....	.....	310						

SESSIONAL PAPER No. 25c

*Monthly Discharge of Incomappleux River o' Beaton for 1915.*

(Drainage area, 460 square m.les.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mille.	Depth in inches on Drainage area.	Total in acre-feet.
April .....	3,290	749	1,950	4.24	4.73	116,000
May .....	5,290	2,390	3,270	7.11	8.20	201,000
June .....	5,960	2,470	3,730	8.11	9.06	222,000
July .....	6,150	3,730	5,010	10.90	12.60	308,000
August .....	6,950	4,000	5,340	11.60	13.40	325,000
September .....	3,380	9,720	1,640	3.57	3.98	97,600
October .....	2,240	670	1,150	2.50	2.88	70,700
November .....	1,460	596	797	1.73	1.93	47,400
December .....	596	310	455	0.99	1.14	28,000
The period .....	6,950	310	2,594	5.64	57.91	1 418,700

## KICKING HORSE RIVER.—(3011).

*Location.*—The station is located at traffic bridge, in Golden; section 12, township 27, range 22, west of 5th meridian.

*Records Available.*—Open season of 1912-13-14-15.

*Drainage Area.*—Seven hundred square miles.

*Climatic Conditions.*—Summers hot and quite dry. Winters severe. Snowfall is 3 to 4 feet. Frazil ice will be found at this point as well as practically up to its source.

*Gauge.*—A vertical staff gauge used, and read twice daily by Mr. W. Wenman, of Golden.

*Channel.*—Straight for 200 yards above and below section. The control is a sandbar about 200 yards downstream from section.

*Discharge Measurements.*—The 1915 rating curve was prepared from one metering in 1911, two in 1912, one in 1913, six in 1914, and six in 1915. A metering under ice conditions was made on February 22, 1912, and gave a discharge of 172 c.f.s. Another on February 28, 1914, gave a discharge of 276 c.f.s. A third on March 2, 1915, gave a discharge of 154 c.f.s.

*Accuracy.*—"B." Readings are reliable, measurements accurate, results should be within 10 per cent.

*Discharge Measurements of Kicking Horse River at Golden (For Curve.)*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1911							
Oct. 18	Richardson	1,048	103 0	279	1.66	1 72	464
1912							
Sept. 26	Richardson	1,055	110. 0	363	2.85	2 48	1,035
Oct. 1	Richardson	1,055	110. 0	351	2.65	2 36	930
1913							
Nov. 29	Webb	1,048	96. 0	277	1.40	1 55	384
1914							
Feb. 28	Webb	1,048	126. 0	284	0.98	Ice	278 <sup>1</sup>
June 11	Elliott	1,908	180. 0	644	5.51	4 25	3,550
July 28	Elliott	1,909	155 0	605	5.12	4 10	3,100
Aug. 6	Elliott	1,909	155 0	602	5.94	4 50	4,110
Sept. 11	Richardson	1,927	98. 0	391	3.30	2 90	1,290
Oct. 14	Elliott	1,909	81. 0	329	2.77	2 32	912
1915							
Mar. 2	Corbould	1,927	78. 0	308	0.50	Ice	154 <sup>2</sup>
May 15	Elliott	1,672	98. 0	434	3.92	3 20	1,700
May 18	Elliott	1,672	98. 0	423	3.78	3 05	1,600
July 5	Elliott	1,909	157. 0	739	6.97	4 95	5,160
July 14	Elliott	1,909	176 0	765	6.95	5 00	5,320
Oct. 26	Richardson	1,929	98. 0	282	1.94	1 89	518

<sup>1</sup> Frazil ice.<sup>2</sup> Ice conditions.

SESSIONAL PAPER No. 26a

Daily Gauge Height and Discharge of Kicking Horse River at Golden for 1915.

(Drainage area, 700 square miles.)

Day.	April.		May.		June.		July.		August.		September.	
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	1.25	255	3.4	2,030	3.55	2,270	5.2	5,840	5.0	5,330	3.9	2,840
2	1.28	275	3.38	2,000	3.74	2,560	5.03	5,410	4.9	5,080	3.92	2,880
3	1.58	395	3.3	1,590	3.6	2,330	4.8	4,830	5.0	5,330	3.85	2,750
4	1.53	422	3.25	1,820	3.71	2,510	4.75	4,730	5.05	5,490	3.92	2,880
5	1.55	387	3.24	1,810	3.84	2,730	4.9	5,080	4.84	4,930	3.7	2,490
5	1.55	382	3.34	1,940	3.82	2,700	4.95	5,200	4.65	4,450	3.7	2,490
7	1.6	405	3.7	2,490	3.84	2,730	4.98	5,280	4.7	4,580	3.5	2,150
8	1.61	410	4.08	3,100	3.9	2,840	4.98	5,280	4.85	4,960	3.25	1,820
9	1.55	382	4.25	3,540	3.65	2,430	4.88	5,030	4.61	4,360	3.05	1,580
10	1.5	350	4.35	3,750	3.51	2,200	4.78	4,780	4.51	4,110	2.82	1,330
11	1.54	378	4.26	3,530	3.34	1,950	4.32	3,580	4.59	4,550	2.58	1,190
12	1.58	395	3.88	2,800	3.35	1,950	4.22	3,470	4.79	4,800	2.5	1,120
13	1.7	460	3.68	2,450	3.45	2,100	4.25	3,540	4.54	4,430	2.51	1,050
14	1.71	455	3.54	2,240	3.51	2,200	5.1	5,590	4.5	4,090	2.42	972
15	1.72	472	3.35	1,960	3.7	2,490	5.2	5,810	4.8	4,780	2.4	955
15	1.93	605	3.18	1,740	4.06	3,150	5.27	6,020	4.35	3,770	2.4	955
17	2.2	800	3.08	1,520	4.48	4,040	5.45	6,480	4.55	4,450	2.4	955
18	2.42	972	3.1	1,640	4.4	3,850	5.46	6,510	4.72	4,630	2.4	955
19	2.72	1,230	3.11	1,650	4.25	3,540	5.2	5,840	4.5	4,090	2.4	955
20	2.95	1,480	3.13	1,580	4.31	3,660	5.05	5,460	4.55	4,210	2.4	955
21	2.85	1,360	3.28	1,850	4.28	3,600	4.96	5,230	4.59	4,310	2.45	998
22	2.83	1,360	3.65	2,410	4.28	3,600	5.15	5,720	4.56	4,230	2.45	998
23	2.55	1,080	3.61	2,350	4.51	4,110	5.08	5,530	4.45	3,980	2.38	939
24	2.58	1,100	3.8	2,330	4.55	4,210	4.78	4,780	4.59	4,310	2.4	955
25	2.55	1,080	3.68	2,450	5.0	5,330	4.51	4,110	4.52	4,140	2.4	955
25	2.5	1,040	3.73	2,540	5.95	7,840	4.45	3,980	4.42	3,910	2.38	939
27	2.48	1,020	3.55	2,260	5.6	6,590	4.5	4,090	4.35	3,750	2.3	875
28	2.4	955	3.66	2,430	5.3	6,090	4.65	4,450	4.28	3,500	2.24	830
29	2.55	1,080	3.8	2,660	5.17	5,760	4.71	4,800	4.38	3,820	2.2	800
30	2.99	1,520	3.52	2,350	5.25	5,960	4.71	4,500	4.28	3,500	2.18	785
31	.....	.....	3.5	2,180	.....	.....	4.84	4,930	4.3	3,540	.....	.....

Day.	October.		November.		December.					
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.				
1	2.28	860	2.05	690	1.55	382				
2	2.32	891	2.00	555	1.35	302				
3	2.20	800	1.92	599	1.50	405				
4	2.15	762	1.90	585	1.70	460				
5	2.15	752	1.90	585	1.70	450				
5	2.12	740	1.85	552	1.70	460				
7	2.05	690	1.78	508	1.50	405				
8	2.02	589	1.75	490	1.50	405				
9	2.00	555	1.70	450	1.65	432				
10	1.90	585	1.58	449	1.50	360				
11	1.90	585	1.55	382	1.30	283				
12	1.85	552	1.40	320	1.70	450				
13	1.85	552	1.20	250	1.80	520				
14	1.90	585	1.31	287	1.60	405				
15	1.82	533	1.48	352	1.50	350				
15	1.72	472	1.60	405	1.50	350				
17	1.70	450	1.70	460	1.55	382				
18	1.70	460	1.62	416	1.60	405				
19	1.95	520	1.58	395	1.70	450				
20	1.90	585	1.50	405	2.12	740				
21	1.90	585	1.50	405	1.80	520				
22	1.90	585	1.50	405	1.80	520				
23	1.88	572	1.50	405	Ice	.....				
24	1.90	585	1.62	416	Ice	.....				
25	1.90	585	1.60	405	Ice	.....				
25	1.88	572	1.50	405	Ice	.....				
27	2.06	697	1.65	382	Ice	.....				
28	2.05	690	1.60	405	Ice	.....				
29	2.09	718	1.50	405	Ice	.....				
30	2.10	725	1.50	405	Ice	.....				
31	2.05	590	.....	.....	Frozen	.....				

*Monthly Discharge of Kicking Horse River at Golden for 1915.*

(Drainage area, 700 square miles.)

MONTH	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
April .....	1,520	266	751	1.07	1.19	44,700
May .....	3,750	1,620	2,310	2.20	3.80	142,000
June .....	7,840	1,950	3,590	5.13	5.72	214,000
July .....	6,510	2,470	5,030	7.19	8.29	299,000
August .....	5,490	3,600	4,380	6.26	7.22	269,000
September .....	2,880	785	1,410	2.01	2.24	83,900
October .....	891	460	639	0.91	1.05	39,300
November .....	690	250	443	0.63	0.70	26,400
The period .....	7,840	250	2,219	3.31	30.21	1,128,300

## KICKING HORSE RIVER.—(3012).

*Location.*—The station is in township 28, range 18, west of 5th meridian, below the mouth of Yoho river, on first traffic bridge, about  $3\frac{1}{4}$  miles east of Field.

*Records Available.*—Open season, 1912-13-14-15.

*Drainage Area.*—One hundred and thirty square miles.

*Climatic Conditions.*—Summers are short, with some very hot days, and nights generally cool. The rainfall in summer months varies greatly, but is usually much less in July and August than in June. Winters are cold, with occasional severe storms. The river, near Field, is generally frozen for three or four months, and frazil ice is to be expected.

*Gauge.*—A chain gauge is read daily by Mr. Wm. Tarr, of Field.

*Channel.*—The channel is straight for 50 yards above and below station, the current is swift during freshet, the control is fairly permanent, but shifted slightly in 1915.

*Discharge Measurements.*—The 1915 rating curve was prepared from twenty-seven well-distributed measurements.

*Accuracy.*—"C" and "D." Gauge readings are reliable, and the measurements are accurate, and though a slight shift was noted, results are considered to be within 15 per cent.

SESSIONAL PAPER No. 25c

Discharge Measurements of Kicking Horse River at Field (For Curve).

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1912							
June 6	Richardson	1,048	54	120	2.46	4.40	295
June 28	Richardson	1,048	145	403	8.88	7.00	3,600
June 26	Richardson	1,048	145	488	9.65	7.60	4,710
July 2	Richardson	1,048	145	272	7.14	6.00	1,940
Aug. 13	Richardson	1,048	73	192	5.00	5.35	963
Oct. 2	Richardson	1,048	53	102	2.10	3.70	214
Nov. 19	Richardson	1,048	45	74	1.60	3.10	116
1913							
May 22	Richardson	1,048	60	126	2.40	4.15	300
July 3	Richardson	1,948	73	220	5.82	5.70	1,280
July 28	Richardson	1,048	88	300	7.40	6.30	2,220
July 30	Richardson	1,048	75	206	5.90	5.55	1,200
July 31	Richardson	1,048	89	281	7.70	6.20	2,190
Aug. 28	Swan & Richardson	1,048	88	297	7.80	6.30	2,300
Sept. 12	Richardson	1,048	61	155	3.20	4.80	496
Dec. 1	Richardson & Webb	1,048	45	55.2	1.55	2.95	86
1914							
June 14	Elliott	1,909	72	218	6.41	5.60	1,410
July 29	Elliott	1,909	75	2.7	6.49	5.50	1,470
Sept. 12	Elliott	1,927	60	137	2.84	4.30	590
Sept. 21	Richardson	1,927	55	116	2.35	4.10	272
Oct. 16	Elliott	1,909	52	103	1.93	3.65	199
1915							
Mar. 10	Corbould	1,927	39	45	0.90	Ice	40.7 <sup>1</sup>
May 9	Elliott	1,672	62	168	4.57	4.80	769
May 17	Elliott	1,672	60	125	2.60	4.10	324
July 3	Elliott	1,909	75	20.	6.39	5.30	1,320
July 14	Elliott	1,909	70	230	6.61	5.70	1,520
Oct. 20	Richardson	1,929	43	67.8	1.63	3.40	111
Nov. 27	Richardson	1,929	47	60.2	1.20	3.15	72.3

<sup>1</sup> Ice conditions.

Daily Gauge Height and Discharge of Kicking Horse River at Field for 1915.

(Drainage area, 130 square miles.)

Day.	April.		May.		June.		July.		August.		September.	
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	2.75	45.0	.....	286	4.45	506	5.75	1,620	6.15	2,060	6.50	2,470
2	2.85	50.0	.....	266	4.45	506	5.70	1,570	6.25	2,170	6.75	2,800
3	3.00	60.0	3.95	266	4.35	419	5.65	1,520	6.60	2,600	6.95	3,060
4	3.00	60.0	4.05	305	4.50	535	5.65	1,520	6.88	2,920	6.85	2,920
5	.....	64.5	4.15	349	4.80	744	5.70	1,570	6.95	3,060	6.60	2,600
6	3.10	69.0	4.25	397	4.75	707	5.90	1,790	7.15	3,340	6.55	2,840
7	.....	64.5	4.35	449	4.90	821	6.15	2,060	7.25	3,500	6.15	2,060
8	3.00	60.0	4.80	744	4.75	707	6.10	2,000	7.25	3,500	5.40	1,270
9	2.90	53.0	5.15	1,030	4.65	635	6.15	2,060	7.25	3,500	5.10	988
10	2.80	47.0	5.10	988	4.55	568	6.20	2,110	7.05	3,200	4.90	821
11	.....	53.5	4.75	707	4.50	535	6.05	1,940	7.00	3,130	4.50	535
12	3.00	60.0	4.55	568	4.45	506	5.90	1,790	6.75	2,800	4.40	476
13	.....	67.5	4.45	506	4.65	635	5.65	1,520	6.65	2,660	4.35	449
14	3.15	75.0	4.50	535	4.75	707	5.75	1,220	6.45	2,410	4.30	422
15	.....	89.5	4.35	449	4.90	821	5.45	1,320	6.80	2,860	4.25	397
16	3.35	104.0	4.40	476	5.05	945	5.50	1,370	6.85	2,920	4.20	372
17	3.80	132.0	4.85	449	5.25	1,120	5.35	1,220	6.95	3,060	4.15	349
18	3.65	168.0	4.25	397	5.55	1,420	5.60	1,470	7.10	3,270	4.10	326
19	3	217.0	4.15	349	5.35	1,220	5.80	1,680	6.95	3,060	4.05	305
20	3.95	266.0	4.05	375	5.00	902	5.90	1,790	6.85	2,920	4.05	305
21	.....	231.0	4.20	372	4.95	862	6.00	1,890	6.75	2,800	4.10	326
22	3.75	196.0	4.50	535	5.00	902	6.20	2,110	6.95	3,060	4.00	284
23	3.65	168.0	4.20	372	5.25	1,120	6.00	1,890	7.05	3,200	4.05	305
24	3	162.0	4.10	326	5.35	1,220	5.50	1,370	6.75	2,800	4.05	305
25	3.60	155.0	4.15	349	5.65	1,520	5.50	1,370	6.90	2,990	4.10	326
26	.....	149.0	4.25	397	6.10	2,000	5.70	1,570	6.95	3,060	4.05	305
27	3.55	144.0	4.50	535	5.70	1,570	6.05	1,940	6.85	2,920	4.05	305
28	3.55	144.0	4.55	568	5.65	1,520	6.40	2,350	6.85	2,920	4.00	284
29	3.65	168.0	4.65	635	5.60	1,470	6.60	2,600	6.55	2,540	3.95	266
30	4.05	305.0	4.55	568	5.55	1,420	6.50	2,470	6.45	2,410	3.95	266
31	.....	.....	4.50	535	.....	.....	6.50	2,470	6.20	2,110	.....	.....

	October.		November.		December.	
1	3 90	247	3 40	112 0	3 10	69 0
2	3 90	247	3 40	112 0	3 10	69 0
3	4 00	284	3 40	112 0	3 10	69 0
4	3 90	247	3 30	95 0	3 10	69 0
5	3 95	266	.....	95 0	.....	69 0
6	3 90	247	3 30	95 0	3 10	69 0
7	3 90	247	.....	95 0	3 00	60 0
8	4 00	284	3 30	95 0	.....	64 5
9	3 90	247	3 30	95 0	3 10	69 0
10	.....	266	.....	95 0	.....	64 5
11	4 00	284	3 30	95 0	3 00	60 0
12	3 90	247	3 30	95 0	3 00	60 0
13	3 90	247	3 20	81 0	.....	60 0
14	3 80	212	3 20	81 0	3 00	60 0
15	3 80	212	3 30	96 0	3 00	60 0
16	3 70	181	.....	88 0	3 10	69 0
17	3 60	165	3 20	81 0	.....	64 8
18	3 60	165	.....	81 0	3 00	60 0
19	3 50	132	3 20	81 0	3 00	60 0
20	.....	122	3 20	81 0	.....	60 0
21	3 40	112	3 20	81 0	3 00	60 0
22	.....	122	.....	81 0	.....	60 0
23	3 50	132	3 20	81 0	3 00	60 0
24	3 50	132	3 10	69 0	.....	56 5
25	3 40	112	3 20	81 0	2 90	53 0
28	3 50	132	.....	75 0	Ice	.....
27	3 50	132	3 10	69 0	Ice	.....
28	.....	132	.....	75 0	Ice	.....
29	3 50	132	3 20	81 0	Ice	.....
30	3 40	112	3 10	69 0	Ice	.....
31	3 40	112	.....	.....	Ice	.....

*Monthly Discharge of Kicking Horse River at Field for 1915.*

(Drainage area, 130 square miles.)

MON <sup>TH</sup> .	DISCHARGE IN SECONO-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
April	305	45 0	121 0	0 93	1 04	7 200
May	1 030	266 0	484 0	3 72	4 29	29 700
June	2 000	449 0	953 0	7 33	8 18	56 700
July	2 600	1 220 0	1 780 0	13 70	15 80	109 000
August	3 500	2 060 0	2 900 0	22 30	25 70	178 000
September	3 060	266 0	948 0	7 29	8 13	56 400
October	284	112 0	190 0	1 46	1 68	11 700
November	112	69 0	87 4	0 67	0 75	5 200
The period	3 500	45 0	933 0	7 17	65 57	453 900



SESSIONAL PAPER No. 25a

## KICKING HORSE RIVER. —(3013).

*Location.*—Township 28, range 18, west of 5th meridian, above mouth of Yoho river, immediately above C.P.R. bridge over Kicking Horse, between tunnels Nos. 1 and 2, 5 miles east of Field.

*Records Available.*—July to October, 1912, April, 1913, to December, 1914, and all 1915.

*Drainage Area.*—Fifty square miles.

*Climatic Conditions.*—Similar to Field, with possibly a little more snow.

*Gauge.*—Vertical staff gauge read by Mr. C. E. Hamilton, and later by Mr. W. J. Hartley.

*Channel.*—Straight for 25 yards above and below section. Control is not permanent.

*Discharge Measurements.*—The 1915 rating curve is deduced from seven well-distributed measurements made during the year.

*Accuracy.*—"B" and "C." At high water the measuring section is not satisfactory. The control below the gauge is not permanent. The results are considered to be within 15 per cent.

*Discharge Measurements of Kicking Horse River at No. 2 Tunnel for 1915.*

Date.	Engineer	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1915							
Mar. 10	Corbould	1,927	16.0	11.8	0.77	0.35	9.06 <sup>1</sup>
May 9	Elliott	1,927	18.0	44.1	4.53	2.10	200.0
May 17	Elliott	1,927	31.0	30.7	2.78	1.40	85.5
July 3	Elliott	1,909	21.0	72.8	5.83	3.70	424.0
July 14	Elliott	1,909	20.0	66.8	5.84	3.80	390.0
Oct. 20	Richardson	1,929	12.5	12.2	3.48	0.80	42.1
Nov. 27	Richardson	1,929	10.4	9.27	2.46	0.48	22.2

<sup>1</sup> Ice conditions.

## Daily Gauge Height and Discharge of Kicking Horse River at No. 2 Tunnel for 1915.

(Drainage area, 80 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	0.22	12.6	0.22	12.8	0.1	8.8	0.22	12.8	1.83	100.0	2.0	138
2	0.22	12.8	0.22	12.8	0.1	8.8	0.22	14.4	1.8	88.4	2.13	152
3	0.22	12.6	0.22	12.5	0.1	8.8	0.35	17.4	1.43	82.8	2.12	152
4	0.22	12.6	0.22	12.8	0.1	8.8	0.38	17.4	1.4	80.0	2.0	138
5	0.22	12.8	0.22	12.6	0.1	8.8	0.55	17.4	1.4	80.0	2.08	145
6	0.22	12.8	0.22	12.6	0.1	8.8	0.35	17.4	1.	80.0	2.0	138
7	0.22	12.8	0.22	12.6	0.1	8.6	0.42	20.8	1.5	100.0	2.08	148
8	0.22	12.6	0.22	12.6	0.1	8.8	0.48	22.8	2.1	180.0	2.28	172
9	0.22	12.6	0.22	12.6	0.1	8.8	0.48	22.8	2.48	198.0	2.12	162
10	0.22	12.8	0.22	12.5	0.1	8.8	0.46	22.8	2.5	214.0	1.58	125
11	0.22	12.5	0.10	8.8	0.1	8.8	0.35	17.4	2.35	182.0	1.8	117
12	0.22	12.6	0.10	8.8	0.1	8.6	0.35	17.4	2.1	150.0	1.75	112
13	0.22	12.6	0.10	8.8	0.1	8.8	0.45	22.8	1.9	128.0	1.9	126
14	0.22	12.6	0.10	8.8	0.1	8.5	0.48	22.8	1.82	119.0	2.0	139
15	0.22	12.6	0.10	8.6	0.1	8.8	0.5	25.4	1.53	100.0	2.88	182
16	0.22	12.6	0.10	8.6	0.1	5.8	0.5	28.4	1.5	95.4	2.72	231
17	0.22	12.6	0.10	8.8	0.1	6.8	0.73	35.3	1.43	82.5	2.8	350
18	0.22	12.5	0.10	8.8	0.1	8.8	0.8	39.2	1.4	80.0	3.25	322
19	0.22	12.5	0.10	8.8	0.1	8.5	1.0	51.3	1.4	80.0	3.05	253
20	0.22	12.6	0.10	5.6	0.1	5.5	1.1	87.6	1.4	80.0	3.02	276
21	0.22	12.5	0.10	8.5	0.1	6.8	1.1	57.8	1.55	92.9	3.02	278
22	0.22	12.5	0.10	8.8	0.22	12.5	1.0	51.3	1.95	134.0	3.15	300
23	0.22	12.6	0.10	8.5	0.22	12.6	1.0	51.2	1.9	128.0	3.35	334
24	0.22	12.6	0.10	8.8	0.22	12.6	1.0	51.3	1.98	137.0	3.52	364
25	0.22	12.6	0.10	8.8	0.2	12.6	1.0	51.2	2.0	129.0	4.22	304
26	0.22	12.5	0.10	8.8	0.22	12.6	1.0	51.2	2.0	139.0	5.75	332
27	0.22	12.5	0.10	8.8	0.22	12.5	1.0	51.3	1.85	122.0	4.75	314
28	0.22	12.5	0.10	8.8	0.22	12.6	1.0	51.3	1.98	126.0	4.38	336
29	0.22	12.6	.....	.....	0.22	12.6	1.0	51.3	1.9	128.0	4.12	484
30	0.22	12.5	.....	.....	0.22	12.6	1.37	77.5	1.95	134.0	4.15	490
31	0.22	12.5	.....	.....	0.22	12.6	.....	.....	1.85	122.6	.....	.....
	July.		August.		September.		October.		November.		December.	
1	4.12	484	3.52	387	2.9	259	1.15	61.2	0.75	36.4	0.4	19.4
2	3.78	415	3.52	264	2.58	211	1.1	57.8	0.7	33.5	0.4	19.4
3	3.75	409	3.75	409	2.48	194	1.15	61.2	0.7	32.5	0.4	19.4
4	3.75	409	3.88	475	2.4	188	1.05	52.6	0.7	33.6	0.4	19.4
5	3.75	409	3.82	354	2.35	182	1.1	57.8	0.7	33.5	0.4	19.4
6	3.95	449	3.42	346	2.1	150	1.1	57.5	0.65	31.0	0.4	19.4
7	4.18	495	3.2	325	1.85	92.9	1.0	51.3	0.6	28.4	0.4	19.4
8	4.15	460	3.35	334	1.88	126	1.0	51.3	0.5	28.4	0.4	19.4
9	4.05	470	3.32	328	1.72	109	1.0	51.3	0.6	28.4	0.4	19.4
10	3.7	399	2.3	325	1.68	95.5	1.0	51.3	0.55	28.0	0.4	19.4
11	3.2	308	3.28	322	1.45	84.2	0.95	48.2	0.55	26.0	0.4	19.4
12	2.85	251	3.25	315	1.38	78.4	0.9	45.0	0.5	23.7	0.4	19.4
13	2.85	251	3.2	308	1.3	72.0	0.85	42.1	0.5	23.7	0.4	19.4
14	3.32	328	3.2	308	1.25	68.2	0.85	42.1	0.55	26.0	0.4	19.4
15	3.75	409	3.28	322	1.2	64.5	0.8	39.2	0.55	26.0	0.4	19.4
16	3.95	449	3.3	325	1.2	64.5	0.75	36.4	0.55	26.0	0.4	19.4
17	4.18	495	3.35	334	1.1	57.8	0.78	36.4	0.5	23.7	0.4	19.4
18	4.15	490	3.3	342	1.1	57.8	0.75	36.4	0.5	23.7	0.4	19.4
19	4.02	463	3.2	308	1.1	57.8	0.75	36.4	0.5	23.7	0.45	21.6
20	4.1	483	3.3	325	1.1	57.8	0.8	39.2	0.5	23.7	0.45	21.6
21	4.1	480	3.32	328	1.1	57.8	0.8	39.2	0.5	23.7	0.50	23.7
22	4.12	484	3.15	300	1.1	57.8	0.8	39.2	0.5	23.7	0.50	23.7
23	4.15	490	3.1	291	1.1	57.8	0.75	36.4	0.5	23.7	0.50	23.7
24	3.75	409	3.18	305	1.1	57.8	0.75	36.4	0.5	23.7	0.45	21.6
25	3.5	360	3.1	291	1.1	57.8	0.75	36.4	0.45	21.6	0.48	21.6
26	3.35	334	3.1	291	1.1	57.8	0.75	36.4	0.45	21.6	Ice	19.4
27	3.32	328	3.05	282	1.1	57.8	0.75	36.4	0.45	21.6	Ice	19.4
28	3.52	364	3.0	275	1.1	57.8	0.75	36.4	0.4	19.4	Ice	19.4
29	3.55	389	2.92	282	1.1	57.8	0.75	36.4	0.4	19.4	Ice	19.4
30	3.65	389	3.0	275	1.0	51.3	0.8	39.2	0.4	19.4	Ice	19.4
31	5.72	403	3.1	291	.....	.....	0.8	39.2	.....	.....	Ice	19.4

SESSIONAL PAPER No. 290

## Monthly Discharge of Kicking Horse River at No. 2 Tunnel for 1915.

(Drainage area, 50 square miles.)

MONTH	DISCHARGE IN SECOND-FEET				RUN-OFF.	
	Maximum	Minimum	Mean	Per square mile	Depth in inches on Drainage area.	Total in acre-feet.
January	12.6	12.6	12.6	0.25	0.29	778
February	12.6	8.8	10.2	0.21	0.22	570
March	12.6	8.8	10.0	0.20	0.23	618
April	77.6	12.6	35.0	0.70	0.74	2,080
May	214.0	30.0	118.0	2.36	2.72	7,260
June	832.0	112.0	278.0	5.56	6.20	16,500
July	496.0	251.0	412.0	8.28	9.55	26,300
August	409.0	262.0	321.0	6.42	7.60	19,700
September	259.0	51.3	94.7	1.89	2.11	5,640
October	61.2	36.4	44.1	0.88	1.02	2,710
November	36.4	19.4	25.9	0.52	0.58	1,640
December	23.7	19.4	20.1	0.40	0.46	1,240
The year	832.0	8.8	115.1	2.30	31.56	83,920

## NO. 2 CREEK. (3015).

*Location.*—The section is located about 2 miles from the mouth of the creek, at highway bridge, on road from Wilmer to Forster's landing.

*Records Available.*—June to October, 1912, May to October, 1913, April to November, 1914, and April to October, 1915.

*Drainage Area.*—One hundred and twenty square miles.

*Climatic Conditions.*—Precipitation is light, the summers are hot and dry, winters severe.

*Gauge.*—A staff gauge is used and is read by Mr. F. B. Hume.

*Channel.*—The section is in the middle of a straight stretch of 100 feet, the bed is rocky, gravelly and sandy, and may shift a little.

*Discharge Measurements.*—The 1915 rating curve is based on one measurement in 1914 and five in 1915.

*Accuracy.*—"B," "C" and "D." Meterings are reliable, but as readings are taken only three times a week, results vary from 10 to 20 per cent.

## Discharge Measurements of No. 2 Creek at Forster's (For Curve).

Date.	Engineer	Meter No.	Width	Area of Section	Mean Velocity	Gauge Height	Discharge.
			Feet	Sq. ft.	Ft. per sec.	Feet	Sec.-ft.
1914							
Oct. 22	Elliott	1,909	33	79.2	2.07	1.30	184.0
1915							
Feb. 26	Corbould	1,927	27	61.5	1.18	0.8	76.4
May 1	Elliott	1,072	33	90.6	3.35	1.4	305.0
May 22	Elliott	1,572	33	134.6	3.78	1.65	395.0
July 8	Elliott	1,909	33	136.0	7.25	2.40	987.0
Oct. 23	Richardson	1,029	33	76.5	1.97	0.98	131.0



SESSIONAL PAPER No. 25e

*Monthly Discharge of No. 2 Creek at Forster's Landing for 1915.*

(Drainage area, 120 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
April.....	183	79	115	0.96	1.07	6,480
May.....	550	157	382	3.01	3.47	22,300
June.....	765	327	496	4.13	4.61	29,500
July.....	1,270	486	886	7.13	8.22	52,600
August.....	1,580	785	1,170	9.75	11.24	71,900
September.....	742	213	496	4.15	4.63	29,600
October.....	213	135	173	1.44	1.61	10,300
The period.....	1,580	79	524	4.36	34.85	222,680

## SPILLIMACHEEN RIVER.—(3019).

*Location.*—The station is located at highway bridge, near mouth of river, about 4 miles from Spillimacheen landing.

*Records Available.*—June to October, 1912, June to November, 1913, April to December, 1914, and April to December, 1915.

*Drainage Area.*—Five hundred and eighty square miles.

*Climatic Conditions.*—The summer generally has hot days with cool nights, light precipitation. The winter is of about 4½ months duration, with considerable snowfall and low temperatures. The river usually freezes up in November or December, opening up again in April.

*Gauge.*—Vertical staff read two or three times weekly by Mr. Jas. Montgomery.

*Channel.*—The channel is straight above and below section for 50 yards, the control is a gravel bar, and there is a pronounced riffle at low water, 25 yards below the section.

*Discharge Measurements.*—The data for 1915 has been prepared from a rating curve based on nineteen measurements, well distributed, during the years 1912-13-14-15.

*Accuracy.*—"B" and "C." As readings are not taken daily, and there is a possibility of backwater in extreme high water, results cannot be considered closer than 10 or 15 per cent.

*Discharge Measurements of Spillimacheen River at Spillimacheen Landing (For Curve).*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
<b>1912</b>							
May 31	Hughes	1,055	119	464	2.43	1.30	1,120
June 17	Hughes	1,055	122	585	4.70	2.20	2,740
June 19	Hughes	1,055	124	520	5.52	2.55	3,450
July 5	Hughes	1,055	122	558	4.18	2.25	2,750
July 19	Hughes	1,055	124	599	5.08	2.35	3,040
Sept. 29	Richardson	1,055	114	381	1.45	0.42	554
<b>1913</b>							
May 20	Elliott	1,672	117	465	2.50	1.17	1,210
June 25	Elliott	1,572	123	508	7.39	2.75	4,420
July 11	Richardson	1,048	123	570	5.60	2.50	3,880
July 27	Elliott	1,672	124	613	5.60	2.57	4,070
July 30	Elliott	1,672	122	571	4.70	2.10	2,710
Sept. 3	Swan & Richardson	1,048	118	490	3.12	1.50	1,530
Sept. 14	Elliott	1,572	119	488	3.68	1.57	1,750
Nov. 26	Webb	1,048	114	330	1.14	0.25	378
<b>1914</b>							
July 31	Elliott	1,909	124	585	5.84	2.45	3,430
Oct. 23	Elliott	1,909	114	374	1.28	0.40	480
<b>1915</b>							
May 3	Elliott	1,672	105	524	3.80	1.85	1,990
May 21	Elliott	1,672	105	530	3.55	1.80	1,920
Oct. 22	Richardson	1,929	114	425	1.19	0.40	507

SESSIONAL PAPER No. 25e

Daily Gauge Height and Discharge of Spillimacheen River at Galena for 1915.

(Drainage area, 580 square miles.)

Day.	March.		April.		May.		June.		July.		August.		
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	
1					348	1.8	1,950						
2					396	1.9	2,100	1.85	2,110	2,980	2.7	3,870	
3			0.3	445	445		1,960		2,020	3,040		4,060	
4			0.3	445	445		1,810		2,050	2.4	3,100	4,250	
5				437	437	1.6	1,670	1.9	2,080	2.5	3,340	4,440	
6									2,100			4,160	
7			0.25	429	429		2,000	2.0	2,270	4,070		3,880	
8				420	429	2.2	2,320		2,210	2.9	4,400	2.6	3,600
9				437	437	2.5	2,650		2,160		3,960	2.6	3,600
10			0.3	445	445		2,980		2,100		3,470		3,600
11									2,050	2.35	2,980		3,600
12			0.35	420	420		2,630		2,000	2.3	2,870		3,600
13				429	429	2.0	2,270	1.8	1,950		2,950	2.6	3,600
14				437	437		2,160		1,880		3,020		3,470
15			0.3	445	445		2,060	1.7	1,810	2.4	3,100	2.6	3,340
16				587	587	1.8	1,950		2,340		3,020	2.45	3,220
16	0.1	345		728	728	1.65	1,740	2.3	2,870		2,950		2,280
17	0.1	345	0.9	870	870		1,720		2,730	2.3	2,870	2.5	3,340
18		345	1.2	1,170	1,170		1,690		2,590	2.6	3,600		3,220
19	0.1	345		1,230	1,230	1.6	1,670	2.1	2,450		3,690		3,100
20	0.1	345		1,280	1,280		1,870	1.95	2,180		3,780		2,990
21	0.0	300	1.35	1,340	1,340		2,070		2,410	2.7	3,870	2.3	2,870
22		323		1,230	1,230	2.0	2,270		2,640		3,690	2.4	3,100
23		346		1,120	1,120	2.0	2,270	2.3	2,870		3,520		3,020
24	0.15	370	1.05	1,010	1,010		2,240		3,200	2.5	3,340		2,950
25		354	1.05	1,010	1,010		2,210		3,540	2.6	3,200	2.3	2,870
26		338		1,010	1,010	1.95	2,180	2.7	3,870		3,260		2,870
27	0.05	322		1,020	1,020		2,210	2.4	3,100		3,180		2,970
28	0.05	322	1.06	1,020	1,020		2,240		2,980	2.4	3,100	2.3	2,870
29		315		1,330	1,330	2.0	2,270	2.3	2,870		3,270	2.35	2,980
30		308		1,640	1,640	2.0	2,270		2,930		3,430		2,710
31	0.0	300					2,190			2.6	3,600		2,440

	September.		October.		November.		December.	
1	2.00	2,270		675		520	0.10	345
2		2,330	0.70	700		510		330
3		2,390	0.70	700	0.40	500		315
4	2.10	2,450		630		480	0.00	300
5	2.00	2,270		560		460	0.10	345
6		1,900	0.40	500	0.30	445		330
7		1,530		480	0.20	395		320
8	1.20	1,170		460		360		310
9		1,130	0.30	445		330	0.00	300
10		1,090	0.25	420	0.00	300		300
11	1.10	1,060		420		315	0.00	300
12	0.80	780		420		330	0.00	300
13		730		420	0.10	345		300
14		680	0.25	420	0.40	500		300
15	0.60	630		405		540	0.00	300
16		606	0.20	395		580		315
17		583	0.15	370	0.60	630		330
18	0.50	560		410		520	0.10	345
19	1.40	1,400		450		410	0.10	345
20		1,180	0.40	500	0.00	300		345
21		980		465	0.10	345		345
22	0.80	780		430		345	0.10	345
23	0.60	630	0.20	395		345		330
24		630	0.30	445		345		315
25	0.60	630		530	0.10	345	0.00	300
26	0.65	645		615		322		310
27		650	0.70	700	0.00	300		320
28		640		630	0.00	300		330
29	0.60	630		560		315	0.10	345
30		630	0.40	500		330		300
31			0.45	530				300

*Monthly Discharge of Spillimacheen River at Galena for 1915.*

(Drainage area, 580 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
April	1,640	348	785	1.35	1.61	46,700
May	3,340	1,670	2,160	3.72	4.29	133,000
June	3,870	1,810	2,480	4.28	4.77	148,000
July	4,440	2,870	3,370	5.81	6.70	207,000
August	4,440	2,440	3,350	5.78	6.56	206,000
September	2,450	560	1,120	1.93	2.15	66,600
October	700	370	603	0.87	1.00	30,900
November	630	300	402	0.70	0.78	23,900
December	345	300	320	0.55	0.63	19,700
The period.	4,440	300	1,610	2.78	28.49	881,800

TOBY CREEK.—(3020)

*Location.*—The section is located at highway bridge, on road from Athalmer to Wilmer, 1½ miles from Athalmer and 1 mile from mouth of creek.

*Records Available.*—June to September, 1912, May to October, 1913, April to November, 1914, and April to November, 1915.

*Drainage Area.*—One hundred and eighty square miles.

*Climatic Conditions.*—Precipitation is light. Summer days are hot and the evenings cool. Duration of winter is about four months, and severe at times. Chinook winds occasionally strike the locality, and changes in temperature result. Toby creek remains frozen about four months of the year.

*Gauge.*—A vertical staff read by Mr. H. H. Peters of Wilmer.

*Channel.*—The channel is straight above the section and widens out below. Two channels are formed by a central pier in the bridge. The water does not flow at right angles to the bridge, and runs swiftly.

*Discharge Measurements.*—The 1915 data is prepared from a rating curve based on three measurements in 1914, and six in 1915, all of them well distributed.

*Accuracy.*—"C." Results considered to be within 15 per cent.

*Discharge Measurements of Toby Creek at Athalmer (For Curve).*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1914							
May 5	Gill	1,048	160	316	2.00	2.20	631
June 19	Elliott	1,909	198	627	4.79	2.65	3,000
Oct. 22	Elliott	1,909	185	159	1.87	1.60	298
1915							
Feb. 26	Elliott & Corbould	1,927	22	55.2	1.25	Ice	69.2 <sup>1</sup>
May 1	Elliott	1,672	190	217	2.57	1.28	558 <sup>2</sup>
May 23	Elliott	1,672	189	285	2.87	1.35	817
July 8	Elliott	1,909	191	326	3.86	2.00	1,260
Sept. 24	(Prov.) Bergoust		137	163	2.24	0.60	342
Oct. 23	Richardson	1,929	64	132	1.89	0.45	250

<sup>1</sup> Ice conditions.

<sup>2</sup> New gauge.





*Monthly Discharge of Toby Creek at Athalmer for 1915.*

(Drainage area, 180 square miles.)

MONTH.	DISCHARGE IN SECOND-FeET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
May .....	990	494	669	3.66	4.22	40,600
June .....	1,830	784	1,080	6.00	6.69	64,300
July .....	2,290	945	1,610	8.94	10.30	99,000
August .....	2,880	1,090	1,980	11.00	12.70	122,000
September .....	1,090	278	468	2.60	2.90	27,800
October .....	323	244	269	1.49	1.72	16,500
The period .....	2,880	244	1,011	5.61	38.53	370,100

NORTH VERMILION CREEK.—(3032).

*Location.*—The section is located about 200 yards above the highway bridge, on the road from Golden to Windermere.

*Records Available.*—1913-14-15.

*Drainage Area.*—Twenty square miles.

*Climatic Conditions.*—Summer days are hot, with cool nights, precipitation is light, winters more or less severe and of about four months duration.

*Gauge.*—Vertical staff read three to five times a week by Mr. S. B. Harrison.

*Channel.*—Clean and gravelly, likely to shift.

*Discharge Measurements.*—The 1915 rating curve is based on three measurements in 1913, taken by Provincial Water Rights Branch, six in 1914 taken by this survey, and five in 1915.

*Accuracy.*—"C" and "D." Generally considered to be within 15 per cent.

*Discharge Measurements of North Vermilion Creek at Edgewater (For Curve).*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet	Sec.-ft.
1913							
Aug. 7	(Prov.) Bergoust.			12.3	3.14	1.06	38.8
Sept. 15	(Prov.) Bergoust.			10.9	2.78	0.95	32.2
Nov. 9	(Prov.) Bergoust.			10.3	2.75	0.80	28.4
1914							
April 18	(Prov.) Bergoust.		13.0	8.85	2.38	0.70	21.1
May 6	Gill.	1,048	14.0	16.7	4.00	1.30	66.7
May 26	(Prov.) Bell.		15.2	27.7	5.04	1.95	139.0
July 27	(Prov.) Bergoust.		13.0	16.0	3.71	1.25	59.8
Aug. 24	(Prov.) Bell.		13.7	13.2	2.63	1.00	34.8
Sept. 29	(Prov.) Bergoust.		13.0	13.3	3.32	1.15	44.3
1915							
Feb. 27	Elliott.	1,927	19.0	10.4	2.00	0.68	20.5 <sup>1</sup>
May 2	Elliott.	1,672	15.0	18.4	3.66	1.60	65.6
May 22	Elliott.	1,572	14.5	17.9	4.66	1.25	73.2
July 10	Elliott.	1,909	14.0	19.6	3.83	1.35	76.1
Sept. 21	(Prov.) Bergoust.		13.0	10.0	2.63	0.90	25.3

<sup>1</sup> Ice conditions.

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Daily Gauge Height and Discharge of North Vermilion Creek at Edgewater for 1915.

(Drainage area, 20 square miles.)

Day.	April.		May.		June.		July.		August.		September.	
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	0.70	21.3	1.50	81.0	1.50	81.0	1.90	132.0	1.50	81.0	0.90	30.9
2	0.70	21.3		75.6	1.60	92.6	1.80	118.0	1.40	70.2		30.9
3	0.80	26.0	1.40	70.2		89.7	1.60	92.6		65.2	0.90	30.9
4	0.80	26.0		75.6	1.55	86.8	1.55	86.8	1.30	60.2		30.9
5	0.80	26.0	1.50	81.0	1.45	75.6	1.50	81.0		60.2	0.90	30.9
6		27.2	1.50	81.0	1.40	70.2	1.40	70.2	1.30	60.2		32.4
7		28.4	1.60	92.6	1.40	70.2		70.2	1.20	51.3	0.95	33.8
8	0.85	28.4	1.70	105.0	1.40	70.2		70.2		47.4		32.4
9	0.85	28.4		98.8	1.40	70.2	1.40	70.2	1.10	43.5	0.90	30.9
10		27.2	1.60	92.6		67.7	1.40	70.2	1.10	43.5		30.0
11	0.80	26.0		86.8	1.35	65.2		70.2	1.00	36.7		29.2
12		26.0	1.50	81.0		62.7	1.40	70.2		36.7	0.85	28.4
13	0.80	26.0		73.1	1.30	60.2	1.50	81.0	1.00	36.7		28.4
14	0.80	26.0	1.35	65.2	1.35	65.2	1.50	81.0		32.6	0.85	28.4
15		29.9		58.2		67.7	1.85	125.0	0.85	28.4	0.90	30.9
16	0.95	33.8	1.20	51.3	1.40	70.2	2.70	250.0		32.6	0.85	28.4
17	1.00	36.7	1.20	51.3	1.40	70.2	2.60	235.0	1.00	36.7		27.2
18	1.30	60.2		47.4		72.4	2.50	220.0		36.7	0.80	26.0
19		55.8	1.10	43.5	1.45	75.6	2.50	220.0		36.7		27.2
20	1.20	51.3		43.5	1.40	70.2	2.50	220.0	1.00	36.7	0.55	28.4
21		47.4	1.10	43.5	1.40	70.2		205.0		36.7		28.4
22	1.10	43.5	1.20	51.3	1.35	65.2	2.30	190.0	1.00	36.7	0.85	28.4
23		41.8	1.20	51.3		70.4	2.00	146.0		35.2		27.2
24	0.95	40.1		51.3	1.45	75.6		139.0	0.95	33.8	0.80	26.0
25	0.95	33.8	1.20	51.3	1.50	81.0	1.90	132.0		32.8	0.80	26.0
26		38.6	1.20	51.3		99.5		125.0		31.8		26.0
27	1.10	43.5		55.8	1.80	118.0	1.80	118.0	0.90	30.9	0.80	26.0
28		45.4	1.30	60.2	1.85	125.0		111.0	0.90	30.9	0.80	26.0
29	1.15	47.4	1.40	70.2	1.95	139.0		105.0	0.90	30.9		26.0
30	1.50	81.0	1.45	75.6	1.90	132.0	1.60	92.6	0.90	30.9	0.80	26.0
31				78.3			1.50	81.0	0.95	33.8		

Monthly Discharge of North Vermilion Creek at Edgewater for 1915.

(Drainage area, 20 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
April	81.0	21.3	36.5	1.82	2.03	2,170
May	105.0	43.5	67.5	3.38	3.90	4,150
June	139.0	60.2	81.0	4.06	4.82	4,820
July	250.0	70.2	125.0	6.25	7.21	7,690
August	81.0	30.9	41.9	2.10	2.42	2,580
September	33.8	26.0	28.8	1.44	1.61	1,720
The period	250.0	21.3	63.4	3.17	21.69	23,130

## SOUTH VERMILION CREEK.—(3033).

*Location.*—The section is about 40 feet above the highway bridge, on the Golden-Windermere road, which crosses this creek, and is about ½ mile above the mouth.

*Records Available.*—April to September, 1914, and April to September, 1915.

*Drainage Area.*—Ten square miles.

*Climatic Conditions.*—Summer days hot, with cool nights. Precipitation is generally light. Winter lasts about 4½ months, and is more or less severe.

*Gauge.*—Vertical staff read daily by Mr. Eric Smith.

*Channel.*—Gravelly and likely to shift.

*Discharge Measurements.*—The 1915 data has been prepared from a rating curve based on four measurements made by this Survey and one by the Provincial Water Rights Branch, in 1915.

*Accuracy.*—"C" and "D." Results considered to be within 15 or 20 per cent.

*Discharge Measurements of South Vermilion at Edgewater for 1915.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
1916			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
May 2	Elliott.	1,672	14.0	11.6	2.84	3.80	33.0
May 22	Elliott.	1,672	18.0	10.3	3.19	3.75	32.9
July 10	Elliott.	1,909	14.5	17.1	3.33	4.00	57.1
Sept. 21	(Prov.) Bergoust		14.0	9.30	1.86	3.55	17.3
Oct. 24	Richardson.	1,929	15.0	9.75	1.43	3.51	13.9

*Daily Gauge Height and Discharge of South Vermilion Creek at Edgewater for 1915.*

(Drainage area, 10 square miles.)

Day.	April.		May.		June.		July.		August.		September.	
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1			3.80	33.4	3.90	44.0	4.15	84.5	3.90	44.0	3.62	20.3
2			3.80	33.4	3.90	44.0	4.12	78.2	3.90	44.0	3.62	20.3
3			3.80	33.4	3.90	44.0	4.10	74.0	3.90	44.0	3.60	18.9
4			3.78	31.8	3.90	44.0	4.10	74.0	3.85	38.7	3.60	18.9
5			3.78	31.8	3.90	44.0	4.08	70.6	3.85	38.7	3.60	18.9
6			3.78	31.8	3.90	44.0	4.05	65.6	3.80	33.4	3.60	18.9
7			3.80	33.4	3.92	46.6	4.02	60.6	3.80	33.4	3.60	18.9
8			3.80	33.4	3.92	46.6	4.02	60.6	3.80	33.4	3.60	18.9
9			3.82	36.6	3.90	44.0	4.00	57.2	3.80	33.4	3.60	18.9
10			3.90	44.0	3.90	44.0	4.00	57.2	3.78	31.8	3.60	18.9
11	3.50	13.8	3.90	44.0	3.85	38.7	4.00	57.2	3.78	31.8	3.60	18.9
12	3.60	13.8	3.85	38.7	3.82	35.6	3.96	50.6	3.78	31.8	3.60	18.9
13	3.50	13.8	3.80	33.4	3.80	33.4	4.00	57.2	3.75	29.4	3.60	18.9
14	3.50	13.8	3.75	29.4	3.80	33.4	4.05	65.6	3.75	29.4	3.60	18.9
16	3.65	16.4	3.75	29.4	3.82	35.6	4.10	74.0	3.70	25.3	3.60	18.9
16	3.55	16.4	3.76	29.4	3.82	35.5	4.30	121.0	3.70	25.3	3.60	18.9
17	3.60	18.9	3.72	26.9	3.82	35.5	4.40	150.0	3.70	25.3	3.60	18.9
18	3.66	22.1	3.72	26.9	3.86	38.7	4.40	150.0	3.70	25.3	3.60	18.9
19	3.65	22.1	3.72	26.9	3.85	38.7	4.30	121.0	3.70	25.3	3.60	18.9
20	3.66	22.1	3.75	29.4	3.85	38.7	4.20	95.0	3.70	25.3	3.58	17.9
21	3.65	22.1	3.78	31.8	3.85	38.7	4.20	95.0	3.70	25.3	3.58	17.9
22	3.62	20.3	3.80	33.4	3.85	38.7	4.15	84.5	3.68	24.0	3.55	16.4
23	3.60	18.9	3.80	33.4	3.90	44.0	4.10	74.0	3.68	24.0	3.55	16.4
24	3.60	18.9	3.80	33.4	3.92	46.6	4.10	74.0	3.68	24.0	3.55	16.4
25	3.60	18.9	3.81	34.5	4.00	57.2	4.15	84.5	3.65	22.1	3.55	16.4
26	3.60	18.9	3.81	34.6	4.10	74.0	4.15	84.5	3.65	22.1	3.55	16.4
27	3.60	18.9	3.85	38.7	4.15	84.6	4.00	57.2	3.65	22.1	3.55	16.4
28	3.62	20.3	3.90	44.0	4.20	95.0	4.00	57.2	3.65	22.1	3.55	16.4
29	3.62	20.3	3.90	44.0	4.20	95.0	3.95	60.6	3.65	22.1	3.55	16.4
30	3.70	25.3	3.90	44.0	4.16	84.5	3.90	44.0	3.65	22.1	3.55	16.4
31			3.88	41.9			3.90	44.0	3.62	20.3		

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## Monthly Discharge of South Vermilion Creek at Edgewater for 1915.

(Drainage area, 10 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet
May . . .	44.0	26.9	34.5	3.45	3.98	2,120
June . . .	95.0	33.4	48.9	4.89	5.46	2,910
July . . .	150.0	44.0	76.6	7.66	8.83	4,710
August . . .	44.0	20.3	29.0	2.90	3.34	1,780
September . . .	20.3	16.4	19.2	1.82	2.03	1,080
The period	150.0	16.4	41.4	4.14	23.64	12,600

## WASHOUT CREEK.—(3054).

*Location.*—The section is located in wooden flume, which is about 20 feet long, and situated about 200 feet above the district schoolhouse, near Galena.

*Records Available.*—1914 and 1915.

*Drainage Area.*—Not determined.

*Climatic Conditions.*—See Spillimacheen river. Similar conditions prevail.

*Gauge.*—Vertical staff, located in the flume, and read by Mr. H. Alton.

*Channel.*—Straight for 10 feet above and below section. Water flows swiftly. The natural channel is rough and rocky.

*Discharge Measurements.*—The 1915 data has been prepared from a rating curve based on five measurements by this Survey and five by Provincial Water Rights Branch well distributed, in 1914 and 1915.

*Accuracy.*—"D." This stream is subject to considerable variation, and the accuracy cannot be considered closer than 20 or 25 per cent.

*General.*—Studies are being made of this stream for possible irrigation and other requirements.

## Discharge Measurements of Washout Creek at Galena (For Curve).

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1914							
May 26	(Prov.) Bergoust			5.94	7.35	1.10	43.6
June 2	Elliott	1,909	5.9	7.20	7.75	1.65	55.8
Aug. 28	(Prov.) Bergoust	1,909	5.9	2.13	6.02	0.32	12.6
Oct. 7	(Prov.) Bergoust			2.00	6.10	0.30	12.2
1915							
May 2	Elliott	1,672	6.0	5.20	6.80	0.40	21.8 <sup>1</sup>
May 22	Elliott	1,672	6.0	2.85	6.16	0.30	17.6
June 9	(Prov.) Bergoust		5.9	2.55	6.25	0.35	15.9
July 10	(Prov.) Bergoust	1,909	6.0	3.00	6.66	0.50	19.9
July 21	(Prov.) Bergoust		5.9	1.93	5.50	0.30	10.7
Oct. 22	Richardson	1,929	5.9	1.65	4.84	0.28	7.99

<sup>1</sup> New gauge.

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## Daily Gauge Height and Discharge of Washout Creek at Galena for 1915.

Day.	April.		May.		June.		July.		August.		September.	
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	0 40	14.5	0 50	18.7	0 53	20.0	0 90	35.0			5.40	14.5
2	0 40	14.5	0 54	20.5	0 53	20.0	0 90	38.0			5.40	14.5
3	0 40	14.5	0 54	20.5	0 53	20.0	0 90	38.0			5.40	14.5
4	0 40	14.5	0 54	20.5	0 58	22.3	0 80	32.9			5.40	14.5
5	0 40	14.5	0 54	20.5	0 58	22.3	0 80	32.9			5.40	14.5
6	0 40	14.5	0 54	20.5	0 52	19.5	0 70	28.0			5.40	14.5
7	0 40	14.5	0 54	20.5	0 51	19.2	0 70	28.0			5.40	14.5
8	0 40	14.5	0 54	20.5	0 44	16.2	0 70	28.0			5.40	14.5
9	0 40	14.5	0 54	20.5	0 43	15.8	0 60	23.2			5.40	14.5
10	0 40	14.5	0 50	23.3	0 43	15.5	0 60	18.7			5.40	14.5
11	0 40	14.5	0 60	23.2	0 43	15.5	0 55	21.0			5.40	14.5
12	0 40	14.5	0 54	20.5	0 43	15.8	0 55	21.0			5.40	14.5
13	0 47	17.4	0 47	17.4	0 43	15.8	0 70	28.0	5.50	18.7	5.40	14.5
14	0 47	17.4	0 47	17.4	0 43	15.8	0 80	32.9	5.50	18.7	5.40	14.5
15	0 47	17.4	0 47	17.4	0 43	15.8	Gauge washed out.		5.50	18.7	5.30	10.7
16	0 47	17.4	0 47	17.4	0 43	15.8			5.40	14.5	5.30	10.7
17	0 54	20.5	0 47	17.4	0 43	15.8	From July 15th to Aug. 13th no readings were taken.		5.40	14.5	5.30	10.7
18	0 54	20.5	0 47	17.4	0 43	15.8			5.40	14.5	5.30	10.7
19	0 54	20.5	0 47	17.4	0 51	19.2			5.40	14.5	5.30	10.7
20	0 54	20.5	0 47	17.4	0 51	19.2			5.40	14.5	5.30	10.7
21	0 54	20.5	0 47	17.4	0 57	21.8			6.40	14.5	5.30	10.7
22	0 54	20.5	0 47	17.4	0 57	21.8			5.40	14.5	5.30	10.7
23	0 47	17.4	0 47	17.4	0 57	21.8			5.40	14.5	5.30	10.7
24	0 47	17.4	0 47	17.4	0 80	21.8			5.40	14.5	5.30	10.7
25	0 47	17.4	0 47	17.4	2.20	120.0			5.40	14.5	5.30	10.7
26	0 47	17.4	0 51	17.4	2.20	120.0			5.40	14.5	5.30	10.7
27	0 47	17.4	0 51	17.4	2.00	105.0			5.40	14.5	5.30	10.7
28	0 47	17.4	0 47	17.4	1.70	85.3			6.40	14.5	5.30	10.7
29	0 47	17.4	0 53	20.0	1.40	65.0			6.40	14.5	5.30	10.7
30	0 50	18.7	0 53	20.0	1.10	48.5			6.40	14.5	5.30	10.7
31			0 53	20.0					5.40	14.5		

## Monthly Discharge of Washout Creek at Galena for 1915.

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
April	20.5	14.5	15.9			1,000
May	23.2	17.4	19.0			1,170
June	120.0	15.8	33.0			1,950
September	14.5	10.7	12.5			744
The period	120.0	10.7	20.3			4,874

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## CRANBROOK DISTRICT.

## BULL RIVER.—(3039).

*Location.*—The station is near the mouth, on C.P.R. bridge, at Bull river.

*Records Available.*—1914 and 1915.

*Drainage Area.*—Four hundred and twenty square miles.

*Climatic Conditions.*—Summers hot and dry. Winters severe, with light snowfall at lower altitudes. Ice conditions from November to April. During this period low flow may be anticipated, and frazil ice expected.

*Gauge.*—A vertical staff nailed to the buttress about 100 yards below Bull River Lumber Company's dam. Daily readings.

*Channel.*—Straight for 100 yards below and above gauge.

*Discharge Measurements.*—The 1915 data is based on seven measurements made during the year.

*Accuracy.*—The channel is liable to shift, and peculiar conditions exist, therefore results are not guaranteed. Further study is being made.

*Discharge Measurements of Bull River at Bull River for 1915.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1915							
April 28	Elliott	1,672	94	504	3.48	2.10	1,740
May 14	Corbould	1,909	94	552	4.53	2.40	2,500
May 29	Elliott	1,672	94	548	5.24	2.85	2,870
June 17	Elliott	1,909	94	328	5.00	2.60	2,640
July 4	Richardson	1,929	94	335	4.63	2.65	2,480
Aug. 30	Dempster	1,927	95	405	1.58	1.15	641
Nov. 24	Richardson	1,929	94	342	1.19	0.49	407 <sup>1</sup>

<sup>1</sup> Peculiar conditions owing to dam above gauge.

## Daily Gauge Height and Discharge of Bull River at Bull River for 1915.

(Drainage area, 420 square miles.)

Day.	April.		May.		June.		July.		August.		September.	
	Gauge Height	Discharge.	Gauge Height	Discharge.	Gauge Height	Discharge.	Gauge Height	Discharge.	Gauge Height	Discharge.	Gauge Height	Discharge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1		400	3.4	3,780	2.6	2,500	3.2	3,463	1.8	1,360	1.2	363
2		450	3.05	3,210	2.7	2,650	2.9	2,970	1.8	1,360	1.2	365
3		500	2.85	2,890	2.7	2,650	2.8	2,810	1.7	1,240	1.2	333
4	1.05	552	2.5	2,350	2.6	2,500	2.8	2,810	1.7	1,240	1.2	365
5	1.1	595	2.55	2,420	2.6	2,500	2.7	2,650	1.7	1,240	1.2	365
6	1.1	595	2.4	2,200	2.55	2,420	2.6	2,500	1.7	1,240	1.2	365
7	1.1	595	2.5	2,350	2.7	2,650	2.45	2,280	1.7	1,240	1.2	365
8	1.1	595	2.2	3,450	2.6	2,500	2.4	2,300	1.7	1,240	1.2	365
9	1.1	595	2.5	3,950	2.45	2,280	2.35	2,120	1.6	1,120	1.2	365
10	1.1	595	2.6	4,120	2.4	2,200	2.4	3,200	1.6	1,120	1.1	365
11	1.1	595	2.55	3,700	2.1	1,760	2.3	2,080	1.5	1,000	1.1	365
12	1.25	785	2.7	2,650	2.1	1,760	2.1	1,730	1.5	1,000	1.1	365
13	1.6	1,120	2.6	2,500	2.2	1,900	1.9	1,490	1.45	940	1.1	365
14	1.65	1,180	2.6	2,500	2.45	2,240	2.15	1,640	1.4	890	1.1	365
15	1.6	1,490	2.5	2,350	2.6	2,600	2.15	1,840	1.4	890	1.1	365
16	2.15	1,840	2.3	2,050	2.6	2,500	2.4	2,200	1.4	890	1.1	365
17	2.65	2,580	2.1	1,760	2.7	2,650	2.4	2,200	1.4	890	1.1	365
18	3.05	3,210	2.1	1,760	2.7	2,650	2.4	2,200	1.4	890	1.1	365
19	3.2	3,450	2.05	1,690	2.7	2,650	2.0	1,620	1.4	890	0.5	320
20	3.2	3,450	1.9	1,490	2.7	2,650	1.9	1,490	1.4	890	0.6	320
21	3.05	3,210	1.9	1,490	2.6	2,500	1.9	1,490	1.4	890	0.6	320
22	2.65	2,580	1.9	1,490	2.6	2,500	1.9	1,490	1.4	890	0.6	320
23	2.3	2,050	2.05	1,690	2.55	2,580	1.9	1,490	1.4	890	0.6	320
24	2.1	1,760	2.35	2,120	2.7	2,650	1.9	1,490	1.4	890	1.0	360
25	2.0	1,520	2.4	2,200	2.8	2,810	1.9	1,490	1.4	890	0.6	300
26	2.0	1,520	2.4	2,200	3.45	3,860	1.8	1,360	1.4	890	0.6	300
27	2.0	1,620	2.4	2,200	3.45	3,860	1.85	1,420	1.4	890	0.6	320
28	2.0	1,620	2.5	2,350	3.1	3,290	1.9	1,490	1.4	890	0.6	320
29	2.35	2,120	2.75	2,750	3.1	3,290	1.9	1,490	1.2	885	0.6	320
30	3.1	3,290	2.7	2,650	3.2	3,450	1.9	1,490	1.2	885	0.6	320
31			2.55	2,420			1.6	1,360	1.2	865		
October.												
1	0.6	520	1.1	595	0.4	335						
2	0.9	585	0.9	585	0.4	335						
3	0.9	585	0.9	585	0.4	335						
4	0.9	585	0.9	585	0.4	335						
5	0.7	620	0.9	585	0.4	335						
6	0.7	620	0.9	585	0.4	335						
7	0.7	620	0.9	585	0.4	335						
8	0.7	620	0.7	620	0.4	335						
9	0.7	620	0.6	520	0.4	335						
10	0.7	620	0.6	520	0.4	335						
11	0.6	520	0.6	520	0.4	335						
12	0.6	520	0.6	520	0.4	335						
13	0.6	520	0.6	520	0.4	335						
14	0.5	425	0.6	520	0.4	335						
15	0.5	425	0.6	520	0.4	335						
16	0.5	425	0.6	520	0.4	335						
17	0.5	425	0.6	520	0.4	335						
18	0.5	425	0.6	520	0.4	335						
19	0.5	425	0.6	520	0.4	335						
20	0.5	425	0.6	520	0.4	335						
21	0.5	425	0.6	520	0.4	335						
22	0.5	425	0.5	425	0.4	335						
23	0.5	425	0.5	425	0.4	335						
24	0.5	425	0.5	425	0.4	335						
25	0.5	425	0.5	425	0.4	335						
26	0.4	335	0.5	425	0.4	335						
27		345	0.5	425	0.4	335						
28	0.8	355	0.5	425	0.4	335						
29	1.20	685	0.4	335	0.4	335						
30	1.4	820	0.4	335	0.4	335						
31	1.2	685			0.4	335						
November.												
December.												



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## Monthly Discharge of Bull River at F. 'l River for 1915.

(Drainage area, 420 square miles.)

MONTH	DISCHARGE IN SECOND FEET				RUN-OFF	
	Maximum	Minimum	Mean	Per square mile	Depth in inches on Drainage area.	Total in acre-feet
April	3,450	400	1,550	3.69	4.12	92,200
May	4,120	1,490	2,470	5.88	6.78	152,000
June	3,850	1,760	2,430	6.26	6.98	155,000
July	3,450	1,360	1,960	4.67	5.34	120,000
August	1,360	685	992	2.36	2.72	61,000
September	685	500	596	1.42	1.58	35,500
The period	4,120	400	1,699	4.05	27.56	616,700

NOTE.—Drainage area in doubt. These computations not guaranteed.

## CHERRY CREEK. (3038).

*Location.*—Near Wasa, about 1 mile above mouth.*Records Available.*—1913-14-15.*Drainage Area.*—Eighty square miles.*Climatic Conditions.*—Summers hot and dry, winters severe, with light snowfall.*Gauge.*—A vertical staff located on highway bridge. Daily readings made by Roy Myers.*Channel.*—Channel is regular and affords a good measuring section. Slight shifts are possible.*Discharge Measurements.*—The 1915 curve is based on four measurements made by Provincial Water Rights Branch in 1913, three in 1914, by the B.C. Hydrometric Survey, and four during 1915.*Accuracy.*—Results should be within 15 per cent.*Discharge Measurements of Cherry River at Wasa (For Curve).*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet	Sq. ft.	F. per sec.	Inches.	Sec.-ft.
1913							
July 20	Provs. Hicks		16.5	18.5	2.12	6	39.7
Sept. 12	Provs. Hicks		16.5	15.6	1.50	2.75	25.2
Sept. 16	Provs. Hoblin		16.5	16.5	1.42	3.5	23.5
Oct. 16	Provs. Cole		16.5	17.1	1.44	3.8	24.6
1914							
July 24	Provs. Hicks	1,929	16.5	24.2	2.34	7.25	55.7
Sept. 26	Provs. Hicks		16.5	16.3	1.37	2.75	22.3
Aug. 21	Provs. Hicks		16.5	13.7	1.18	0.78	15.2
1915							
April 22	H. H. Hott	1,672	15.5	29.2	2.88	9.5	84.1
May 21	H. H. Hott	1,672	16.5	29.8	3.43	11	102
June 12	H. H. Hott	1,909	16.5	29.8	3.46	10.75	103
Aug. 25	Dempster	1,927	16.0	15.7	1.53	2.9	26.5

## Daily Gauge Height and Discharge of Cherry Creek at Wasa for 1915.

(Drainage area, 80 square miles.)

Day.	April.		May.		June.		July.		August.		September.	
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.
	Inches.	Sec.-ft.	Inches.	Sec.-ft.	Inches.	Sec.-ft.	inches.	Sec.-ft.	Inches.	Sec.-ft.	Inches.	Sec.-ft.
1			10.0	90.6	11.0	104	9.0	78.1		54.4	1.0	17.3
2			10.0	90.6	11.0	104	9.25	81.0		52.0	1.0	17.3
3			10.0	90.6	11.2	107	9.75	87.3		49.5	1.0	17.3
4			10.0	90.6	11.0	104	9.0	78.1		47.0	1.5	19.4
5			9.0	78.1	11.0	104	8.75	75.2		44.5	1.5	19.4
6			9.0	78.1	11.5	112	8.0	67.0		42.0	1.5	19.4
7			9.0	78.1	12.0	120	8.75	75.2		39.5	2.0	21.8
8			9.0	78.1	12.0	120	9.25	81.0	4.5	36.7	2.0	21.8
9			9.5	84.1	12.0	120	9.0	78.1	4.0	33.2	2.0	21.8
10			10.0	90.6	11.0	104	9.0	78.1	4.0	33.2	2.5	24.4
11	6.0	48.2	10.0	90.6	11.0	104	8.0	67.0	4.0	33.2	2.5	24.4
12	6.0	48.2	11.0	104	11.0	104	8.0	67.0	4.0	33.2	2.5	24.4
13	6.5	52.4	11.0	104	11.0	104	8.0	67.0	3.5	30.0	3.0	27.1
14	7.0	56.9	10.75	101	10.0	90.6	9.25	81.0	3.5	30.0	3.0	27.1
15	7.0	56.9	11.0	104	10.0	90.6	9.5	84.1	3.5	30.0	3.0	27.1
16	7.0	56.9	11.0	104	10.0	90.6	10.25	93.9	3.0	27.1	3.5	30.0
17	8.0	67.0	11.0	104	10.0	90.6	10.5	97.3	3.0	27.1	3.0	27.1
18	9.0	78.1	11.0	104	10.0	90.6	10.0	90.6	3.0	27.1	3.0	27.1
19	9.0	78.1	10.0	90.6	10.0	90.6	9.5	84.1	3.0	27.1	3.0	27.1
20	9.0	78.1	10.0	90.6	10.0	90.6	9.75	87.3	3.0	27.1	3.0	27.1
21	9.0	78.1	10.0	90.6	9.0	78.1	9.0	78.1	3.5	30.0	3.0	27.1
22	9.0	78.1	10.0	90.6	8.0	67.0	9.0	78.1	3.5	30.0	3.0	27.1
23	8.5	72.4	10.5	97.3	8.0	67.0	8.5	72.4	3.0	27.1	3.0	27.1
24	8.5	72.4	10.5	97.3	8.0	67.0	8.5	72.4	2.5	24.4	3.0	27.1
25	8.5	72.4	11.0	104	8.5	72.4	8.5	72.4	2.5	24.4	3.0	27.1
26	7.8	64.4	11.0	104	12.0	120.0	8.5	72.4	2.5	24.4	3.0	27.1
27	8.0	67.0	11.0	104	12.25	124	8.0	67.0	2.5	24.4	3.0	27.1
28	8.0	67.0	11.0	104	10.75	101	8.0	67.0	2.5	24.4	3.0	27.1
29	9.0	78.1	11.8	116	10.0	90.6	8.0	67.0	2.5	24.4	3.0	27.1
30	9.5	84.1	12.0	120	9.25	81.0	7.25	59.3	2.0	21.8	3.0	27.1
31			11.8	116			7.0	56.9	1.0	17.3		

## Monthly Discharge of Cherry Creek at Wasa for 1915.

(Drainage area, 80 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
May.	120	78.1	96.5	1.21	1.39	5,930
June.	124	67.0	97.1	1.21	1.35	5,780
July.	97.3	56.9	76.2	0.95	1.10	4,890
August.	54.4	17.3	32.1	0.40	0.46	1,970
September.	30.0	17.3	24.6	0.31	0.35	1,460
The period.	124	17.3	65.3	0.82	4.65	19,830

NOTE.—No readings were made for the first week in August, during which the gauge dropped from 7.0 to 4.5 inches. No accuracy is given for this month, as the discharges for this week were interpolated.

SESSIONAL PAPER No. 25e

## ELK RIVER.—(3048).

*Location.*—At cable station, 50 yards above traffic bridge,  $\frac{1}{4}$  mile from Elko, in south-east Kootenay.

*Records Available.*—1914 and 1915.

*Drainage Area.*—One thousand six hundred square miles.

*Climatic Conditions.*—Summers hot and dry, winters severe, with light snowfall. Frazil ice is to be expected.

*Gauge.*—A chain gauge was established at the highway bridge and a vertical staff at the cable station. These were read by Mr. Jas. McKee daily.

*Channel.*—The channel below the bridge is confined in a canyon, and there is no possibility of shift, though log jams might occasionally affect the gauge readings. Above and below the station the channel is straight for about 40 yards. There is a distinct riffle 30 yards below the section at low water,—but this is drowned at high water by the water backing up in its endeavour to get through the narrow canyon below. The low water control below the station may shift somewhat in high water.

*Discharge Measurements.*—The 1915 rating curve was based on one measurement in November, 1913, six in 1914, and six well-distributed measurements in 1915. On December 18, 1914, a measurement under ice conditions gave a discharge of 630 c.f.s., and one on February 23, 1915, gave a discharge of 601 c.f.s.

*Accuracy.*—Gauge readings and measurements are reliable, the rating curve is satisfactory, results should be within 10 or 15 per cent.

*Discharge Measurements of Elk River at Elko (For Curve).*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1913							
Nov. 11	Richardson & Webb	1,048	84	300	4.42	3.20	1,330
1914							
June 5	Gill	1,048	218	1,410	7.78	4.55	11,000
June 19	Gill	1,048	213	1,200	7.42	3.60	6,950
July 30	Gill	1,929	195	515	3.48	4.80	1,790
Oct. 7	Gill	1,929	194	455	2.95	3.55	1,360
Oct. 14	Gill	1,929	195	458	3.07	3.60	1,410
Dec. 18	Elliott & Corbould	1,909	75	281	2.24	2.80	630 <sup>1</sup>
1915							
Feb. 23	Elliott & Corbould	1,909	80	348	1.73	4.40	601 <sup>1</sup>
April 24	Elliott	1,672	210	672	4.17	4.90	2,500
May 13	Corbould	1,909	220	838	5.96	2.40	5,000
May 31	Elliott	1,572	210	755	5.24	2.60	3,940
June 15	Elliott	1,909	210	742	4.89	1.60	3,620
Aug. 28	Dempster	1,927	195	482	3.03	0.55	1,460

<sup>1</sup> Ice conditions.

## Daily Gauge Height and Discharge of Elk River at Elko for 1915.

(Drainage area, 1,600 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	4.8		5.9		4.2		2.86	1,060	2.2	4,580	1.95	3,960
2	4.65		5.7		3.95		3.75	1,600	2.4	5,090	2.0	4,080
3	4.5		5.4		4.0		3.65	1,440	2.35	4,960	2.1	4,330
4	4.65		5.3		4.2		3.75	1,500	2.15	4,460	2.0	4,080
5	4.76		5.0		4.2		3.7	1,470	1.95	3,960	2.0	4,080
6	4.52		5.0		4.2		3.6	1,400	2.0	4,080	1.95	3,960
7	4.5		5.05		4.0		0.4	1,340	2.1	4,330	1.95	3,960
8	4.5		5.1		3.9		0.35	1,310	2.2	4,680	1.9	3,840
9	4.6		5.1		4.0		0.3	1,280	2.35	4,060	1.9	3,840
10	4.35		5.1		4.2		0.3	1,280	2.95	6,560	1.8	3,600
11	4.3		5.0		4.25		0.3	1,280	2.95	6,560	1.7	3,370
12	4.3		4.85		4.3		0.5	1,410	2.75	6,020	1.6	3,140
13	4.35		4.85		4.15		0.75	1,660	2.45	5,220	1.55	3,030
14	4.15		5.0		4.0		0.9	1,840	2.45	5,220	1.8	3,140
15	4.15		5.1		4.2		1.0	1,980	2.35	4,960	1.75	3,480
16	4.1		5.0		4.7		1.1	2,140	2.1	4,330	1.95	3,960
17	4.15		5.0		4.0		1.35	2,610	2.0	4,080	2.0	4,080
18	4.6		4.9		3.0	1,100	1.65	2,260	1.9	3,840	2.25	4,700
19	4.5		4.85		2.9	1,070	1.95	3,960	1.7	3,370	2.35	4,960
20	4.3		4.7		2.9	1,070	2.0	4,080	1.6	3,140	2.35	4,960
21	4.1		4.6		3.0	1,100	1.9	3,840	1.66	3,030	2.3	4,830
22	4.0		4.4		3.2	1,180	1.7	3,370	1.5	2,920	2.25	4,700
23	4.0		4.4		3.2	1,180	1.5	2,920	1.5	2,920	2.25	4,700
24	4.6		4.4		3.2	1,180	1.35	2,610	1.6	3,140	2.25	4,700
25	4.8		4.35		3.1	1,140	1.3	2,510	1.6	3,140	2.95	6,560
26			4.2		2.9	1,070	1.3	2,510	1.7	3,370	3.75	8,800
27	5.2		4.0		2.8	1,040	1.35	2,610	1.7	3,370	3.75	8,800
28	5.3		3.9		2.9	1,070	1.35	2,610	1.8	3,600	3.35	7,660
29	5.7				2.9	1,070	1.5	2,920	2.0	4,080	3.2	7,240
30	6.0				2.8	1,040	1.95	3,960	2.0	4,080	3.1	6,970
31	5.9				2.85	1,080			1.95	3,960		
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	2.9	6,420	1.3	2,510	0.4	1,340	0.15	1,220	0.35	1,310	2.75	1,020
2	2.8	6,150	1.3	2,510	0.4	1,340	0.30	1,280	0.35	1,310	2.80	1,040
3	2.6	6,620	1.2	2,320	0.4	1,340	0.30	1,280	0.30	1,280	2.85	1,060
4	2.45	5,220	1.2	2,320	0.4	1,340	0.30	1,280	0.35	1,310	2.95	1,080
5	2.35	4,960	1.15	2,280	0.4	1,340	0.30	1,280	0.35	1,310	3.10	1,140
6	2.3	4,830	1.1	2,140	0.35	1,310	0.30	1,280	0.35	1,310	3.10	1,140
7	2.25	4,700	1.0	1,980	0.35	1,310	0.25	1,260	0.30	1,280	3.05	1,120
8	2.2	4,580	0.95	1,910	0.35	1,310	0.20	1,240	0.25	1,260	3.00	1,100
9	1.9	3,840	0.9	1,840	0.32	1,290	0.20	1,240	0.20	1,240	3.30	1,230
10	1.85	3,720	0.9	1,840	0.3	1,280	0.20	1,240	0.20	1,240	3.20	1,180
11	1.8	3,600	0.85	1,780	0.3	1,280	0.15	1,220	3.20	1,180	3.10	1,140
12	1.7	3,370	0.8	1,710	0.3	1,280	0.15	1,220	3.10	1,140	3.00	1,100
13	1.55	3,030	0.8	1,710	0.2	1,240	0.10	1,200	2.90	1,070	2.95	1,080
14	1.66	3,030	0.8	1,710	0.2	1,240	0.30	1,280	2.95	1,080	2.90	1,070
16	1.65	3,030	0.8	1,710	0.15	1,220	0.30	1,280	3.10	1,140	2.80	1,040
17	1.55	3,030	0.75	1,660	0.10	1,200	0.20	1,240	3.10	1,140	2.80	1,040
18	1.5	2,920	0.7	1,600	0.12	1,210	0.10	1,200	3.10	1,140	2.70	1,010
19	1.4	2,710	0.8	1,600	0.1	1,200	0.10	1,200	3.10	1,140	2.60	980
20	1.4	2,710	0.65	1,550	0.1	1,200	0.25	1,260	3.05	1,120	2.70	1,010
21	1.3	2,510	0.65	1,550	0.1	1,200	0.35	1,310	3.00	1,100	2.80	1,040
22	1.3	2,510	0.6	1,500	0.15	1,220	0.35	1,310	3.00	1,100	2.90	1,070
23	1.3	2,510	0.6	1,500	0.15	1,220	0.25	1,260	3.05	1,120	3.00	1,100
24	1.3	2,510	0.6	1,500	0.22	1,250	0.25	1,260	3.10	1,140	2.95	1,080
25	1.3	2,510	0.55	1,460	0.22	1,250	0.30	1,280	3.10	1,140	3.00	1,100
26	1.3	2,510	0.5	1,410	0.2	1,240	0.30	1,280	3.00	1,100	3.00	1,100
27	1.3	2,510	0.5	1,410	0.22	1,250	0.25	1,260	2.90	1,070	2.90	1,070
28	1.3	2,510	0.45	1,380	0.2	1,240	0.30	1,280	2.75	1,020	2.80	1,040
29	1.4	2,710	0.45	1,380	0.2	1,240	0.30	1,280	2.85	1,060	2.70	1,010
30	1.6	2,920	0.45	1,380	0.15	1,220	0.30	1,280	2.90	1,070	2.70	1,010
31	1.3	2,510	0.45	1,380			0.36	1,310			2.70	1,010

SESSIONAL PAPER No. 25a

## Monthly Discharge of Elk River at Elko for 1915.

(Drainage area, 1,600 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
April.	4,080	1,060	2,220	1.39	1.65	136,000
May.	6,560	2,920	4,260	2.66	3.07	262,000
June.	8,800	3,030	4,780	2.98	3.33	284,000
July.	6,420	2,610	3,490	2.18	2.61	216,000
August.	2,610	1,380	1,740	1.08	1.26	107,000
September.	1,340	1,200	1,260	0.78	0.87	76,000
October.	1,310	1,200	1,260	0.78	0.90	77,500
November.	1,310	1,020	1,170	0.73	0.81	69,600
December.	1,230	980	1,070	0.57	0.77	65,800
The period	8,800	980	2,360	1.47	16.06	1,291,900

## GOLD CREEK.—(3047).

*Location.*—The station is at a highway bridge,  $\frac{1}{2}$  mile from mouth. 7 miles from International boundary line, near Newgate, in south-east Kootenay.

*Records Available.*—1914 and 1915.

*Drainage Area.*—Two hundred and thirty square miles.

*Climatic Conditions.*—Winters severe, with light snowfall, summers hot and dry.

*Gauge.*—A wooden staff, 4 feet long, located on downstream side of bridge, and read three times a week by Mr. C. Thompson.

*Channel.*—Gravel bed. Flow is fairly smooth. Control is a gravel bar below.

*Discharge Measurements.*—The 1915 curve is based on five measurements made in 1914, and five in 1915.

*Accuracy.*—"B" and "C." Measurements are reliable. Results are within 10 or 15 per cent.

## Discharge Measurements of Gold Creek at Newgate (For Curve).

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1914							
May 17	Gill.	1,048	63.5	192	5.97	2.35	1,150
June 18	Gill.	1,048	60	112	3.02	1.35	339
July 11	(Prov.)		62	74.4	1.65	0.75	123
July 23	Gill.	1,929	62	48.6	1.11	0.37	63.8
Sept. 11	(Prov.) Hicks			30.0	0.69	0.05	20.8
1915							
April 26	Elliott.	1,672	63.5	120	2.51	1.22	302
May 14	Corbould	1,909	63.5	121	2.76	1.30	335
May 30	Elliott.	1,672	63.5	108	2.53	1.20	273
June 14	Elliott.	1,909	63.0	86.2	1.90	0.90	164
Aug. 27	Dempster.	1,927	61.0	37.6	0.92	0.10	34.4

## Daily Gauge Height and Discharge of Gold Creek at Newgate for 1915.

(Drainage area, 230 square miles.)

Day.	April.		May.		June.		July.		August.		September.	
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	0.26	41.6	1.46	397	1.2	370	1.1	230	0.6	72.1	0.1	31.0
2	0.6	56.9	1.35	370	1.1	270	1.0	212	0.6	72.1	0.1	31.0
3	0.6	72.1	1.35	342	1.1	260	1.0	194	0.4	66.0	0.1	31.0
4	0.86	110	1.3	329	1.1	230	0.9	178	0.4	67.8	0.1	31.0
5	0.86	146	1.3	316	1.1	212	0.9	162	0.4	57.8	0.1	31.0
6	0.8	141	1.2	293	1.0	194	0.9	162	0.4	67.6	0.1	31.0
7	0.8	134	1.2	370	1.0	194	0.9	162	0.3	52.0	0.1	31.0
8	0.6	134	1.3	293	1.0	194	0.9	162	0.3	46.3	0.1	31.0
9	0.6	134	1.3	316	0.96	166	0.9	162	0.3	46.3	0.1	31.0
10	0.66	141	1.3	316	0.96	178	0.8	148	0.3	46.3	0.1	31.0
11	0.66	148	1.3	316	0.9	170	0.8	134	0.3	46.3	0.1	31.0
12	1.16	199	1.36	329	0.9	162	0.7	122	0.3	46.3	0.1	31.0
13	1.16	360	1.36	342	0.9	162	0.7	110	0.2	41.8	0.1	31.0
14	1.2	260	1.4	365	0.7	144	0.7	110	0.2	37.4	0.2	34.1
15	1.2	370	1.4	368	0.6	126	0.7	110	0.2	37.4	0.2	37.4
16	1.3	393	1.4	368	0.6	108	0.7	110	0.2	37.4	0.2	40.3
17	1.3	316	1.4	368	0.6	89.4	0.7	110	0.2	37.4	0.2	43.3
18	1.6	403	1.35	365	0.7	99.7	0.8	122	0.2	37.4	0.3	46.3
19	1.6	490	1.35	342	0.7	110	0.8	134	0.2	37.4	0.4	52.0
20	1.46	444	1.35	342	0.6	99.7	0.7	122	0.3	46.3	0.4	67.8
21	1.46	397	1.35	342	0.6	89.4	0.7	110	0.3	43.3	0.4	67.8
22	1.6	444	1.35	342	0.6	89.4	0.7	99.7	0.2	40.3	0.4	67.8
23	1.6	490	1.35	342	0.6	89.4	0.6	89.4	0.2	37.4	0.6	66.0
24	1.3	403	1.46	370	0.6	80.7	0.6	80.7	0.3	37.4	0.6	72.1
25	1.3	316	1.46	397	0.6	72.1	0.6	72.1	0.3	37.4	0.6	72.1
26	1.2	293	1.4	383	1.3	194	0.6	80.7	0.3	35.2	0.6	72.1
27	1.2	270	1.4	368	1.3	316	0.6	89.4	0.1	33.1	0.6	67.3
28	1.4	319	1.3	342	1.2	293	0.6	89.4	0.1	31.0	0.4	62.6
29	1.4	368	1.3	316	1.2	270	0.6	89.4	0.1	31.0	0.4	67.8
30	1.4	382	1.3	293	1.2	260	0.6	80.7	0.1	31.0	0.4	57.8
31	1.2	270	1.2	270	1.2	260	0.6	72.1	0.1	31.0	0.4	57.8

## Monthly Discharge of Gold Creek at Newgate for 1915.

(Drainage area, 230 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
April.....	490.0	41.8	262.0	1.14	1.37	16,600
May.....	397.0	370.0	338.0	1.47	1.69	20,800
June.....	316.0	72.1	173.0	0.76	0.84	10,300
July.....	230.0	72.1	126.0	0.66	0.63	7,760
August.....	72.1	31.0	44.1	0.19	0.22	2,710
September.....	72.1	31.0	45.2	0.20	0.22	2,690
The period.....	490.0	31.0	164.7	0.71	4.87	69,850

SESSIONAL PAPER No. 26a

## KOOTENAY RIVER.—(3041).

*Location.*—This station is at the highway bridge, near Wardner.

*Records Available.*—1914 and 1915.

*Drainage Area.*—Five thousand two hundred square miles.

*Climatic Conditions.*—Summers hot and dry. Winters severe. The river is generally affected by ice from December to March. A precipitation of from 16 to 20 inches may be expected. Frazil ice occurs.

*Gauge.*—A vertical staff, 12 feet long, is nailed to one of the bridge piers, and read daily by Mrs. C. Barnes.

*Channel.*—The channel is straight and uniform.

*Discharge Measurements.*—The 1915 rating curve is based on fifteen measurements made during 1913-14-15.

*Accuracy.*—"A" and "B." Gauge readings and measurements are reliable. The rating curve is satisfactory, and results are considered to be within 5 and 10 per cent.

*Discharge Measurements of Kootenay River at Wardner (For Curve).*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1913							
Nov. 13	Webb & Richardson	1,048	460	2,100	1.64	3.00	3,640
1914							
May 19	Gill	1,048	482	4,860	4.83	8.00	28,500
June 7	Gill	1,048	482	4,840	4.85	8.00	28,500
June 15	Gill	1,048	483	5,450	5.55	9.30	30,200
June 20	Gill	1,048	488	5,070	6.41	10.65	38,900
July 28	Gill	1,929	467	3,350	3.38	5.00	11,300
July 31	Gill	1,929	467	3,210	3.33	4.70	10,700
Oct. 7	Gill	1,929	464	2,490	2.08	2.95	5,210
Oct. 13	Gill	1,929	465	2,460	2.11	2.88	5,180
Dec. 19	Elliott	1,909	134	774	2.11	1.70	1,640 <sup>1</sup>
1915							
Feb. 23	Elliott & Corbould	1,909	200	927	1.95	1.10	1,810 <sup>1</sup>
April 27	Elliott	1,672	235	2,720	2.74	3.80	7,400
May 29	Elliott	1,672	470	3,500	4.11	5.90	14,800
June 16	Elliott	1,909	470	3,450	3.82	5.60	13,200
Aug. 29	Dempster	1,927	464	2,690	2.56	3.60	6,870

<sup>1</sup> Ice conditions.

Daily Gauge Height and Discharge of Koolenay River at Wardner for 1915.

(Drainage area, 5,300 square miles.)

Day.	March.		April.		May.		June.		July.		August.	
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	1.0	1,650	1.35	2,210	5.35	12,400	5.5	13,000	7.05	19,000	5.35	13,300
2	1.0	1,650	1.4	2,300	5.7	13,600	5.65	13,600	7.0	13,700	5.3	13,300
3	0.92	1,530	1.5	2,460	5.45	12,600	5.85	14,200	6.76	17,700	5.25	12,200
	0.92	1,530	1.85	3,110	5.12	11,800	5.8	14,100	6.55	16,800	5.15	11,600
	0.95	1,560	2.07	3,540	4.85	11,000	5.9	14,400	6.4	16,300	4.96	11,600
6	0.98	1,620	2.1	3,600	4.7	10,500	5.92	14,500	6.5	16,600	4.73	10,600
7	1.0	1,650	2.13	3,640	4.75	10,600	5.92	14,500	6.45	16,400	4.6	10,300
8	0.95	1,560	2.12	3,640	5.66	12,500	6.15	16,400	6.35	16,000	4.53	9,960
9	0.9	1,600	2.12	3,640	6.12	15,300	6.0	14,800	6.15	15,400	4.48	9,840
10	0.9	1,500	2.1	3,600	6.55	16,800	5.62	13,500	6.05	15,000	4.43	9,560
11	0.98	1,620	3.15	3,700	6.5	16,600	5.32	12,400	5.92	14,500	4.33	9,360
12	0.96	1,620	2.18	3,770	6.05	15,000	5.05	11,600	5.5	13,000	4.25	9,150
13	1.0	1,650	2.68	4,200	5.65	13,200	4.92	11,200	5.16	11,900	4.3	9,000
14	0.97	1,600	3.65	4,820	5.4	12,600	5.02	11,500	5.25	13,200	4.2	9,000
15	1.05	1,720	2.85	3,500	5.4	12,600	5.25	12,200	5.62	16,500	4.15	8,850
16	1.05	1,720	6.1	6,000	5.2	12,000	5.58	16,300	6.12	15,300	4.2	9,000
17	1.05	1,720	3.6	7,200	4.92	11,200	5.82	14,200	6.35	16,000	4.1	8,700
18	1.2	1,960	4.3	9,300	4.72	10,600	6.05	15,000	6.45	16,400	4.0	8,400
19	1.1	1,800	4.9	11,100	4.6	10,200	6.1	15,200	6.32	16,000	4.0	8,400
20	1.15	1,860	5.18	11,900	4.5	9,900	5.9	14,000	6.15	15,400	6.95	8,250
21	1.2	1,960	5.2	12,000	4.45	9,750	5.82	14,200	6.02	15,000	4.02	6,460
22	1.25	2,040	4.82	10,900	4.65	10,400	5.8	14,100	6.0	14,600	3.98	6,640
23	1.4	2,300	4.4	9,600	4.95	11,400	5.8	14,100	6.0	14,600	3.9	8,100
24	1.52	2,520	4.13	8,790	5.1	11,700	6.0	14,800	5.8	14,100	3.9	8,100
25	1.57	2,610	3.95	8,250	5.25	12,200	6.25	16,800	5.45	12,600	6.8	7,800
26	1.5	2,460	3.85	7,950	5.28	12,200	7.0	18,700	5.4	12,600	3.75	7,650
27	1.37	2,250	3.85	7,950	5.2	12,000	7.68	21,800	5.32	13,400	6.7	7,500
28	1.32	2,160	3.88	8,040	5.25	12,200	7.25	19,600	5.6	13,400	6.62	7,260
29	1.32	2,160	3.92	8,160	5.9	14,400	7.08	19,100	5.58	13,300	3.6	7,200
30	1.65	2,210	4.42	9,660	5.96	14,600	7.05	19,000	5.5	13,000	3.58	7,160
31	1.38	2,270	.....	.....	5.65	13,600	.....	.....	5.28	12,200	3.52	7,040
	September.		October.		November.		December.					
1	3.60	7,200	2.48	4,420	2.70	4,940	1.65	2,750				
2	3.48	6,940	2.48	4,420	2.65	4,820	1.65	2,750				
6	3.40	6,700	2.62	4,750	2.52	4,520	1.65	2,750				
4	6.65	6,600	2.70	4,940	2.45	4,360	1.65	2,750				
5	6.18	6,240	2.65	4,820	2.40	4,240	1.62	2,700				
6	6.15	6,150	3.55	4,580	2.40	4,240	1.50	2,660				
7	3.10	6,000	2.82	4,520	2.40	4,240	1.60	2,660				
8	6.02	5,760	3.42	4,290	2.65	4,130	1.60	2,660				
9	2.90	5,460	3.65	4,130	2.32	4,060	1.60	2,660				
10	2.80	5,180	3.30	4,020	2.25	3,920	1.62	2,700				
11	2.72	4,990	2.60	4,020	2.25	3,920	1.50	2,480				
12	2.70	4,940	2.22	3,850	2.25	3,920	1.50	2,480				
13	2.70	4,940	2.20	3,810	2.15	3,700	1.50	2,480				
14	2.60	4,700	2.18	3,770	2.00	3,400	1.58	2,620				
15	2.48	4,420	2.15	3,700	1.90	3,210	1.60	2,660				
16	2.42	4,390	2.12	3,640	1.90	3,210	1.60	2,660				
17	3.45	4,660	2.10	3,600	1.92	3,250	1.60	2,660				
16	2.45	4,360	2.08	3,500	1.95	3,300	1.60	2,660				
19	2.45	4,360	2.10	3,600	2.02	3,440	1.50	2,480				
20	2.45	4,360	3.13	6,640	1.92	3,250	1.50	2,480				
31	2.45	4,360	2.15	3,700	1.82	3,060	1.50	2,480				
22	2.40	4,240	2.20	3,810	1.83	3,060	1.50	2,480				
23	2.40	4,240	2.30	3,810	1.95	3,300	1.50	2,480				
24	2.40	4,240	2.22	3,850	1.95	3,300	1.45	2,690				
25	2.45	4,660	2.28	3,980	1.90	3,210	1.45	2,390				
26	2.50	4,470	2.30	4,020	1.87	3,150	1.45	2,390				
27	2.50	4,470	3.25	3,920	1.85	3,120	1.45	2,690				
28	2.52	4,520	2.32	4,060	1.85	3,120	1.45	2,390				
29	2.55	4,580	3.68	4,650	1.80	3,020	1.42	2,340				
30	2.50	4,470	2.75	5,040	1.72	2,880	1.40	2,300				
31	.....	.....	2.76	5,030	.....	.....	1.32	2,160				



SESSIONAL PAPER No. 26a

*Monthly Discharge of Kootenay River at Wardner for 1915.*

(Drainage area, 6,200 square miles.)

MTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
March.....	2,610	1,600	1,870	0.36	0.42	116,000
April.....	12,000	2,210	6,340	1.22	1.36	377,000
May.....	16,800	9,760	12,400	2.38	2.74	762,000
June.....	21,800	11,200	14,800	2.85	3.18	881,000
July.....	19,000	11,900	14,900	2.87	3.31	916,000
August.....	12,300	7,040	9,120	1.76	2.03	561,000
September.....	7,200	4,240	5,060	0.07	1.08	301,000
October.....	5,060	3,660	4,130	0.70	0.91	284,000
November.....	4,940	2,880	3,640	0.70	0.78	217,000
December.....	2,750	2,180	2,640	0.49	0.57	156,000
The period.....	21,800	1,500	7,480	1.44	16.38	4,640,000

## LINKLATER CREEK.—(3045).

*Location.*—The section is at Smith's ranch, six miles from Newgate.*Records Available.*—1913-14-15.*Drainage Area.*—Forty-two square miles.*Climatic Conditions.*—Precipitation is light, usually not in excess of 20 inches. Summers hot and dry, winters severe.*Gauge.*—A 3-foot enamel gauge is nailed to a footbridge, and is read daily by Mr. Alex. F. Smith.*Channel.*—Smooth and unbroken.*Discharge Measurements.*—The 1915 data was prepared from a rating curve based on five measurements in 1914 and five in 1915.*Accuracy.*—"C." Measurements and readings reliable. Results within 15 per cent.*Discharge Measurements of Linklater Creek at Newgate (For Curve).*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1914							
May 17	Gill.....	1,048	20.0	30.0	3.30	1.30	99.0
June 18	Gill.....	1,048	20.0	21.5	2.66	0.85	57.1
July 11	(Prov.) Hicks	.....	20.0	13.0	1.66	0.60	21.7
July 28	Gill.....	1,929	20.0	10.6	1.35	0.40	14.3
Sept. 11	(Prov.) Hicks	.....	.....	8.70	1.41	0.30	12.3
1915							
April 25	Elliott.....	1,672	20.0	14.2	1.80	0.66	25.6
May 14	Corbould.....	1,909	20.0	16.3	2.34	0.65	35.8
May 30	Elliott.....	1,672	20.0	16.3	2.27	0.65	37.0
June 14	Elliott.....	1,909	26.0	12.9	1.84	0.48	23.7
Aug. 28	Dempster.....	1,927	19.7	11.8	0.88	0.44	10.4

7 GEORGE V. A. 1917

## Daily Gauge Height and Discharge of Linklater Creek at Newgate for 1915.

(Drainage area, 42 square miles.)

Day.	April.		May.		June.		July.		August.		September.	
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	0.33	11.7	0.78	47.9	0.5	53.5	0.62	35.4	0.4	18.2	0.44	10.4
2	0.34	12.1	0.88	38.5	0.5	33.3	0.5	33.5	0.59	17.8	0.44	10.4
3	0.33	12.5	0.84	34.9	0.5	33.5	0.58	31.9	0.39	17.8	0.44	10.4
4	0.38	12.5	0.8	31.4	0.55	40.8	0.55	29.3	0.35	15.3	0.44	10.4
5	0.35	12.8	0.89	50.5	0.55	29.3	0.7	42.7	0.35	15.3	0.44	10.4
6	0.33	12.5	0.59	30.5	0.55	29.3	0.52	26.8	0.35	15.3	0.44	10.4
7	0.38	12.5	0.59	30.5	0.55	29.5	0.57	31.0	0.35	15.3	0.44	10.4
8	0.38	14.0	0.65	33.8	0.65	29.5	0.55	29.3	0.35	15.3	0.44	10.4
9	0.4	15.0	0.7	40.3	0.62	28.8	0.5	33.6	0.35	15.5	0.5	12.3
10	0.41	15.8	0.7	41.2	0.5	28.2	0.58	31.9	0.3	12.8	0.5	12.8
11	0.41	15.5	0.69	39.4	0.5	28.2	0.55	29.3	0.3	12.5	0.5	12.8
12	0.41	15.0	0.87	57.6	0.5	28.2	0.55	29.3	0.3	12.8	0.47	11.5
13	0.45	15.0	0.88	38.7	0.45	28.7	0.5	28.2	0.4	10.4	0.45	10.7
14	0.55	24.5	0.88	55.7	0.5	28.2	0.5	28.2	0.5	12.8	0.5	12.3
15	0.5	28.9	0.78	45.0	0.5	28.2	0.49	24.4	0.45	10.7	0.5	12.8
16	0.55	33.2	0.72	42.2	0.5	25.2	0.48	23.7	0.45	10.7	0.5	12.8
17	0.7	37.7	0.7	40.3	0.5	25.2	0.52	26.8	0.45	10.7	0.47	11.5
18	0.74	41.3	0.7	40.3	0.45	21.5	0.5	25.2	0.45	10.7	0.47	11.5
19	0.84	50.9	0.84	38.0	0.45	21.5	0.48	23.7	0.45	10.7	0.45	10.7
20	0.8	47.0	0.85	35.8	0.43	20.1	0.45	21.5	0.5	12.8	0.45	10.7
21	0.72	39.5	0.65	35.8	0.42	19.5	0.45	21.5	0.55	15.3	0.45	10.7
22	0.58	35.9	0.68	38.5	0.41	18.8	0.45	21.5	0.55	15.3	0.45	10.7
23	0.5	28.9	0.72	42.2	0.4	18.2	0.42	19.5	0.5	12.8	0.45	10.7
24	0.55	25.5	0.75	45.0	0.4	18.2	0.4	18.2	0.5	12.8	0.5	12.8
25	0.55	25.5	0.78	47.9	0.45	21.5	0.4	18.2	0.5	12.8	0.45	10.7
26	0.55	24.5	0.72	42.2	0.82	54.3	0.4	18.2	0.5	12.8	0.45	10.7
27	0.59	25.0	0.7	40.5	0.92	54.4	0.4	18.2	0.45	10.7	0.45	10.7
28	0.57	25.4	0.7	40.3	0.82	54.5	0.42	19.5	0.45	10.7	0.45	10.7
29	0.62	30.5	0.58	38.5	0.72	44.5	0.4	18.2	0.45	10.7	0.45	10.7
30	0.75	42.3	0.55	35.8	0.58	40.8	0.4	18.2	0.44	10.4	0.45	10.7
31	.....	.....	0.5	31.4	.....	.....	0.4	18.2	0.44	10.4	.....	.....

SESSIONAL PAPER No. 25a

## Monthly Discharge of Linklater Creek at Newgate for 1915.

(Drainage area, 42 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
April .....	50.9	11.7	25.0	0.60	0.67	1,490
May .....	47.9	30.5	38.4	0.91	1.05	2,360
June .....	64.4	18.2	30.1	0.72	0.80	1,790
July .....	42.7	18.2	25.5	0.60	0.59	1,670
August .....	18.2	10.4	13.2	0.31	0.38	612
September .....	12.6	10.4	11.2	0.27	0.30	666
The period .....	64.4	10.4	23.9	0.57	3.87	8,666

## MARK CREEK.—(3037).

*Location.*—The section is near the mouth of the creek, at Marysville, about 14 miles from Cranbrook.

*Records Available.*—1914 and 1915.

*Drainage Area.*—Ninety square miles.

*Climatic Conditions.*—Precipitation is light, seldom over 20 inches. The summers are hot and dry, the winters severe. The creek freezes over in November or December, till March. Frazil ice is to be expected.

*Gauge.*—Enamel gauge, 6 feet long, is read daily by Mr. M. W. Burdette.

*Channel.*—Straight and rocky, the flow is generally broken. The section may fill, but the control appears permanent.

*Discharge Measurements.*—The 1915 rating curve was based on eight measurements made in 1914 and five in 1915.

*Co-operation.*—This station was maintained by co-operation with the Provincial Water Rights Branch, during 1914.

*Accuracy.*—"B." The rating curve is satisfactory, and results are considered to be within 10 per cent.

## Discharge Measurements of Mark Creek at Marysville (For Curve).

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1914							
May 1	Richardson	1,048	20.0	41.4	2.66	1.68	110.0
May 28	Gill	1,537	25.0	57.9	4.08	2.20	233.0
July 3	(Prov.) Hicks		24.0	55.4	4.02	2.10	223.0
July 24	Gill	1,929	16.0	34.1	1.92	1.40	56.4
Sept. 1	(Prov.) Hicks			22.2	0.77	1.00	17.2
Sept. 29	(Prov.) Hicks			26.2	1.05	1.20	27.4
Oct. 10	Gill	1,929	19.5	28.4	0.86	1.12	24.2
Oct. 16	Gill	1,929	19.5	29.4	0.99	1.22	29.1
1915							
Feb. 21	Elliott & Corbould	1,909	21.0	33.0	0.45	1.25	11.0 <sup>1</sup>
April 22	Elliott	1,672	20.0	41.5	2.83	2.10	118.0
May 26	Elliott	1,672	20.0	44.4	3.08	2.16	137.0
June 12	Elliott	1,909	20.0	39.7	2.43	2.00	96.3
Aug. 26	Dempster	1,927	21.0	29.5	0.81	1.16	26.4

<sup>1</sup> Ice conditions.

## Daily Gauge Height and Discharge of Mark Creek at Marysville for 1915.

(Drainage area, 90 square miles.)

Day.	April.		May.		June.		July.		August.		September.	
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	1.52	25.0	2.32	170	2.2	141	1.9	78.2	1.75	51.5	1.46	20.8
2	1.5	23.5	2.28	160	2.18	136	1.89	76.2	1.72	47.0	1.44	19.6
3	1.52	25.0	2.28	160	2.18	136	1.88	74.3	1.72	47.0	1.41	18.1
4	1.56	30.0	2.02	102	2.14	127	1.85	68.6	1.65	37.7	1.41	18.1
5	1.52	34.2	2.15	130	2.22	146	1.89	76.2	1.65	37.7	1.41	18.1
6	1.52	34.2	2.12	123	2.28	160	1.87	72.4	1.61	33.1	1.42	18.5
7	1.65	37.7	2.02	102	2.32	170	1.83	65.0	1.58	30.0	1.44	19.6
8	1.61	33.1	2.25	153	2.25	153	1.8	59.7	1.59	31.0	1.45	20.2
9	1.61	33.1	2.4	191	2.15	130	1.8	59.7	1.55	27.4	1.48	22.1
10	1.61	33.1	2.85	180	2.1	119	1.82	63.2	1.55	27.4	1.48	22.1
11	1.63	35.3	2.28	160	2.02	102	1.78	56.3	1.54	36.6	1.45	20.2
12	1.68	41.5	2.21	144	1.98	94	1.78	56.3	1.52	25.0	1.45	20.2
13	1.72	47.0	2.18	136	1.98	94	1.78	55.3	1.51	24.2	1.46	20.8
14	1.78	56.8	2.22	146	2.0	98	1.8	59.7	1.5	23.5	1.44	19.6
15	1.8	59.7	2.25	153	2.08	114	1.78	56.3	1.48	22.1	1.44	19.6
16	1.88	74.3	2.18	136	2.0	98	1.81	61.4	1.48	22.1	1.46	20.8
17	2.01	100	2.08	114	2.0	98	1.81	61.4	1.5	23.5	1.46	20.8
18	2.12	123	2.08	114	1.98	94	1.86	70.5	1.5	23.5	1.45	20.2
19	2.26	156	2.08	114	2.06	110	1.82	63.2	1.49	22.8	1.44	19.6
20	2.28	150	2.01	100	1.98	94	1.75	51.5	1.52	25.0	1.41	18.1
21	2.28	150	2.08	114	1.9	78.2	1.75	51.5	1.51	24.2	1.41	18.1
22	2.18	135	2.05	108	1.9	78.2	1.74	50.0	1.48	22.1	1.38	16.6
23	2.08	114	2.05	108	1.92	82.2	1.72	47.0	1.5	23.5	1.4	17.7
24	2.02	102	2.14	127	2.01	100	1.68	41.5	1.48	22.1	1.46	20.8
25	1.98	94	2.18	136	2.18	136	1.72	47.0	1.48	22.1	1.52	25.0
26	2.0	98	2.09	116	2.08	114	1.65	37.7	1.48	22.1	1.55	28.2
27	2.04	106	2.09	116	2.08	114	1.75	51.5	1.5	23.5	1.56	28.2
28	2.08	114	2.21	144	1.95	88.1	1.72	47.0	1.48	22.1	1.55	27.4
29	2.08	114	2.25	153	1.93	84.2	1.76	53.1	1.45	20.2	1.55	27.4
30	2.22	145	2.2	141	1.9	78.2	1.71	45.6	1.42	18.6	1.52	25.0
31	.....	.....	2.18	136	.....	.....	1.74	50.0	1.44	19.6	.....	.....
Day.	October.		November.		December.							
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.
1	1.51	24.2	1.45	20.2	1.41	18.1						
2	1.57	29.1	1.45	20.2	1.34	15.5						
3	1.54	25.6	1.48	22.1	1.40	17.6						
4	1.52	25.0	1.48	22.1	1.40	17.6						
5	1.52	25.0	1.44	19.6	1.40	17.5						
6	1.48	22.1	1.44	19.6	1.40	17.6						
7	1.46	20.8	1.41	18.1	1.38	16.6						
8	1.45	20.8	1.41	18.1	1.40	17.6						
9	1.44	19.6	1.40	17.6	1.40	17.6						
10	1.46	20.8	1.40	17.6	1.40	17.6						
11	1.44	19.6	1.40	17.6	1.40	17.6						
12	1.40	17.6	1.38	15.6		17.6						
13	1.42	18.6	1.38	16.6	1.40	17.6						
14	1.45	20.2	1.38	16.5	1.40	17.6						
15	1.42	18.5	1.38	16.6	1.40	17.6						
16	1.44	19.6	1.38	16.5	1.40	17.6						
17	1.45	20.2	1.38	15.6	1.40	17.6						
18	1.45	20.2	1.38	16.6	1.45	20.2						
19	1.52	25.0	1.38	16.6		18.6						
20	1.48	22.1	1.38	16.6	1.40	17.6						
21	1.48	22.1	1.36	15.8	1.40	17.6						
22	1.48	22.1	1.38	15.6	1.40	17.6						
23	1.46	20.8	1.40	17.6	1.40	17.6						
24	1.45	20.2	1.42	18.5	Ice	Ice						
25	1.45	20.2	1.42	18.5	Ice	Ice						
26	1.45	20.2	1.40	17.6	Ice	Ice						
27	1.46	20.8	1.40	17.6	Ice	Ice						
28	1.45	20.2	1.40	17.6	Ice	Ice						
29	1.50	23.5	.....	17.6	Ice	Ice						
30	1.52	25.0	.....	18.1	Ice	Ice						
31	1.52	25.0	.....	.....	Ice	Ice						

SESSIONAL PAPER No. 250

## Monthly Discharge of Mark Creek at Marysville for 1915.

(Drainage area, 90 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
April	160.0	23.5	2	0.87	0.97	4,650
May	191.0	102.0	135.0	1.50	1.73	8,300
June	176.0	78.2	112.0	1.24	1.38	6,660
July	78.2	37.7	58.3	0.65	0.75	3,540
August	51.5	18.6	27.4	0.30	0.35	1,680
September	28.2	16.6	21.0	0.23	0.37	1,250
October	29.1	17.6	21.8	0.24	0.28	1,340
November	22.1	15.8	17.9	0.20	0.22	1,060
The period	191.0	15.8	59.9	0.65	6.05	28,520

## MOYIE RIVER.—(3056).

*Location.*—The section is at the International boundary, at highway bridge, near Kingsgate.

*Records Available.*—July to December, 1914, and all of 1915.

*Drainage Area.*—Five hundred and seventy square miles.

*Climatic Conditions.*—Winters and summers are temperate. In summer hot days occur, but the evenings are cool. As a rule the river does not freeze over, but frazil ice is to be expected.

*Gauge.*—A vertical staff is attached to the abutment of the bridge, and daily readings were made by Mr. John Dunlop.

*Channel.*—The flow at the section is swift, over gravel and small boulders. Straight above and below for 200 feet.

*Discharge Measurements.*—The 1915 data is based on a rating curve prepared from eight measurements made during the year.

*Accuracy.*—"C." Meterings are reliable. Gauge readings taken daily. Results are considered to be within 15 per cent.

*General.*—The Moyie rises in the summit of the Purcell mountains, flows easterly into Moyie lake, thence south-westerly and crosses the International boundary near Kingsgate. In Canada it drains approximately 570 square miles. Studies are being carried on to meet the possible requirements of lumbering and mining industries.

## Discharge Measurements of Moyie River at Kingsgate for 1915.

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
1915			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
Feb. 20	Elliott	1,909	80.0	66.0	2.14	0.65	142
April 21	Elliott	1,672	97.5	370.0	6.42	3.40	2,370
June 2	Elliott	1,672	97.5	270	5.17	2.55	1,390
July 23	Elliott	1,909	92.5	133	2.77	1.20	370
July 23	Elliott	1,909	142.0	136	2.31	1.45	314 <sup>1</sup>
Aug. 24	Dempster	1,927	83.0	60.0	2.24	0.78	179
Aug. 23	Dempster	1,927	160.0	14.0	1.78	0.80	186 <sup>1</sup>
Nov. 24	Dempster	1,927	81.0	88.7	2.42	0.89	215

<sup>1</sup> At American bridge.

## Daily Gauge Height and Discharge of Moyie River at Kingsgate for 1915.

(Drainage area, 870 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	2.1	Ice	1.8	Ice	0.85	142	1.35	424	2.0	1,590	2.8	1,460
2	2.0	Ice	1.88	Ice	0.6	128	1.50	573	3.1	2,010	2.8	1,240
3	2.8	Ice	1.8	Ice	0.8	129	1.85	745	2.0	1,880	2.4	1,240
4	2.8	Ice	1.4	Ice	0.2	129	2.0	868	2.8	1,770	2.2	1,160
5	2.4	Ice	1.4	Ice	0.6	129	2.0	668	2.35	1,720	2.22	1,100
6	2.0	Ice	1.43	Ice	0.6	129	2.0	666	2.2	1,660	2.2	1,080
7	1.2	Ice	1.2	Ice	0.6	129	2.0	668	2.75	1,500	2.3	1,140
8	0.62	205	1.55	Ice	0.65	142	2.0	666	2.78	1,600	2.2	1,080
9	0.6	187	1.7	Ice	0.7	158	1.9	786	2.6	1,660	2.15	1,000
10	0.5	167	1.5	Ice	0.7	156	1.9	786	2.9	1,770	2.1	855
11	0.5	167	1.9	Ice	0.7	156	2.2	1,050	2.65	1,720	2.0	282
12	0.72	172	2.0	Ice	0.7	156	2.75	1,600	2.6	1,660	2.0	662
13	0.78	172	2.0	Ice	0.7	156	2.7	1,580	2.65	1,720	1.9	785
14	0.7	156	2.0	Ice	0.75	172	2.7	1,550	2.9	1,770	1.8	710
15	0.75	172	1.7	Ice	0.5	127	2.5	1,660	5.38	2,180	1.75	674
15	0.75	172	1.4	Ice	0.55	205	2.95	1,520	2.4	2,370	1.7	639
17	0.7	156	0.9	223	0.95	242	2.1	2,010	3.45	2,420	1.65	604
18	0.75	172	0.6	187	1.05	262	2.3	2,250	3.25	2,190	1.6	572
19	0.75	172	0.7	156	1.1	604	2.8	2,820	6.1	3,010	1.6	572
20	0.8	187	0.65	142	1.15	226	2.4	2,270	6.0	1,690	1.6	572
21	0.6	167	0.6	129	1.2	246	2.4	2,670	2.05	1,950	1.6	572
22	0.65	205	0.6	129	1.35	424	2.2	2,130	3.1	2,010	1.25	242
23	0.8	167	0.65	142	1.45	460	3.0	1,890	3.0	1,880	1.5	510
24	0.8	187	0.7	156	1.5	510	2.9	1,770	3.0	1,690	1.45	460
25	0.9	222	0.65	142	1.4	451	2.8	1,660	3.0	1,690	1.7	638
26	1.1	Ice	0.7	156	1.35	424	2.7	1,550	2.9	1,770	2.0	555
27	1.2	Ice	156	1.3	297	2.65	1,500	2.6	1,560	2.2	1,140	
28	1.4	Ice	0.7	156	1.25	272	2.65	1,500	2.75	1,600	2.15	1,000
29	1.9	Ice	1.25	372	2.6	372	2.6	1,440	2.95	1,630	2.0	622
30	1.9	Ice	1.3	397	2.9	397	2.9	1,770	2.9	1,770	1.9	782
31	1.65	Ice	1.2	397	2.9	397	2.9	1,770	2.6	1,650	1.9	782

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	1.5	710	1.2	346	0.65	142	0.7	156	0.65	205	0.90	222
2	1.75	674	1.15	326	0.65	142	0.75	172	0.65	205	0.95	242
3	1.7	629	1.1	304	0.6	129	0.6	187	0.9	226	1.00	262
4	1.6	573	1.05	262	0.6	129	0.8	187	0.95	242	0.90	222
8	1.2	397	1.0	262	0.6	129	0.75	172	1.0	262	0.65	205
6	1.05	263	1.0	262	0.6	129	0.75	172	1.0	262	0.60	167
7	0.95	242	1.0	262	0.6	129	0.75	172	1.0	262	0.60	167
6	0.9	222	1.0	262	0.55	117	0.7	156	1.05	262	0.60	167
9	1.15	326	0.95	242	0.6	129	0.7	156	1.0	262	0.90	222
10	1.45	460	0.95	242	0.65	142	0.7	156	1.0	262	0.90	222
11	1.4	451	0.9	223	0.65	142	0.7	156	0.95	242	0.95	242
12	1.35	424	0.65	205	0.65	142	0.7	156	0.95	242	1.00	262
12	1.3	397	0.65	205	0.65	142	0.7	156	0.9	222	1.10	304
14	1.35	424	0.8	187	0.65	142	0.75	172	0.9	222	1.10	304
15	1.4	481	0.8	157	0.65	142	0.75	172	0.9	222	1.00	262
16	1.25	424	0.5	187	0.7	156	0.75	172	0.55	205	0.90	222
17	1.4	451	0.6	187	0.7	156	0.75	172	0.5	167	0.85	205
18	1.65	424	0.8	187	0.7	156	0.75	172	0.65	205	0.85	205
19	1.2	348	0.8	187	0.65	142	0.8	157	0.85	205	0.60	157
20	1.3	397	0.8	187	0.6	129	0.6	157	0.9	222	0.65	205
21	1.25	672	0.5	167	0.65	142	0.85	205	0.9	226	0.80	187
22	1.2	348	0.5	187	0.7	156	0.85	205	0.85	205	0.90	222
23	1.15	326	0.6	167	0.75	172	0.8	157	0.95	242	0.95	242
24	1.1	304	0.8	187	0.8	167	0.8	167	0.9	222	1.00	262
25	1.15	326	0.8	187	0.75	172	0.8	187	0.85	205	0.90	222
26	1.15	326	0.75	172	0.7	156	0.85	205	0.85	205	1.00	Ice
27	1.2	348	0.75	172	0.75	172	0.9	222	0.6	167	1.10	Ice
28	1.25	424	0.7	156	0.75	172	0.9	222	0.95	242	1.60	Ice
29	1.2	346	0.7	156	0.7	156	0.85	205	1.0	262	1.20	Ice
30	1.15	625	0.7	156	0.7	155	0.85	205	0.95	242	2.20	Ice
31	1.2	348	0.65	142	0.65	142	0.65	205	0.95	242	2.60	Ice

Ice  
Mean  
estimated  
at  
180

SESSIONAL PAPER No. 26a

*Monthly Discharge of Moyie River at Kingsgate for 1915.*

(Drainage area, 570 square miles)

MONTH.	DISCHARGE IN SECOND FEET				RUN-OFF	
	Maximum	Minimum.	Mean	Per square mile	Depth in inches on Drainage area	Total in acre-feet.
March .....	510	129	262	0 46	0 53	16,100
April .....	2,620	424	1,460	2 56	2 86	86,900
May .....	2,450	1,600	1,850	3 26	3 76	114,000
June .....	1,440	480	858	1 50	1 67	51,100
July .....	710	223	404	0 71	0 82	24,800
August .....	348	142	214	0 38	0 44	13,200
September .....	187	117	147	0 26	0 29	8,750
October .....	223	156	181	0 32	0 37	11,100
November .....	283	187	229	0 40	0 45	13,600
December .....	304	180	219	0 38	0 44	13,800
The period .....	2,620	117	882 4	1 02	11 63	353,050

## PHILLIPS CREEK.—(3046).

*Location.*—Near Roo's ranch, Roosville, a few hundred feet above road.

*Records Available.*—May to November, 1914, and April to September, 1915.

*Drainage Area.*—Twenty-three square miles.

*Climatic Conditions.*—Summers are hot and dry, winters severe, as low as forty degrees below zero, during some cold spells. Light snowfall. Frazil ice may be expected.

*Gauge.*—A wooden staff read by Mr. Fred Roo.

*Channel.*—Fairly uniform and smooth. Good control.

*Discharge Measurements.*—The 1915 curve is based on three measurements in 1914, and four in 1915.

*Accuracy.*—"B" and "C." The rating curve is satisfactory, and readings also. Results should be within 10 or 15 per cent.

*Discharge Measurements of Phillips Creek at Roosville (For Curve).*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1914							
May 16	Gill .....	1,048	16.5	23 3	3 36	1.80	78.4
June 17	Gill .....	1,048	14.0	23 6	4 06	1.85	96.1
July 27	Gill .....	1,929	11.0	13 3	1 35	1.20	18 0
1915							
April 24	Elliott .....	1,672	14 0	18 4	2 44	1 50	44 9
May 13	Corbould .....	1,909	15 0	21 7	2 97	1 60	64 5
June 15	Elliott .....	1,909	15 0	20 8	2 73	1 55	56 8
Aug. 27	Dempster .....	1,927	14 0	13 6	1 23	1 20	16 7

## Daily Gauge Height and Discharge of Phillips Creek at Roosville for 1915.

(Drainage area, 23 square miles.)

Day.	April.		May.		June.		July.		August.		September.	
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	1.05	8.3	1.75	76.7	1.70	76.8	1.9	106	1.4	33.3	1.2	17.0
2	1.1	11.6	1.65	63.4	1.7	76.8	1.85	98.6	1.4	33.3	1.2	17.0
3	1.1	11.6	1.6	56.8	1.7	76.8	1.8	91.3	1.35	28.6	1.2	17.0
4	1.1	11.6	1.6	56.8	1.7	76.8	1.75	84.0	1.35	28.6	1.2	17.0
5	1.1	11.6	1.8	56.8	1.7	76.8	1.7	74.5	1.35	28.6	1.2	17.0
6	1.15	14.3	1.55	50.6	1.65	69.9	1.7	74.5	1.35	28.6	1.2	17.0
7	1.1	11.6	1.6	56.8	1.75	84.0	1.65	67.7	1.35	28.6	1.2	17.0
8	1.15	14.3	1.7	69.9	1.65	69.9	1.65	67.7	1.3	24.0	1.2	17.0
9	1.1	11.6	1.7	69.9	1.7	76.8	1.65	67.7	1.3	24.0	1.25	20.5
10	1.15	14.3	1.85	90.2	1.85	69.9	1.6	60.8	1.3	24.0	1.2	17.0
11	1.2	17.0	1.85	92.7	1.6	63.0	1.6	60.8	1.3	24.0	1.2	17.0
12	1.2	17.0	1.8	85.6	1.6	63.0	1.55	54.5	1.3	24.0	1.2	17.0
13	1.5	44.4	1.8	85.6	1.6	63.0	1.6	60.8	1.3	24.0	1.15	14.3
14	1.45	38.8	1.8	85.6	1.55	56.5	1.55	54.5	1.35	28.6	1.2	17.0
15	1.45	38.8	1.75	78.7	1.65	69.9	1.6	60.8	1.25	20.5	1.2	17.0
16	1.5	44.4	1.7	71.9	1.7	76.8	1.6	60.8	1.25	20.5	1.15	14.3
17	1.55	50.6	1.7	71.9	1.7	76.8	1.65	67.7	1.25	20.5	1.15	14.3
18	1.6	56.8	1.65	85.3	1.65	69.9	1.6	60.8	1.25	20.5	1.15	14.3
19	1.7	69.9	1.65	65.3	1.7	76.8	1.6	60.8	1.25	20.5	1.15	14.3
20	1.7	69.9	1.65	67.6	1.65	69.9	1.55	54.5	1.25	20.5	1.15	14.3
21	1.65	63.4	1.65	67.6	1.65	69.9	1.5	46.1	1.25	20.5	1.15	14.3
22	1.6	56.8	1.7	74.5	1.6	63.0	1.5	46.1	1.25	20.5	1.15	14.3
23	1.6	56.8	1.7	74.5	1.6	63.0	1.5	46.1	1.25	20.5	1.15	14.3
24	1.60	58.8	1.7	74.5	1.6	63.0	1.5	46.1	1.25	20.5	1.15	14.3
25	1.55	50.6	1.65	67.6	1.8	91.3	1.45	40.8	1.25	20.5	1.15	14.3
26	1.6	56.8	1.65	67.6	1.95	113.0	1.45	40.6	1.2	17.0	1.15	14.3
27	1.55	50.6	1.6	60.8	1.95	113.0	1.45	40.6	1.2	17.0	1.15	14.3
28	1.55	50.6	1.65	67.6	1.9	106.0	1.45	40.6	1.2	17.0	1.2	17.0
29	1.55	50.6	1.6	63.0	1.9	106.0	1.4	35.1	1.2	17.0	1.2	17.0
30	1.75	76.7	1.6	63.0	1.95	113.0	1.4	35.1	1.2	17.0	1.2	17.0
31	.....	.....	1.65	69.9	.....	.....	1.55	52.4	1.2	17.0	.....	.....

## Monthly Discharge of Phillips Creek at Roosville for 1915.

(Drainage area, 23 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
April	76.7	8.3	37.9	1.64	1.83	2,260
May	92.7	50.6	70.0	3.04	3.50	4,300
June	113.0	56.5	78.0	3.40	3.79	4,640
July	106.0	35.1	59.9	2.60	3.00	3,680
August	33.3	17.0	22.9	1.00	1.15	1,410
September	20.5	14.3	15.9	0.69	0.77	946
The period.	113.0	8.3	47.4	2.06	14.04	17,236



SESSIONAL PAPER No. 25a

ROCK CREEK.—(3049).

Location.—1/2 mile above Rock creek mill, near Elko.

Records Available.—1914 and 1915.

Drainage Area.—Seventy-five square miles.

Climatic Conditions.—Similar to Elko (see Elk river).

Gauge.—A 2-foot wooden staff, read four or five times a week, by Mr. H. B. Stiven, of Elko.

Channel.—Smooth. Swift water. Good control.

Discharge Measurements.—The 1915 data has been prepared from a rating curve based on five well-distributed measurements during the year.

Accuracy.—"C." The results should be within 15 per cent.

Discharge Measurements of Rock Creek at Elko for 1915.

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1915							
April 25	Elliott	1,672	18.5	25.2	1.79	0.75	45.2
May 14	Corboun	1,909	18.5	30.0	2.15	1.00	65.8
May 30	Elliott	1,672	18.5	30.7	2.17	0.95	67.1
June 14	Elliott	1,909	18.5	25.5	1.82	0.70	46.5
Aug. 27	Dempster	1,927	18.5	17.8	1.15	0.30	20.4

Daily Gauge Height and Discharge of Rock Creek at Elko for 1915.

(Drainage area, 75 square miles.)

Day.	April.		May.		June.		July.		August.		September.	
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	0.2	14.7		57.9	0.9	59.9	1.0	67.9	0.5	31.8	0.3	19.9
2	0.2	14.7	0.9	59.9	0.95	63.9	0.95	63.9	0.5	31.8	0.3	19.9
3	0.2	14.7	0.95	63.9	0.9	59.9	0.9	59.9	0.45	28.8	0.3	19.9
4		14.7	0.95	63.9	0.95	63.9	1.0	67.9	0.45	28.8	0.3	19.9
5	0.2	14.7	0.9	59.9	0.9	59.9	0.95	63.9	0.45	28.8	0.3	19.9
6		16.0	0.85	56.0	0.85	56.0	0.9	59.9	0.45	28.8	0.3	19.9
7	0.25	17.3	0.85	56.0	0.85	56.0	0.9	59.9	0.45	28.8		19.9
8	0.25	17.3	0.9	59.9	0.8	52.2	0.85	56.0		27.2	0.3	19.9
9		18.6		68.1	0.85	56.0	0.8	52.2	0.4	25.7		19.9
10	0.3	19.9	1.1	76.3	0.8	52.2	0.75	48.6	0.4	25.7	0.3	19.9
11		21.0	1.15	89.7		57.4	0.7	45.0	0.4	25.7	0.3	19.9
12		22.1	1.1	76.3	0.75	48.6	0.7	45.0	0.4	25.7	0.3	19.9
13		23.2	1.1	76.3	0.75	48.6	0.7	45.0	0.4	25.7		21.3
14		24.3	1.05	72.0	0.7	45.0	0.65	41.6	0.35	22.8	0.35	22.8
15		25.4	1.0	67.9	0.7	45.0	0.65	41.6	0.4	25.7	0.3	19.9
16		26.5	0.95	63.9		45.3	0.65	41.6	0.4	25.7	0.25	17.3
17		27.6	0.9	59.9	0.65	41.6	0.6	38.2	0.35	22.8	0.25	17.3
18	0.45	28.8	0.85	56.0	0.7	45.0	0.65	41.6	0.3	19.9	0.25	17.3
19	0.6	38.2	0.8	52.2	0.65	41.6	0.6	38.2	0.35	22.8	0.25	17.3
20	0.75	48.6		52.2	0.65	41.6	0.65	41.6	0.35	22.8	0.25	17.3
21	0.85	56.0	0.8	52.2	0.65	41.6	0.55	35.0	0.35	22.8		17.3
22		57.9	0.75	48.6	0.65	41.6	0.6	38.2	0.35	22.8	0.25	17.3
23	0.9	59.9	0.8	52.2	0.7	45.0	0.55	35.0	0.3	19.9	0.25	17.3
24	0.9	59.9	0.85	56.0	0.7	45.0	0.6	38.2	0.3	19.9		17.3
25	0.8	52.2	0.9	59.9	0.65	41.6	0.55	35.0	0.3	19.9	0.25	17.3
26	0.75	45.6	0.9	59.9		46.9	0.6	38.2	0.3	19.9	0.25	17.3
27	0.7	45.0	0.9	59.9	0.8	52.2	0.65	41.6	0.3	19.9	0.3	19.9
28	0.7	45.0	0.95	63.9	0.95	63.9	0.6	38.2	0.3	19.9		18.6
29	0.8	52.2	0.9	59.9	1.05	72.0	0.55	35.0	0.3	19.9	0.25	17.3
30	0.85	56.0	0.95	63.9	1.1	76.3	0.55	35.0	0.3	19.9	0.25	17.3
31			0.95	63.9			0.5	31.8	0.3	19.9		

*Monthly Discharge of Rock Creek at Elko for 1915.*

(Drainage area, 75 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
April.....	59.9	14.7	32.7	0.44	0.49	1,950
May.....	80.7	48.6	61.9	0.83	0.98	3,810
June.....	76.3	41.6	51.9	0.69	0.77	3,090
July.....	67.9	31.8	45.8	0.61	0.70	2,810
August.....	31.8	19.9	24.2	0.32	0.37	1,490
September.....	22.8	17.3	18.9	0.25	0.28	1,130
The period.....	80.7	14.7	39.2	0.52	3.57	14,290

BIG SAND CREEK.—(3042).

*Location.*—The section is located about 300 yards below the highway bridge, 2 miles from Galloway, near Jaffray.

*Records Available.*—1914 and 1915.

*Drainage Area.*—Forty square miles.

*Climatic Conditions.*—Summers hot and dry, winters severe, with light snow-fall.

*Gauge.*—Vertical staff read daily by Robt. Cameron.

*Channel.*—Smooth and uniform, with swift water and a good control.

*Discharge Measurements.*—The 1915 rating curve is based on five measurements in 1914 and five in 1915.

*Accuracy.*—"A" and "B." The section is suitable for good work, and readings are reliable, results should be within 10 per cent.

*Discharge Measurements of Big Sand Creek at Jaffray (For Curve).*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1914							
May 19	Gill.....	1,048	38.0	93.8	5.44	2.30	511.0
June 19	Gill.....	1,048	38.0	81.5	4.53	2.00	369.0
July 9	(Prov.) Hicks.....		36.0	51.2	2.64	1.20	135.0
July 29	Gill.....	1,929	35.0	28.4	1.65	0.65	47.1
Sept. 9	(Prov.) Hicks.....			19.9	1.10	0.35	21.9
1915							
April 24	Elliott.....	1,672	32.0	60.6	3.15	1.40	191.0
May 13	Corbould.....	1,909	38.0	67.8	4.30	1.65	292.0
June 1	Elliott.....	1,672	36.0	56.2	3.10	1.35	175.0
June 16	Elliott.....	1,909	36.0	39.0	2.31	0.97	90.7
Aug. 29	Dempster.....	1,927	29.0	16.2	0.75	0.18	12.2

SESSIONAL PAPER No. 25e

## Daily Gauge Height and Discharge of Big Sand Creek at Jaffray for 1915.

(Drainage area, 40 square miles.)

Day.	April.		May.		June.		July.		August.		September.	
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	0.5	34.0	1.88	332	1.38	180.0	2.18	443.0	0.68	52.8	0.11	10.4
2	0.5	34.0	1.82	312	1.4	185.0	1.93	350.0	0.66	50.0	0.10	10.0
3	0.52	36.0	1.72	279	1.4	185.0	1.68	266.0	0.58	42.0	0.10	10.0
4	1.1	117.0	1.7	272	1.35	172.0	1.68	266.0	0.58	42.0	0.08	9.4
5	1.09	115.0	1.62	247	1.32	165.0	1.58	235.0	0.58	42.0	0.10	10.0
6	1.08	113.0	1.65	256	1.22	142.0	1.46	201.0	0.56	40.0	0.10	10.0
7	1.13	123.0	1.68	266	1.25	148.0	1.4	185.0	0.53	37.0	0.075	9.25
8	1.1	117.0	1.78	298	1.22	142.0	1.23	144.0	0.48	32.4	0.075	9.25
9	0.98	95.8	1.98	368	1.2	137.0	1.13	123.0	0.48	32.4	0.075	9.25
10	1.06	110.0	2.1	412	1.15	127.0	1.03	104.0	0.43	28.4	0.075	9.25
11	1.12	121.0	2.12	420	1.05	108.0	0.98	95.8	0.40	26.0	0.075	9.25
12	1.2	137.0	1.95	357	1.02	103.0	0.98	95.8	0.38	24.6	0.075	9.25
13	1.48	207.0	1.68	266	1.0	99.0	0.93	87.8	0.36	23.2	0.10	10.0
14	1.58	235.0	1.65	256	1.0	99.0	0.95	91.0	0.28	18.0	0.11	10.4
15	1.65	256.0	1.6	241	0.95	91.0	1.13	123.0	0.28	18.0	0.11	10.4
16	1.71	275.0	1.58	235	0.95	91.0	1.33	168.0	0.28	18.0	0.10	10.0
17	1.68	332.0	1.5	212	0.95	91.0	1.28	155.0	0.28	18.0	0.09	9.7
18	2.1	412.0	1.48	207	0.95	91.0	1.18	133.0	0.28	18.0	0.075	9.25
19	2.15	432.0	1.45	198	1.0	99.0	1.16	129.0	0.28	18.0	0.075	9.25
20	2.12	420.0	1.4	185	1.08	113.0	1.08	113.0	0.28	18.0	0.075	9.25
21	2.08	405.0	1.35	172	1.05	108.0	0.98	95.8	0.28	18.0	0.075	9.25
22	1.95	357.0	1.45	198	1.0	99.0	0.96	93.0	0.26	17.0	0.075	9.25
23	1.75	288.0	1.5	212	0.98	95.8	0.88	80.0	0.25	17.0	0.08	9.7
24	1.48	207.0	1.48	207	0.85	91.0	0.86	77.0	0.23	15.5	0.18	13.2
25	1.45	198.0	1.45	198	1.08	113.0	0.78	65.4	0.23	15.5	0.15	12.0
26	1.45	198.0	1.42	190	2.48	568.0	0.78	65.4	0.22	15.0	0.14	11.6
27	1.48	207.0	1.4	185	3.5	1190.0	0.78	65.4	0.22	15.0	0.12	10.8
28	1.52	218.0	1.48	207	2.75	689.0	0.78	65.4	0.23	15.5	0.10	10.0
29	1.58	235.0	1.58	235	2.3	492.0	0.78	65.4	0.15	12.0	0.10	10.0
30	1.82	312.0	1.48	207	2.35	513.0	0.73	58.9	0.14	11.6	0.10	10.0
31			1.4	185			0.68	52.8	0.12	11.2		

## Monthly Discharge of Big Sand Creek at Jaffray for 1915.

(Drainage area, 40 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
April.	432.0	34.00	212.00	5.30	5.91	12,000
May.	420.0	172.00	252.00	6.30	7.26	15,500
June.	1,190.0	91.00	218.00	5.45	6.08	13,000
July.	443.0	52.80	138.00	3.45	3.98	8,480
August.	52.8	11.20	24.60	0.61	0.70	1,810
September.	13.2	9.25	9.98	0.25	0.28	594
The period.	1,190.0	9.25	142.45	3.56	24.21	51,684

## LITTLE SAND CREEK.—(3043).

*Location.*—The section is located at the small traffic bridge, above Rosen's ranch, near Jaffray.

*Records Available.*—1914 and 1915.

*Drainage Area.*—Thirty-three square miles.

*Climatic Conditions.*—Summers hot and dry, winters severe, with light snowfall.

*Gauge.*—Vertical staff, nailed to bridge abutment, and read by Mr. A. Rosen.

*Channel.*—Uniform. Water unbroken and swift. Control is fair.

*Discharge Measurements.*—The 1915 data is based on a rating curve prepared from two measurements in 1914, and five in 1915.

*Accuracy.*—"C." Results are thought to be within 15 per cent.

*Discharge Measurements of Little Sand Creek at Jaffray (For Curve).*

Date.	Engineer.	Meter No.	Wid. h.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
1914			Fcet.	Sq. ft.	Ft. per sec.	Inches.	Sec.-ft.
June 19	Gill	1,048	24.0	26.7	3.01	12	80.3
July 29	Gill	1,929	24.0	14.7	2.04	5½	80.0
1915							
April 24	Elliott	1,672	24.0	17.6	2.11	7	37.2
May 13	Corbould	1,909	24.0	29.4	3.44	13	101.0
June 1	Elliott	1,672	24.0	18.9	2.24	7	42.4
June 15	Elliott	1,909	24.0	18.7	2.24	7½	42.1
Aug. 29	Dempster	1,927	23.5	14.3	1.92	5	27.3

*Daily Gauge Height and Discharge of Little Sand Creek at Jaffray for 1915.*  
(Drainage area, 33 square miles.)

Day.	April.		May.		June.		July.		August.		September.	
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.
	Inches.	Sec.-ft.	Inches.	Sec.-ft.	Inches.	Sec.-ft.	Inches.	Sec.-ft.	Inches.	Sec.-ft.	Inches.	Sec.-ft.
1	3.0	19.4	9.0	54.3	7.2	39.9	10.0	64.2	7.8	44.3	4.5	25.0
2	3.0	19.4	7.5	42.1	7.2	39.9	9.0	55.3	7.5	42.1	4.5	25.0
3	4.0	23.0	7.8	44.3	5.0	37.3	9.25	55.8	7.2	39.9	4.0	23.0
4	4.5	25.0	7.5	42.1	5.5	35.4	9.0	54.3	6.5	35.4	4.0	23.0
5	4.5	25.0	8.0	45.7	7.0	38.5	8.5	59.9	6.0	32.4	4.0	23.0
6	5.2	28.3	8.0	45.7	8.0	45.7	8.0	45.7	6.0	32.4	4.0	23.0
7	5.5	29.8	8.0	45.7	8.2	47.4	8.0	45.7	6.0	32.4	4.0	23.0
8	5.0	27.3	8.5	49.9	8.5	49.9	8.5	49.9	5.75	30.9	4.0	23.0
9	8.2	47.4	11.0	75.4	9.8	52.2	8.5	49.9	5.5	29.8	4.75	26.2
10	8.2	47.4	10.5	69.8	8.2	47.4	8.25	47.8	5.0	27.3	7.25	40.3
11	5.6	30.2	11.8	85.2	8.0	45.7	7.5	42.1	5.0	27.3	8.25	47.8
12	4.5	25.0	12.5	94.4	7.8	44.3	7.5	42.1	5.0	27.3	8.0	45.7
13	4.0	23.0	12.5	94.4	7.5	42.1	7.75	43.9	4.5	25.0	7.5	42.1
14	4.0	23.0	12.2	90.4	7.0	38.5	8.0	45.7	4.75	26.2	7.25	40.3
15	3.8	22.3	12.8	98.3	7.2	39.9	8.25	47.8	5.0	27.3	5.75	30.9
16	4.2	23.8	9.2	55.3	7.2	39.9	8.75	52.0	5.0	27.3	5.25	28.6
17	6.8	37.3	8.2	47.4	7.0	38.5	8.75	52.0	5.0	27.3	4.5	25.0
18	7.5	42.1	8.5	49.9	7.5	42.1	8.5	49.9	5.0	27.3	4.0	23.0
19	6.2	33.6	7.8	44.3	7.0	38.5	12.5	94.4	5.0	27.3	4.0	23.0
20	7.5	42.1	7.5	42.1	7.0	38.5	8.5	49.9	5.0	27.3	4.0	23.0
21	7.2	39.9	8.0	45.7	7.0	38.5	12.8	98.3	4.5	25.0	4.0	23.0
22	7.8	44.3	9.0	54.3	7.0	38.5	12.8	98.3	4.5	25.0	4.0	23.0
23	11.2	77.9	9.5	59.3	7.0	38.5	13.2	104.0	9.25	56.8	4.0	23.0
24	8.0	45.7	11.2	77.9	7.0	38.5	12.5	94.4	5.0	27.3	4.0	23.0
25	11.5	81.6	11.0	75.5	7.2	39.9	8.2	47.4	5.0	27.3	4.0	23.0
26	7.5	44.3	10.0	64.2	13.2	104.0	8.0	45.7	5.0	27.3	4.0	23.0
27	7.0	38.5	9.2	56.3	14.8	127.0	10.5	59.8	5.0	27.3	4.0	23.0
28	7.5	42.1	8.2	47.4	12.2	90.4	8.5	49.9	5.0	27.3	4.0	23.0
29	7.5	42.1	7.2	39.9	11.0	75.4	8.0	45.7	4.75	25.2	3.75	22.1
30	8.5	49.9	6.5	35.4	10.2	56.4	7.5	42.1	5.0	27.3	3.75	22.1
31	.....	.....	6.8	37.3	.....	.....	7.8	42.1	4.75	25.2	.....	.....

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## Monthly Discharge of Little Sand Creek at Jaffray for 1915.

(Drainage area, 33 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
April.....	81.6	19.4	36.7	1.11	1.24	2,180
May.....	98.3	35.4	58.4	1.80	2.08	2,590
June.....	127.0	35.4	50.3	1.52	1.70	2,990
July.....	104.0	42.1	57.3	1.74	2.01	3,520
August.....	56.8	25.0	30.3	0.92	1.06	1,860
September.....	47.8	22.1	27.1	0.82	0.92	1,610
The period.....	127.0	19.4	43.3	1.32	9.01	14,750

## ST. MARY'S RIVER.—(3050).

*Location.*—At traffic bridge, near Wycliffe, 12 miles from the mouth, and 7 miles from Cranbrook.

*Records Available.*—1914 and 1915.

*Drainage Area.*—One thousand one hundred square miles.

*Climatic Conditions.*—The climatic conditions near Wycliffe are similar to those at Cranbrook. Summers hot, with dry winds, winters severe, with occasional cold spells, during which it may reach forty degrees below zero. Precipitation is light. Frazil ice is to be expected.

*Gauge.*—A vertical staff gauge read daily by the Otis Staples Lumber Company till the end of September.

*Channel.*—Straight, uniform, with smooth swift flow. Good control.

*Discharge Measurements.*—The 1915 rating curve is based on six measurements made by the Provincial Water Rights Branch, in 1912 and 1913, four measurements made by this survey in 1914, and three in 1915.

*Accuracy.*—"B" and "C." Results should be within 10 or 15 per cent.

## Discharge Measurements of St. Mary's River at Wycliffe (For Curve).

Date.	Engineer.	Mete No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1912							
Aug. 21	(Prov.) Hicks.....		150	477	1.81	7.05	862
Dec. 2	(Prov.) Hicks.....		125	345	1.36	1.10	468
1913							
June 14	(Prov.) Hicks.....		175	1,290	8.33	6.80	10,800
June 25	(Prov.) Roblin.....		176	1,076	6.88	5.50	6,270
July 21	(Prov.) Hicks.....		168	786	3.80	3.90	2,990
Sept. 17	(Prov.) Roblin.....		151	450	1.86	1.80	838
1914							
June 30	Gill.....	1,048	143	1,110	6.82	5.90	7,560
July 23	Gill.....	1,929	162	708	3.46	3.60	2,450
Oct. 10	Gill.....	1,929	148	484	1.93	1.90	878
Oct. 16	Gill.....	1,929	146	452	1.94	1.90	877
1915							
Feb. 21	Elliott & Corbould.....	1,909	130	493	1.32	Ice	651 <sup>1</sup>
May 27	Elliott.....	1,672	222	665	5.85	4.60	3,890
June 12	Elliott.....	1,909	237	570	5.10	4.00	2,910

<sup>1</sup> Ice conditions.

## Daily Gauge Height and Discharge of St. Mary's River at Wycliffe for 1915.

(Drainage area, 1,100 square miles.)

Day.	April.		May.		June.		July.		August.		September.	
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1	2.3	1,890	4.35	4,680	4.65	4,230	4.4	3,710	3.0	1,780	2.15	1,030
2	3.0	1,780	4.72	4,880	4.55	4,020	4.1	3,170	3.0	1,760	2.1	990
3	2.7	1,800	4.52	3,980	4.5	3,910	4.2	3,340	3.0	1,760	2.1	990
4	2.8	1,890	4.32	3,560	4.6	4,120	4.5	3,910	3.0	1,780	2.1	990
5	2.9	1,830	4.02	3,040	4.7	4,340	4.4	3,710	2.6	1,580	2.1	990
6	3.2	2,000	4.0	3,010	4.55	4,680	4.0	3,010	2.6	1,400	2.1	990
7	3.0	1,780	4.12	3,200	4.9	4,790	3.6	2,460	2.5	1,310	2.1	990
8	2.7	1,800	4.92	4,840	5.3	5,800	3.2	2,000	2.5	1,310	2.1	990
9	2.6	1,400	5.3	5,800	4.9	4,790	3.5	2,340	2.5	1,310	2.1	990
10	2.5	1,310	5.45	6,210	4.55	4,020	3.3	2,110	2.55	1,360	2.1	990
11	2.45	1,270	5.3	5,800	4.05	3,090	3.45	2,280	2.5	1,310	2.1	990
12	2.5	1,310	4.9	4,790	4.1	3,170	3.55	2,400	2.55	1,360	2.1	990
13	3.0	1,780	4.35	3,620	4.1	3,170	3.3	2,210	2.5	1,310	2.05	953
14	3.1	1,890	4.45	3,810	4.0	3,010	3.5	2,340	2.55	1,360	2.0	910
15	3.1	1,890	4.75	4,450	4.05	3,090	3.5	2,340	2.5	1,310	2.0	910
16	3.1	1,890	4.4	3,710	4.1	3,170	3.8	2,720	2.5	1,310	2.0	910
17	3.55	2,400	4.2	3,340	4.55	4,020	4.05	3,090	2.5	1,310	1.9	836
18	4.3	3,520	4.1	3,170	4.5	3,910	3.8	2,720	2.5	1,310	1.9	836
19	4.75	4,450	4.25	3,430	4.2	3,340	3.95	2,940	2.5	1,310	1.9	836
20	4.9	4,790	4.1	3,170	4.25	3,430	3.8	2,720	2.55	1,360	1.9	836
21	4.45	3,810	4.1	3,170	4.15	3,260	3.7	2,590	2.5	1,310	1.9	836
22	4.25	3,430	4.2	3,340	3.95	2,940	3.5	2,340	2.5	1,310	1.9	836
23	4.1	3,170	4.35	3,620	4.0	3,010	3.5	2,340	2.5	1,310	1.9	836
24	4.02	3,040	4.4	3,710	3.95	2,940	3.55	2,400	2.5	1,310	1.95	873
25	3.55	2,400	4.4	3,710	4.15	3,260	3.6	2,460	2.5	1,310	2.1	990
26	3.4	2,220	4.35	3,620	4.45	3,810	3.4	2,220	2.4	1,230	2.25	1,110
27	3.4	2,220	4.45	3,810	4.4	3,710	3.4	2,220	2.35	1,190	2.35	1,190
28	3.6	2,460	4.7	4,340	4.55	4,020	4.0	3,010	2.35	1,190	2.45	1,270
29	3.65	2,520	4.45	3,810	4.4	3,710	3.75	2,660	2.4	1,230	2.4	1,230
30	4.2	3,340	4.55	4,020	4.3	3,520	3.55	2,400	2.35	1,190	2.4	1,230
31	.....	.....	4.55	4,020	.....	.....	3.25	2,060	2.3	1,150	.....	.....

## Monthly Discharge of St. Mary's River at Wycliffe for 1915.

(Drainage area, 1,100 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
April	4,790	1,270	2,330	2.12	2.36	139,000
May	6,210	3,010	3,970	3.61	4.16	244,000
June	5,800	2,940	3,740	3.40	3.79	223,000
July	3,910	2,000	2,620	2.29	2.64	155,000
August	1,780	1,150	1,370	1.25	1.44	84,200
September	1,270	836	978	0.89	0.99	60,100
The period	6,210	836	2,484	2.24	15.38	905,300

SESSIONAL PAPER No. 25a

## MISCELLANEOUS METERINGS—NELSON DIVISION.

## NELSON DISTRICT.

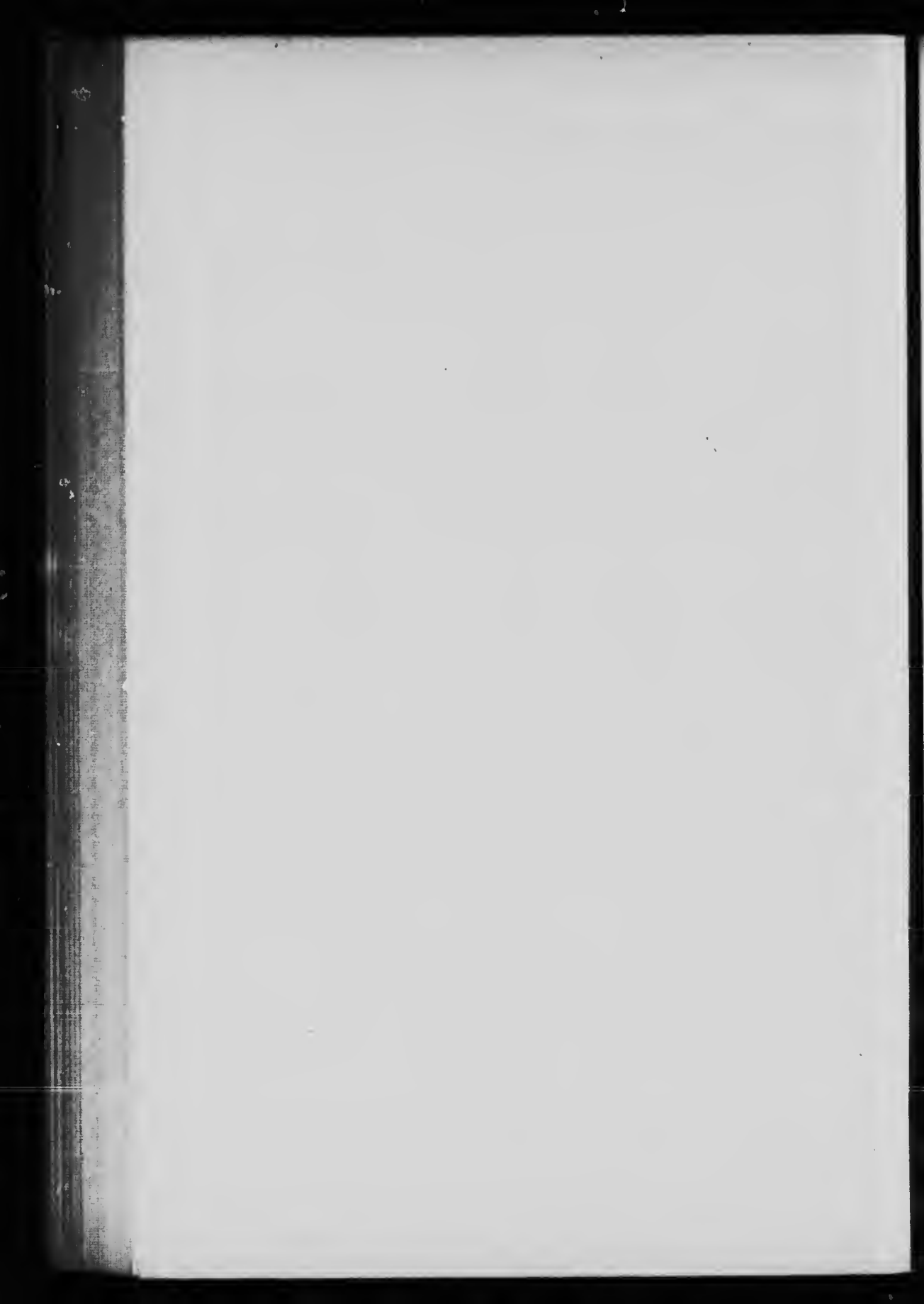
Date.	Stream.	Tributary To—	Locality.	Gauge Height.	Discharge.	Drainage Area.	Discharge per square mile.
				Feet.	Sec.-ft.	Sq. miles	Sec.-ft.
1915							
May 29	Eagle creek	Arrow lakes	Near Edgewood		209.0		
June 24	Eagle creek	Arrow lakes	Near Edgewood		47.3		
Sept. 16	Eagle creek	Arrow lakes	Near Edgewood		5.61		
Oct 21	Eagle creek	Arrow lakes	Near Edgewood		3.79		
July 12	Glveout creek	Cottonwood creek	Near Nelson		25.2		
July 27	Hall creek	Salmon river	Near Halls siding		44.2		
Oct. 22	Hall creek	Salmon river	Near Halls siding		8.1		
Oct. 23	Whatahan creek (Above Barnes creek) (Below Barnes creek)	Arrow lakes	Near Needles		103.0		
April 8	Cariboo creek	Arrow lakes	Near Burton City		142.0		
May 18	Cariboo creek	Arrow lakes	Near Burton City		370.0		
May 28	Cariboo creek	Arrow lakes	Near Burton City		933.0		
Sept. 16	Cariboo creek	Arrow lakes	Near Burton City		1,600.0		
Mar. 17	Carpenter creek		Near New Denver		183.0		
April 27	Carpenter creek		Near New Denver		96.0		
June 10	Carpenter creek		Near New Denver		459.0		
Sept. 8	Carpenter creek		Near New Denver		361.0		
Dec. 3	Carpenter creek		Near New Denver		170.0		
1914							
Nov. 28	Lardeau river	Duncan river	Near Howser		1,130.0		
1915							
Mar. 5	Lardeau river	Duncan river	Near Howser		484.0		
May 6	Lardeau river	Duncan river	Near Howser		3,520.0		
July 22	Lardeau river	Duncan river	Near Howser		4,540.0		
Oct. 28	Lardeau river	Duncan river	Near Howser		1,320.0		
Mar. 17	Slocan river	Kootenay river	Near Slocan City		460.0		
July 29	Slocan river	Kootenay river	Near Slocan City		2,930.0		
Mar. 17	Wilson creek	Slocan lake	Near Roseberry		187.0		
April 29	Wilson creek	Slocan lake	Near Roseberry		1,350.0		
June 9	Wilson creek	Slocan lake	Near Roseberry		1,250.0		
Sept. 10	Wilson creek	Slocan lake	Near Roseberry		293.0		
Dec. 2	Wilson creek	Slocan lake	Near Roseberry		360.0		

## REVELSTOKE DISTRICT.

Feb. 26	Horsethief creek	Columbia river	Near Wilmer		67.6		
Sept. 23	Horsethief creek	Columbia river	Near Wilmer		289.0		
Mar. 16	Illecillewaet river	Columbia river	Near Glacier		9.9		
May 12	Illecillewaet river	Columbia river	Near Glacier		120.0		
Oct. 19	Illecillewaet river	Columbia river	Near Glacier		34.4		
1914							
Nov. 20	Salmon river	Arrow lakes	Near Beaton		56.9		
1915							
Mar. 19	Salmon river	Arrow lakes	Near Beaton		31.8		
May 16	Salmon river	Arrow lakes	Near Beaton		171.0		
Sept. 13	Salmon river	Arrow lakes	Near Beaton		84.0		
Oct. 26	Salmon river	Arrow lakes	Near Beaton		41.1		
April 30	Shuswap creek	Columbia river	Near Athalmer		28.4		
May 24	Shuswap creek	Columbia river	Near Athalmer		25.7		
July 9	Shuswap creek	Columbia river	Near Athalmer		36.6		
Sept. 21	Shuswap creek	Columbia river	Near Athalmer		11.4		
April 30	Stoddart creek	Columbia river	Near Athalmer		4.46		
May 24	Stoddart creek	Columbia river	Near Athalmer		5.42		
July 9	Stoddart creek	Columbia river	Near Athalmer		8.38		
Sept. 21	Stoddart creek	Columbia river	Near Athalmer		3.96		
Feb. 27	Sinclair creek	Columbia river	Near Radium Hot Springs		11.5		
May 2	Sinclair creek	Columbia river	Near Radium Hot Springs		66.8		
May 22	Sinclair creek	Columbia river	Near Radium Hot Springs		63.8		
June 9	Sinclair creek	Columbia river	Near Radium Hot Springs		80.0		
July 9	Sinclair creek	Columbia river	Near Radium Hot Springs		80.9		
Sept. 21	Sinclair creek	Columbia river	Near Radium Hot Springs		29.8		
April 29	Windermere creek	Columbia river	Near Windermere		13.7		
May 24	Windermere creek	Columbia river	Near Windermere		17.9		
June 11	Windermere creek	Columbia river	Near Windermere		18.6		
July 7	Windermere creek	Columbia river	Near Windermere		26.8		
Sept. 22	Windermere creek	Columbia river	Near Windermere		20.9		

## CRANBROOK DISTRICT.

Mar. 11	Cedar creek	Kootenay lake	Near Ainsworth		1.34		
May 11	Hammill creek	Kootenay lake	Near Argenta		626.0		
July 23	Hammill creek	Kootenay lake	Near Argenta		947.0		
Oct. 29	Hammill creek	Kootenay lake	Near Argenta		203.0		
Mar. 10	Woodhury creek	Kootenay lake	Near Ainsworth		48.0		





REPORT  
OF THE  
BRITISH COLUMBIA HYDROMETRIC  
SURVEY FOR 1915.

CHAPTER IX.  
Fort George District—Hydrometric Data.



CHAPTER IX.  
FORT GEORGE DISTRICT.  
HYDROMETRIC DATA.

BULKLEY RIVER.

Bulkley river is one of the largest tributaries of the Skeena. It rises on the western slope of the interior plateau and flows in a north-westerly direction to join the Skeena, near Hazelton. The Bulkley is about 150 miles in length and drains an area of about 3,900 square miles.

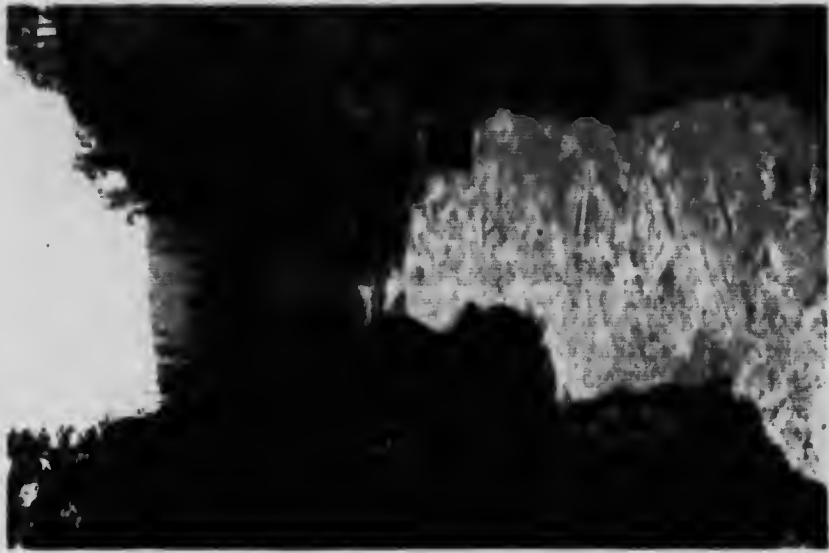
The Bulkley is a rough, unnavigable stream and flows through many rapids and canyons. For 30 miles above its mouth it flows through a deep and narrow canyon, falling 1,000 feet in this distance. The valley enclosing Bulkley river is very large, varying from four to ten miles in width. On the south-west, from Hazelton to Moricetown, this valley is flanked by the rugged Rocher Deboles mountains, and from Moricetown to Barrett, by Hudson Bay mountains. On the north-east the mountains are lower and not as rugged.

There are no power developments as yet, but the Bulkley canyon affords probably one of the best power possibilities in northern British Columbia.

The principal tributaries of the Bulkley are, the Morice and Telkwa rivers, Bull, Boulder, Porphyry and Mud creeks on the south; Canyon and Driftwood creeks and Suskwa river on the north.

There are at present two gauging stations on the Bulkley river. One is at Hubert, above the mouth of the Telkwa river, the other is at Hazelton at the mouth. This latter station is to give the flow through the Bulkley canyon. The gauging station at Hubert was established in July, 1915, and records are available from then till December 31. Measurements are made from the downstream side of the highway bridge. A vertical staff gauge is nailed to the pier, at the south end of the bridge.

The metering station at Hazelton is at the ferry crossing about half a mile from the mouth. Daily gauge readings have been taken since July, 1915, on a chain gauge at the low level suspension bridge, 2 miles above the metering station. Meter measurements are made from the Government pontoon ferry, a tag line is stretched from shore to shore to mark points of observation, the ferry being held in place by the current action on the face of the pontoons.



Kettle river, at Cascade  
The drop in this canyon is utilized by the Cascade power  
plant of the West Kootenay Power and Light Co.  
Total head, 156 feet.

—Photograph by Lake Studio,  
Grand Forks.



High level suspension bridge, 250 feet above Bulkley river,  
near New Hazelton.

Old Indian bridge in background.

SESSIONAL PAPER No. 25a

## BULKLEY RIVER, HAZELTON.—(4004).

*Location.*—At ferry crossing, about  $\frac{1}{4}$  mile above confluence with Skeena river,  $\frac{3}{4}$  of a mile from Old Hazelton.

*Records Available.*—Gauge heights from July 13 to December 31, 1915. Insufficient data to compute daily discharges.

*Drainage Area.*—Approximately 3,000 square miles.

*Gauge.*—Chain gauge at low level suspension bridge, over Bulkley canyon, 2 miles above metering section. Daily readings by Mr. A. M. Ruddy.

*Channel.*—One channel at all stages. Straight above and below section. The stream bed appears to be permanent. The depth of water at the section is influenced at some stages by backwater from the Skeena river.

*Discharge Measurements.*—Four measurements during open season and one in early winter.

*Winter Flow.*—The river freezes over about the end of November. Frazil and anchor ice remain in the river for most of the winter.

*Discharge Measurements of Bulkley River near Hazelton, B.C., for 1915.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
July 14	Chisholm & Chailles	1,521	460	1,690	6.11	18.42	11,580
Aug. 27	Elliott & Chailles	1,521	473	1,460	5.59	13.5	8,160
Sept. 25	J. A. Elliott	1,521	470	1,210	4.47	11.0	5,410
Oct. 22	J. A. Elliott	1,521	470	1,304	4.80	11.2	6,260

## BULKLEY RIVER, HUBERT.—(4003).

*Location.*—At highway bridge, near Hubert, and about 3 miles above the mouth of Telkwa river.

*Records Available.*—July 8 to December 31, 1915.

*Drainage Area.*—Approximately 2,070 square miles.

*Gauge.*—Vertical staff gauge, nailed on upstream side of pier at south end of bridge. Daily readings by Mrs. F. Norris.

*Channel.*—Divided into three sections by bridge piers. Straight above and below for 250 feet. Section is influenced by a curve in the channel about 300 feet above the bridge.

*Discharge Measurements.*—Four measurements during the open season of 1915.

*Winter Flow.*—The river freezes over about the end of November. Ice jams, frazil and anchor ice affect the winter flow.

*Accuracy.*—"C" and "D." For gauge heights above 2.5 feet results should be within 15%. Below 2.5 feet results are probably within 20%.

## Discharge Measurements of Bulkley River near Hubert, B.C., for 1915.

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
July 8	K. G. Chisholm	1,521	310	1,450	5.11	4.80	7,420
Aug. 30	Elliott & Challies	1,521	29.	1,120	4.31	2.87	4,880
Sept. 27	J. A. Elliott	1,521	290	835	3.69	2.93	3,080
Oct. 25	J. A. Elliott	1,521	290	790	3.78	2.75	2,980

Snowing.

## Daily Gauge Height and Discharge of Bulkley River near Hubert for 1915.

(Drainage area, 2,070 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1			4.9	7,740	3.8	4,770	3.0	3,150	2.7	2,700	1.8	1,250
2			4.9	7,740	3.8	4,770	3.0	3,150	2.6	2,550	1.8	1,350
3			4.9	7,740	3.8	4,770	3.0	3,150	2.6	2,550	1.8	1,350
4			4.9	7,740	3.8	4,770	3.0	3,150	2.6	2,550	1.8	1,350
5			4.9	7,740	3.8	4,770	3.0	3,150	2.6	2,550	1.5	1,250
6			4.9	7,740	3.8	4,770	2.9	3,000	2.5	2,400	1.5	1,250
7			4.9	7,740	3.8	4,770	2.9	3,000	2.5	2,400	1.4	1,160
8			4.8	7,440	3.7	4,540	2.9	3,000	2.4	2,270	1.4	1,160
9	4.8	7,440	4.8	7,440	3.7	4,540	2.9	3,000	2.3	2,140	1.2	980
10	4.9	7,740	4.7	7,140	3.6	4,370	2.9	3,000	2.3	2,140	1.2	980
11	4.9	7,740	4.5	6,540	3.5	4,100	2.8	2,850	2.3	2,140	1.2	980
12	5.2	8,040	4.5	6,540	3.5	4,100	2.8	2,850	2.2	2,010	1.2	980
13	5.2	8,040	4.5	6,540	3.4	3,900	2.7	2,700	2.1	1,890	1.2	980
14	5.0	8,040	4.5	6,540	3.3	3,700	2.6	2,650	2.0	1,770	1.2	980
15	4.8	7,440	4.3	6,000	3.3	3,700	2.6	2,550	2.0	1,770	1.2	980
16	4.8	7,440	4.3	6,000	3.4	3,900	2.5	2,400	2.0	1,770	1.2	980
17	5.0	8,040	4.2	5,730	3.4	3,900	2.6	2,550	2.0	1,770	1.2	980
18	5.0	8,040	4.2	5,730	3.4	3,900	2.5	2,400	2.0	1,770	1.2	980
19	5.0	8,040	4.2	5,730	3.4	3,900	2.7	2,700	2.0	1,770	1.2	980
20	5.0	8,040	4.2	5,730	3.3	3,700	2.8	2,850	2.0	1,770	1.2	980
21	5.0	8,040	4.1	5,480	3.3	3,700	2.8	2,850	1.9	1,850	1.2	980
22	5.0	8,040	4.1	5,480	3.1	3,320	2.9	3,000	1.9	1,650	1.2	980
23	5.1	8,340	4.1	5,480	3.1	3,320	2.8	2,850	1.8	1,550	1.2	980
24	5.1	8,340	4.1	5,480	3.1	3,320	2.8	2,850	1.8	1,550	1.2	980
25	5.0	8,040	4.1	5,480	3.1	3,320	2.8	2,850	1.8	1,550	1.2	980
26	5.0	8,040	4.1	5,480	3.1	3,320	2.8	2,850	1.7	1,450	1.2	980
27	4.9	7,740	4.1	5,480	3.1	3,320	2.7	2,700	1.6	1,350	1.2	980
28	4.9	7,740	4.0	5,230	3.0	3,150	2.7	2,700	1.6	1,350	1.2	980
29	4.9	7,740	3.9	5,000	3.0	3,150	2.8	2,850	1.6	1,350	1.2	980
30	4.9	7,740	3.9	5,000	3.0	3,150	2.8	2,850	1.6	1,350	1.2	980
31	4.9	7,740	3.8	4,770			2.7	2,700			1.2	980

## Monthly Discharge of Bulkley River near Hubert for 1915.

(Drainage area, 2,070 square miles.)

MONTH.	DISCHARGE IN SECONO-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
August	7,740	4,770	6,310	3.04	3.50	388,000
September	4,770	3,150	3,960	1.91	2.13	236,000
October	3,150	2,700	2,850	1.38	1.59	175,000
November	2,700	1,350	1,920	0.93	1.04	114,000
December	1,350	980	1,060	0.51	0.59	85,200
The period	7,740	980	3,220	1.53	8.85	978,200

## DORE RIVER.

The Dore or Fifty Mile river rises in the Cariboo mountains, about 25 miles south-west of the town of McBride, and flows north to the Fraser river. The town of McBride is about  $2\frac{1}{2}$  miles east of the mouth of the Dore. Dore river has a fairly steep gradient and several small power sites. It will probably afford a water or power supply for McBride, as it is the most important stream in this vicinity.

## DORE RIVER.—(4002).

*Location.*—About  $\frac{1}{2}$  mile above the confluence with the Fraser river, and below all tributaries. The station is on the Grand Trunk Pacific Railway bridge, about  $2\frac{1}{2}$  miles west of McBride, B.C.

*Records Available.*—July 2 to November 25, 1915.

*Drainage Area.*—Approximately 190 square miles.

*Gauge.*—Chain gauge fastened to a supported rod on the right bank, about 100 yards above the railway bridge. Gauge is read two or three times a week, by Miss M. Johnson, of McBride.

*Channel.*—The channel is straight above and below the section for 50 yards. The river bed is liable to shift. One channel at all stages.

*Discharge Measurements.*—Three well-distributed measurements in 1915, and one ice measurement in winter.

*Winter Flow.*—The river freezes over in November, and does not appear to carry frazil ice or anchor ice.

*Accuracy.*—"D." The gauge readings are infrequent, and the station newly established. Results should be within 20%.

*Discharge Measurements of Dore River near McBride, B.C., for 1915.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
July 2	K. G. Chisholm	1.521	120	350	4.60	4.63	1.660
Aug. 21	Elliott & Challies	1.521	110	306	4.39	4.10	1.340 <sup>1</sup>
Sept. 19	J. A. Elliott	1.521	108	264	4.69	3.90	1.240

<sup>1</sup> Shift in channel.

## Daily Gauge Height and Discharge of Dore River near McBride, B.C., for 1915.

(Drainage area, 190 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1			6 2	2,000		1,650		550		500		
2				1,900		1,500	2 7	660		440		
3				1,800	4 1	1,350		320	2 44	390		
4	4 4	1,320	4 7	1,700		1,400		480		360		
5		1,620		1,780		1,460		440		330		
6		1,720		1,850		1,520	2 4	390		390		
7	4 9	1,320		1,920		1,680		390	2 45	270		
8		1,720	5 2	2,000	4 6	1,640		400		240		
9		1,520		1,940		1,330		410		200		
10		1,320		1,880		1,020	2 45	415	2 25	160		
11	3 7	1,120	4 9	1,820		700		410		160		
12		1,220		1,880	2 4	390		400		160		
13		1,370		1,940		350	2 4	390		160		
14	4 4	1,520		2,000	2 9	670		480	2 4	160		
15		1,620	5 3	2,060		670		660		160		
16		1,520		2,060	2 9	670		650		160		
17		1,520		2,060		950	3 0	730	2 55	160		
18	4 4	1,520	5 3	2,060	3 9	1,240		680		160		
19		1,620		1,830	2 9	670		620		140		
20		1,670		1,600		620	2 7	560		130		
21		1,720	4 1	1,350		560		560	2 5	120		
22	4 9	1,820		1,530	2 6	500		560		110		
23		1,720		1,710		480		560		110		
24		1,720		1,900		460	2 7	560	2 7	110		
25	4 6	1,640	5 3	2,060	2 7	410		580		100		
26		1,680		2,080		460		600		Frozen		
27		1,720		2,100		480		610				
28	4 8	1,760		2,100		500	2 8	600				
29		1,840	5 4	2,120	2 65	530		580				
30		1,920		1,970		540		580				
31				1,820			2 7	560				

## Monthly Discharge of Dore River near McBride, B.C., for 1915.

(Drainage area, 190 square miles.)

MONTH	DISCHARGE IN SECOND-FEET.				RUN-OFF	
	Maximum.	Minimum	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
August	2,120	1,350	1,900	10 0	11 5	117,000
September	1,650	440	880	4 62	5 16	52,400
October	730	390	530	2 79	3 22	32,600
The period	2,120	390	1,103	5 80	19 88	202,000



## NECHAKO RIVER.

The Nechako river rises at the western end of the lake region of the great interior plateau, south of the Grand Trunk Pacific. The Nechako has its source in Ootsabunkut and Cheslatta lakes, at an elevation of about 2,900 feet, and, after flowing about 70 miles in a north-easterly direction, almost touches the eastern end of Fraser lake, and then turns nearly due east along the 54th parallel, holding this direction for 100 miles to its confluence with the Fraser at Fort George. Near Fraser lake the Upper Nechako receives the waters from Fraser and François lakes.

Nechako river may be said to be of three main branches:—the Upper Nechako, which drains Ootsabunkut, Cheslatta, Natalkuz, Euchu, and Teta-chuck lakes; the Nautley and Endako rivers which drain François and Fraser lakes; and the Stuart which drains Tacla, Tremblay and Stuart lakes. The drainage area of the Nechako basin is about 15,700 square miles.

The Nechako valley proper is in reality an old lake bed and its soil is very rich. It averages 15 miles in width and contains several thousand acres of excellent farming land.

The lower Nechako was navigated by small river steamers, from Fort George to Fort Fraser, during the construction of the Grand Trunk Pacific Railway. As early as 1871, a 70-foot steamer, the "Enterprise," made a trip from Soda creek to Tacla lake, during the Omineca gold rush. The remains of this steamer are now beached on Tremblay lake. During the summer of 1915 the Department of Public Works, Canada, did considerable improvement work on the Stuart river rapids to make a navigable waterway at all stages from the railway to the Omineca mining region.

There are no power developments on the Nechako at present. The total fall between Ootsabunkut, or Ootsa lake, and the Fraser is about 860 feet, of which 80 feet is in the short stretch between Ootsa and Natalkuz lakes. Near the Cheslatta Creek rapids, about 60 miles up the Upper Nechako, there is a box canyon 12 miles long, which contains many falls and rapids.

Several of the largest lakes in the province are in the Nechako basin,—Ootsa, 140 miles long; Cheslatta, 25 miles; François, 60 miles; and Fraser, 14 miles; Stuart (area, 221 square miles); and Tacla, 135 square miles.

There are two gauging stations being maintained on the Nechako river at the present time, one at Vanderhoof, on the Lower Nechako, and one near Fort Fraser, on the Upper Nechako. The gauging station on the Upper Nechako river was established in June, 1915, and daily gauge readings have been taken since that time. Meterings are made from the railway bridge, half a mile west of Fort Fraser. The gauging station on the Lower Nechako, at Vanderhoof, was established in June, 1915. Daily gauge readings are taken and meterings are made from a boat station near the ferry crossing of the Vanderhoof-Stuart lake road. This latter station gives the combined discharges of the Upper Nechako, Nautley and Endako rivers.

Climatic conditions in the Nechako valley are shown by the temperature and precipitation tables for Fort St. James and Fort George. The winter is

generally of 5 months duration, snow coming to stay in mid-November and lasting until the middle of April. The precipitation is light but well distributed throughout the year.

NECHAKO RIVER, FORT FRASER.—(4000).

*Location.*—At the Grand Trunk Pacific Railway bridge, about  $\frac{1}{2}$  mile west of Fort Fraser townsite.

*Records Available.*—June 16 to December 10, 1915.

*Drainage Area.*—Approximately 6,150 square miles.

*Gauge.*—Vertical staff gauge, nailed to a timber pile on the left bank of the river, about 75 feet above the railway bridge. The gauge is read daily in the open season and semi-weekly in the frozen season, by Mr. F. Clarke.

*Channel.*—Straight above and below section. Divided into sections by the bridge piers. There is a possibility of shift in the section, due to current action around the piers of the bridge.

*Discharge Measurements.*—Four well-distributed measurements during the summer of 1915.

*Winter Flow.*—The river freezes in mid-November, and is frozen until the middle of April. During the early winter months the flow is affected by presence of anchor and frazil ice.

*Accuracy.*—"C." The station is newly established, but the conditions for metering are good. The results should be well within 15%.

*Discharge Measurements of Nechako River near Fort Fraser, B.C., for 1915.*

Date.	Engineer.	Meter No.	Width	Area of Section	Mean Velocity.	Gauge Height	Discharge.
			Feet	Sq. ft.	Ft. per sec.	Feet	Sec.-ft.
June 17	K. G. Chisholm	1,521	490	6,210	2.37	8.64	14,730
July 18	Chisholm & Challies	1,521	480	5,480	2.18	7.10	11,920
Aug. 26	Elliott & Challies	1,521	470	3,950	1.67	4.20	6,610
Sept. 23	Elliott & Challies	1,521	430	3,180	1.40	2.68	4,440

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Daily Gauge Height and Discharge of Nechako River near Fort Fraser, B.C., for 1915.

(Drainage area, 6,150 square miles.)

Day.	June.		July.		August.		September.		October.		November.	
	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.	Gauge Height.	Discharge.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1			7.8	13,100	6.45	10,450	3.9	6,150	2.25	3,880	1.7	3,220
2			7.6	12,700	6.35	10,270	3.85	6,080	2.2	3,810	1.8	3,330
3			7.5	12,600	6.20	10,090	3.8	6,000	2.2	3,810	1.8	3,330
4			7.5	12,600	6.16	9,910	3.7	5,850	2.2	3,810	1.8	3,330
5			7.5	12,500	6.1	9,820	3.65	5,780	2.2	3,810	1.9	3,450
6			7.4	12,300	6.0	9,640	3.6	5,700	2.2	3,810	2.0	3,570
7			7.3	12,100	5.95	9,550	3.55	5,640	2.1	3,690		3,690
8			7.1	11,700	5.8	9,280	3.5	5,550	2.05	3,630		3,690
9			7.0	11,500	5.8	9,280	3.5	5,550	2.0	3,570	2.2	3,810
10			7.0	11,500	5.7	9,100	3.45	5,480	2.0	3,570		3,570
11			6.9	11,300	5.6	8,920	3.4	5,410	1.95	3,510		3,450
12			6.8	11,110	5.5	8,750	3.35	5,340	1.9	3,450	1.8	3,380
13			6.75	11,000	5.35	8,490	3.3	5,270	1.8	3,330		3,330
14			6.8	11,110	5.2	8,240	3.25	5,200	1.7	3,220		3,220
16			6.7	10,920	5.1	8,070	3.2	5,130	1.7	3,220		3,220
16	8.8	15,160	6.7	10,920	5.0	7,900	3.15	5,060	1.65	3,160	1.7	3,220
17	8.6	14,720	6.80	11,200	5.0	7,900	3.1	4,990	1.6	3,110		3,220
18	8.5	14,600	6.8	11,110	4.9	7,730	3.0	4,850	1.6	3,110		3,110
19	8.4	14,300	7.2	11,900	4.8	7,560	2.9	4,720	1.55	3,060	1.6	3,110
20	8.4	14,300	7.25	12,000	4.7	7,390	2.85	4,660	1.5	3,000		3,110
21	8.3	14,100	7.35	12,200	4.6	7,230	2.8	4,590	1.5	3,000		3,110
22	8.2	13,900	7.5	12,500	4.5	7,070	2.75	4,520	1.5	3,000		3,220
23	8.1	13,700	7.4	12,300	4.4	6,910	2.7	4,460	1.5	3,000	1.7	3,220
24	8.0	13,500	7.3	12,100	4.35	6,830	2.65	4,390	1.5	3,000		3,220
25	8.0	13,500	7.2	11,900	4.3	6,750	2.6	4,330	1.5	3,000		3,220
26	7.9	13,300	7.1	11,700	4.25	6,680	2.5	4,200	1.5	3,000		3,220
27	7.9	13,300	7.0	11,500	4.2	6,600	2.5	4,200	1.55	3,060	1.7	3,220
28	8.0	13,500	6.9	11,300	4.1	6,450	2.45	4,140	1.6	3,110		3,110
29	8.0	13,500	6.8	11,110	4.0	6,300	2.4	4,070	1.6	3,110		3,110
30	7.9	13,300	6.65	10,820	4.0	6,300	2.3	3,940	1.6	3,110		3,110
31			6.55	10,620	4.0	6,300			1.65	3,160		

December.		
1	2.10	3,110
2		3,110
3		3,110
4	3.0	3,110
5		3,110
6		3,000
7		3,000
8	2.8	3,000
9		3,000
10		3,000
11	3.4	Frozen
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
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26		
27		
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30		
31		

*Monthly Discharge of Nechako River near Fort Fraser, B. C., for 1915.*

(Drainage area, 6,180 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
July.....	13,100	10,620	11,700	1.90	2.19	719,000
August.....	10,460	6,300	8,120	1.32	1.52	499,000
September.....	6,180	3,940	5,040	0.82	0.92	300,000
October.....	3,880	3,000	3,330	0.54	0.62	208,000
November.....	3,810	3,110	3,300	0.54	0.60	196,000
December.....						
The period.....	13,100	3,000	6,298	1.02	5.85	1,919,000

## NECHAKO RIVER, VANDERHOOF—(4006).

*Location.*—At the ferry crossing, about  $\frac{1}{2}$  mile from the town of Vanderhoof.

*Records Available.*—July 21 to November 8, 1915.

*Drainage Area.*—Approximately 9,500 square miles.

*Gage.*—Chain gage on right bank of river, about 25 yards above ferry land. Daily gage readings by Mr. R. Stuart.

*Channel.*—Permanent channel of even cross-section, straight for 1,000 feet and below section.

*Discharge Measurements.*—Four measurements during open season and one each winter, 1915. Measurements are made from a canoe, anchored to a log 50 feet above the ferry.

*Winter Flow.*—The river freezes early in November and is frozen over until April. Frazil and anchor ice affect the flow in the early winter.

*Accuracy.*—"C." The section is good, and the meterings are well distributed. Results should be within 15%.

*Discharge Measurements of Nechako River near Vanderhoof, B. C., for 1915.*

Date	Engineer	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
July 22	Chisholm & Challies	1,521	447	4,050	3.30	8.70	13,400
Aug 26	Elliott & Challies	1,521	435	2,730	2.77	2.60	7,580
Sept 22	J. A. Elliott	1,521	413	2,070	2.63	1.00	5,580
Oct 20	J. A. Elliott	1,521	390	1,600	2.43	-0.1	3,890

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Daily Gauge Height and Discharge of Nechako River near Vanderhoof, B.C., for 1915.

(Drainage area, 9,500 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1			4.8	11,570	2.2	7,050	0.5	4,750	0.1	4,130		
2			4.5	11,190	2.1	6,900	0.5	4,650	0.1	4,130		
3			4.5	11,190	2.0	6,750	0.5	4,550	0.1	4,130		
4			4.55	11,100	2.0	6,750	0.5	4,650	0.1	4,130		
5			4.4	10,810	1.9	6,500	0.4	4,520	0.2	4,250		
6			4.4	10,510	1.9	6,600	0.4	4,520	0.2	4,250		
7			4.3	10,620	1.8	6,450	0.3	4,390	0.2	4,250		
8			4.2	10,430	1.5	6,450	0.3	4,390	0.2	4,260		
9			4.1	10,240	1.7	6,300	0.2	4,260	Ice Frozen			
10			4.0	10,050	1.7	6,300	0.2	4,260				
11			4.0	10,050	1.6	6,150	0.2	4,260				
12			3.8	9,710	1.5	6,150	0.2	4,260				
13			3.7	9,540	1.5	6,000	0.1	4,130				
14			3.6	9,370	1.4	5,860	0.1	4,130				
15			3.5	9,200	1.4	5,660	0.1	4,130				
16			3.4	9,030	1.3	5,720	0.0	4,000				
17			3.3	8,860	1.3	5,720	0.0	4,000				
18			3.2	8,690	1.2	5,580	-0.10	3,870				
19			3.1	8,520	1.2	5,580	-0.10	3,870				
20			3.0	8,350	1.1	5,440	-0.10	3,870				
21	5.6	13,150	2.9	8,150	1.1	5,440	-0.20	3,740				
22	5.7	13,350	2.8	8,010	1.0	5,330	-0.20	3,740				
23	5.7	13,350	2.7	7,840	0.9	5,170	-0.20	3,740				
24	5.6	13,150	2.6	7,670	0.9	5,170	-0.20	3,740				
25	5.5	12,950	2.6	7,670	0.9	5,170	-0.20	3,740				
26	5.4	12,750	2.5	7,500	0.8	5,040	-0.20	3,740				
27	5.4	12,750	2.5	7,500	0.8	5,040	-0.10	3,670				
28	5.2	12,350	2.4	7,350	0.7	4,910	-0.10	3,670				
29	5.1	12,150	2.3	7,200	0.6	4,780	-0.10	3,670				
30	5.0	11,950	2.3	7,200	0.6	4,780	0.00	4,000				
31	4.9	11,750	2.2	7,050			0.00	4,000				

Monthly Discharge of Nechako River near Vanderhoof, B.C., for 1915.

(Drainage area, 9,500 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
August	11,600	7,050	9,110	0.96	1.11	560,000
September	7,950	4,780	5,830	0.61	0.68	347,000
October	4,780	3,740	4,120	0.43	0.50	253,000
The period	11,600	3,740	6,353	0.66	2.29	1,160,000

## SKEENA RIVER.

The Skeena river is about 335 miles long and drains a territory of about 19,000 square miles. It rises in the eastern slopes of the Coast range and for 180 miles follows the general direction of this mountain system, then, at a point near Hazelton, it turns south-west and cuts across the range, to reach the Pacific ocean. In its upper reaches the Skeena is very swift and flows through numerous canyons and boulder-strewn rapids. The lower part of the river is wide and swift-flowing; it is divided into several channels by the many alluvial islands in its passage through the coast range. Tidal influence extends up the river for about 40 miles.

Prior to and during the construction of the Grand Trunk Pacific Railway, the Skeena was navigated by river steamers to Hazelton, at the mouth of the Bulkley, a distance of 154 miles. Navigation, except near the mouth, is difficult and dangerous.

Probably the most important industry connected with the Skeena river is the salmon fishing. The Skeena is a noted salmon river and several canneries have been established for some years near the mouth.

The main line of the Grand Trunk Pacific Railway follows the lower 154 miles of the river to Hazelton. The route of the proposed extension of this railway from Hazelton to Dawson, follows the upper part of the Skeena for about 130 miles.

The Skeena valley has a general width of 2 miles, decreasing as it ascends. The mountains on either side seldom exceed 3,000 feet in height. The principal tributaries of Skeena river are the Kitsumgallum, Kitwanga, Kispiox, Kuldo, Exchamsiks, Kwinitsa, Seaxe, Kasiks and Exstew, on the north and west; Exstall, Lakelse, Zymoetz, Bulkley, Kitsequekla, Babine, Shequnya, Kleanza and Chindemash, on the south and west, most of them draining valleys with a considerable extent of agricultural land.

There are no power developments on the Skeena at present. It has a fall of about 725 feet in the 154 miles between Hazelton and its mouth, but the construction of the railway along its banks prevents any extensive utilization for power purposes.

There is at present only one gauging station on the Skeena river. It is located at the Hazelton ferry, about half a mile above the mouth of the Bulkley. This station was established in July, 1915. Readings are made daily from a chain gauge. Discharge measurements are made from the canoe ferry, a tagged line being stretched across the river to mark points of observation.

## SKEENA RIVER, HAZELTON.—(4005).

*Location.* At ferry, at Old Hazelton, about  $\frac{3}{4}$  mile above the mouth of Bulkley river.

*Records Available.*—July 15 to December 31, 1915.

*Drainage Area.*—Approximately 13,300 square miles.

*Gauge.*—Chain gauge on a long pole braced over left bank, near ferry. Read daily by Jas. MacKay.

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*Channel.*—Straight above and below section. Bed is permanent and current is very swift. At high stage, surface velocities only can be obtained.

*Discharge Measurements.*—Four well-distributed measurements during open season, 1915.

*Winter Flow.*—River freezes over early in December. Winter flow is affected by ice jams near confluence with Bulkley river.

*Accuracy.*—Below gauge height of 5.0 feet results should be within 15%. Above 5.0 feet within 20%.

*Discharge Measurements of Skeena River at Hazelton, B.C., for 1915.*

Date.	Engineer.	Meter No.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
			Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
July 16	Chisholm & Challies	1,521	460	4,450	5.32	5.55	23,200
Aug. 28	Elliott & Challies	1,521	415	3,340	4.99	3.00	16,580
Sept. 25	J. A. Elliott	1,521	380	2,190	3.27	0.20	7,180
Oct. 23	J. A. Elliott	1,521	423	3,490	5.24	3.40	12,260

*Daily Gauge Height and Discharge of Skeena River at Hazelton, B.C., for 1915.*

(Drainage area, 13,300 square miles.)

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.
	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.	Feet.	Sec.-ft.
1			6.8	34,880	3.5	18,600	2.0	12,800	2.2	13,520	-0.2	6,120
2			5.6	33,760	3.3	17,900	1.9	12,460	2.0	12,500	-0.2	6,120
3			6.0	30,600	3.2	17,400	1.2	10,140	1.9	12,460	-0.3	5,880
4			7.0	36,000	3.2	19,040	1.0	9,600	1.9	12,460	-0.3	5,880
5			6.6	33,200	3.6	19,040	1.0	9,500	1.3	10,460	-0.3	5,880
6			5.7	29,100	2.8	16,800	1.0	9,500	1.0	9,500	-0.3	5,560
7			5.8	29,600	2.6	15,000	0.8	8,900	1.0	9,500	-0.4	5,640
8			5.9	30,100	2.5	14,600	0.6	8,300	0.9	9,200	-0.4	5,640
9			5.6	28,100	2.3	13,880	0.6	8,300	0.8	8,900	-0.4	5,640
10			5.9	30,100	1.9	12,460	0.6	8,300	0.8	8,900	-0.4	5,640
11			6.3	32,160	1.6	11,440	0.7	8,600	0.7	8,600	-0.3	5,880
12			6.5	33,200	1.3	10,460	0.7	8,600	0.7	8,600	-0.2	6,120
13			5.6	28,600	1.3	10,460	0.9	9,200	0.6	8,300	-0.2	6,120
14			5.4	27,600	1.2	10,140	0.9	9,200	0.5	8,000	-0.2	5,120
15			5.2	26,600	1.3	10,460	1.0	9,500	0.5	8,000	-0.3	5,880
16	5.5	28,100	4.9	25,120	1.6	11,440	3.2	42,800	0.7	8,600	-0.3	5,880
17	5.4	27,600	4.8	24,640	1.6	11,440	9.6	61,440	0.5	8,000	-0.4	5,640
18	5.1	26,100	4.8	24,640	1.9	12,460	9.8	52,720	0.5	8,000	-0.4	5,640
19	5.4	27,600	4.7	24,160	1.8	11,100	9.6	51,440	0.4	7,720	-0.4	6,640
20	5.5	28,100	4.6	23,680	1.3	10,460	9.3	49,520	0.2	7,160	-0.4	5,640
21	6.0	30,600	4.4	22,720	1.1	9,820	4.2	21,760	0.2	7,160	-0.4	5,540
22	9.5	47,920	4.0	20,800	0.7	8,600	3.7	19,480	0.2	7,160	-0.3	5,880
23	8.2	42,800	3.8	19,920	0.5	8,000	3.4	18,200	0.1	6,880	-0.3	5,880
24	7.6	39,360	3.8	19,920	0.3	7,440	3.4	18,200	0.0	6,600	-0.3	5,880
25	7.0	36,000	3.7	19,480	0.2	7,160	3.0	16,600	0.0	6,600	-0.3	5,880
26	6.9	35,440	3.2	17,400	0.3	7,440	2.8	15,800	-0.1	6,360	-0.3	5,880
27	6.7	34,320	3.2	17,400	0.5	8,000	2.5	14,600	-0.2	6,120	-0.3	5,880
28	6.5	33,200	3.2	17,400	0.9	9,200	2.3	13,880	-0.2	6,120	-0.3	5,880
29	6.6	33,200	3.3	17,900	1.2	10,140	2.3	13,880	-0.2	6,120	-0.3	6,880
30	6.6	33,760	3.4	18,200	2.0	12,800	2.2	13,520	-0.2	6,120	-0.3	5,880
31	6.65	34,040	3.5	18,600			2.3	13,880			-0.3	5,880

**Monthly Discharge of Sheena River at Hazelton, B.C., for 1915.**

(Drainage area, 12,300 square miles.)

MONTH.	DISCHARGE IN SECOND-FEET.				RUN-OFF.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on Drainage area.	Total in acre-feet.
August.....	26,000	17,400	26,600	1.92	2.31	1,370,000
September.....	19,040	7,160	12,000	0.90	1.00	714,000
October.....	62,700	6,600	16,400	1.26	1.69	1,130,000
November.....	12,600	6,120	6,480	0.64	0.72	602,000
December.....	6,120	5,840	2,620	0.44	0.51	360,000
The period.....	22,700	5,840	14,060	1.06	6.02	4,277,000

**FORT GEORGE DISTRICT.—MISCELLANEOUS METERING STATIONS.**

Date, 1915	Stream.	Tributary to	Locality.	Engineer.	Gauge Height	Discharge
July 11	Bulkley	Skeena	Smithers	K. G. Chisholm	.....	7,920
June 23	Chilako	Nechako	Miller's Ranch	K. G. Chisholm	2.68	112
Sept. 2	Chilako	Nechako	Miller's Ranch	J. A. Elliott	1.90	80
Oct. 29	Chilako	Nechako	Miller's Ranch	J. A. Elliott	2.10	66
Aug. 19	Dome	Fraser	Mile 145, B.C.	J. A. Elliott	1.09	170
Sept. 2	Dome	Fraser	Mile 145, B.C.	J. A. Elliott	0.85	92
Aug. 18	Fraser	.....	Mile 145, B.C.	J. A. Elliott	.....	29,900
July 19	Nautley	Nechako	Fort Fraser	K. G. Chisholm	2.20	1,370
June 18	Stoney	Nechako	Vanderhoof	K. G. Chisholm	0.60	7.70
July 20	Stoney	Nechako	Vanderhoof	K. G. Chisholm	0.50	7.90
Aug. 25	Stoney	Nechako	Vanderhoof	J. A. Elliott	0.25	2.02

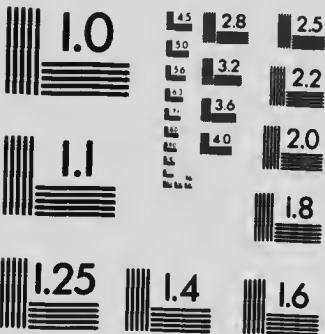


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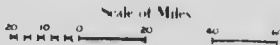


R. F. Nunn, M.S., Chief Draughtsman  
S. J. Allen, Draughtsman

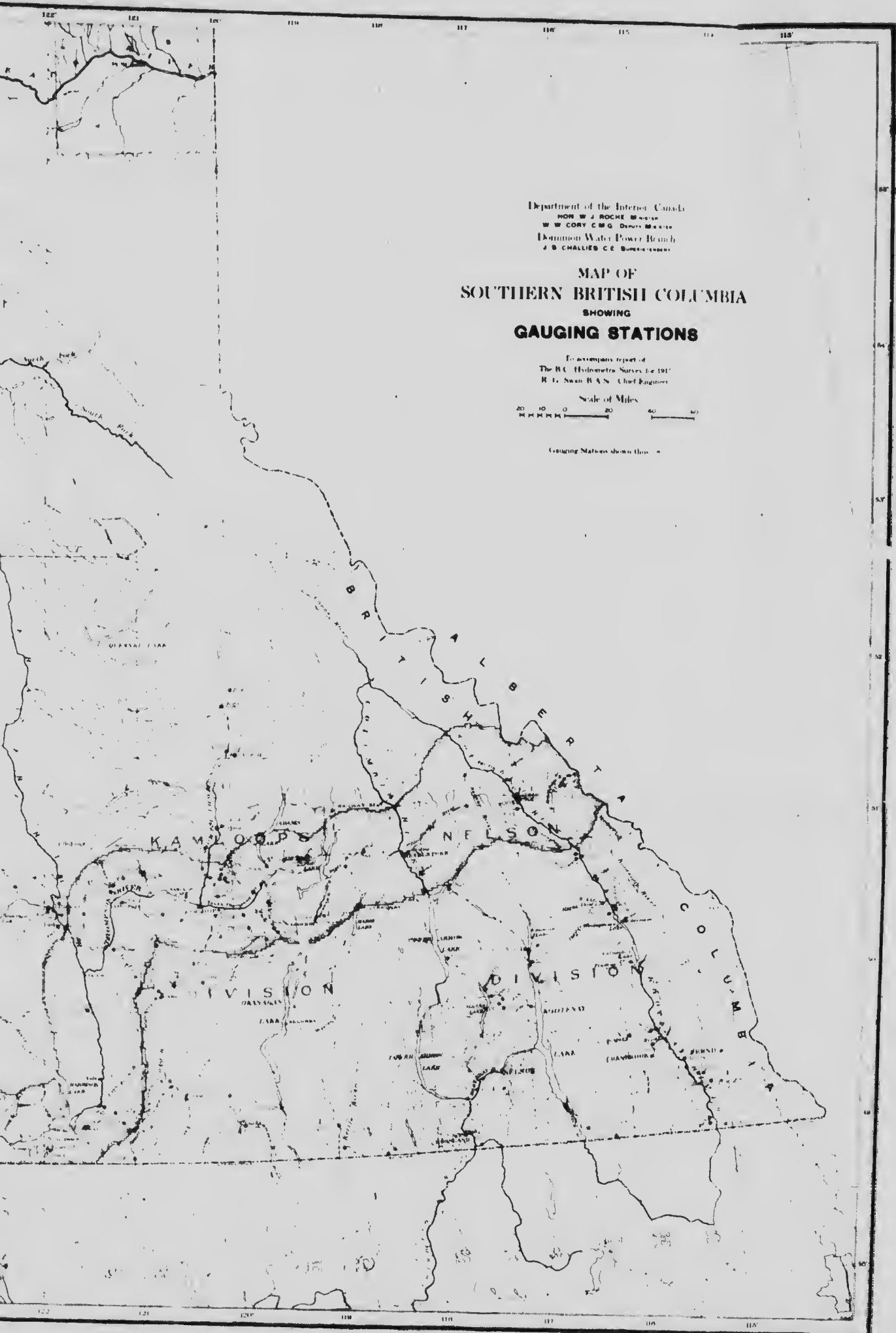
Department of the Interior, Canada  
HON. W. J. ROCHE, Minister  
W. W. CORY, C.M.G., Deputy Minister  
Domestic Water Power Branch  
J. B. CHALLICE, C.E., Superintendent

MAP OF  
SOUTHERN BRITISH COLUMBIA  
SHOWING  
GAUGING STATIONS

To accompany report of  
The B.C. Hydrometric Survey for 1917  
R. L. SWAN, B.A.S., Chief Engineer



Gauging Stations shown thus: —







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